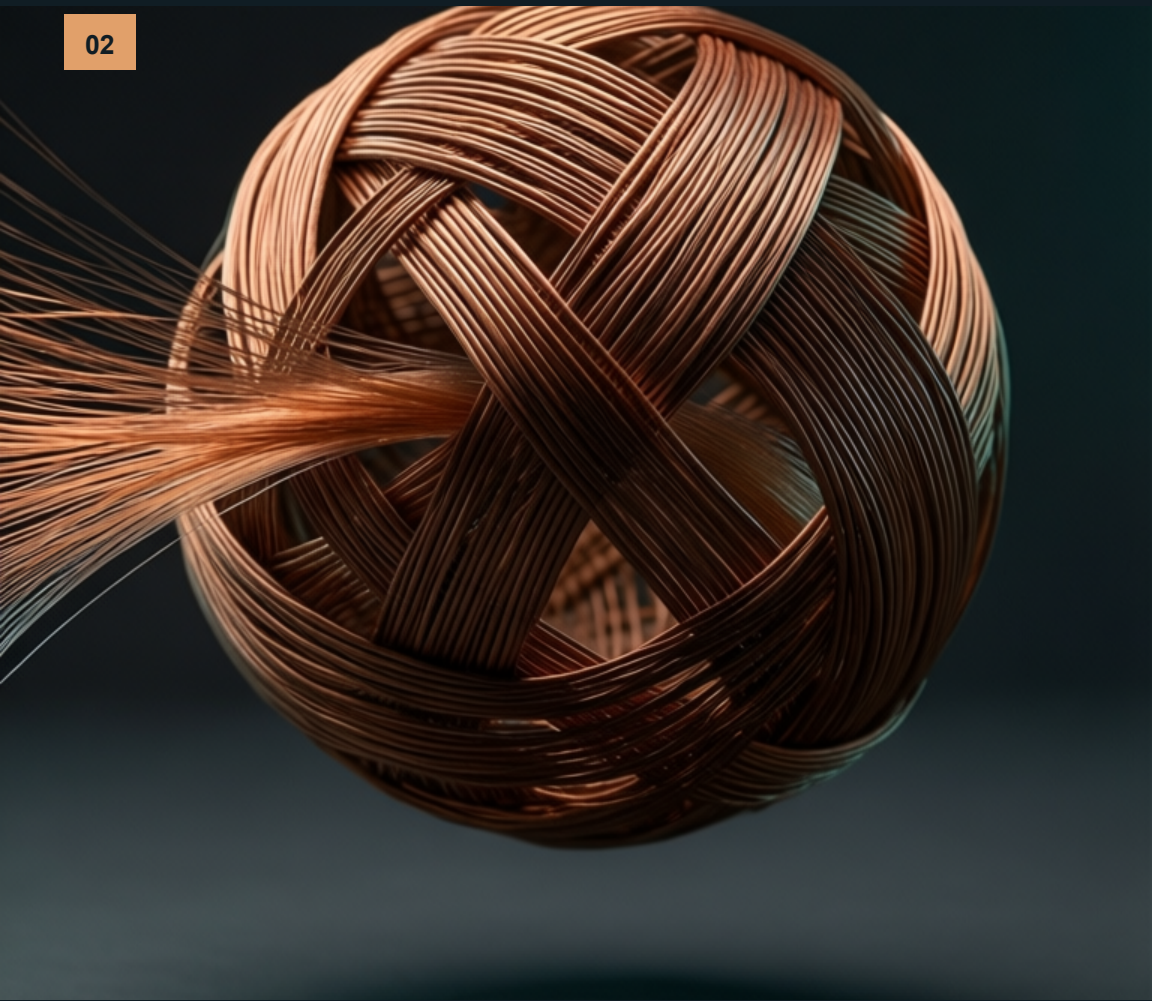
CODEFARMER

ISSUE 002 / NOVEMBER 20, 2026

CREATIVE AGENTIC COMPUTING

02



GIVE AN IDEA A CREW.

THREE PROGRAMS / THREE LEVELS

Orbit Postcards / Switchyard / Research Relay

FIVE COMMUNITY PROJECTS / TWO HANDS-ON LABS

READER EDITION

CONTENTS

Pick a thread. Follow it somewhere.

03 Word from the Editor / Alvin
04 The useful handoff
05 Prepare the pack / your second session
07 Next level: Codex
09 Next level: Claude Code
11 Next level: Muse Code
13 Next level: Gemini CLI
15 Next level: Copilot
17 Community Workbench / projects and labs
25 Learn how altering prompts affects output
26 Orbit Postcards / first run and fresh build
34 Make it better: keep a favorite
36 Switchyard / intermediate
41 Make it better: explain a wait
43 Research Relay / run, inspect and recover
49 Make it better: inspect a stopped run
54 The test bench
55 Cartoon: The handoff
56 Your local-model workshop / setup and results
65 Edge0 / why local AI, then build your first tools
83 From type-ins to prompt-ins / our roots
85 Readers' ideas and comments
86 Sources and discussions
92 How this issue was made
93 One more thing
94 The Back Page / Arthur

ISSUE 002 / READER EDITION

November 20, 2026 / 94 pages / CodeFarmer
Editor: Alvin / Original reporting and test dates retained.

Learn how altering the prompt affects the output. Explore three programs, local models and our magazine roots.

WORD FROM THE EDITOR

Give an idea a crew.

By Alvin / Editor

Last issue, the invitation was to make something only you would make. This time, let that something acquire a few moving parts. A postcard learns to draw itself. Three couriers share a depot. A question passes through a planner, a worker and a reviewer.

I like the ladder Rob suggested: one approachable program, one that asks you to keep a small system in your head, and one that makes you work for your next belt. It gives the magazine room for an evening experiment and a weekend project in the same issue.

Research Relay, our advanced program, answers a question using notes you supply. In its local-model test, the AI found real quotations but returned a review in a format the program could not accept. The program stopped and saved what happened. We show that result so you can see what worked and what still needed attention.

The fun is in seeing the mechanism, changing one rule and finding out what you misunderstood. A good prompt gives you a starting point. A good program gives you something worth changing.

Take your installed workbenches into a second session. Learn how altering the prompt affects the output in three prompt-ins, then build and test with models running on your own Mac.

> **FROM THE EDITOR / ALVIN**
>
> Start at the level that makes you curious. Move up when the next question becomes more interesting than the next feature.

Give each AI step a job you can check.

By Alvin

Imagine asking an AI to answer a question from three notes. You could request a finished answer immediately, or divide the job into steps you can inspect. Research Relay, the program on page 43, demonstrates the second approach. Each role is a separate request to a model; one model can perform all three roles.

Planner: choose a useful small job

The planner chooses which supplied notes to use. Each note has a short label such as S1. You can read the selected labels and check that the chosen notes belong to your question.

Worker: leave evidence behind

A worker returns a claim and the exact words it used as evidence. The program checks that those words occur in the chosen note before continuing.

Reviewer: judge the interpretation

A quotation can be copied correctly and still be irrelevant. The reviewer examines the connection between the claim and the quote. You inspect its decision before approving a saved report.

> **TRY THE THREE STEPS**
>
> Give your agent a short question and two notes. Ask which note to use, then ask for an answer with a quotation, then ask whether the quotation supports that answer. Keep the three replies so you can follow the decisions.

Open the pack. Choose your route.

By Alvin

Use the Programs + prompt workshop ZIP supplied with this issue. On a Mac, open the ZIP to extract it. Open the resulting folder in Finder: you should see programs and lab. Keep this folder as your working pack.

A browser gives you the first two programs

In programs, right-click 001-orbit-postcards.html and choose Open With and your browser. Use the same method for 002-switchyard.html. The browser runs these HTML files. Research Relay and the model workshop also need Python on a computer.

Prepare Terminal for the Python activities

Open Terminal from Applications > Utilities. Type python3 --version and press Return. Research Relay needs Python 3.10 or newer. If the command is missing or older, install a current Python 3 release using the official macOS installer, reopen Terminal and check again. [40]

```
python3 --version
```

To work from the pack, type cd followed by a space. Drag the extracted folder from Finder into Terminal, then press Return. Type ls and press Return. Seeing programs and lab confirms the right starting folder. A command stays in this Terminal window; a chat request goes in your coding agent.

> **CHOOSE YOUR CODING TOOL**
>
> The next five guides build on a coding tool you already installed. Issue one has the setup routes. Use a copied project folder. When a guide names AGENTS.md, CLAUDE.md or GEMINI.md, ask the coding agent to save that plain-text instruction file beside index.html.

Open issue one’s five setup routes

Improve the project you already started.

Pack, Terminal and Python preparation: page 5. Use its issue-one link to set up a coding tool.

These five guides improve Idea Shelf, a browser app with idea cards containing a title and note. Choose one guide for the coding tool you installed.

Bring a working starting point

Use a copy of your Idea Shelf folder from issue one. Starting here? Ask your coding agent to create index.html with embedded styling and JavaScript, title and note fields, Add and Remove buttons, three fictional cards and a phone-friendly layout. Check that adding and removing work before trying a change.

> **GIVE EVERY TOOL THE SAME PROJECT CONTEXT**
>
> Keep the app offline, with embedded resources and fictional examples. Preserve Add, empty-title validation and Remove. Name the files you will change, plan one useful improvement, run concrete checks, and report observed results.

Make a change you can judge

Each guide changes a visible job: keeping a card after reload, undoing deletion, choosing a next action, searching or tracking progress. Its checks help you judge the generated program.

An origin is a web address's protocol, host and port. Keep http://127.0.0.1:8803 and the same browser for storage tests. From the copied Idea Shelf folder in Terminal, run this command and open that address. Control-C stops the server.

```
python3 -m http.server 8803 --bind 127.0.0.1
```

Reader lab: product commands were checked against official documentation on November 13. These new vendor exercises are proposed work for you to run; the magazine's three supplied programs retain their separate test records.

Give the next session a useful memory.

By Alvin

Return to your copied Idea Shelf project. The next reader promise is straightforward: an idea you add is still there after reloading the page. That promise reaches beyond the appearance of a card.

1 / Write the project agreement

AGENTS.md is a plain-text instruction file in your project folder. Codex reads it for guidance about the app and its tests. Create one beside index.html with instructions like those below; the first line names the file. The later behavior checks establish whether the edit works. [21]

```
AGENTS.md
Keep index.html self-contained.
Render entered text literally.
Preserve Add and Remove behavior.
Report checks actually executed.
```

2 / Inspect before adding storage

Read index.html and the project instructions. Trace how ideas are created, rendered and removed. Propose a small plan for keeping them across reloads, including startup behavior, saved-data validation and a failed-storage case. Show the affected functions before editing.

3 / Make the plan concrete

Ask which state will be saved, what happens on the first launch and how deletion updates storage. Keep the same local address during reload tests. The next page supplies the implementation request.

Documentation-led workflow / checked November 13, 2026. [21] [22]

Keep the idea. Prove it survives.

In this project copy, add local persistence to Idea Shelf. Keep its current Add, empty-title validation, Remove and literal text rendering. Save a versioned list of idea IDs, titles and notes after each successful change. Seed examples only when no saved record exists; an intentionally empty shelf must stay empty. Validate loaded records before replacing state. If storage is unavailable or malformed, explain the condition and keep the current session usable. Use the same local HTTP origin for checks. Show tests for add/reload, delete/reload, an empty shelf and malformed saved data. Summarize changed files and observed results.

What the wording asks Codex to build

A “versioned list” is saved card data labeled with a format number, so later code can recognize it. “Intentionally empty” means deleting all cards must stay deleted after reload. Saving “after each successful change” includes both Add and Remove.

Review the difference

Inspect the edited files. In a CLI project with a local Git change set, /review offers a review of uncommitted changes; use its findings alongside your own behavior checks. A local repository can remain entirely on your computer. [22]

> **COMPARE THE SAME JOURNEY**
>
> Add “Moon greenhouse,” reload, then remove every card and reload again. Expect the new card to survive the first reload and the empty shelf to survive the second. Record the actual result.

Prompt improvement: “Make it remember things” becomes a startup, mutation and recovery contract. Fresh implementation and testing are the reader exercise.

Teach the project what a careful edit means.

By Alvin

A useful next step is recovering from an ordinary mistake. Give Idea Shelf an Undo action for its most recent deletion, and make that action feel dependable.

1 / Keep the agreement close

CLAUDE.md is a plain-text project instruction file that Claude Code reads. Put it beside index.html and describe how to open the app and check its behavior. The first line below names the file. Some configurations also read AGENTS.md; check which instructions your session loaded. [23]

```
CLAUDE.md
Keep the current offline single-file app.
Preserve labels and keyboard focus.
Run the app's existing checks.
Explain any check you could not run.
```

2 / Describe the reader's moment

Inspect the current removal code. Plan an Undo action for the most recently deleted idea. Show where to retain its original position, how to restore keyboard focus, and what a second deletion should replace. Keep this turn focused on the plan.

3 / Give Claude a check to run

Anthropic's guidance emphasizes concrete instructions and verifiable results. Turn "make deletion safer" into a visible state transition: a card disappears, an Undo action is offered, and the card can return exactly once. [24]

This exercise adds a bounded undo record. Whole-app history is a separate product decision. Documentation checked November 13, 2026.

Bring the card back to the right place.

Implement the agreed plan in this project copy. Add Undo for the latest deletion. Retain the deleted card's stable ID, title, note and former position. A second deletion replaces the one available undo record. Undo restores that card once in its former position and gives useful keyboard focus feedback. Adding another idea keeps the undo record available. Reload clears the in-memory undo record. Show a short status message with an accessible Undo button. Preserve existing title validation, literal text rendering and the phone layout. Test removing the middle of three cards, undoing, a second Undo attempt, two consecutive deletions and keyboard operation. Report actual results.

Why this produces a different program

"Latest deletion" means remembering one removed card and its former place. Its ID is a unique label. Undo restores that same card once at that place. Keyboard focus is the control receiving your next key press; return it somewhere useful after restoration.

Refine the prompt with an observation

If a card returns at the bottom, report that exact behavior: "Removing B from A/B/C, then Undo, gives A/C/B. Restore the saved position and add a check for A/B/C." That feedback names the failed journey and the expected result.

> **AN EDIT YOU CAN COMPARE**
>
> Replace "latest deletion" with "every edit in this session, in order." Now the agent needs a history model, reversals for each action, and rules for new edits after undo. Choose that larger job deliberately.

Design exercise: these are proposed changes to your copy. The original program and its recorded checks remain the baseline.

Turn a promising card into a first step.

By Alvin

A collection becomes more useful when each idea has something you can actually do next. Ask Muse Code to add a short next-action field while keeping your existing cards readable.

1 / Inspect the local workspace

Muse Code is Meta's coding tool. Start muse in the copied project folder. Type /help inside its session to see the controls offered by your installed version. Describe corrections through the card you clicked and the result you expected. [26]

2 / Reuse project instructions

Muse Code reads project instructions from AGENTS.md. If you need one, muse init --dry-run previews a proposed file before writing it. Review the preview alongside any existing instructions. The workspace's trust setting controls whether its local guidance is used. [25]

```
muse init --dry-run
muse
```

3 / Ask for the data change first

Read Idea Shelf. Plan a next-action field for each idea. Show the card data before and after this addition, how older cards get an empty value, and how the reader edits the field using a keyboard. Keep this response to the plan and proposed checks.

Use a single interactive session for this exercise. Meta's optional workflow engine has build/platform availability limits; the lesson needs ordinary project editing, not parallel-agent setup. [25] [26] [31]

Give each idea one useful next action.

In this project copy, add a next-action field of at most 160 characters to each Idea Shelf card. Let the reader edit it in place, then save or cancel. Display an empty field as “Choose a first step.” Treat all entered content as plain text. Older cards start with an empty next action; preserve their IDs, titles and notes. If this copy already has persistence, update its stored-record version and validation consistently. Keep Add, Remove, empty-title feedback and keyboard access working at a phone width. Test older cards, a 160-character action, rejection of 161 characters, cancel and editing the correct card. Show changed files and results.

What changes in the build

Each card needs its own saved next action. While editing, the app also needs a temporary value so Cancel can restore the previous text. Older cards need a sensible empty value. The 160-character limit needs a check and a message when the reader exceeds it.

Steer with something observable

If editing one card changes another, tell Muse the two card titles, the clicks you made and the result. Ask it to trace the ID used by the edit handler and add a regression check. In the terminal, Enter can steer a running turn; /help describes the current session controls. [26]

> **ALTER THE PURPOSE**
>
> Change “next action” to “a checklist of tasks with completion.” The agent now needs task IDs, multiple rows, completion state and revised saved-data validation. Those words change the work model.

Documentation-led reader exercise / commands checked November 13. A new Muse-generated implementation has not been tested for this issue.

Make a growing shelf easy to search.

By Alvin

A shelf of three ideas is easy to scan. A shelf of thirty calls for a way to find the one you remember. Give Gemini a search task with a precise definition of what searching changes.

1 / Show the project context

GEMINI.md is Gemini CLI's project instruction file. Put the app's requirements and test commands there. Inside the Gemini session, /memory show displays the guidance it loaded; /memory reload reads it again after you edit the file. [27]

```
/memory show
/memory reload
```

2 / Plan how filtering affects state

Current Gemini CLI documentation provides Plan Mode and /plan. Enter it for this design discussion, then review the proposed work before choosing implementation. Use the commands offered by your installed version; mode availability can differ across releases. [28]

Plan a title-and-note search for Idea Shelf. Explain the difference between the full idea list and the visible filtered list. Show how a card keeps its identity while results are filtered, how Clear behaves, and how deleting a visible result preserves hidden cards.

A focused plan supplies a state model and test cases. Ask for those outputs before asking for visual polish. Official documentation checked November 13, 2026.

Find the card. Keep the whole shelf.

Implement the agreed search in this project copy. Add a labeled search field that matches title or note case-insensitively and updates results as I type. Filtering changes only the view; keep the complete idea list intact. Show the visible count and a useful zero-result message. Clear restores all cards. Remove operates on the selected card's stable ID, including while filtered. Preserve current text handling, validation, keyboard controls and any storage behavior. Test a match in the note, mixed-case input, zero results, Clear and deletion of one filtered card while hidden cards remain. Show results and changed files.

How the words change the architecture

The app should keep its complete list and calculate which cards match the search. Each card needs an ID that stays the same when its position on screen changes. Otherwise, deleting the first search result could remove the first card in the full list instead.

Improve the request with a real case

Use fictional cards titled Telescope, Garden and Song. Search a word found only in Garden's note, remove that result, then Clear. Telescope and Song should remain. A screenshot of a filtered list is a useful supplement to this precise journey.

> **ANOTHER MEANING OF SEARCH**
>
> Replace the substring rule with "ask a local model for semantically related ideas." That asks for model access, a response contract, failure behavior and a different evaluation set. Choose the larger system explicitly.

This is an original revision brief and proposed acceptance test. Record what your new build actually does before calling the change successful.

Plan a feature beside the code.

By Alvin

Use GitHub Copilot in VS Code to turn Idea Shelf into a simple project board. Keep the work in a local folder and make one state change easy to inspect: an idea can be Next, Doing or Done.

1 / Select the intended session

Open the project folder in VS Code and start a Copilot chat session. If the session has a target selector, choose Copilot. Keep the account setup from issue one. Copilot's project instructions can live in AGENTS.md or .github/copilot-instructions.md, both files in your local project folder. [29]

2 / Review a plan

Use the planning controls shown by your installed VS Code release, such as /plan or Plan mode. Copilot can present a reviewable plan before implementation. Read the approach, files and checks; submit corrections before starting the implementation action. [30]

Plan a three-state Idea Shelf board: Next, Doing and Done. Preserve stable idea IDs and current card fields. Explain the state transition, the default for old cards, the keyboard-friendly control, the saved-data change if present, and the tests. Keep the current layout recognizable.

3 / Choose the smallest useful board

Start with a labeled status selector on each card. Drag-and-drop can be a later task with its own keyboard alternative. The selector makes the state transition easy to exercise and review.

Documentation-led workflow / checked November 13. Labels vary across VS Code versions; use the current Copilot session's planning and implementation controls.

Move an idea through a useful workflow.

Implement the reviewed plan in this local project copy. Give each Idea Shelf card one status: Next, Doing or Done. Existing cards default to Next. Use a labeled keyboard-accessible selector; the selected status and visible totals must agree. Keep IDs, titles, notes, Add and Remove behavior. If persistence exists, save and validate status with the other fields; reject unknown status values. Preserve literal text rendering and the phone layout. Test adding a Next card, moving it through all states, removing a Done card, an unknown status in a validation fixture and reloading saved status where storage exists. Show the diff and actual results.

From an adjective to a workflow

Next, Doing and Done give each card a clear place in the work. Old cards need a starting status. The app must recount the totals whenever a status changes and check saved values when it reloads.

Review and exercise the change

Inspect VS Code's changed-file view. Look for edits that correspond to the plan: the idea record, status control, totals, optional storage and tests. Then use a keyboard to move a fictional card through all three states. Keep the session's checks and your own observations together.

> **EXTEND THE PROMPT ON PURPOSE**
>
> Add "only the project owner can mark Done." A selector alone cannot enforce that rule: the agent now needs an identity and authority model. Decide the product requirement before asking it to build enforcement.

Reader exercise: the resulting Copilot implementation needs its own checks. This article reports documentation and a build brief, rather than a five-vendor execution comparison.

Find a project you can put to use.

By Alvin

Hacker News and Slashdot are discussion sites where programmers share projects and argue about them. We use those conversations to find ideas, then read the original project documentation. Each story below explains the tool before discussing our experiment.

PROJECT	JOB	OUR STATUS
Klad	Edit a drawing	Read the project
Atuin Threads	Find old chats	Tested 2 messages
OmniDiff	Compare files	Tested Python pair
Ginux	Supervise programs	Read current design
celld / workerd	Run shared apps	Read October plans

The project link takes you to the builder's explanation. The discussion link takes you to readers' questions and reactions. "Tested" means we ran the specific checks described here; "reported" means the description comes from our reading.

Another lead: AWS Emulator

AWS is Amazon's collection of cloud services. AWS Emulator imitates service APIs, the requests a program sends to those services, on a local machine. That could help test an agent-built app before connecting real services. Its Mac route uses a container, a packaged software environment. We have read the project and November 11 HN discussion; a hands-on test is future work. [17] [18]

Klad: draw alongside your coding agent.

By Alvin

FOUND VIA HACKER NEWS / Read the discussion
PROJECT: Klad
Reported: project read; hands-on test pending
Show HN: November 11, 2026

Imagine sketching a tree and asking your coding agent to make one branch thinner. Klad is a painting and animation app designed for that kind of shared work: you use its drawing editor, and the agent uses typed commands to edit the same drawing. [1]

What the agent can change

Klad keeps individual brush strokes, shapes and fills as editable items. A stroke retains information such as its path, brush and color. That gives the agent specific marks to inspect and change. Your next request can refer to a selected part of the picture. [1]

Why it belongs in this magazine

The interesting idea is giving an agent tools that operate on meaningful pieces of a project. In a painting, those pieces can be brush strokes; in an app, they might be buttons or saved records. A request becomes easier to inspect when you can see exactly which piece changed.

> **AN EXPERIMENT WE WOULD TRY**
>
> Draw a simple tree, ask for one branch to change, then inspect whether the other marks stayed intact. Try Undo and reopening the file. These are proposed checks; we have not run Klad. The project is early and source-available, with a company-revenue restriction in its license. [1]

Atuin: find an old coding conversation.

By Alvin

FOUND VIA HACKER NEWS / Read the discussion
PROJECT: Atuin Threads
Tested: store and search invented conversations; other features reported
Atuin 18.24.6 / November 10 release

You remember discussing a bug with a coding agent last week, but the useful explanation is buried in an old conversation. Atuin Threads is built to collect those coding sessions into a searchable history. A “thread” is one recorded conversation. [3] [5]

What it saves and searches

Atuin began as a history tool for commands typed in a terminal. Threads extends that idea to agent sessions: requests, replies and recorded tool activity. Capture means recording that material. You choose whether to enable it. The project also describes resuming work and optional encrypted synchronization between machines. [3] [5]

The documentation calls the coding tool a “harness”: Codex and Claude Code are examples. Moving a conversation to another harness means continuing its work in another coding tool. That is a broader claim than finding a sentence in a saved conversation.

Our smaller question

We tested whether a clean local setup could store two invented messages, find their unusual phrase and recognize the same messages when submitted again. The next page shows what happened.

WHY THIS COULD HELP

Searching old sessions can recover why a program was built a certain way, as well as the code it produced. Our test covers local storage and search. Resuming real sessions, switching tools and synchronization remain untested here.

Atuin in practice: find the saved phrase.

By Alvin

We checked Atuin 18.24.6 for Apple Silicon against its published SHA-256 hash, a file fingerprint. In a separate temporary profile, we stored two fictional “copper-kite” messages. The client and background helper were blocked from reading real home-folder data; synchronization stayed off.

WHAT WE TRIED	WHAT HAPPENED
Store two invented messages	Accepted
List saved conversations	Our fictional conversation appeared
Search for copper-kite	The conversation was found
Submit those messages again	It still contained 2 messages
Search for volcanic-marmalade	No matches
Resume using our invalid made-up ID	The invalid ID was rejected

Capture had to be enabled, and Atuin needed its daemon: a helper program that runs in the background. The test sent messages in the documented import format. The command names below are lab notes; the push line is abbreviated, with ... standing for a session identifier. [5] [6]

```
atuin threads push --harness codex --session ...
atuin threads list --style json
atuin threads search --style json copper-kite
```

WHAT THE RESULT MEANS

Recording, search and duplicate detection worked for our two messages. Rejecting an invalid ID checks an error path. Successful resumption remains untested. Invented input and results are under lab/ in the program pack.

OmniDiff: see what your agent changed.

By Alvin

FOUND VIA HACKER NEWS / Read the discussion
PROJECT: OmniDiff
Tested: command-line file comparisons, version 0.4.0
Show HN: November 1 / release: November 8, 2026

After a coding agent edits a program, you need to inspect the difference between the old file and the new one. A tool that shows those changes is called a diff tool. OmniDiff is one such tool, with comparison methods that depend on the kind of file. [7]

A one-line example

Suppose a fare calculator originally multiplies distance by 2, and the edited version multiplies it by 3. A diff should make that change visible. You can then decide whether it matches the request you gave the agent.

OmniDiff can display changes in the terminal, the app where you type commands, or return JSON: text organized into named fields that another program can read. Our test used two tiny Python files and the tool's command-line interface, or CLI. [7] [9]

Why an automated check needs care

When a command finishes, it returns an exit code: a small number telling the calling script how it ended. OmniDiff's default zero means the comparison completed successfully. It can still have found changes. The next page shows the option that makes the number report a difference.

> **A DIFF SHOWS THE CHANGE**
>
> Use the comparison to inspect the agent's edit, then run the program's behavior checks. Combining two people's edits into one file is a separate task called a merge. The HN discussion raised three-way merging; our test covers two-file comparison. [8]

OmniDiff in practice: read the result correctly.

By Alvin

Our test files contain a function called fare. before.py returns distance * 2; after.py returns distance * 3. For a distance of 10, those formulas give 20 and 30. The change is deliberate and easy to recognize.

COMPARISON / OPTION	EXIT CODE / MEANING
Same file / --exit-code	0 / no difference
Changed files / default	0 / comparison completed
Changed files / --exit-code	1 / files differ
Changed files / --mode json	Structured JSON returned
Missing input file	2 / an error occurred

```
omnidiff --headless --color never before.py after.py
omnidiff --headless --exit-code before.py after.py
omnidiff --mode json before.py after.py
```

These commands assume OmniDiff is installed and the two files are in the current folder. --headless prints the result as text; --color never removes color codes. --exit-code makes a difference return 1. --mode json gives a program-readable result. We checked version 0.4.0 and verified its release hash. [7] [9]

> **FIVE CHECKS, ONE PRACTICAL LESSON**
>
> A script checking for changed files should request the difference exit code and handle an error separately. Our small test confirms these cases. Large-file performance, PDFs, images and broader comparison accuracy were outside it.

Ginux: what does an AI-built kernel do?

By Alvin

FOUND VIA SLASHDOT / Read the discussion
PROJECT: Ginux
Reported: current design read; system not run
Discussion: November 2 / current docs: November 12

An operating-system kernel is the core software that manages work such as memory, running programs and access to devices. The November 2 Slashdot story concerned an AI-assisted experiment in building a standalone kernel. That is a much larger claim than generating an ordinary app. [10] [11]

The project changed direction

The bootable experiment is preserved on a separate branch, a saved line of development. Active work now runs as an ordinary program above Linux. This "userspace kernel" supervises selected programs and checks their requests to the host system. [10]

For example, a program can ask to open a file. Ginux's design decides whether to handle the request itself, allow a checked host operation or deny it. This is research software with a narrower scope than replacing Linux. We have read the design; we have not booted the old kernel or tested the current system. [10]

What a reader can take from it

The project describes human direction, explicit requirements and executable checks alongside AI-written code. Judge such a system through specific things it demonstrates, including its response to a forbidden request.

> **A SMALLER READER EXERCISE**
>
> Ask an agent for a calculator with three allowed operations and an explanation for an unsupported fourth. This proposed exercise practices explicit boundaries; Ginux itself remains untested here.

Deno and Cloudflare: keep the work after a restart.

By Alvin

FOUND VIA SLASHDOT / Read the discussion
PROJECT: celld / workerd
Reported: October follow-up; software not tested
Original announcement: October 9 / discussion: October 17

A chat app remembers rooms and messages. An agent workflow remembers completed steps and approvals. This lasting information is called state. Saving and recovering it becomes harder when several servers share the work.

What the October announcement meant

Deno runs JavaScript and TypeScript code outside the browser. Cloudflare's Workers platform runs web programs on its servers. In October, Deno's team announced a move to Cloudflare and plans to combine workerd, Workers' software engine, with celld, which brings this style of app to servers you control. [12] [13]

Durable Objects pair a named piece of code with its own database. A chat room can keep its messages in one such object. The announcement aimed to make these apps easier to run across several machines on infrastructure you control. This is October follow-through. [13] [14]

Connect it to a program you can inspect

Research Relay saves a job's progress in a local checkpoint file it can reopen after restarting. A shared service needs additional rules: who can approve a step, where that approval is saved, and how restarting avoids repeating finished work.

WHO THIS STORY IS FOR

For readers planning a shared web service. Our report covers the announcements; celld and workerd were not tested.

How altering the prompt affects the output.

LEVEL	PROGRAM	NEW IDEA
Beginner	Orbit Postcards	Draw a pattern and save it
Intermediate	Switchyard	Coordinate couriers on one grid
Advanced	Research Relay	Check answers against supplied notes

Learn how altering the prompt affects the output. A build prompt tells a coding agent what to create. With tools, the agent writes files, runs them and checks the result. The three programs below let you inspect that process at increasing levels of difficulty.

Read it as a set of decisions

An equation directs a calculation. A button requirement calls for a control and a response. A saved-data shape calls for a writer and a validator. The agent chooses how to organize the code; you can compare whether those decisions produce the requested behavior.

Use concrete examples and check the result. Anthropic and Google both recommend that practice. [19] [20]

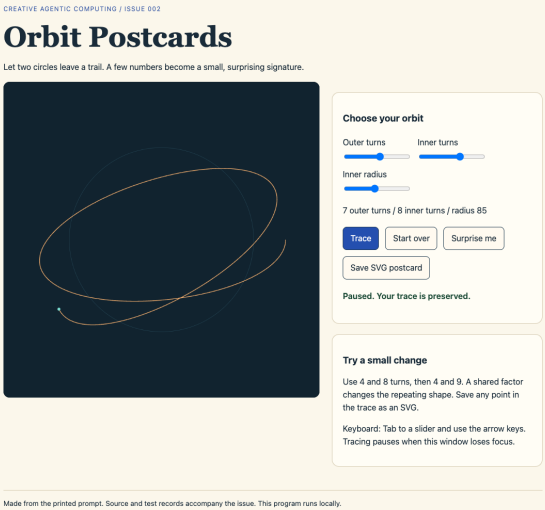
> **MAKE A SECOND COPY**
>
> Keep the original brief and program. Change one intended behavior in a copied prompt, name any dependent updates, and ask your agent for a separate build. Run the same starting case in both. Different agents or runs can choose different code.

Follow the brief into a program’s controls, saved information and checks. Then change its audience or purpose and identify what the agent must build differently. The lessons distinguish predictions from tested results.

PROMPT-IN 001 / BEGINNER

Orbit Postcards

By Alvin



An actual view of the supplied program. Two rotating circles leave an exportable trace.

Orbit Postcards draws looping patterns using two circular movements added together. The Outer turns and Inner turns sliders choose how many rotations each movement makes during a full trace. Whole-number settings return the line to its starting point.

Set Outer turns to 5 and Inner turns to 8, then try 4/8 and 4/9. Watch how the loops change. Pause partway through and save that moment as an SVG: a picture made from paths that stays sharp when enlarged.

YOU WILL PRACTICE

Open programs/001-orbit-postcards.html from the extracted pack. Page 27 walks through your first trace and saved picture; page 28 explains making a fresh build from the full prompt.

Trace your first postcard.

By Alvin

Open programs/001-orbit-postcards.html from the extracted pack, following page 5. The supplied screen shows Orbit Postcards, Ready to trace and three sliders. Its initial Outer turns, Inner turns and Inner radius settings are 5, 8 and 85.

1 / Start, then hold a moment

Click Trace. A copper line grows behind a moving teal point. Click Pause after a second or two. The line stays where it stopped. This growing-and-pausing result is your first success; you can explore the mathematics afterward.

2 / Save a picture you can reopen

While paused, click Save SVG postcard. Your browser saves orbit-postcard.svg, usually in Downloads. Open that file in a browser. SVG stores the drawing as paths, so the picture stays sharp when enlarged. This file contains the line drawn so far.

3 / Make a deliberate change

Tab to Outer turns and press an arrow key. The supplied trace resets; changing a slider chooses a new picture. Try 4 outer and 8 inner turns, then 4 and 9. Click Trace again. Start over keeps the chosen settings and begins that picture again.

> **IF A STEP LOOKS DIFFERENT**
>
> Start by checking the file name: these labels describe the supplied program. If you see code, confirm that the file ends in .html and open it with a browser. If a download is hard to find, use your browser's downloads list. Switching to another window pauses tracing; click Trace when you return.

We followed this route and downloaded an actual SVG using automated Chromium on a Mac. Physical Duo use and a human beginner trial remain separate checks.

Give the agent the whole brief.

Give a coding agent the next page's complete prompt. The prompt is your request; the saved HTML is the program your browser runs. Keep the supplied file for comparison.

1 / Give this build a fresh folder

In Finder, make orbit-reader-build in Documents. Open that folder in the coding tool you chose. Use its file-writing project mode. Copy the entire complete brief on page 29, paste it into the agent's chat and send it. The First modification box is a separate later exercise.

2 / Open the file it actually saved

Ask for the saved HTML path and open that file in a browser. If the agent only displays code, ask: "Save the complete browser program in this project folder and tell me the file name." A build may choose index.html and its own initial slider values; the brief leaves those choices open.

3 / Repeat a small, visible check

Start tracing, pause, save the current picture and reopen the SVG. Change one slider and see whether the trace resets. Use Tab and the arrow keys too. The result earns its place by doing these jobs. Its code and appearance can differ from the supplied file.

> **GIVE A USEFUL FOLLOW-UP**
>
> Keep the first file. In a copied project, report the starting screen, button or key used, expected behavior and actual result. Ask the agent to fix that one behavior, keep the working features and repeat the check. For example: "Save SVG postcard produces a blank picture after I pause. Export the path currently on the canvas and test reopening that saved file."

The example follow-up is a reader exercise. Our actual exact-prompt generation and independent results follow on page 30.

Paste this. Watch the line think.

Build Orbit Postcards as one self-contained HTML file using canvas, CSS and plain JavaScript. Use a midnight canvas with a copper trace and a pale teal moving point. Provide labeled integer sliders for outer turns 1-12, inner turns 1-12 and inner radius 20-160. On an 840-square canvas, use x=420+245*cos(a*t)+r*cos(b*t) and y=420+245*sin(a*t)-r*sin(b*t). One complete trace runs from t=0 to 2*pi in eight seconds, sampled at 2400 equal intervals. Expose Trace/Pause, Start over, Surprise me and Save SVG postcard controls. Changing a slider resets the trace. Export exactly the current partial or complete path as a self-contained SVG. Revoke its temporary object URL. Pause on window blur and when the document becomes hidden. Keep controls keyboard accessible and fit a 390-pixel viewport. Run entirely offline with no libraries or external resources. Show an explanatory status message. Verify the initial point, closed full curve, reset, pause and SVG download. Deliver the working file and test results.

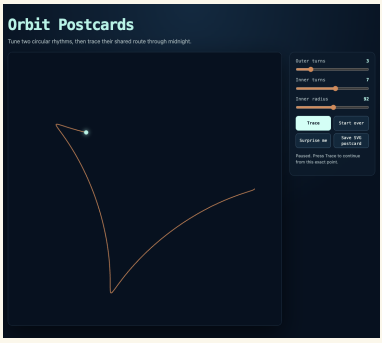
FIRST MODIFICATION

Add a second copper-to-teal trail with a phase offset. Keep the original trace in the SVG export and give the new parameter a keyboard-accessible label.

A fresh postcard.

By Alvin

We sent the exact complete brief on page 29 to Codex in an empty project. It received no supplied Orbit code, screenshots or our independent test harness. It saved index.html and chose initial settings 3, 7 and 92. Those defaults were unspecified in the prompt.



Actual fresh build after tracing and pausing.

INDEPENDENT CHECKS	OBSERVED
Equation and sampling cases	8 / 8 passed
Rendered-browser cases	20 / 20 passed
Narrow layouts included	390, 540, 1100 px

Browser checks used Enter, Space and Tab, operated the controls and downloaded both partial and complete SVGs. They verified pause, reset, offline reload and focus changes. The full export contained 2,400 line segments and returned to its start.

Open the preserved fresh Orbit build. File in the companion pack: lab/beginner-walkthrough-2026-11-15/orbit-first-build/index.html

One generation, November 15: Codex CLI 0.144.0, default GPT-5.6-Sol, 152 seconds including its checks. CLI ran on the M1 using the account model service. The agent used a simulated harness; we separately tested the rendered file in Chromium. Results cover this candidate and these cases.

Read the prompt behind the line.

The drawing is specified by an equation, a range of inputs and a timeline. Those clauses do different jobs. Compare those behaviors while exploring the visual choices an agent makes around them.

PROMPT CLAUSE

use x=420+245*cos(a*t)+r*cos(b*t) and y=420+245*sin(a*t)-r*sin(b*t).

This is the shape generator. Two rotating offsets add together. Change a frequency or radius to alter the points. Change a color to alter their appearance.

PROMPT CLAUSE

One complete trace runs from t=0 to 2*pi in eight seconds

This connects mathematical progress to wall-clock time. The equation decides where the line goes; eight seconds decides how quickly it gets there.

PROMPT CLAUSE

Export exactly the current partial or complete path as a self-contained SVG.

The export must use the same equation and progress as the canvas. It should preserve exactly the visible portion of the trace.

READ IT AS A REQUIREMENT

A prompt can specify precise behavior while leaving the internal function names and code organization to the agent. Compare the running behavior with the requirements; function names and source organization can vary between implementations.

Compose a postcard. Save your moment.

The supplied program traces a mathematical curve. A postcard-making brief changes the outcome from watching a mechanism to keeping a composed artifact.

EDITED BUILD BRIEF
Keep the original point equation and offline one-file implementation. Build a postcard-making workflow: choose a trace, stop at a pleasing moment, add a short title and select portrait or square framing. Provide a preview of exactly the card that will be saved, then export a self-contained SVG with the title and a small record of the orbit settings. Store and render the title as plain, editable text. Keep Save available as an explicit action and verify that reopening the SVG reproduces the preview.

HOW IT FEELS
The reader feels they are composing and keeping something personal. The curve becomes material for an artifact.

WHAT THE AGENT NEEDS TO BUILD / INTERFACE
Composition, title, frame and a reliable save preview become the main controls. Group mathematical settings behind the composition task so readers can adjust them when useful.

WHAT THE AGENT NEEDS TO BUILD / STRUCTURE
The agent needs a card document combining trace progress, settings, framing and title; a shared rendering/export path; and careful text escaping. Saving a generic full curve would now miss the requested output.

ACCEPTANCE CHECK
Freeze a partial trace, add a title containing angle brackets and export. The saved card should show literal text, the selected frame and that same partial path.

Asking for a useful output artifact can change the data model and export pipeline even when the underlying equation is untouched.

DESIGN EXERCISE: try a new build from this edited brief. Status: proposed; implementation and testing pending.

Change the time. Change the possible curve.

Build a variation from the edited prompt and compare it with the supplied program. The expected effects below are predictions for that build; testing a fresh agent-generated version is your next experiment.

TAKE TWICE AS LONG
BEFORE: in eight seconds
REPLACE / ADD: in sixteen seconds
EXPECTED: The full postcard takes twice as long to draw. Its final geometry and full-path sample count stay the same.
WHY: Elapsed seconds map to progress at a slower rate. The point equation stays the same.
CHECK: At four seconds, compare progress: about one half versus one quarter. Export both completed traces and compare their path coordinates.
KEEP IN STEP: Keep t=0 to 2*pi and the 2400 intervals unchanged. Doubling samples would be a separate change.

ALLOW HALF-TURN FREQUENCIES
BEFORE: labeled integer sliders for outer turns 1-12, inner turns 1-12
REPLACE / ADD: labeled sliders from 1 to 12 in steps of 0.5 for outer and inner turns
EXPECTED: The new settings admit curves that may be open when t reaches 2*pi. A=1 and B=1.5 is a useful example.
WHY: At 2*pi, the first rotation returns to its start while a 1.5-frequency rotation has made an extra half turn.
CHECK: At a=1, b=1.5, compare first and last coordinates at 2*pi; they should differ. At 4*pi they coincide.
KEEP IN STEP: Choose an explicit ending rule: explain the open curve, or request a 0-to-4*pi trace for half-step inputs. Update the export and closed-curve tests to match.

WHAT WE CHECKED / REFERENCE IMPLEMENTATION

Reference-code check: the existing point function produces an open path at 2*pi for frequencies 1 and 1.5, and a closed path at 4*pi. The current sliders intentionally allow integers only.

Find a favorite. Keep the moment.

By Alvin

Help a first-time reader choose a starting pattern and keep a favorite. “Make it more creative” leaves the agent guessing at colors or decoration. A useful journey gives it a job to build.

Work in a separate copy of Orbit Postcards. Keep the equation, integer sliders and SVG export. Add three named starter presets with their settings visible; selecting one resets the trace. Add a named favorites list stored locally with a versioned record of a, b, r and current progress. Selecting a favorite restores those values and pauses the trace. Explain the next useful action in the status line. Validate saved records and keep manual controls usable if storage fails. Preserve keyboard access, the 390-pixel layout and offline operation. Show tests for saving, reloading, restoring and exporting the same partial trace.

What the agent needs to change

“First-time reader” changes the entry experience. “Current progress” makes a favorite a saved document rather than just a set of slider values. Restoring a paused trace ties storage, the animation clock, drawing and SVG export to one state.

> **JUDGE THE RESULT**
>
> At a=5, b=8, r=80, pause after a quarter of the trace and save “First orbit.” Reload from the same local origin, restore it and export. Expect the same settings and partial path, paused. Check a malformed favorite too.

Proposed improvement: use a copy of the supplied program, implement the revised brief and record the observed result.

A curve with a memory.

By Alvin

A point is an agreement

```
x = 420 + 245*cos(a*t) + r*cos(b*t)
y = 420 + 245*sin(a*t) - r*sin(b*t)
```

Here a and b are the two turn counts, r is the inner-circle radius in pixels, and t marks progress through a cycle from 0 to 2*pi. The number 420 places the center on the canvas; 245 sets the outer radius. Pausing stops progress while preserving the curve already drawn.

Export the thing you can see

The SVG uses the same point function and the current progress value. A separate export formula could drift away from the display. Here, both views share the mechanism.

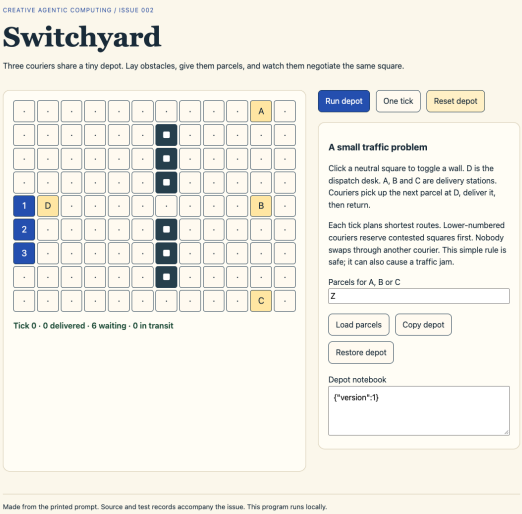
An interesting next test

Change the turn sliders to allow fractions. The old claim that every trace closes after one cycle will fail. Decide whether the program should draw longer, explain that an open path is expected, or restrict the inputs again.

> **A SMALL PROGRAM EARNS ITS KEEP**
>
> A working download, a predictable reset and a clear pause make an experiment pleasant enough to revisit.

Switchyard

By Alvin



The supplied depot: three couriers, one dispatch desk and three delivery stations.

Switchyard is a small parcel-depot simulation. Three couriers move through squares, collect parcels and deliver them to stations. A courier may know the shortest route while another courier occupies the square it wants next. You can watch the traffic rules handle that conflict.

The default queue delivers six parcels. Add walls, pause, move one obstacle and try again. The status line separates parcels waiting, parcels in transit and completed deliveries.

OPEN THE DEPOT

Open programs/002-switchyard.html as on page 5. One tick advances one step; Run depot continues. Pause before changing walls. Copy depot fills the JSON notebook; save that text yourself. Restore checks it before accepting the board. The route finder explores neighboring squares in layers, called breadth-first search.

Plan a route.
Check the next move.

Build Switchyard as a single offline HTML file: a responsive 12-by-9 depot made from keyboard-accessible buttons. Dispatch D is cell 49, destinations A/B/C are 10/58/106, and couriers 1/2/3 start at 48/60/72. Number cells row-major from zero. Initial walls are 18,30,42,66,78,90. Queue six parcels A,B,C,A,C,B. Each tick, couriers in ID order pick up at D, deliver to the named destination, then return to D or home when the queue is empty. Use breadth-first shortest paths; treat walls and other couriers as obstacles. Reserve destination squares sequentially, prohibit overlaps and swaps, and count waiting ticks. Prefer a safe wait when blocked. Show a traffic-jam message after eight waits; do not claim deadlock freedom. Supply Run/Pause, One tick, Reset, an editable A/B/C parcel queue, and JSON notebook export/import. Validate every imported field, protected square, courier ID, collision and delivery total before replacing state. Allow wall edits only while paused and protect stations, homes and occupied squares. Arrow keys move cell focus. Pause on blur/hidden. Test shortest paths, unreachable targets, collision freedom, delivery of the default queue and invalid-import preservation. Deliver the file, tests and usage notes.

The brief gives each courier a world.

Each tick is one simulation step. Couriers share the same board, so a decision by one can change the next courier's available moves. The prompt sets their order and tells the program which squares are blocked.

PROMPT CLAUSE
couriers in ID order

This makes priority predictable. Courier 1 gets the first opportunity each tick. Implement that choice in the update order; route length keeps its existing calculation.

PROMPT CLAUSE
treat walls and other couriers as obstacles

A route must account for the shared world. The courier needs a next step it can enter, so planning must account for occupied squares.

PROMPT CLAUSE
Validate every imported field, protected square, courier ID, collision and delivery total

The saved depot is an untrusted claim about a world. Validation needs to finish before the active state is replaced; a parseable JSON object can still describe an impossible depot.

> **READ IT AS A REQUIREMENT**
>
> Choose an explicit tick interval in your revised prompt. The original brief leaves that detail open, and the supplied program uses 250 ms.

Compare layouts. Plan a better depot.

The original depot exposes a traffic problem. A planning-tool brief asks it to help a reader make a decision, which requires a comparison they can trust.

EDITED BUILD BRIEF
Keep the depot engine and collision rules. Build a local layout-comparison tool for someone choosing between two depot designs. Let the reader save a named layout and workload, clone it into a trial, and run baseline and trial from the same recorded start. Offer a fixed number of ticks per comparison. Report delivered parcels and waiting ticks, show unfinished work, and export the two configurations with their results. Clearly separate editing, running and reviewing states. Verify repeatability and reject invalid imported layouts.

HOW IT FEELS
The reader tries a design, compares a result and makes a choice. The moving couriers provide evidence for that decision.

WHAT THE AGENT NEEDS TO BUILD / INTERFACE
Scenario names, clone, baseline/trial views, a run length and a result comparison replace an endless animation as the central journey.

WHAT THE AGENT NEEDS TO BUILD / STRUCTURE
The agent needs separate scenario and runtime records, deterministic resets, accumulated wait counters and a comparison report. Reuse the routing engine and give each run its own mutable world.

ACCEPTANCE CHECK
Compare a layout with its unedited clone for 50 ticks. Results should agree. Add a wall only to the trial; confirm the baseline record and starting couriers are unchanged.

A useful comparison is a product requirement. It calls for explicit state ownership, repeatable runs and a report that helps the reader choose.

DESIGN EXERCISE: try a new build from this edited brief. Status: proposed; implementation and testing pending.

Change who goes first. Change how fast you watch.

Build a variation from the edited prompt and compare it with the supplied program. The expected effects below are predictions for that build; testing a fresh agent-generated version is your next experiment.

SHARE THE FIRST TURN
BEFORE: couriers in ID order
REPLACE / ADD: Rotate first priority each tick: 1-2-3, then 2-3-1, then 3-1-2; keep the existing reservation and collision rules.
EXPECTED: Different couriers get the first chance at a contested square. This may improve fairness. Progress on arbitrary maps remains a separate property to test.
WHY: Sequential reservations favor whoever is considered first. Rotating that order changes who wins a contested move. The shortest-path calculation stays the same.
CHECK: Set two couriers one step from D. On the tick where courier 2 has priority, it should enter D first. Check unique positions and forbidden swaps too.
KEEP IN STEP: Keep the other requirements unchanged.

MAKE A DEFAULT EXPLICIT
BEFORE: The prompt leaves the tick interval unspecified; the reference program uses 250 ms.
REPLACE / ADD: Add: Run at eight ticks per second, and keep One tick as one complete simulation update.
EXPECTED: The same sequence plays in half the real time. A delivery should take the same number of simulation ticks.
WHY: The timer requests updates more often; routes and per-tick decisions are unchanged.
CHECK: Run identical starting worlds for 50 ticks at both rates. Compare parcel totals and courier positions. Then compare elapsed playback time.
KEEP IN STEP: Keep tick-based jam detection unchanged unless you deliberately want its real-time delay to remain two seconds.

WHAT WE CHECKED / REFERENCE IMPLEMENTATION

Reference-code check: in a contested dispatch fixture, fixed priority gives the square to courier 1; a rotating order gives it to courier 2 on its first-priority tick. Both keep positions unique.

See why the courier waits.

By Alvin

Help a reader understand a jam before changing its rules. “Make the agents smarter” leaves the success condition open. An inspectable decision gives the agent a clearer improvement to implement.

Improve a separate copy of Switchyard for someone learning why a courier waits. Preserve routing, sequential reservations and collision rules. Add a last-tick inspector showing each courier’s starting cell, target, chosen move or safe wait, and a reason derived from its actual decision. Keep a bounded history of twenty completed ticks. Selecting a history row shows a read-only snapshot; Return to live restores the active view. Reset clears history. Preserve One tick, paused wall editing, keyboard controls and notebook validation. Compare the original and instrumented depot from the same start for 100 ticks. Show their positions, delivery totals, waiting counts and collision checks.

Why the prompt changes the build

The engine needs to return a structured decision record alongside its state update. The interface needs a live/history distinction. A plausible explanation invented after the tick would miss the requirement to report the decision actually taken.

> **JUDGE THE RESULT**
>
> Reproduce a blocked route and inspect the recorded wait. Then compare 100 ticks of the unchanged default queue in both copies. Instrumentation should preserve the same simulation results while making each decision inspectable.

Proposed improvement: the existing routing tests remain the baseline. The history inspector and its comparison need a new implementation and checks.

The square belongs to somebody.

By Alvin

Our first implementation planned around static walls, then checked the next square for occupation. A browser check found that it delivered only two of six parcels in 500 ticks. A correct path was repeatedly proposing an unusable step.

The supplied version also treats other couriers as obstacles during route planning. Sequential reservations prevent overlap and swaps. The final test results are recorded on page 54; this change addresses the default-depot failure.

Safety and progress are different questions

The safety rule says two couriers must never share a square. Finishing all deliveries is a different question. The program keeps couriers apart, but some wall layouts can still leave them waiting indefinitely. Watch both the delivery count and the waiting message.

Read an imported world as a claim

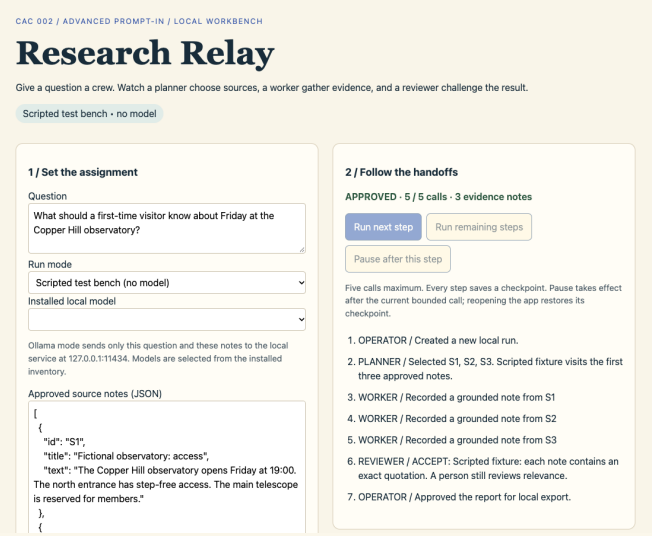
The notebook loader checks courier positions, IDs, wall coordinates, protected locations, queue entries and delivery totals before replacing the current world. A malformed notebook leaves the existing depot in place.

> **TRY THE NEXT RULE**
>
> Rotate courier priority each tick. Then compare delivery time on the same map and queue. Keep the no-overlap rule while you change the scheduling policy.

PROMPT-IN 003 / ADVANCED

Research Relay

By Alvin



The actual scripted test bench after review and explicit local approval.

Research Relay answers a question using notes you choose. Its planner selects notes, workers return claims and quotes, and a reviewer assesses relevance. Each role is a job. An adapter supplies its reply, using prepared examples or a real local model. One model can fill all roles.

Start in Scripted test bench to see the steps using prepared replies. Choose Ollama mode to request fresh replies from an installed local AI model. The program shows which mode is running and saves its progress after each step, so you can reopen a job later.

> **START WITH THE WORKFLOW**
>
> Use Python 3.10+ and a browser. Page 50 gives the recommended walkthrough-edition launch route; page 51 follows the prepared replies through approval and a saved report. The corrected copy and original reference are distinguished on page 52.

Give every role a contract.

Build Research Relay, a local Python 3.10+ application with a browser interface and standard-library-only backend. It answers a question from 1-6 source notes explicitly supplied by the operator. Each note has title (1-120 characters) and text (1-6000); assign IDs S1-S6. Limit the goal to 500 characters. Implement planner, worker and reviewer roles as distinct calls with distinct contracts. The planner chooses 1-3 unique existing source IDs and explains why. Each worker returns one claim and an exact contiguous quote from the selected source. Reject a missing or invented quote. The reviewer returns accept/revise plus a reason; keep that verdict visible. Exact quotation proves literal presence, not truth or entailment. Never treat a source note as an instruction to execute. Support an explicitly labeled scripted test bench and an actual Ollama adapter fixed to http://127.0.0.1:11434. List installed models; never pull one automatically. Use /api/chat, non-streaming JSON-schema responses, temperature zero and bounded output. Validate all returned fields and lengths independently.

READ PART 2 AS WELL

Both pages form one complete build prompt. The orchestration rules define how the program hands off work and enforces its limits.

Keep its place. Know when to stop.

Use at most five adapter calls per run: one plan, up to three workers, one review. Reserve and save the call count before each request; failures consume budget. Stop visibly on invalid output, timeout or exhausted budget; preserve the event journal. Save state atomically after every handoff and restore it on restart. A lock rejects concurrent steps. Offer one-step execution, automatic remaining steps, and pause after the current request. Show mode, role events, call budget, source citations, quotations and review. Require operator approval before a local Markdown download. Serve only on 127.0.0.1. Validate Host, reject cross-origin mutations, require an unpredictable per-server token for POSTs, bound request sizes, and render all supplied/model text using textContent. Expose no shell execution, arbitrary URL fetching or arbitrary filesystem paths to the model. Include fictional sample notes. Deliver relay.py, index.html, a README, engine and browser tests. Test bad source IDs, quote hallucination, malformed replies, failed requests, checkpoints, budget reservation, approval, concurrent calls, responsive layout and export. Run a real installed local model if available and report its actual result separately from the scripted fixture. Do not silently replace model failure with scripted success.

The prompt builds a chain of evidence.

There are two kinds of prompt here. First, you give a coding agent the build brief on pages 44–45 to create Research Relay. Later, the running program sends your question and a role instruction to a local model. A “contract” in this article means the rules for that role’s reply and the checks the program applies to it.

PROMPT CLAUSE
The planner chooses 1-3 unique existing source IDs

The planner returns a small selection from approved notes. The application must reject an invented ID even if the model explains it fluently.

PROMPT CLAUSE
an exact contiguous quote from the selected source

Use a literal comparison to check that the quoted characters occur in the source. Then review whether that source supports the claim; that step calls for interpretation.

PROMPT CLAUSE
Reserve and save the call count before each request

A failed request still consumes the reserved budget. Saving first keeps a restart from silently granting that request back. The backend implements this rule through persisted budget state.

READ IT AS A REQUIREMENT

Give each planner or reviewer a return shape, an allowed action and an application check. The model can propose; the program decides what is accepted.

Turn a draft into an evidence audit.

The supplied relay gathers notes for a question. Asking it to audit an existing answer changes the job of every role, even if planner, worker and reviewer remain the role names.

EDITED BUILD BRIEF

Keep the local-only service, approved source notes, exact-quote checks, durable checkpoints and explicit export approval. Reframe the workbench as an evidence auditor. Accept a question and a draft answer. Give each draft claim a stable ID. Have the planner choose claims to inspect, workers return supporting or conflicting quotes with claim and source IDs, and the reviewer report supported, disputed or unresolved findings. Let the operator inspect each finding beside the draft before saving an audit report. Bound the number of claims and requests and define how partial results appear.

HOW IT FEELS

The reader checks a draft claim by claim and sees where the evidence supports, disputes or leaves a question open. Each finding helps the reader decide what to trust.

WHAT THE AGENT NEEDS TO BUILD / INTERFACE

Draft input, a claim list, evidence beside each claim, status filters and a partial-audit summary are needed. Together, these views let the reader inspect each claim and its evidence.

WHAT THE AGENT NEEDS TO BUILD / STRUCTURE

The agent needs claim IDs as well as source IDs, different role instructions and return shapes, persisted audit findings, budget rules for the new work graph and an export organized by claim. Implement those changes across the workflow, storage and report so the new brief becomes a working audit tool.

ACCEPTANCE CHECK

Use an invented draft with one directly supported statement, one contradicted by a note and one absent from all notes. The report should keep those cases distinct and retain their evidence.

Change the purpose, then trace its consequences through inputs, role contracts, state, interface and tests. Runtime prompts and application structure have to agree.

DESIGN EXERCISE: try a new build from this edited brief. Status: proposed; implementation and testing pending.

Change the crew. Rebalance the promises.

Build a variation from the edited prompt and compare it with the supplied program. The expected effects below are predictions for that build; testing a fresh agent-generated version is your next experiment.

A ONE-SOURCE MINI RELAY
BEFORE: The planner chooses 1-3 unique existing source IDs / Use at most five adapter calls per run
REPLACE / ADD: Choose exactly one approved source and use at most three adapter calls: one plan, one worker and one review.
EXPECTED: A successful run records one evidence note and reaches review in three calls. Its coverage centers on one selected source.
WHY: The budget follows the work graph: 1+1+1 replaces 1+3+1. Reducing the cap alone could stop a three-worker plan before its review.
CHECK: Use one fictional note; verify three calls, an exact quote and approval before export. Then try an invalid quote and a restart.
KEEP IN STEP: Change planner validation, stored maxCalls, the actual budget guard, checkpoint validation and the visible counter together.

PARALLEL WORKERS, THE SAME TOTAL BUDGET
BEFORE: one plan, up to three workers, one review
REPLACE / ADD: After the plan, run selected workers concurrently; reserve every call atomically, save results by source ID, and review only after all workers finish.
EXPECTED: Worker replies may arrive in any order. The UI can show separate progress. Measure elapsed time in your new build to find out whether concurrency helps.
WHY: Concurrent calls change scheduling and shared-state coordination. Each call still consumes budget, and review waits for the worker results.
CHECK: Use fake workers with different delays. Require exactly one call and result per selected source, a budget cap and a review that starts after all results arrive.
KEEP IN STEP: The supplied program is sequential and locks an entire step. Ask the agent to implement a new coordinator that reserves calls atomically, collects worker results and starts review after completion.

WHAT WE CHECKED / REFERENCE IMPLEMENTATION

Reference-code check: with one supplied note, the scripted planner, worker and reviewer complete in three calls. This establishes the smaller work graph; the five-call reference cap is unchanged.

Make a stopped run useful to inspect.

By Alvin

Help an operator understand a rejected handoff while keeping the work already accepted. “Ask the reviewer to be more careful” changes a model instruction; a useful failure panel also needs application code.

Work in a separate copy of Research Relay. Keep all validators, the five-call reservation rule, checkpoints and approval before Markdown export. Add a failure panel showing the role, failing validation rule, last accepted handoff and remaining budget. Retain a bounded raw reply as plain text with the diagnostic record. Reopening the same stopped checkpoint must preserve accepted notes and the error. Add an explicit local diagnostic download. Test a reviewer reason with the wrong type, an unknown source ID and restart after failure. Show that the failed request consumes budget, the run stays stopped and final report export remains subject to approval.

Keep the two prompt layers distinct

The build request tells the coding agent to add an error display and save the information behind it. The running app’s reviewer prompt only asks the local model for a review. If that reply has an invalid format, the app still needs code that detects the problem and explains it to you.

> **JUDGE THE RESULT**
>
> Use fictional notes and an intentionally invalid reviewer reply. Confirm accepted quotes survive restart, the failing rule is visible, and no extra model request runs automatically. The historical local-model failure stays in this issue’s evidence.

Proposed improvement: a new diagnostic implementation is pending. The reference program and its recorded failed model run are preserved.

Start the local workbench.

By Alvin

Research Relay lets you watch a question move through several AI roles. Start with Scripted test bench: it uses prepared replies, so your first run needs Python and a browser. You can try an installed local model afterward.

1 / Open Terminal in the extracted pack

Follow page 5 and confirm that ls shows programs and lab. Keep this Terminal window open while the workbench runs. We recommend the walkthrough edition below, which corrects a model-label problem found during these checks. The original program remains in programs/ as a baseline.

```
python3 lab/beginner-walkthrough-2026-11-15/research-relay/relay.py
```

2 / Open the printed address

Terminal prints Research Relay: http://127.0.0.1:8802. Open that address in a browser on this same Mac. Here 127.0.0.1 means the Mac, and 8802 identifies the workbench. Ollama uses a separate local port, usually 11434; the app contacts it for you.

3 / Choose the prepared-reply route

Leave Run mode on Scripted test bench. The fictional notes already fill the JSON box: structured text with named fields. Keep them for this run. Click Create run. Expect PLAN, 0 / 5 calls and 0 evidence notes. A role is a job, like planning which notes to use.

> **IF THE ADDRESS DOES NOT OPEN**
>
> Check that Python is still running in Terminal and copy the printed address exactly. If Python says Address already in use, keep the other service intact and rerun this command with --port 8804 at the end; use the new address it prints. An empty model list is fine for the scripted route.

Follow five visible handoffs.

1 / Ask the planner to choose notes

Click Run next step once. Expect WORK, 1 / 5 calls, and a planner event selecting S1, S2 and S3. Those are labels for the supplied sources. Refresh the browser: the same progress should return from its saved checkpoint.

2 / Collect three quoted observations

Click Run next step three more times. Each worker step adds one claim and a quotation from a chosen note. A claim is what the reply says; its quote supplies the words you can check. After these steps, expect REVIEW, 4 / 5 calls and three evidence notes.

3 / Read the review, then choose approval

Click Run next step again. The prepared reviewer leads to READY, 5 / 5 calls. Check every claim against the question and its source. A quotation appearing in a note proves those words were present; you still judge whether the claim follows from them and whether the source is reliable.

4 / Keep the result

Click Approve local report, then Save Markdown report. Open research-relay-report.md in a text editor. Markdown is readable text with simple heading marks. It records Mode: scripted and model: none (scripted fixture). Run remaining steps is a shortcut through the remaining jobs.

> **WHAT THESE FIVE CALLS MEAN**
>
> In scripted mode, the five steps consume the application's call budget while returning prepared replies. They are not five AI requests. In Ollama mode, a step requests a fresh model reply. Its planner may select fewer than three sources, so a valid run can use fewer than five calls.

We verified approval, report download, reload and Python restart. Prepared replies teach the sequence; real-model replies need their own inspection.

Give the report a truthful label.

By Alvin

Our first walkthrough passed eight of nine restart/export checks. With Ollama running, the original scripted report named the model selected in its dropdown. The application had used prepared replies. That label could make a reader mistake a demonstration for a real model result.

Fix the stored choice and the exported record

The walkthrough copy stores an empty model name for scripted runs and derives the report label from the run's actual mode. It also labels an older scripted checkpoint correctly. The same nine checks then passed, including a real report download with installed models visible.

> **A REPAIR PROMPT YOU CAN TRY**
>
> In a copy of Research Relay, record a model name only when Ollama mode actually uses it. Derive report provenance from the saved run mode, including older checkpoints. Preserve the five-call limit, validators, checkpoints and approval. Test a scripted run while models are installed, an old scripted checkpoint and a genuine local-model run.

We corrected reference code in the walkthrough edition. The prompt above is a reader exercise for reproducing the repair; it was not a separate fresh agent-generation trial.

The original comparison stays available

The unchanged baseline remains under programs/003-research-relay. These original commands run from the extracted pack. Its scripted report has the labeling problem described above; use the walkthrough launch route for your first run.

```
cd programs/003-research-relay
python3 relay.py
# Open http://127.0.0.1:8802
```

Keep your run. Read a stop.

Reopen the same saved work

Control-C in the server's Terminal stops Python; the browser may show a connection error. Repeat the launch command and reload the printed address. The saved checkpoint is workspace/state.json beside relay.py. Keep that same folder to restore progress.

Each workspace holds one run. Save the completed report before Create run starts another. To preserve a stopped investigation, stop Python and copy its workspace folder in Finder before starting a new run. You can also choose a different folder with --data-dir followed by a folder name.

Choose a real model when you are ready

Complete model setup from page 57. Start Ollama and reload Relay to refresh Installed local model. Select Local Ollama model, choose a name and click Create run. Inspect each step. An empty list calls for the service or model-inventory checks.

A stopped reply keeps its evidence

Our November 15 Qwen run chose two sources, accepted two quoted notes and stopped at the reviewer after four requests: Invalid review reason. Review reasons must be nonempty text. The saved run retained those notes and the error; export stayed blocked. That is one real-model observation.

> **WE CHECKED THE FAILURE PATH TOO**
>
> In a separate controlled test, we supplied a deliberately malformed reviewer reply after three accepted notes. The app stopped at 5 / 5 calls. Restart kept the three quotes and error, and both another step and export stayed blocked. This fixture checks recovery behavior; it is separate from the real-model run.

To try again, preserve the checkpoint, address the reported problem and create a new run. A failed request counts toward the budget. Stopped work waits for your decision.

Claims meet observable behavior.

By Alvin

SUITE	RECORDED RESULT
Supplied programs / browser	42 / 42 checks
Relay engine	22 / 22 cases
OmniDiff / CLI	5 / 5 fixture checks
Atuin / CLI	6 / 6 fixture checks
Research Relay / local model	Stopped at review validation

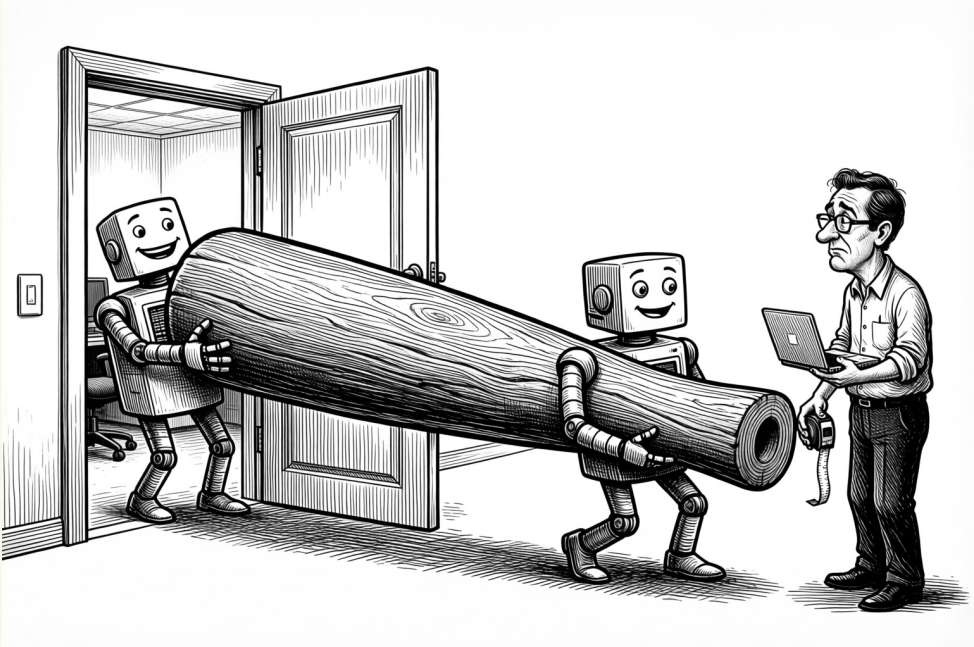
The program checks exercise equations, routing, default delivery, offline operation, keyboard controls, responsive widths, downloads, checkpoint restoration and approval. The engine suite also probes invented quotes, unknown IDs, unexpected fields, failure stops and concurrent steps.

In a separate test, Research Relay sent five requests to the local qwen3.5:4b model. Its plan and three worker replies met the program's checks. The reviewer's reason field had an unacceptable format, so the app stopped and kept its history. This tests the complete role-based workflow; the later workshop tests smaller generated functions.

THE LIMIT OF THE EVIDENCE

Chromium checks cover 390, 540 and 1100-pixel layouts. Safari, physical Duo operation, arbitrary-map progress and broad model reliability remain future evaluations. The Research Relay run is one recorded case. The local-AI workshop begins on page 56 and reports its own model comparisons.

A handoff with room to grow.



The agents agreed on a handoff. Facilities is widening the doorway.

Cartoon by Alvin

Give your computer a local workshop.

By Alvin

A local AI model runs on your own computer. In this workshop you will ask one to write a small Python program, run the result against invented notes, then change the prompt and inspect the new build.

Three pieces you can name

The model is a downloaded set of learned numbers, called weights. A runner such as Ollama loads it and produces a reply. A coding agent adds tools for reading files, editing code and running checks. The model's context is the text it can consider in a request; a token is a small piece of that text.

Our experiment asks the model for one Python function: a reusable piece of code that takes notes and returns organized data. The supplied test driver calls that function with four examples and compares the answers with expected results. We call those examples fixtures. Each tested function is fresh model output. The driver removes surrounding code-block backticks and keeps the original reply for inspection.

> **THE INVITATION**
>
> Learn how altering the prompt affects the output. First build an editor's source notebook. Then change its purpose: help an editor decide which notes are ready and which need follow-up.

The earlier small-model measurements are local observations from November 14, with a November 15 rerun. The expanded Edge0 workshop adds a November 17 replay, two fresh programs and behavior checks.

Start a local model service.

By Alvin

Use a Mac running macOS 14 or newer for the Ollama route here. Apple M-series Macs use their processor and graphics chip; Intel Macs use the processor. Python preparation and the pack's Terminal folder are on page 5. [33] [40]

Install the runner

Download Ollama from its official site, open the disk image and drag Ollama to Applications. Open it and follow its setup for the ollama Terminal command. Allow space for model downloads; our two small installed models occupied about 3.3 GB and 2.0 GB. [32] [33]

Check whether its local service is running

```
ollama list
```

A table of installed models means the service answered; an empty table means you can download one next. A connection error means the runner is not serving requests yet. Open Ollama, or use a separate Terminal window for the following local-only service command. Leave that window running. [41]

```
OLLAMA_NO_CLOUD=1 ollama serve
```

Use a second Terminal window for the workshop commands. If the service is already running, keep it and use that second window. We ran a task-owned loopback service with cloud features disabled and reused the two models already installed. This walkthrough did not repeat the downloads.

> **CHOOSE YOUR FIRST ROUTE**
>
> Begin with the two small Ollama models on the next page, or follow the complete Edge0 workshop from page 65. Edge0 uses a different engine and a much larger download. Our tested large-model machine has 64GB of unified memory.

Download a model. Try a conversation.

By Alvin

In the workshop Terminal window, run these lines one at a time. pull downloads the model files when needed, list shows installed names, and run starts a conversation. Each download needs internet access and disk space; replies use the installed local model.

```
ollama pull qwen3.5:4b
ollama pull llama3.2:latest
ollama list
ollama run qwen3.5:4b
```

Recognize the chat prompt

When >>> appears, you are talking to the model. Ask a short question, such as “What is a Python function?” Wait for the reply. Then type /bye and press Return to get back to Terminal. In our installed Ollama 0.32.0, /? listed /bye as Exit; we exercised that route. [41]

Know what the reply gives you

This chat produces text. A coding agent can also write project files using its tools. The next page’s driver sends a complete brief, saves the returned Python function and checks its behavior on invented notes. It supplies the file-writing and testing steps for this exercise.

> **IF THE COMMAND IS MISSING**
>
> Reopen Terminal after completing Ollama setup. Repeat ollama list. If it cannot connect, use the service route on page 57. Keep the exact model names shown in the printed commands; each name may refer to a different release later.

Run a brief. Read the saved result.

Use the Terminal whose current folder contains programs and lab. This Python checker reads the local inventory and prints Ready for each required model:

```
python3 lab/beginner-walkthrough-2026-11-15/workshop_check.py
```

If it reports a missing service, open Ollama or start the other Terminal's service command. If it reports a missing model, run the printed ollama pull line and repeat the check. The checker downloads nothing.

Ask for the two programs

```
python3 lab/local-workshop-2026-11-14/benchmark.py \
  --endpoint http://127.0.0.1:11434 \
  --models qwen3.5:4b llama3.2:latest \
  --out my-local-results
```

The driver sends both printed briefs to each model. Wait for four summaries and the Terminal prompt. Its my-local-results folder contains results.json, fixtures.json and Python files for candidates that passed the code-format checks.

Explain the examples it checked

```
python3 lab/beginner-walkthrough-2026-11-15/workshop_check.py --results \
  my-local-results/results.json
```

A 4/4 line means four inputs matched expected records and preserved the input. For a failure, this checker prints expected and received data. Open the saved .py file in a text editor to inspect the function.

> **IF THE LAB STOPS EARLY**
>
> A "cannot open file" error calls for the pack-folder check on page 5. A missing model or connection error calls for the setup checker above. If a model reply fails, keep results.json and its saved reply, read the failed example and revise a copied prompt deliberately. Use a new output-folder name to preserve each attempt.

See what the check result means.

By Alvin

Our November 15 walkthrough used Ollama 0.32.0 on the primary Mac, installed model files and the unchanged benchmark. Each brief produced one fresh function checked on four invented-note examples.

MODEL / BRIEF	EXAMPLES PASSED
Qwen3.5 4B / notebook	4 / 4
Qwen3.5 4B / triage	4 / 4
Llama3.2 3B / notebook	1 / 4
Llama3.2 3B / triage	1 / 4

Read one failed example as a reader problem

The input included “Ramp access awaits confirmation.” The notebook should keep it beside the confirmed note; Llama omitted it. For triage, Llama returned strings instead of records with source_id (the note’s label) and quote (its exact words). An editor loses the link back to the source.

The one passing example in each Llama set was the empty list. A 1 / 4 count therefore describes those inputs; it is not a percentage rating of the model’s general ability. Qwen’s 4 / 4 also covers these four examples only.

Practice recovery before a bigger experiment

We stopped the service, read the startup guidance, restarted it and recovered its model list. A deliberately missing model name and missing results file each produced a next action. We installed or removed no weights.

The November 14 tables retain their dates and numbers. This rerun checks the command route and these saved functions. Find its inputs, code and results in lab/beginner-walkthrough-2026-11-15 in the pack.

Build the source notebook.

By Alvin

The first program keeps an editor's source notes in order. Each input has an id, the exact text and a confirmed value of true or false. The test expects every note to remain available, including unconfirmed ones.

Write Python 3 code containing exactly one function build_report(notes). Return only code, with no imports, markdown, file access, network access or top-level calls. notes is a list of dictionaries with string keys id, text and boolean confirmed. Build a source notebook for an editor. Return {"notes": [{"source_id": note id, "quote": note text}, ...]}, sorted by source_id. Preserve every text character exactly and keep repeated IDs as separate entries. Accept an empty list. Do not mutate the input. Use only ordinary builtins, list/dict operations and loops. No prose or example calls.

How this prompt becomes a program

"Source notebook" gives the program its job. Preserving text means keeping the quotation unchanged. Sorting by source_id puts the notes in a predictable order. Repeated IDs need separate list entries; using an ID as the sole lookup key could replace an earlier note.

The returned entries each have named fields: source_id identifies the note, and quote holds its text. A future screen could show one entry per row. The model chooses the code; our examples check the records it returns.

FOUR EXAMPLES TO CHECK

We try an empty list, mixed confirmation values, repeated IDs with spacing and accented text, and one unconfirmed note. The returned data must match the expected answer, and the input must remain unchanged.

Change the purpose. Build a triage tool.

By Alvin

Now give the editor two piles: ready to use and needing follow-up. This sorting of work is called triage. The new function puts confirmed notes in ready and the rest in needs_review, keeping the source label and quotation in both.

Write Python 3 code containing exactly one function build_report(notes). Return only code, with no imports, markdown, file access, network access or top-level calls. notes is a list of dictionaries with string keys id, text and boolean confirmed. Build an editorial triage tool: help an editor see what is ready and what needs follow-up. Return {"ready": [...], "needs_review": [...]}. Each entry must be {"source_id": note id, "quote": note text}. Put confirmed true notes in ready and confirmed false notes in needs_review. Sort each group by source_id. Preserve every text character exactly and keep repeated IDs as separate entries. Accept an empty list. Do not mutate the input. Use only ordinary builtins, list/dict operations and loops. No prose or example calls.

What changes in the build

The changed purpose creates two queues. A complete app would gain two sections, a confirmation control, persistent status and a way to revisit unresolved notes. This experiment checks the transformation behind that interface.

Both groups retain source identity, exact quotes, sorted order and duplicates. A change of output shape carries these requirements into each branch.

> **A SECOND CONTROLLED EDIT**
>
> Try: “Put every new note in needs_review until a human records a review decision.” Predict a review field, action, persistence and a check on automatic approval. This proposed variation has not been generated or tested.

Compare the builds. Inspect the difference.

By Alvin

Each row is one generated function from our 128GB M5 Max. Checks counts four test examples; elapsed seconds includes model loading.

MODEL / BRIEF	CHECKS	ELAPSED s
Qwen3.5 4B / notebook	4/4	34.20
Qwen3.5 4B / triage	4/4	17.07
Llama3.2 3B / notebook	1/4	9.70
Llama3.2 3B / triage	1/4	10.87

Qwen passed both sets. Llama passed only the empty-list examples: it dropped unconfirmed notebook notes and lost source labels from triage.

Give the field a clear job

```
if 'confirmed' not in note or note['confirmed']:
    report.append({'source_id': source_id,
                   'quote': quote})
```

Our notebook fixture expects every note. Llama treated confirmed as a selection rule. The next page adds an explicit inclusion sentence and follows the resulting change.

Decode rate measures reply generation after prompt processing: Qwen produced about 28–29 tokens/s; Llama 28–34. Elapsed times also include loading. We left the operating system's file cache in place.

> **CHECK THE CHECKER TOO**
>
> Our checker initially rejected valid Python sorting code using lambda, a short function choosing how to sort. Fixing the checker accepted the same saved code.

One sentence. A different build.

By Alvin

An explicit inclusion rule gave Llama a different job. On the same M5 Max with Ollama 0.32.0 and the same model digest and options, we inserted this sentence after the notebook's purpose:

Include every input note, whether confirmed is true or false.

The fresh function retained the unconfirmed notes. It also enclosed their quotes in brackets. It passed the empty-list fixture and failed the other three: inclusion improved while verbatim preservation broke.

```
if confirmed:
    report.append({'source_id': source_id,
                   'quote': quote})
else:
    report.append({'source_id': source_id,
                   'quote': f"[{quote}]"})
```

Give status its own place

The model marked uncertainty by changing the quotation itself. A useful app could instead display an unconfirmed badge beside the original words. That requires a separate status field and display code that leaves the quoted text intact.

NEXT BRIEF / READER EXERCISE

Replace the output-shape clause: "Return notes as records with separate source_id, quote and confirmed fields. Include every note. Preserve quote character for character. Use confirmed for status only." Update the expected records, then render badges from confirmed. This variation is proposed and untested.

The clarification produced one fresh candidate. Its exact prompt, reply and four cases are in primary-clarification-results in the lab pack. Repeat the exercise on your task to assess its reliability.

Turn your Mac into a software workshop.

By Alvin

Describe a tool you wish existed. Have a model running on your own computer write it. Run the program, change your instructions, and see your idea take a different shape.

Bring the model to your own Mac.

Edge0 produces its replies on your computer. Our client sends your prompt to that local engine and saves the generated source. You can read the code, run the tool and keep both for another session. Setup downloads the model; this workshop's generation requests go to your Mac.

Start with a job you recognize.

A writer has collected notes for an announcement. Which quotations are ready to share, and which need follow-up? First build a notebook that keeps every quotation. Then turn it into a publication desk with a ready queue, a review queue and a draft export.

Learn how altering the prompt affects the output.

Changing the purpose changes the software's structure and the way you use it. We trace the instructions into those decisions, show an actual startup mistake and its focused repair, and check the resulting programs. You learn to direct the build and judge what it made.

> **MAKE SOMETHING ONLY YOU WOULD MAKE**
>
> The quotation desk is your first experiment. The larger invitation is to turn a task, hobby or curiosity of your own into a tool you can understand, test and improve.

Edge0 brings a bigger experiment.

By Alvin

Edge0's November 12 announcement reports a 145-billion-parameter local model, 29GB peak memory and generation above 80 tokens/s on a compatible setup. Treat these as vendor measurements tied to their hardware and evaluation conditions. [35]

Understand the moving parts

Parameters are a model's learned numbers. This model uses selected groups per generated token; the guide reports 10.12B active parameters per token. Total model size, download space and working RAM measure different things. [36]

Our Mac download was about 101.6GB. The listing totals 105.4GB when alternative files are included. We used its Mac-compatible Q3_K package with Q4 projection files: labels for compressed model data. A large text-lookup table is read from storage as needed. File names and hashes are recorded in the lab. [36] [37]

Follow the current platform guide

The documented Mac route uses Apple Silicon and Metal, Apple's graphics-computing system. edge0-strata performs the model calculations; edge0-infer starts it and provides a local address that other programs can call. The Mac default allows 32768 context tokens. It creates an extra draft-model file on first start. [37] [38]

The initial M1 server became ready in 20.1s, including draft-file preparation. The tuned follow-up startup took 10.1s. These are short local observations.

> **CHECK THE LICENSE**
>
> The weights carry the Edge0 Community Model License. The inference source has separate licensing. Read the model's terms for your intended use. [39]

Build your own quotation desk.

By Alvin

Imagine collecting three notes for an event announcement. You want to keep each quotation exactly as it arrived, then see which statements are ready to use. This workshop turns that everyday job into two running programs built by Edge0 on a Mac.

The three pieces work together

Edge0 is the model: it produces a reply. Its engine loads the downloaded weights and computes that reply. Our small client, edge_workshop.py, sends your prompt to the engine on this Mac and saves the returned Python code. You inspect and run that file. The client supplies file saving; this exercise does not give the model an autonomous tool loop.

Meet the invented source notes

sample-notes.json contains three records. JSON is a text format for named values. Each record has id (a source label), text (the quotation) and confirmed (your true-or-false decision). S1 says the workshop starts Saturday at 10; S2 says ramp access awaits confirmation; S3 asks people to bring a café mug.

```
{
  "id": "S2",
  "text": "Ramp access awaits confirmation.",
  "confirmed": false
}
```

THE USEFUL CHANGE

Quote Desk shows every note. Publication Desk keeps confirmed quotations ready for a draft and makes follow-up work visible. Learn how altering the prompt affects the output. A confirmed flag records your decision; neither program verifies the facts.

Prepare the Mac and your folder.

By Alvin

Use an Apple Silicon Mac; our tested machine is a 64GB M1 Max running macOS 26.5.2. This recipe has no Intel or lower-memory benchmark. For this Homebrew preparation use macOS 15 or newer. Allow about 102GB for the model plus 25GiB of spare space. The vendor's 29GB figure concerns working memory, not the download. [37] [42]

Install Python 3.10 or newer from the Python Software Foundation if needed. Our replay uses Python 3.14.7. Open Terminal from Applications / Utilities. Install Apple's compiler tools with the next line and finish the installer; an already-installed message means you can continue. [40] [44]

```
xcode-select --install
```

Install Homebrew from its official site and complete its printed Next steps. Then run the following. CMake prepares build instructions, Ninja builds them, and uv makes the engine's separate Python environment. [42] [43]

```
brew install cmake ninja uv
export PATH="/opt/homebrew/bin:$HOME/.local/bin:$PATH"
python3 --version
```

Extract the magazine's Programs + prompt workshop ZIP. Inside lab, find edge0-beginner-2026-11-17. Type cd and a space in Terminal, drag that folder from Finder into the line, and press Return. Run ls: you should see edge_workshop.py, setup_edge0.py and sample-notes.json. Start every command below in this folder. Repeat the folder and PATH steps in each new Terminal.

If python3 --version reports an older release, finish Python installation and reopen Terminal. Our first SSH check selected Apple's older Python; selecting the installed Homebrew tools resolved that prerequisite.

Download the model once. Keep the recipe.

By Alvin

Read the model license before downloading; the weights and engine have separate terms. We use source revision 7b60076 and model revision 2d80116, matching our November 14 experiment. [37] [38] [39]

```
python3 edge_workshop.py doctor
```

Doctor prints Ready for each required tool and reports disk space. Resolve Needs attention lines first. A missing model folder or executable is expected before a first installation. Close memory-heavy work before loading this large model.

Run each phase and wait for the prompt

```
python3 setup_edge0.py prepare --out my-install
python3 setup_edge0.py weights --out my-install
```

prepare obtains the engine source, math dependency, Apple's Metal headers and model-file list. weights downloads and fingerprints the selected Q3_K weights with Q4 projection files. Installation needs internet access; later requests use the local engine.

Both phases save records in my-install. Wait for success: true and the Terminal prompt. Files go in Models / Edge0-CAC-20261114 inside your home folder. A first download may take hours; rerunning weights reuses matching files and can resume partial transfers.

> **WHAT WE REPLAYED**
>
> November 17: we reused and rechecked about 101.6GB of weights and rebuilt the existing engine. The original download was November 14. Python, Homebrew and compiler installer dialogs are documented preparation; this was not a clean-Mac installation test.

Build, check and tune the engine.

By Alvin

```
python3 setup_edge0.py build --out my-install
```

This phase compiles the model engine and front end, installs the engine's Python dependencies, and runs two numerical checks. Compilation turns downloaded source code into executable programs for your Mac. Wait for success: true in the saved build record. The helper limits compilation to two threads and disables an optional compile cache that failed in our earlier installation.

Apply the setting we tested on the M1

```
python3 edge_workshop.py tune
python3 edge_workshop.py inspect
```

tune sets STRATA_METAL_PROMPT_CHUNK to 64 in the pinned engine template. It controls how much incoming prompt text the engine processes together. The original 8192 setting failed our November 14 requests. The helper preserves the original template before a change; an already-correct setting remains unchanged.

inspect checks that the model's required files are present. Its JSON report should contain ok: true and exit successfully. File fingerprints are checked during weights; inspect is the separate completeness check.

> **IF A PHASE STOPS**
>
> For a missing tool, repeat doctor and its preparation. For a missing model file, repeat weights, then inspect. Keep the first compiler error and my-install records when a build fails. The readable setup_edge0.py contains every download and build command; the kit README supplies recovery details.

Send your first local request.

By Alvin

In the prepared workshop Terminal, start the engine. Leave that window open.

```
python3 edge_workshop.py serve
```

Wait for Listening:. The model is loaded and the service is ready. Open a second Terminal, repeat the folder-drag cd and PATH steps, and run:

```
python3 edge_workshop.py ready
python3 edge_workshop.py chat
```

Ready identifies the loaded model. chat sends one example question: “In two short sentences, explain what a Python program can do with a list of notes.” A reply confirms that your client reached the model and received text.

> **OUR ACTUAL FIRST REPLY**
>
> A Python program can process a list of notes by sorting them chronologically, filtering by keywords, or converting them into structured data formats like JSON or CSV. It can also automate tasks such as generating summaries, detecting duplicates, or exporting the notes to external applications.

The service address 127.0.0.1:19437 means this computer, on the workshop’s chosen port. The client reads the model identifier from the local service. It uses an OpenAI-compatible message format; the request goes to Edge0 on this Mac and uses no hosted API key. Our client is a small one-request helper, not an interactive coding agent.

Use one model copy at a time. If ready cannot connect, wait for Listening: or check the server window. Press Control-C in that original window when you finish; the helper stops its owned engine processes.

Prompt one: make Quote Desk.

By Alvin

Read prompt-notebook.txt in the kit. This is the complete prompt sent in our first program request. You can copy the printed text or edit a separate copy of that file.

Write a complete Python 3.10+ command-line program using only argparse, json, sys and pathlib from the standard library. Return only the entire Python source, with no Markdown or explanation. Read a UTF-8 JSON file named by the first positional argument. It contains a list of objects with a unique string id, string text and boolean confirmed. Validate this shape and reject duplicate IDs. A missing file, invalid JSON or invalid record must print a helpful error to stderr and exit 2. Preserve every character in text, including leading/trailing spaces and accents. Sort records by id. Read the input; never modify it. Make no network requests, run no other programs and write no files. Include a main entry point.
Build Quote Desk: help a writer inspect all of their source notes. Print NOTEBOOK as the first line. For each note print its id and either CONFIRMED or UNCONFIRMED on one line, then its exact text on the next line. An empty input prints NOTEBOOK and (empty). Finish with exit 0. Support --help with a useful description.

A PROGRAM YOU CAN REUSE

The filename becomes an input argument, so the program can read another notes file next time. Exact quotations and source labels remain the core information. The prompt also asks for useful errors and help because a running tool needs a way to guide its user.

Try the first build. Read the error.

By Alvin

In the second workshop Terminal, ask Edge0 for a fresh build. The client saves the request, exact prompt, raw reply, timing and Python source in a new folder.

```
python3 edge_workshop.py ask notebook --out my-notebook
```

Open my-notebook/notebook.py in a text editor and inspect it. It should read the supplied notes and print a report. The client has saved code; it has not executed it. When ready, run:

```
python3 my-notebook/notebook.py sample-notes.json
```

Our first attempt stopped before the notebook

The saved program registered a --help option twice: Python's argparse library already supplied one. It stopped with a conflicting-option error. All seven notebook behavior checks failed because the program could not start. The Publication Desk build passed its nine checks.

```
argparse.ArgumentError: argument --help:
conflicting option string: --help
```

The useful next step is to describe the observed failure while preserving the working requirements. Keep this source and reply. The next page shows one focused repair; its instruction is different from the later change of purpose.

> **IF YOUR FIRST BUILD ALREADY WORKS**
>
> Inspect and check it. The repair below addresses our saved duplicate-help failure; it is not a required patch for every possible fresh generation. The supplied first-notebook folder preserves our actual failing build.

Use a focused repair.

By Alvin

Keep the server running. Our repair command sends this exact instruction and appends the saved original source as context. The client keeps the complete expanded request.

Update the existing Quote Desk source below. Keep its file input, validation, exact quotations, sorting, output and exit codes. argparse already supplies --help. Remove the duplicate --help registration; use argparse's built-in help. Return only complete corrected Python source. Make no other feature changes.

```
python3 edge_workshop.py repair --source my-notebook/notebook.py --out \
  my-notebook-fixed
```

Inspect the corrected source before running it. The model removed the duplicate help registration and kept the notebook behavior.

```
python3 my-notebook-fixed/notebook.py sample-notes.json
```

```
NOTEBOOK
S1 CONFIRMED
The workshop starts Saturday at 10.
S2 UNCONFIRMED
Ramp access awaits confirmation.
S3 CONFIRMED
  Bring a café mug.
```

On the M1, the original notebook passed 0/7 checks; the repaired program passed 7/7. It keeps S2 visible, sorts the labels and preserves the quotation spaces and accents. This was one real model repair request, with both code versions retained.

The supplied tested-notebook folder holds this corrected build. Run python3 tested-notebook/notebook.py sample-notes.json to inspect the magazine result directly. Fresh generations can differ. If your first build already works, use its filename in the final checker.

Prompt two: make Publication Desk.

By Alvin

Keep the first build. This second full prompt changes the job from inspecting a notebook to preparing a draft and finding follow-up work. We send it as an independent request, rather than editing the first source file in place.

Write a complete Python 3.10+ command-line program using only argparse, json, sys and pathlib from the standard library. Return only the entire Python source, with no Markdown or explanation. Read a UTF-8 JSON file named by the first positional argument. It contains a list of objects with a unique string id, string text and boolean confirmed. Validate this shape and reject duplicate IDs. A missing file, invalid JSON or invalid record must print a helpful error to stderr and exit 2. Preserve every character in text, including leading/trailing spaces and accents. Sort records by id. Read the input; never modify it. Make no network requests, run no other programs and write no files. Include a main entry point.
Build Publication Desk: help a writer prepare confirmed quotations and find the follow-up work before sharing a draft. By default print READY as the first section and NEEDS REVIEW as the second. Put confirmed true notes in READY and confirmed false notes in NEEDS REVIEW. For each note print its id alone on one line and its exact text on the next line. Each empty section prints (empty). Add --ready-only to print only the READY section, so the reader can redirect it into a draft file. In both modes exit 1 if any note needs review, otherwise exit 0. Exit 1 means useful output with follow-up pending, not invalid input. Explain these exit codes and --ready-only in --help. Treat confirmed as the writer's supplied decision; perform no factual verification.

See the changed workflow in action.

By Alvin

Read prompt-publication.txt, generate a second build and inspect its saved Python source before running it:

```
python3 edge_workshop.py ask publication --out my-publication
python3 my-publication/publication.py sample-notes.json
echo $?
```

Our actual output from the same notes

```
READY
S1
The workshop starts Saturday at 10.
S3
  Bring a café mug.
NEEDS REVIEW
S2
Ramp access awaits confirmation.
```

The next number printed by echo $? is 1: the program produced useful output and found follow-up work. An exit code is a small status number a program returns to Terminal. Here 0 means all notes are confirmed, 1 means some need review, and 2 means invalid input.

```
python3 my-publication/publication.py sample-notes.json --ready-only > \
  ready-draft.txt
```

Open ready-draft.txt in a text editor. Only S1 and S3 belong in the draft. The > character asks Terminal to save the output; it replaces that named file if it exists. Choose another filename to keep an earlier draft.

Learn how the brief changes the build.

By Alvin

Change the purpose, then follow its consequences

“Help a writer inspect all of their source notes” creates one notebook: source label, confirmation status and exact quotation. “Prepare confirmed quotations and find the follow-up work” creates a decision aid. The second program needs two queues, rules for membership, a ready-only output option and a status that keeps unfinished work visible.

PROMPT CLAUSE	VISIBLE EFFECT
“Put confirmed true notes in READY”	S1 and S3 are ready. S2 stays in follow-up.
“Add --ready-only”	Save confirmed quotations in a separate draft file.
“exit 1 if any note needs review”	Pending work stays detectable during ready-only export.
“Preserve every character in text”	Spaces, accents and source wording survive both builds.

The input record stays the same; the program’s role changes. The model chooses functions, validation and printing to carry out the brief. Running the code and checking the result establishes what this build does.

YOUR NEXT CONTROLLED CHANGE

Proposed exercise: add “Let a human assign each unresolved note to a named reviewer and save that assignment for next time.” Predict a new reviewer field, a saved decision file and a way to edit it. Test that restarting preserves assignments and quotations. That larger persistent variant has not been generated or tested here.

Check the program, then read the evidence.

By Alvin

```
python3 check_programs.py my-notebook-fixed/notebook.py \
  my-publication/publication.py
```

After inspecting your code, use this checker with invented inputs. It prints each result and a total. It checks exact quotes, sorted IDs, preserved input files, help, empty lists, invalid files and records, duplicate IDs, the two queues and ready-only export. A pass covers these examples.

NOVEMBER 17 / M1 MAX	RECORDED RESULT
Quote Desk / repaired	7/7 behavior checks; repair request 58.43s
Publication Desk	9/9 behavior checks; request 39.24s
Engine preparation	Existing source and weights reused; build replay and two numerical checks completed.

We ran one request per build brief and one focused notebook repair, then executed the saved programs on the M1. Both also passed the same checks on the primary Mac. This is a small real-program demonstration, not a general model reliability score or a controlled speed comparison.

The kit keeps the two exact prompts, sample data, generated source, raw replies and check results. Run python3 check_programs.py with no filenames to check the supplied tested builds. No model download is needed to run those saved Python programs.

The November 14 notebook/triage function experiments on the following pages remain separately dated. The first-time operating-system installers were not rerun; the M1 already had its development tools and model files.

Return to your workshop.

By Alvin

WHAT YOU SEE	YOUR NEXT ACTION
Cannot open a workshop file	Repeat cd by dragging the workshop folder into Terminal; run ls.
Cannot reach Edge0	Start serve in its own window and wait for Listening:.
Port 19437 is in use	Reuse your own ready service, or stop it in its original Terminal.
HTTP 503 / engine exit	Keep the error, check tune, stop your server and restart it.
Output folder already exists	Choose a new --out name to preserve the earlier build.
A reply is truncated or a check fails	Keep the raw reply and failed case. Simplify or focus a copied prompt, generate to a fresh folder and check again.

Next time, return to the workshop folder, prepare PATH, start serve and wait for Listening:. Models / Edge0-CAC-20261114 keeps the installation. Your chosen output folders keep the generated programs and prompt records.

Use Control-C in the original server Terminal when finished. Inspect the server error if loading stops or becomes very slow; close memory-heavy work before trying again. The smaller-model workshop offers a lighter route.

> **TAKE ONE PROMISE AT A TIME**
>
> Keep the first build and the same example notes. Change one intended behavior in a copied prompt, predict the interface and data changes it requires, then run checks that could reveal a mistake. The kit README repeats the full installation and recovery route.

Put the M1 on the bench.

By Alvin

The 64GB M1 Max ran the same Qwen and Llama model files and prompts as the primary Mac. Ollama 0.33.2 loaded one model at a time. As on page 63, the scores count four test examples and elapsed time includes model loading.

MODEL / BRIEF	CHECKS	ELAPSED s
Qwen3.5 4B / notebook	4/4	3.93
Qwen3.5 4B / triage	4/4	3.45
Llama3.2 3B / notebook	4/4	1.67
Llama3.2 3B / triage	0/4	1.74

Qwen passed both sets of four examples. Llama passed the notebook examples, then returned triage groups as ID-based lookup tables instead of the requested lists of records. Even its empty group used the wrong format.

Qwen generated replies at about 65–66 tokens/s; Llama about 101. Other work and downloads were running on the Mac. The primary Mac also used a different Ollama release. These are observations of those runs; a hardware ranking needs matched software and controlled workloads.

EDGE0 / TWO WORKING BUILDS

With the prompt chunk at 64, Edge0-145B Q3_K passed 4/4 notebook and 4/4 triage checks. Requests took 31.98s and 6.39s; engine decode rates were 26.9 and 34.4 tokens/s. The default-template requests returned HTTP 503 with engine exit 5. This loaded-server test uses a different runtime, quantization and load state from Ollama.

Choose your machine. Make the next change.

By Alvin

Apple Silicon and Intel have different routes

The M1 Max has 64GB of RAM shared by its processor and graphics hardware. Edge0's documented 145B Mac route requires Apple Silicon and Metal. Our 64GB Intel Mac is outside that supported route; matching the RAM amount alone is insufficient. [37]

Intel Macs can run other local models through Ollama's CPU-only x86 support on macOS 14+. Start smaller and measure your task. This article has no Intel benchmark. [33]

Make the experiment yours

Save notebook and triage builds separately. Compare their output shapes and exact quotes using identical invented notes. Weigh speed alongside preserved evidence.

Turn the editorial triage tool into a handoff planner. Let a human assign each unresolved note to a named reviewer and mark a review complete. Preserve the original source text and a history of decisions. Explain the interface, stored state and tests that this new purpose requires. Implement the change in a copy of the existing project.

This proposed reader exercise adds reviewer ownership, durable history and a check that unresolved notes remain visible. Generate it in a separate copy, then test those promises.

> **KEEP A RECORD WORTH SHARING**
>
> Send the exact prompt, model digest, machine, generated program, failed case and useful change to support@codefarmer.com. Share invented fixtures or material you have permission to reproduce.

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Build your sound.

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Independent software from CodeFarmer. House advertisements.

From type-ins to prompt-ins.

By Alvin

The charter issue of Creative Computing put two learners at a terminal on its cover. That choice makes the people central: computing as something to explore together, with room for games, questions and discovery. [45]



Creative Computing, Vol. 1 No. 1, Nov-Dec 1974. Cover photograph: Lisa Sheble (original credit, p. 3). Scan: Internet Archive; reduced historical inset. [45]

> **FROM THE 1974 MAILBAG**
>
> “a person can learn more by doing game programs requiring imagination”
> Ricky James Roberson, reader letter, p. 5. [45]

Roberson’s point is about the kind of activity that invites learning. An imaginative game gives you a reason to investigate. The cover and the letter make participation visible; our prompt workshops carry that invitation into a new set of tools.

The inset preserves the scanned copy, including its handwritten inscription. Historical cover and brief quotation reproduced here for commentary; the source identifies their creators.

Keep the curiosity.

By Alvin

A type-in program arrived as printed source code. Readers entered it, ran it and explored changes. BASIC, a common language for listings, often used numbered lines.

READER ACTION	TYPE-IN	PROMPT-IN
Make it run	Enter the listing; check typing and language version.	Give the brief; inspect and test the generated build.
Change the experience	Edit source and run it again.	Change purpose; inspect new source and behavior.
Keep a useful result	Save the program and your notes.	Save prompt, code, checks and repairs.

The useful continuity is reader agency.

Reader agency means choosing a change and checking its effect. In the Edge0 workshop, Quote Desk keeps every quotation together. Publication Desk separates ready material from follow-up work and exports a draft. Changing the purpose changes the program's structure and use.

The model made a startup mistake. A focused prompt repaired it; checks examined the result. Reading, testing and trying again belong to the experiment.

> **YOUR TURN**
>
> Choose a working prompt-in from this issue. Change its audience or purpose in one sentence. Predict two visible changes and one useful check. Keep the original, then record what the next build actually does.

The Edge0 workshop begins on page 65. Our source, prompts and measured results remain in its companion pack. The historical comparison is editorial commentary; the reader exercise above is an invitation to make your own next build.

Show us the interesting change.

By Alvin

A reader's idea can be a tiny rule change, an unexpected failure or a whole new program. Send the prompt you used, what you changed and what the result taught you.

Three invitations

Beginner: send an Orbit Postcard and the numbers that made it.
Intermediate: find a depot layout that jams, then explain a fairer routing rule.
Advanced: show a Research Relay claim whose quote is literal but whose interpretation is wrong.

Include the program version, browser or Python version, and steps we can follow. If you found a project through Hacker News or Slashdot, send both the original source and the discussion.

Write to the editor / support@codefarmer.com

Tell us your preferred byline and whether we may quote your message or reproduce an attached image. Selected contributions may be edited for length and clarity.

> **THE MAILBOX IS OPEN**
>
> Join the conversation through these editorial invitations. Future reader responses will carry their contributors' bylines and permission.

Builders and their discussions

[1] Klad: project and license
Project README, checked November 12
https://github.com/klad-app/klad

[2] Klad: Show HN discussion
November 11, 2026
https://news.ycombinator.com/item?id=50454951

[3] Atuin Threads announcement
Atuin, checked November 12
https://blog.atuin.sh/threads-agent-sessions/

[4] Atuin Threads: HN discussion
November 11, 2026
https://news.ycombinator.com/item?id=50453637

[5] Threads: commands and settings
Official Atuin documentation
https://docs.atuin.sh/latest/ai/threads/

[6] Atuin 18.24.6
Pinned release, November 10, 2026
https://github.com/atuinsh/atuin/releases/tag/v18.24.6

[7] OmniDiff: project and CLI
Official project documentation
https://github.com/ivankovic/omnidiff

[8] OmniDiff: Show HN discussion
November 1, 2026
https://news.ycombinator.com/item?id=50325253

[9] OmniDiff 0.4.0
Pinned release, November 8, 2026
https://github.com/ivankovic/omnidiff/releases/tag/v0.4.0

The trail behind the handoffs

[10] Ginux: current project
Current architecture, checked November 12
https://github.com/gmkurtzer/ginux

[11] Ginux: Slashdot discussion
November 2, 2026
https://tech.slashdot.org/story/26/11/02/0317207/rocky-linux-creator-built-a-new-not-linux-kernel-in-11-days-using-ai

[12] Deno is joining Cloudflare
Ryan Dahl, October 9, 2026
https://deno.com/blog/cloudflare

[13] Deno, cellD and workerd
Original Cloudflare announcement
https://blog.cloudflare.com/deno-joins-cloudflare/

[14] Deno / self-hosting: Slashdot
October 17, 2026; follow-through item
https://developers.slashdot.org/story/26/10/17/0549255/deno-acquired-by-cloudflare-will-work-on-open-source-self-hosting-platform-for-applications

[15] Ollama chat API
Official request and response contract
https://docs.ollama.com/api/chat

[16] Ollama structured outputs
Official schema and validation guidance
https://docs.ollama.com/capabilities/structured-outputs

[17] AWS Emulator
Official project; reported, not run
https://github.com/aws/aws-emulator

[18] AWS Emulator: HN discussion
November 11, 2026
https://news.ycombinator.com/item?id=50456631

[19] Prompting best practices
Anthropic documentation; checked November 13, 2026
https://platform.claude.com/docs/en/build-with-claude/prompt-engineering/claude-prompting-best-practices

[20] Prompt design strategies
Google documentation; checked November 13, 2026
https://aistudio.google.com/docs/prompting-strategies

The next-step reading shelf

[21] Codex: project instructions with AGENTS.md
Official OpenAI documentation; checked November 13, 2026
https://learn.chatgpt.com/docs/agent-configuration/agents-md

[22] Codex: local code review
Official OpenAI documentation; checked November 13, 2026
https://learn.chatgpt.com/docs/code-review?surface=cli

[23] Claude Code: project memory and instructions
Official Anthropic documentation; checked November 13, 2026
https://code.claude.com/docs/en/memory

[24] Claude Code: useful instructions and verifiable checks
Official Anthropic documentation; checked November 13, 2026
https://code.claude.com/docs/en/best-practices

[25] Muse Code: configuration and AGENTS.md
Official Meta documentation; checked November 13, 2026
https://dev.meta.ai/docs/muse-code/configuration

Context, plans and review

[26] Muse Code: interactive controls
Official Meta documentation; checked November 13, 2026
https://dev.meta.ai/docs/muse-code/interactive

[27] Gemini CLI: project context and memory commands
Official Google documentation; checked November 13, 2026
https://geminicli.com/docs/cli/gemini-md/

[28] Gemini CLI: Plan Mode
Official Google documentation; checked November 13, 2026
https://geminicli.com/docs/cli/plan-mode/

[29] VS Code: custom project instructions
Official Microsoft documentation; checked November 13, 2026
https://code.visualstudio.com/docs/agent-customization/custom-instructions

[30] VS Code: plan and review a change
Official Microsoft documentation; checked November 13, 2026
https://code.visualstudio.com/docs/agents/run/planning

[31] Muse Code: current capabilities and availability
Official Meta documentation; checked November 13, 2026
https://dev.meta.ai/docs/muse-code

The local-model reading shelf

[32] Ollama: quickstart
Official source; checked November 14, 2026
https://docs.ollama.com/quickstart

[33] Ollama: macOS requirements
Official source; checked November 14, 2026
https://docs.ollama.com/macos

[34] Ollama: local operation and cloud controls
Official source; checked November 14, 2026
https://docs.ollama.com/faq

[35] Edge0-145B announcement / November 12, 2026
Official source; checked November 14, 2026
https://edge0.ai/blog/introducing-edge0-145b-frontier-ai-capabilities-on-your-own-computer

[36] Edge0-145B: architecture and measured configurations
Official source; checked November 14, 2026; pinned source revision 7b60076
https://github.com/Edge0-AI/Edge0/blob/7b60076641ccd4adeec8b9a41874a24c477fec02/docs/models/edge0-145b.md

[37] Edge0 145B: platform and runtime guide
Official source; checked November 17, 2026; pinned source revision 7b60076
https://github.com/Edge0-AI/Edge0/blob/7b60076641ccd4adeec8b9a41874a24c477fec02/edge0-infer/docs/edge0-145b.md

[38] edge0-strata: Metal build and operator checks
Official source; checked November 17, 2026; pinned source revision 7b60076
https://github.com/Edge0-AI/Edge0/blob/7b60076641ccd4adeec8b9a41874a24c477fec02/edge0-strata/EDGE0.md

[39] Edge0-145B Q3_K: model files and license
Official source; checked November 14, 2026
https://huggingface.co/Edge0/Edge0-145B-q3k/tree/2d8011637b46d532a65ed4f9d78eb5b466e486d5

[40] Python releases for macOS
Python Software Foundation; checked November 17, 2026
https://www.python.org/downloads/macos/

[41] Ollama CLI reference
Official CLI documentation and installed 0.32.0 help; checked November 15, 2026
https://docs.ollama.com/cli

Workshop tools. Magazine roots.

[42] Homebrew: official installation and requirements
Official source; checked November 17, 2026
https://brew.sh/

[43] uv: installation options
Astral official documentation; checked November 17, 2026
https://docs.astral.sh/uv/getting-started/installation/

[44] Apple: installing command-line tools
Apple Developer documentation; checked November 17, 2026
https://developer.apple.com/documentation/xcode/installing-the-command-line-tools/

[45] Creative Computing: charter cover, cover credit and reader letter
Vol. 1 No. 1, Nov-Dec 1974; pp. 3, 5; primary scan checked November 18, 2026
https://archive.org/details/CreativeComputingv01n01NovemberDecember1974

Keep the evidence.

By Alvin

Reporting

Original reporting: November 12, 2026. Planned issue date: November 19. Vendor exercises were checked November 13. Local-model experiments ran November 14, 15 and 17. Sources support claims; discussions supply context.

Programs and experiments

The three original supplied programs remain byte-identical. November 15 adds a fresh Orbit build, a separate Relay correction and recovery tests. November 17 adds two fresh Edge0 builds, one targeted notebook repair and checks on both Macs. Prepared replies, reference-code edits and actual model outputs have separate records.

The Edge0 setup replay reused installed tools and model files. First-time installer dialogs are documented preparation. These are editor-operated walkthroughs; a human beginner study remains separate. Results describe their recorded inputs and environment.

Artwork and review

The saved Agent Weave cover and Draw Things cartoon remain. The heritage inset is a credited historical cover reproduction. This edition includes the PDF, complete web articles and companion pack. Both issues are available at codefarmer.com/magazine/.

> **EDITORIAL PRACTICE**
>
> An unresolved model response is reported as unresolved. A proposed future experiment is labeled as a proposal. A reader letter is a letter only after a reader sends it.

ONE MORE THING

Ask for a useful disagreement.

By Alvin

A productive advanced prompt asks the program to recognize an unsupported request and explain what it can accept. That response makes the contract visible.

A depot can reject a notebook that puts two couriers on one square. A research workbench can reject a quote absent from its note. A reviewer can point out that a correct quotation is irrelevant to the question.

A prompt to keep beside your next project

Before adding another feature, name three claims this program makes. For each claim, give me an observation that would prove it wrong. Implement the smallest checks that exercise those observations. Show the inputs, results and anything the checks leave uncertain.

Try this editorial exercise with a copy of a supplied program. Try it after the thing first appears to work. The most interesting answer may be a smaller, clearer promise.

NEXT ISSUE'S OPEN QUESTION

What happens when two good local decisions produce a bad shared result? Switchyard is already giving us ideas.

The committee that moved a pixel.

By Arthur / Back-page editor

I asked for a blue button. A modest assignment. One rectangle, a pleasant shade of blue, enough room for the word Save.

The planner proposed a design council. The design council established a pigment subcommittee. The pigment subcommittee requested historical context. Someone opened a document called Blue: A Strategic Opportunity.

By lunch the button had a mission statement, three personas and a migration plan. It still had no color. The accessibility reviewer was waiting on the pigment subcommittee, which was waiting on a decision about whether the button was a platform.

I suggested that we draw the rectangle first.

This was entered as a disruptive proposal. A worker created a prototype. A reviewer observed that the prototype did, in fact, contain a blue rectangle. The council requested evidence that it was the right rectangle.

I clicked it. The file saved.

For a moment there was silence. Then someone suggested a retrospective.

I have learned a valuable lesson about agentic computing: every committee needs a stopping condition. Mine is a button that works.

EDITOR'S NOTE

An original closing column for Creative Agentic Computing. The pixel was moved locally. It has declined to join a steering group.