Easel: A Canvas Assistant

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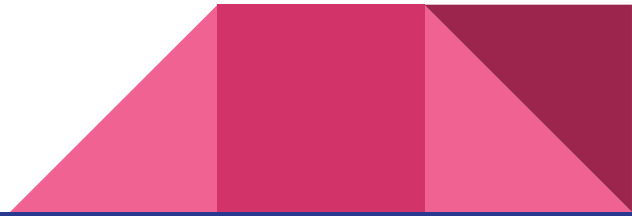
Problem Definition

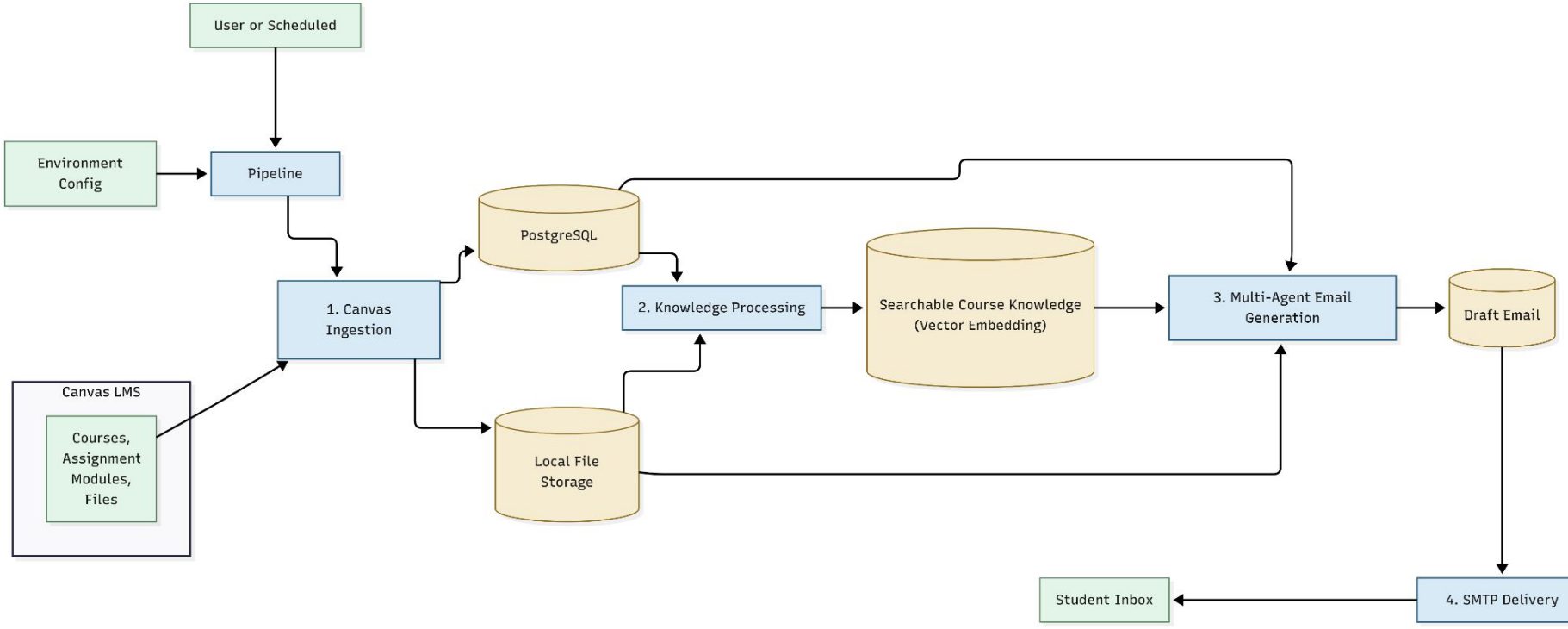
- Canvas consolidates course materials, but **information is fragmented** across many pages and modules & **inconsistently formatted**
- Students must **manually search** for assignments, deadlines, and updates each week
- **Time is wasted** on administrative navigation instead of actual learning or assignment work
- Important tasks can be overlooked or **misprioritized** due to dispersed information
- Students lack a centralized, time-aware weekly plan with effort estimates and ordering

Our Proposed Solution

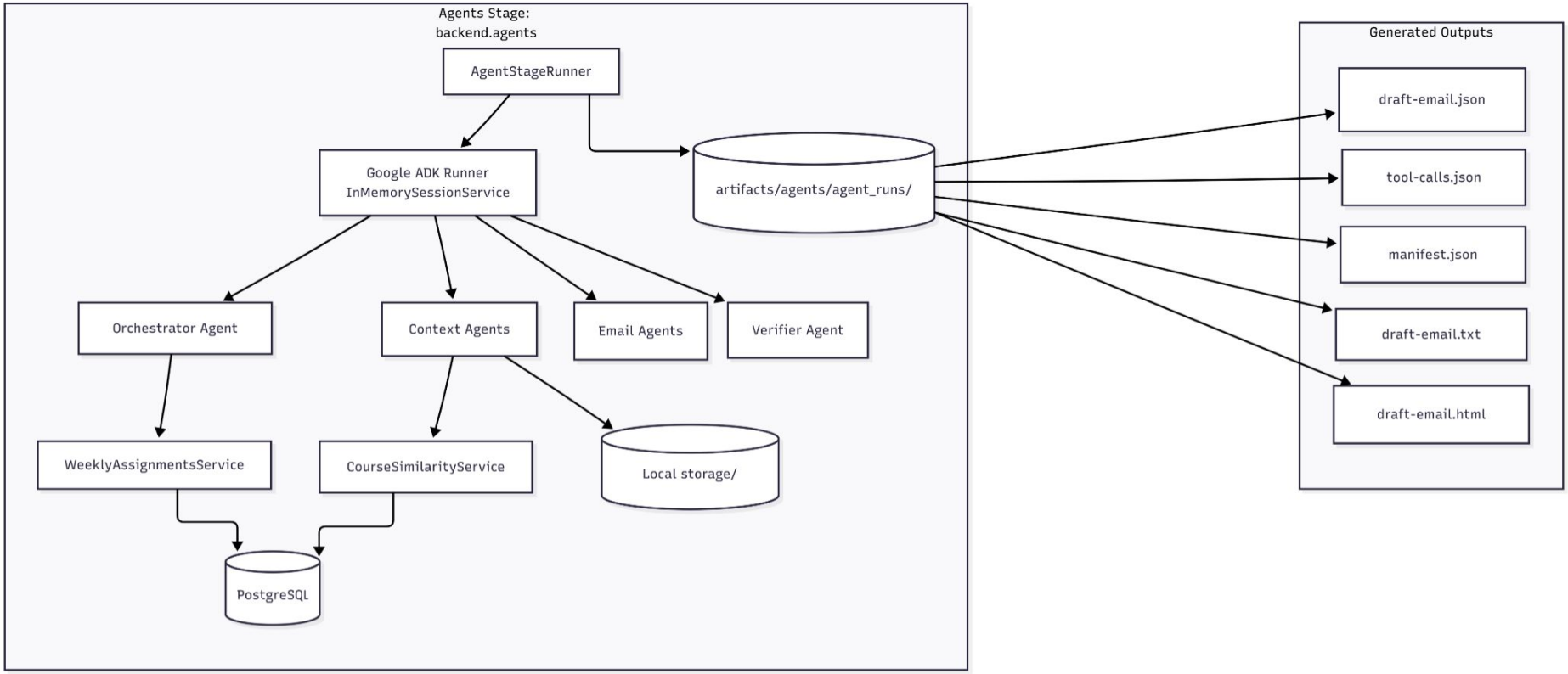
- Agentic system that transforms Canvas course data into a **weekly plan**
- Automatically ingests assignments, deadlines, and course materials
  - Canvas API
- Generates **structured weekly summaries** with prioritized task ordering and time estimates
- Sends students a weekly **email** with actionable plan and suggested workflow



System Architecture

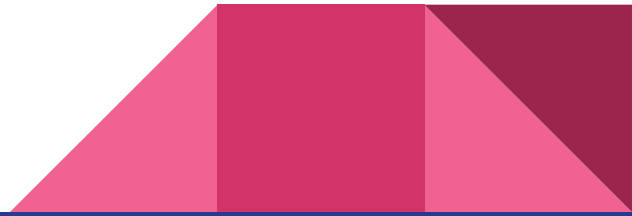


System Architecture - Agent Stage



Testing Validation

- Success rate: 100%
- Average latency:
  - Ingestion + Email Time: 300 seconds (5 min)
  - Ingestion Time: 90 seconds (1.5 min)
  - Chunking + Embedding Time: **7 seconds**
  - Email Time: 200 seconds (3.5 min)
- Average cost: **38 ¢**
  - Context Agent Model: Gemini 3 flash
  - Email Agent Model: **Gemini 3 Pro**
  - Verifier Agent Model: Gemini 3 flash
- Context Testing Harness
- Error categories
  - Free tier model rate limits
  - Naive similarity retrieval can make mistakes



Lessons Learned & Future Work

Lessons:

- The model used unsurprisingly pays a huge role in the output quality
- Excluding the cold start problem, embedding on fly is quite cheap/efficient

Future work may include…

- User-agent feedback and interactions via email
- Dashboard onboarding process instead of CLI
  - Full param customization
  - Prompt tuning
- Explore ways to eliminate the need for a VM
  - Can this be run reliably locally?
  - Could this be integrated into a github actions workflow?