Not-Vibe Coding a GUI

Effectively Building a Web UI Using AI

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Core Thesis

You asked the AI to "build a simple dashboard," and twenty minutes later you were staring at a UI that *almost* worked — wrong flows, mismatched components, and fixes that kept breaking other screens.

You're not vibe coding.

You're leading a team. A team of fast, junior, very capable engineers.

LLMs don't replace product thinking or UX decisions — they amplify them *only if* you make them explicit.

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The Promise of Vibe Coding

The dream

- Describe the app in natural language
- Let the AI **figure out the details**
- Ship a UI in an afternoon

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The Reality of Vibe Coding

The reality

- Inconsistent UI
- Broken or missing flows
- Conflicting components
- Endless re-prompting, trying to fix the wrongs.

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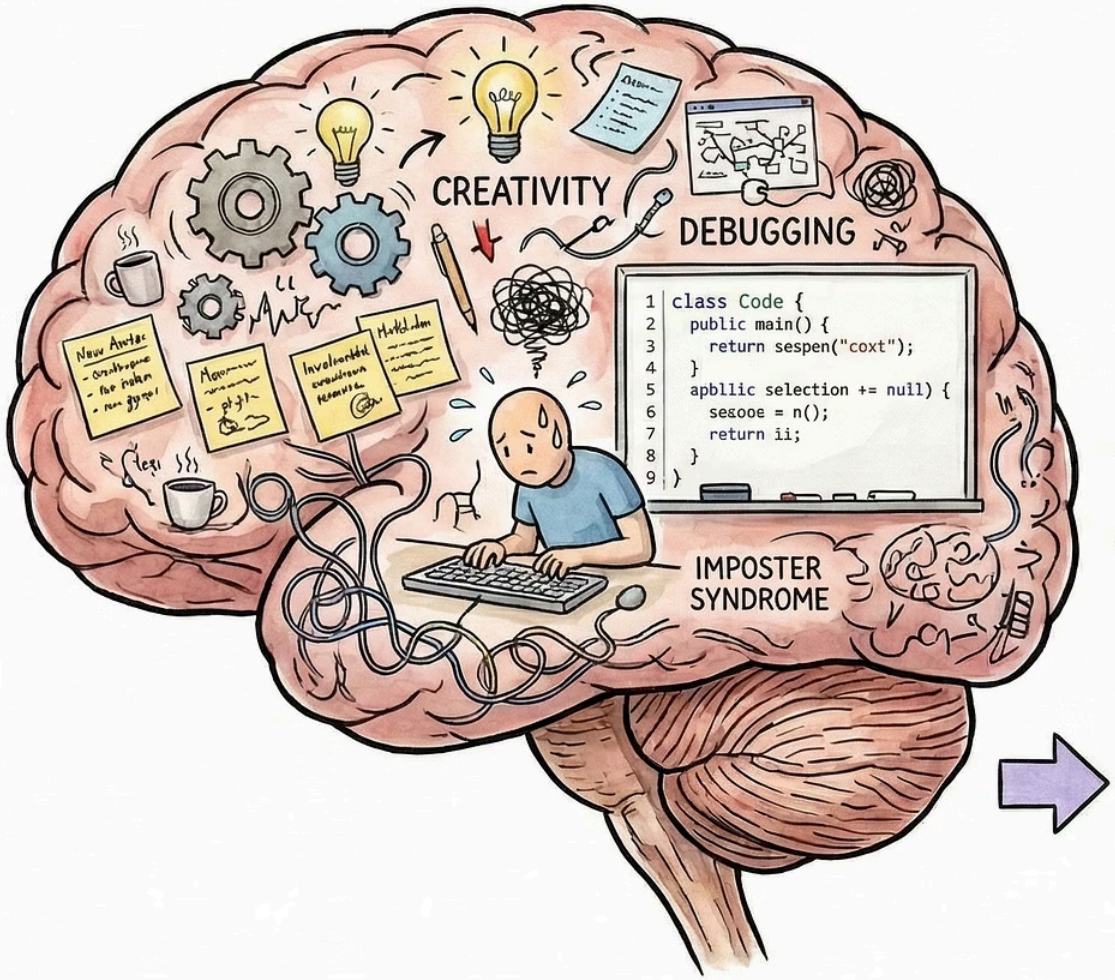
DEVELOPER'S MIND



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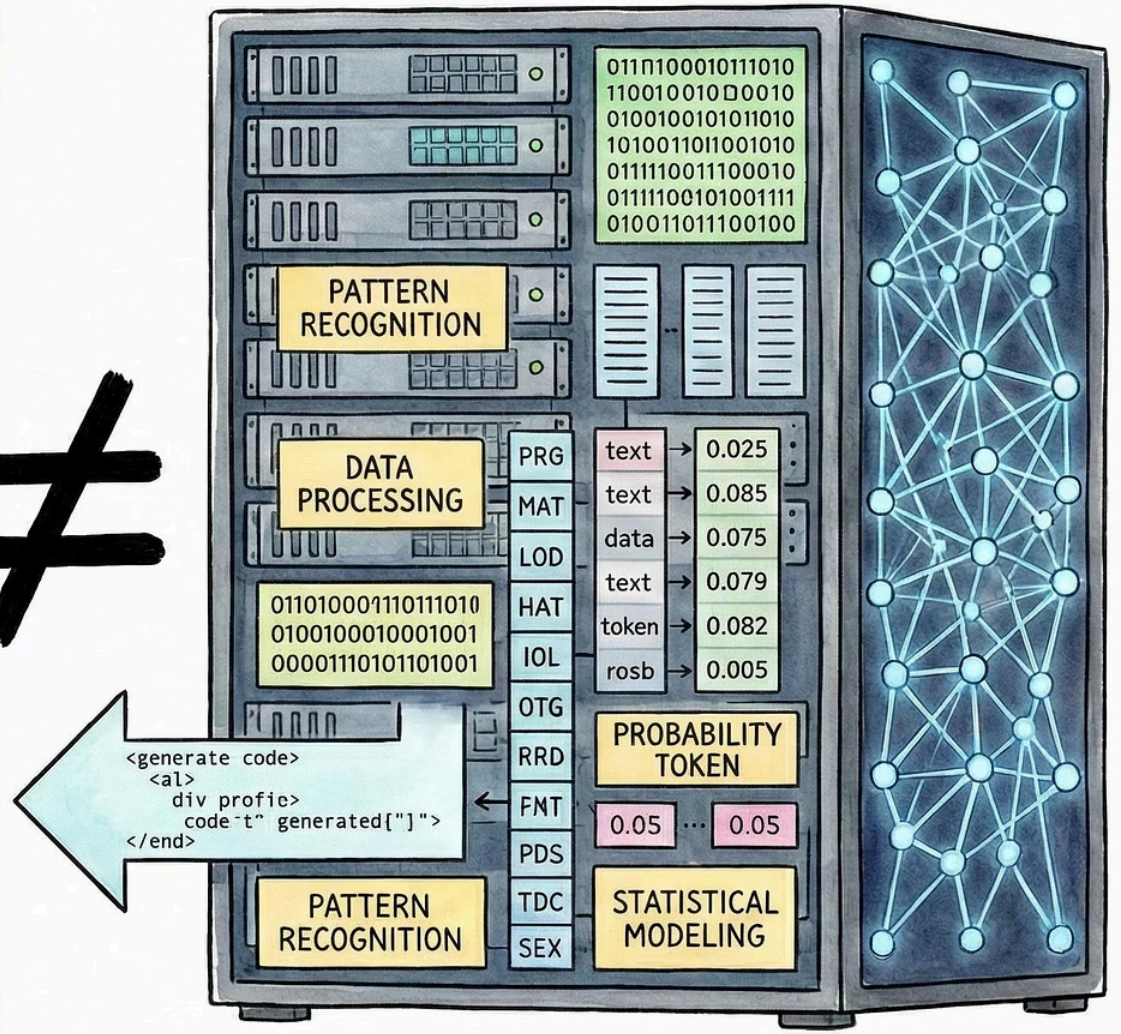
LLM'S MIND



DEVELOPER'S MIND

LLM'S MIND

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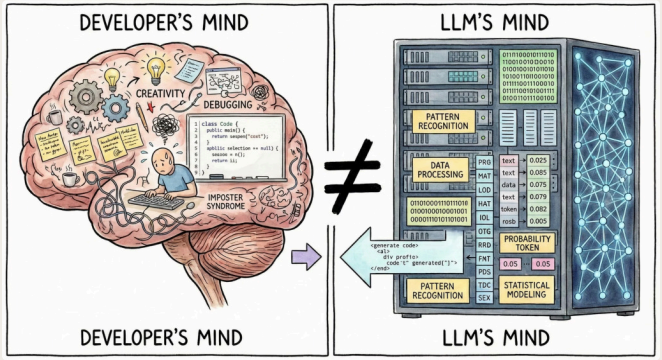
The Problem: Wrong mental model

This gap between expectation and reality is the root cause of most AI-generated UI failures.



What we assume

- The model understands the product
- The model remembers earlier decisions
- The model infers your intent
- The model thinks about edge cases

What actually happens

- Generation is **stateless**
- Lost in ~~translation~~ verbalization - you think you understand what you ask for, but the model **interprets** it differently.
- No shared memory (unless you create it). You know the product, the model doesn't
- You imagine how it's going to look, but the AI "imagines" something different. There are **unspoken gaps**.

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The Correct Mental Model

You Are Leading a Team

Extremely fast

Extremely literal

But - Junior-level product intuition

And - Zero memory beyond what you document

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Prompts are not wishes - they are instructions.

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What "Leading" Means Here

Define *what* to build

Define *constraints*

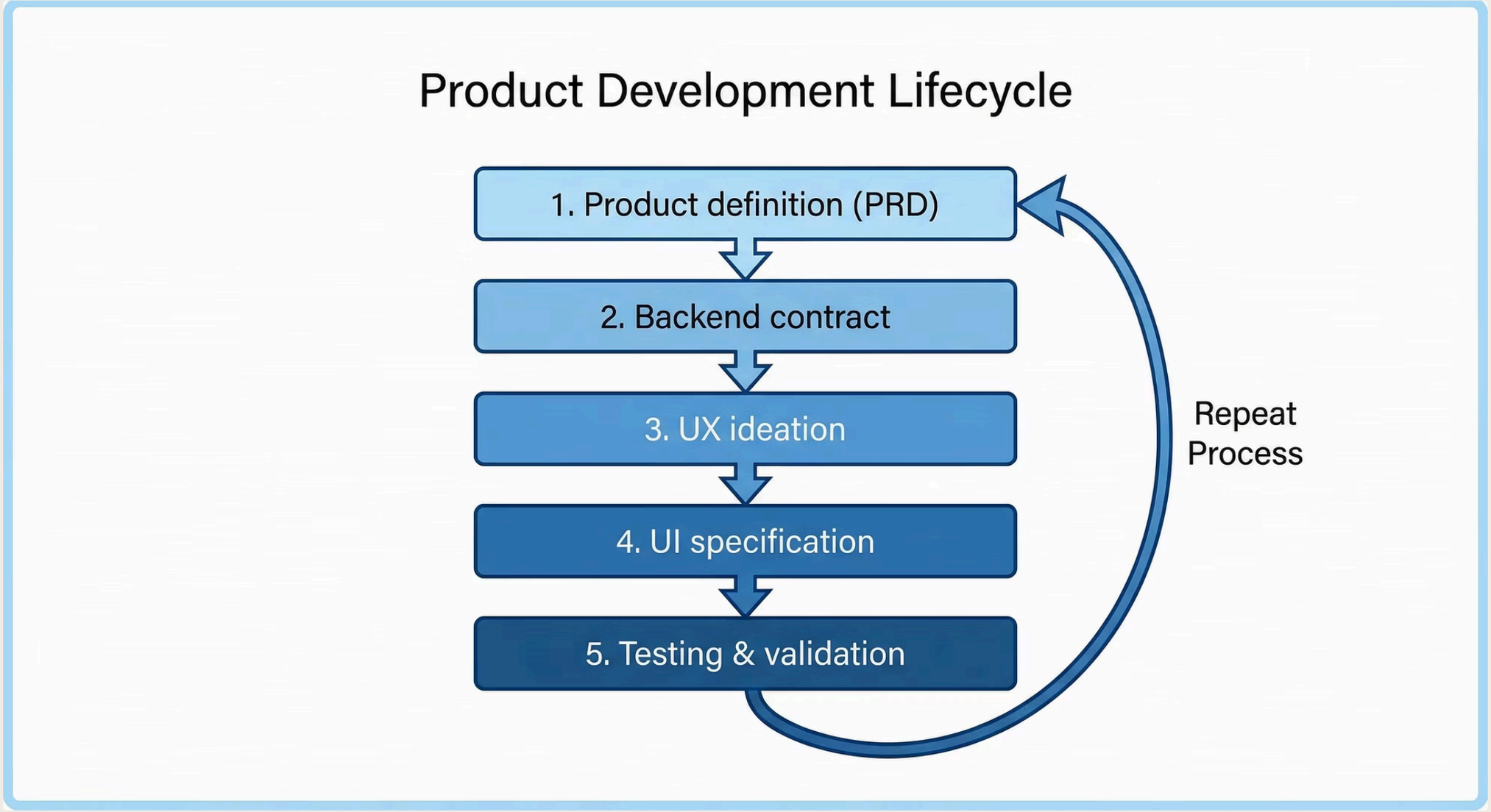
Define *interfaces*

Review output *critically*

This is engineering leadership, not magic.

The Process (Overview)

Each step deliberately reduces ambiguity - for you *and* for the model - turning vague intent into executable instructions.



Boring. Repeatable. Effective.

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4. User Stories / Personas

4.1. User Persona: RAG developer / PM

- **Role:** RAG developer / PM
- **Needs:** Need to find a tool for evaluating and improving their RAG system
- **Goals:** Assure the quality of their RAG system

4.1. User Persona: System administrator

- **Role:** AIIR admin
- **Needs:** Monitor health, troubleshoot, and assist users

4.2. User Stories

- As a user I want to:
  - Create a corpus
  - Generate a benchmark
  - Evaluate my RAG based on the benchmark
  - Experiment with DM using a single or 2 in-line docs
  - Use the demo corpus to experiment with DM
  - Check how much quota I have left
- As an admin I want to:
  - List all past generation requests
  - List all benchmark requests
  - Study usage patterns from benchmark definitions
  - List all ongoing requests
  - Monitor cost
  - Monitor failures (realtime) to provide support
  - List corpora
  - List errors and access logs
  - Purge old data: corpus, benchmark, evaluation results, users, logs

Step 1: Start with a Real PRD

1 Who is the user?

2 What are we solving?

3 Use cases

4 Non-goals

5 Constraints

Iterate on the PRD with **Team members** and **AI**

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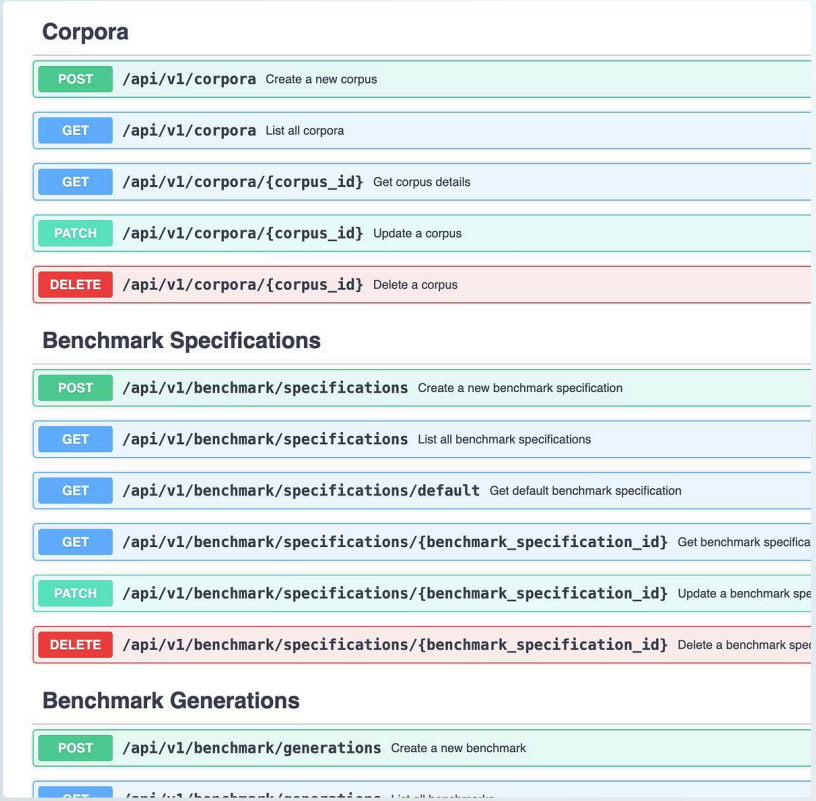

Step 2: Define the Backend Contract

- OpenAPI / Swagger
- Real endpoints
- Real schemas
- Error cases included

UIs cannot safely improvise APIs.

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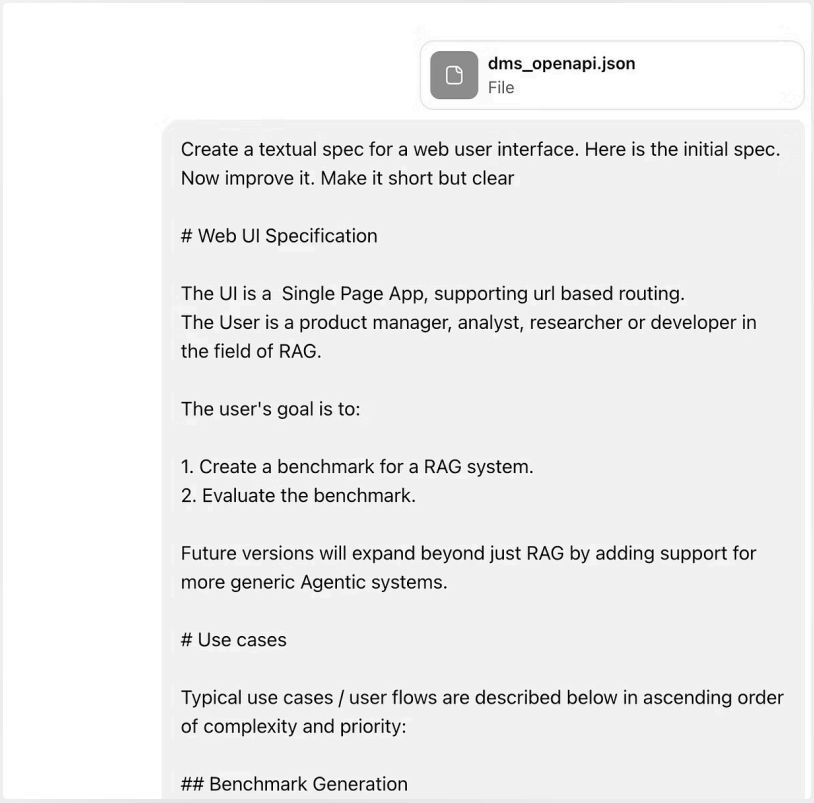

Step 3: UX Ideation (with chat)

1. Explore flows conversationally
2. Ask "what happens next?"
3. Try alternatives
4. Capture decisions

Do not ship from this phase.

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Main goals:

1. Create benchmarks.
2. Evaluate benchmarks.

Future versions will extend to general agentic evaluations.

Core User Flows

1. Benchmark Generation

The UI should allow the user to generate a benchmark with increasing levels of customization:

1. **One-click default benchmark**
   - Use default corpus + default specification.
   - User only chooses number of conversations.
2. **Default benchmark with scenario override**
   - Provide a small "specification overrides" form (scenario, question/answer guidelines, max turns).
3. **Inline corpus benchmark**
   - User provides up to two inline text documents.
   - Uses default specification.
4. **Uploaded corpus benchmark**
   - Step 1: Upload corpus (UI manages multipart upload + status monitoring).

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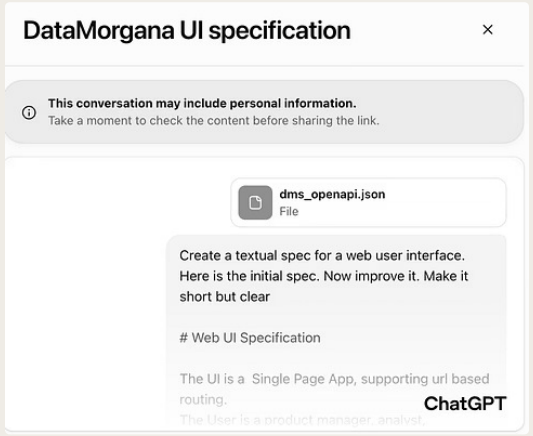

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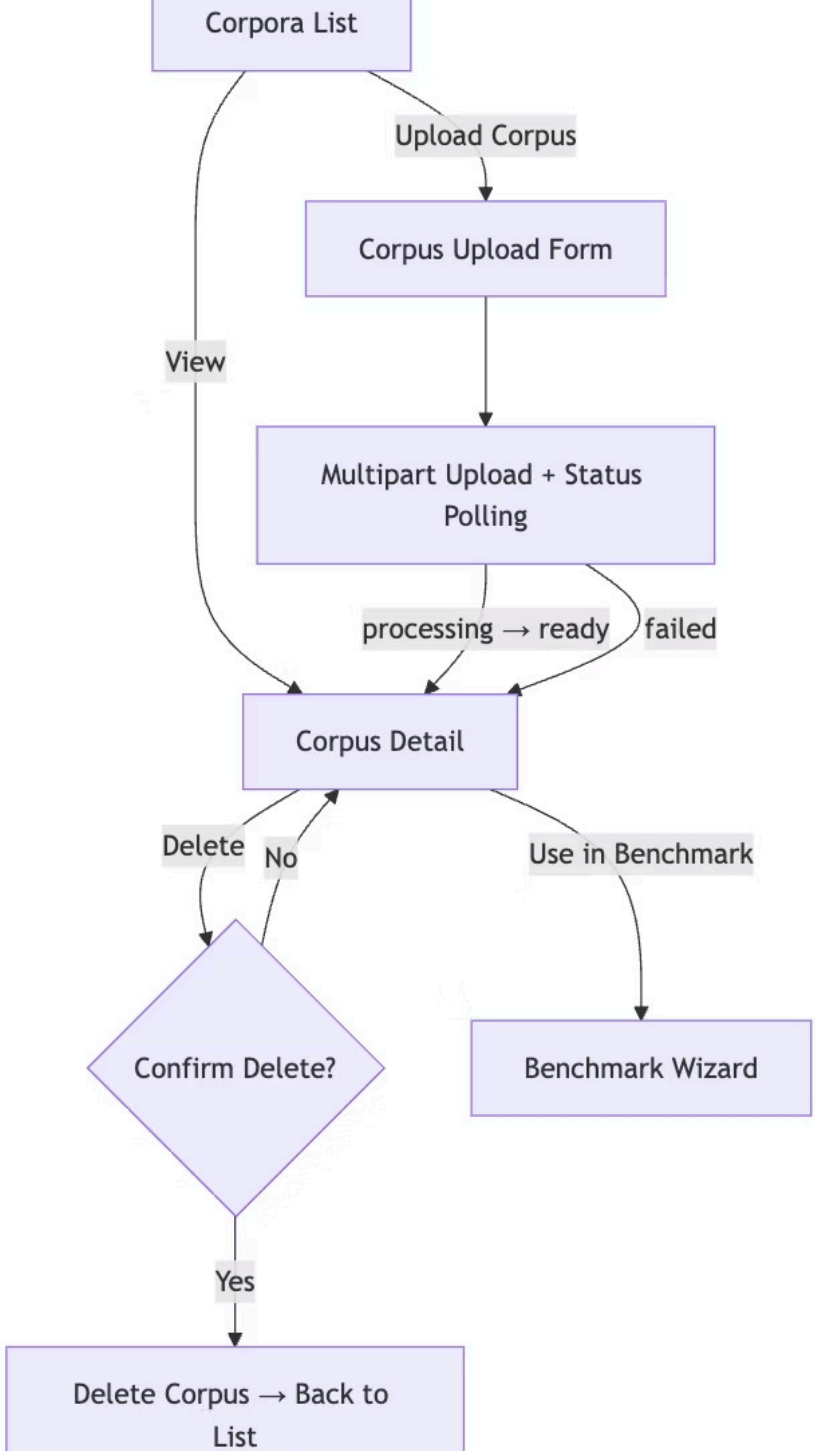

Step 4: Freeze It into a UI Spec

Convert vibes into artifacts:

Markdown UI spec

Screen inventory

User flows

Component behavior

Edge cases

Attach wireframes and flow diagrams.

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🎨 Option C Mockups — Full UI Set

1. Dashboard

less

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```
╔═══════════════════════════════════════════════════════════════╗
║                          DASHBOARD                            ║
╚═══════════════════════════════════════════════════════════════╝

┌──────────────────────────┐   ┌──────────────────────────┐
│  Generate Benchmark      │   │     Upload Corpus        │
│  (default settings)      │   │                          │
└──────────────────────────┘   └──────────────────────────┘

┌──────────────────────────┐   ┌──────────────────────────┐
│ Upload Specification     │   │  Run Evaluation          │
│ (YAML)                   │   │                          │
└──────────────────────────┘   └──────────────────────────┘


──────────────── Recent Benchmarks ────────────────
#1243   READY      50 conv     [View] [Download]
#1242   FAILED     –           [View]
```

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2. Corpora List

pgsql

Copy code

```
╔═══════════════════════════════════════════════════════════╗
║                         CORPORA                           ║
╚═══════════════════════════════════════════════════════════╝

[ Upload New Corpus ]

──────────────────────────────────────────────────────────────
Name                 Status        Created at        Actions
──────────────────────────────────────────────────────────────
legal_docs_v1        READY         Jan 11, 2026      [View] [Delete]
inline_test_02       FAILED        Jan 10, 2026      [View]
product_specs        PROCESSING    Jan 09, 2026      [View]
──────────────────────────────────────────────────────────────

                    Page 1 / 4          < Prev | Next >
```

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3. Corpus Detail

yaml

Copy code

```
╔═══════════════════════════════════════╗
║              CORPUS DETAIL            ║
╚═══════════════════════════════════════╝

Name: legal_docs_v1
Status: READY
Created: Jan 11, 2026     Updated: Jan 11, 2026
Corpus ID: c_239012

[ Delete Corpus ]


──────────────── Corpus Summary ────────────────
Total files:      145
Successful:        145
Skipped:           0
Malformed:         0
Total chunks:      9,821

Raw Data:   [ Download ]

──────────────── Ingestion Report ──────────────
• No errors during ingestion.
• Indexed in 00:02:14.

──────────────── Related Benchmarks ────────────
```

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What Wireframes Are (and Aren’t)

Wireframes are:

- Structural
- Focused on layout
- About hierarchy and flow

Wireframes are not:

- Pixel-perfect
- Visual design

They exist to reduce ambiguity.

Think of them as drawing screens on a napkin.

Wireframe

2. Corpora List

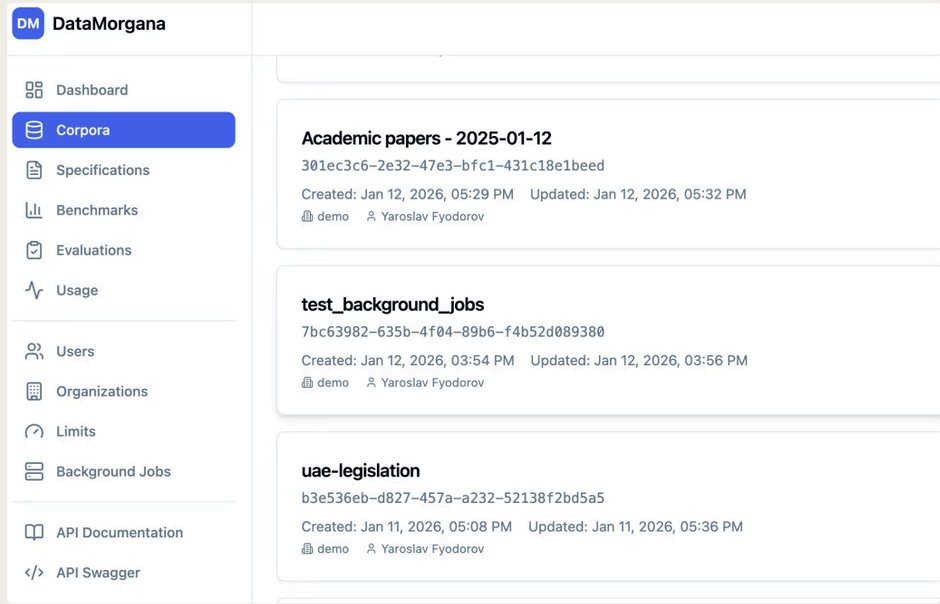
pgsql Copy code

```
╔═══════════════════════════════════════════════╗
║                    CORPORA                    ║
╚═══════════════════════════════════════════════╝

[ Upload New Corpus ]

──────────────────────────────────────────────────────────
Name              Status       Created at       Actions
──────────────────────────────────────────────────────────
legal_docs_v1     READY        Jan 11, 2026     [View] [Delete]
inline_test_02    FAILED       Jan 10, 2026     [View]
product_specs     PROCESSING   Jan 09, 2026     [View]
──────────────────────────────────────────────────────────
                  Page 1 / 4          < Prev | Next >
```

Reality



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Why Flow Diagrams Matter for AI

- Make state explicit
- Clarify transitions
- Act as shared memory
- Reduce hallucination

Mermaid diagrams work especially well.

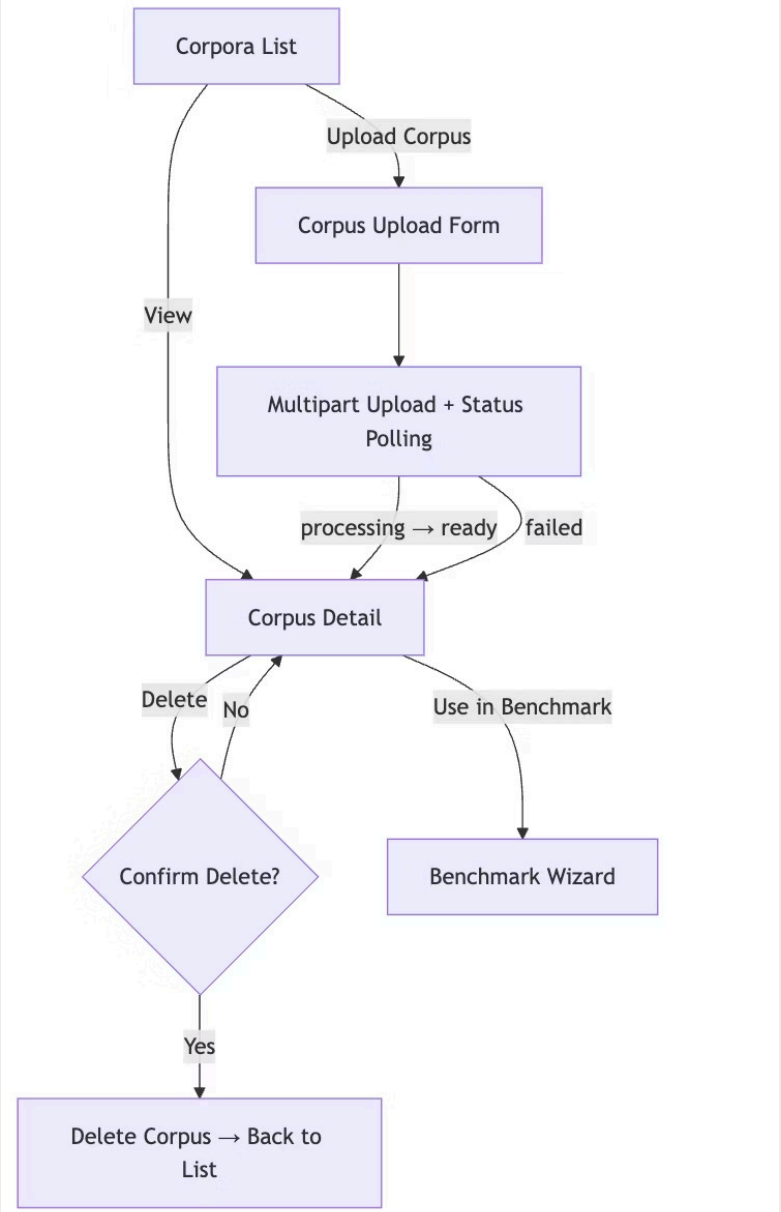
```
flowchart TD

C1[Corpora List] -->|View| C2[Corpus Detail]
C1 -->|Upload Corpus| C3[Corpus Upload Form]

C3 --> C4[Multipart Upload + Status Polling]
C4 -->|processing → ready| C2
C4 -->|failed| C2

C2 -->|Delete| C5{Confirm Delete?}
C5 -->|Yes| C6[Delete Corpus → Back to List]
C5 -->|No| C2

C2 -->|Use in Benchmark| BG1[Benchmark Wizard]
```



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Step 5: Choose Boring, Popular Tech

Typical choices:

- React + TypeScript
- TailwindCSS
- shadcn / MUI / Mantine

Not the best stack — the *most predictable* one.

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Ask not what your agent can do for you,

But what can you do for your agent

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Step 6: Scaffold First, Features Later

First prompt should generate:

- File structure
- Routing
- Layout
- Placeholder pages

No real business logic yet.

E.g. just build the infrastructure first. Filled with placeholders for later implementations.

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Create a web UI for this service. The requirements for the UI are described in the attached spec. The API is described in the file Data\ Morgana\ as\ a\ public\ service\ Oct\ 2025.md.
The web API spec is defined in dms_openapi.json

The stack needs to be:
React + TypeScript + Vite
TailwindCSS
Choose one of the component libraries MUI, Mantine, Chakra, shadcn/ui

Start with just laying out the basic file structure and building blocks that would allow the web UI to be used. Just a basic dashboard page without the rest of the app yet

Plan Auto

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Step 7: Implement One Feature at a Time

Example:

- `/corpora`
- `/corpus/:id`

Rules:

- Use only existing APIs. Explicitly ask it to refer to `opeapi.json`
- Follow established UI patterns

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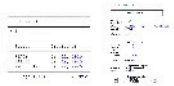

Implement the Web UI for the Corpus Management section. See the reference docuement at Data Morgana as a public service...

Some low fidelity Mockups found in list-corpora.jpg and in corpus-details.jpg

The available API is described at { } dms_openapi.json
Use only API that's available there, I want a working system. If some of the UI elements cannot be created then do not implement then and let me know.

Your goal is to hook into the exisign UI design under web-ui and use the same libraries and UI components there to create a consistent UI.
Focus your efforts now on `/corpora` and `/corpus/:id`

Plan Auto

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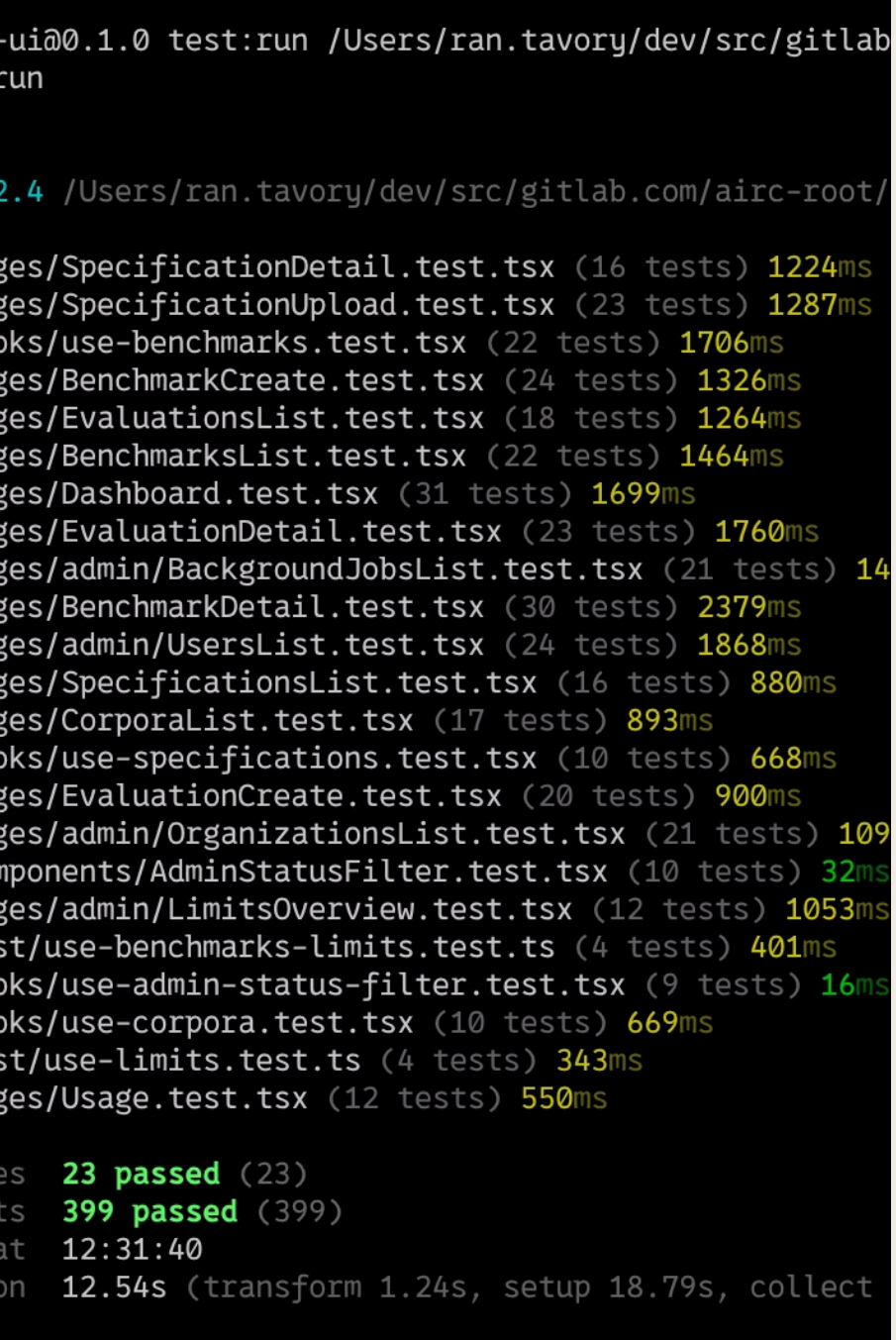

Step 8: Add Testing

- Discuss testing options first
- Add UI tests
- Manual sanity checks
- Lints

AI-generated code needs guardrails.

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What AI Coding agents need to succeed

- Clear, explicit **goals**
  - Product specs, wireframes, business rules
- Rich, concrete **context**
  - Technology stack, chosen libraries, existing codebase
- A reliable way to **verify** correctness
  - Automated tests are ideal

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What This Process Is Not

- Not fully automated
- Not zero thinking
- Not “prompt and pray”

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Conclusion

You’re not vibe coding.

You’re leading a team.

A team of junior, yet very capable coders.

If you instruct them clearly enough — they will succeed.

Actionable takeaway: write specs, not prompts. Specs are the guardrails that keep the model on track.

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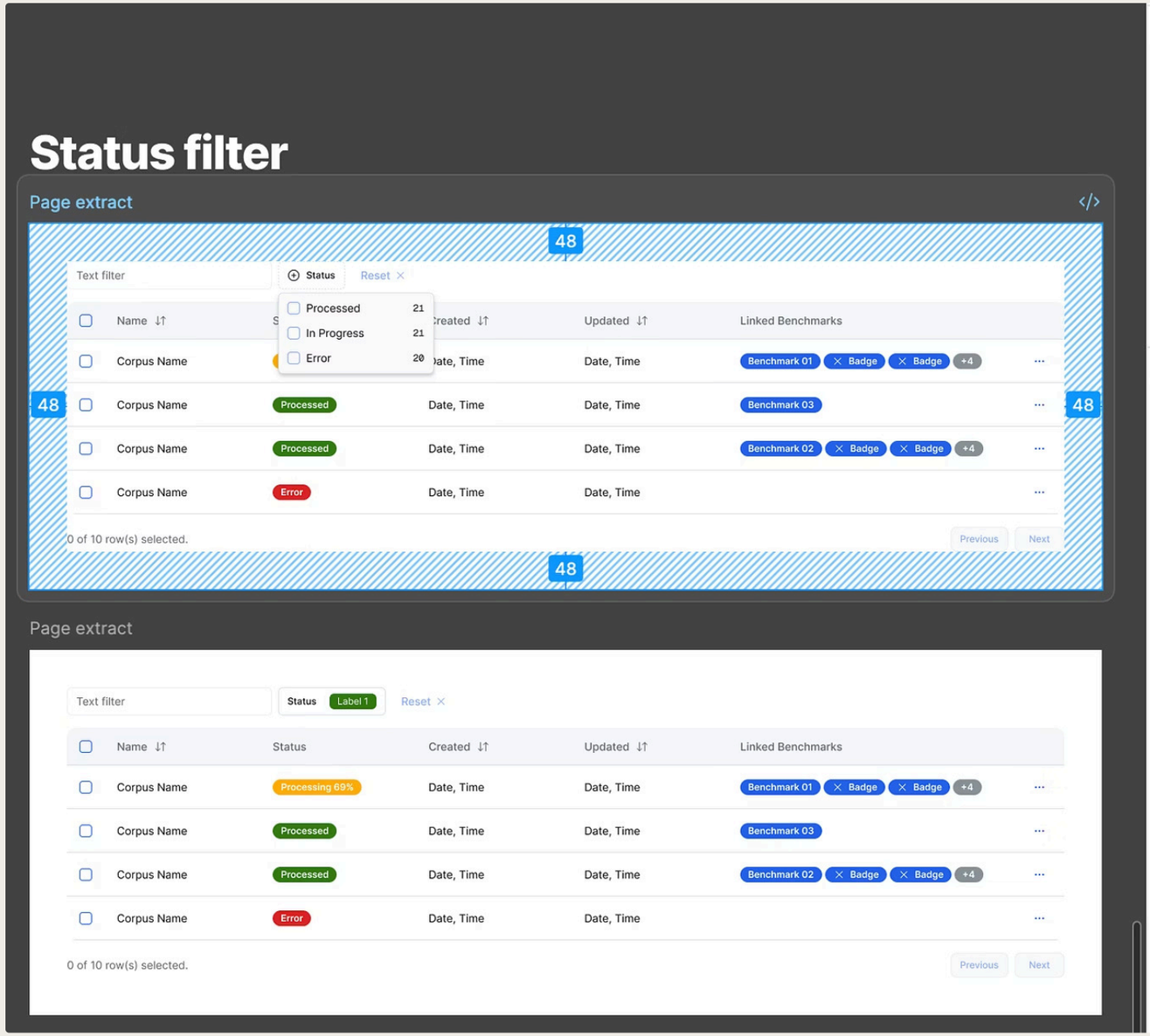
Working with Figma



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What's the future like?

Ralph?

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