

CORE

Lab 4: Build a Prompt-to-Map Pipeline

Sequence data, visual, interface, specification, critique, and publishing decisions

Chapter Chapter 4	Level Beginner	Time ~90-120 min
Mode Individual or pair	Technology Any course-approved LLM	Deliverable Revised data brief

Why This Lab Matters

Chapter 4 argues that pipelines do not replace cartographic judgment. They make judgment visible, sequenced, and easier to critique. In this lab, you will turn a map idea into a prompt-to-map pipeline packet that can guide later LLM-assisted work without rushing into execution.

Essential question

What cartographic decision should you be able to defend by the end of this lab?

Learning Objectives

- Explain the difference between a workflow and a pipeline.
- Create a data brief that anchors purpose, audience, scope, limitations, and ethical concerns.
- Separate visual planning from styling and interface planning from feature collection.
- Write a specification as a flexible contract rather than a command list.
- Use critique prompts to reconnect output to earlier intent.

At a glance

Inputs: Lab scenario, prompts, data notes, or map concept supplied in the activity.
Outputs: Revised data brief; Visual planning note; Interface planning note with rejected interactions.
Evaluation: Clear purpose, defensible cartographic judgment, concise prompting, and evidence of human verification where needed.

LAB WORK

Setup: Choose a Map Idea Worth Sequencing ~7 min

Choose a map idea where purpose, data limits, interface choices, and accountability matter. Keep this topic for the full lab.

- Public cooling centers during heat waves
- Traffic safety near schools
- Emergency shelters and evacuation routes
- Neighborhood access to clinics, parks, or groceries
- Environmental risk communication for a local audience

Setup deliverable

Write one sentence naming your topic, intended audience, and what the map should help that audience decide, understand, or do.

PROCEDURE

Part 1 — Draft the Data Brief ~18 min

The data brief asks what the map can responsibly claim before anyone starts designing.

Data Brief
Map topic:
Intended purpose:
Audience:
Spatial scope:
Temporal scope:
Key variables needed:
Claims the map can support:
Claims the map cannot support:
Known limitations or uncertainty:
Ethical considerations:
One clarifying question before data work begins:

After you draft it, ask an LLM to critique the brief.

Act as a skeptical cartographic project reviewer. Critique this data brief before any map is designed. Identify vague claims, missing scope limits, ethical risks, and one question I should answer before moving to visual planning.

Mini-deliverable

Your revised data brief and one sentence naming the most important limitation.

PROCEDURE

Part 2 — Visual Planning Before Styling ~15 min

Visual planning is about hierarchy, emphasis, and tone before colors, fonts, or symbols.

Using my data brief, help me create a visual planning note. Do not choose final colors or symbols yet. Instead, specify:

1. what should feel visually central
2. what should recede
3. what tone the map should carry
4. what visual defaults would be misleading
5. what the user should notice first, second, and last

Revise the response so it is written in your voice, not the model's.

PROCEDURE

Part 3 — Interface Planning: Say No on Purpose ~15 min

Interface planning anticipates use. It is not a shopping list of widgets.

Using my data brief and visual planning note, create an interface planning note for this map. Include:

- primary user task
- likely device or context
- expected time and attention
- whether exploration should be guided or open-ended
- 2 interactions that support the purpose
- 2 interactions I should reject, with reasons

Reminder

Interface choices are rhetorical choices. A filter, slider, popup, or panel changes what users think the map is asking them to do.

PROCEDURE

Part 4 — Write the Specification as a Contract ~20 min

Now combine the earlier stages into a specification. The goal is to stabilize intent without micromanaging the LLM.

Prompt-to-Map Specification Contract

Data brief summary:

[Paste concise version]

Visual planning commitments:

[Paste concise version]

Interface planning commitments:

[Paste concise version]

System freedom:

The LLM may suggest implementation approaches, but must preserve the stated purpose, audience, scope limits, visual hierarchy, and interface rationale.

Non-negotiables:

- [Constraint 1]
- [Constraint 2]
- [Constraint 3]

Flexible choices:

- [Choice 1]
- [Choice 2]

Output requested:

Return a map concept brief and implementation plan. Do not write code.

Run the contract through an LLM and save the response as your pipeline output.

PROCEDURE

Part 5 — Critique the Pipeline Output ~20 min

Critique is a design stage, not a cleanup phase. Ask the LLM to reconnect the output to the earlier pipeline stages.

Critique the map concept and implementation plan against my pipeline packet. Identify:

1. where it aligns with the data brief
2. where visual planning was respected or ignored
3. where interface suggestions support or distract from intended use
4. where the specification was too vague
5. where the output drifted from my intent
6. one revision I should make before publishing or building

Mini-deliverable

Revise one earlier pipeline stage based on the critique. Do not only revise the final output.

PROCEDURE

Part 6 — Publishing Accountability Note ~10 min

Publishing is where delegation ends and responsibility crystallizes. Write a short accountability note before calling the concept ready.

Publishing Accountability Note

If this map shipped with my name on it, I would be comfortable with:

I would hesitate because:

The single revision that would most improve accountability is:

The audience most likely to misread this map is:

The claim this map must not be allowed to imply is:

DELIVERABLE

Submission ~15 min

Submit or save the following:

- Revised data brief
- Visual planning note
- Interface planning note with rejected interactions
- Specification contract
- Pipeline output and critique
- Publishing accountability note
- A 300-500 word reflection on how sequencing changed the quality or traceability of your decisions