

MICHIGAN STATE

UNIVERSITY

Project Plan Presentation Agentic Collaborator

The Capstone Experience

Team Ally

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*From Students...
...to Professionals*

Project Sponsor Overview

Ally Financial

- Headquartered in Detroit, Michigan
- Leading digital financial services company
- Known for innovation in banking, auto finance, and insurance services
- Recent focus on AI and machine learning to optimize internal operations



Project Functional Specifications

- Managing email threads with multiple collaborators makes tracking consensus challenging
- Large language models and AI agents make the task of understanding emails easier for corporate users
- Automate consensus building in email threads, visualize the consensus on a web application dashboard and develop a RAG pipeline to analyze data


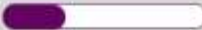








Project Design Specifications

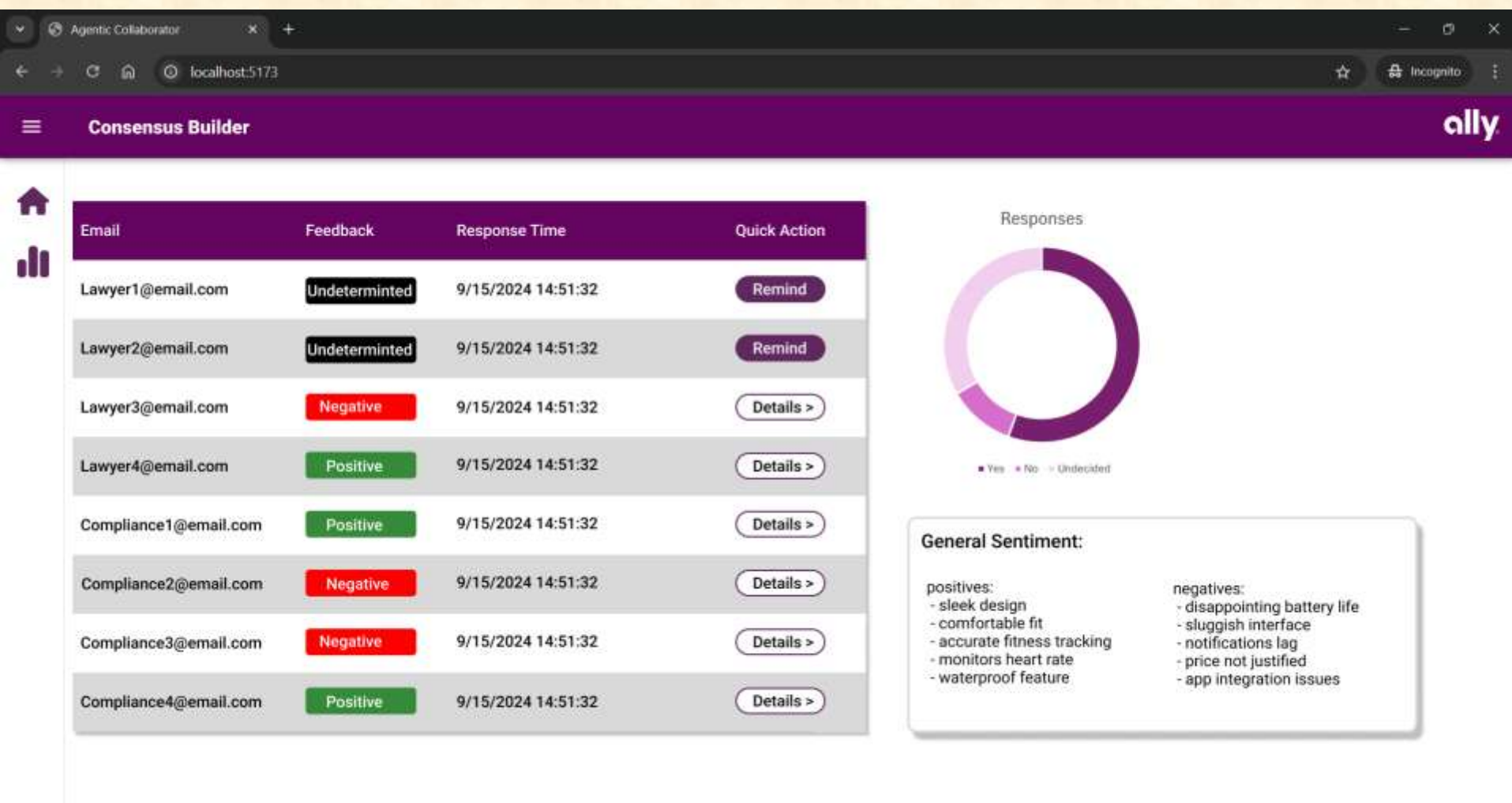
- Internal web application to simplify decision making
- Thread tracking page that displays current and past threads in a table
- Users flag a email thread in outlook using a custom widget
- Consensus building dashboard displays tables showing email, feedback, and a summary of positive and negative feedback



Screen Mockup: Multithread table

Thread ID	Title	Created Date	Status
XXXXXXXXXX	Title 1	09/16/24 16:39:21	 49%
XXXXXXXXXX	Title 2	09/16/24 16:39:21	 30%
XXXXXXXXXX	Title 3	09/16/24 16:39:21	 84%
XXXXXXXXXX	Title 4	09/16/24 16:39:21	 62%
XXXXXXXXXX	Title 4	09/16/24 16:39:21	 100%
XXXXXXXXXX	Title 5	09/16/24 16:39:21	 100%
XXXXXXXXXX	Title 6	09/16/24 16:39:21	 100%
XXXXXXXXXX	Title 7	09/16/24 16:39:21	 100%

Screen Mockup: Consensus Builder Dashboard



Screen Mockup: Activity Log

Agentic Collaborator localhost:5173 Incognito

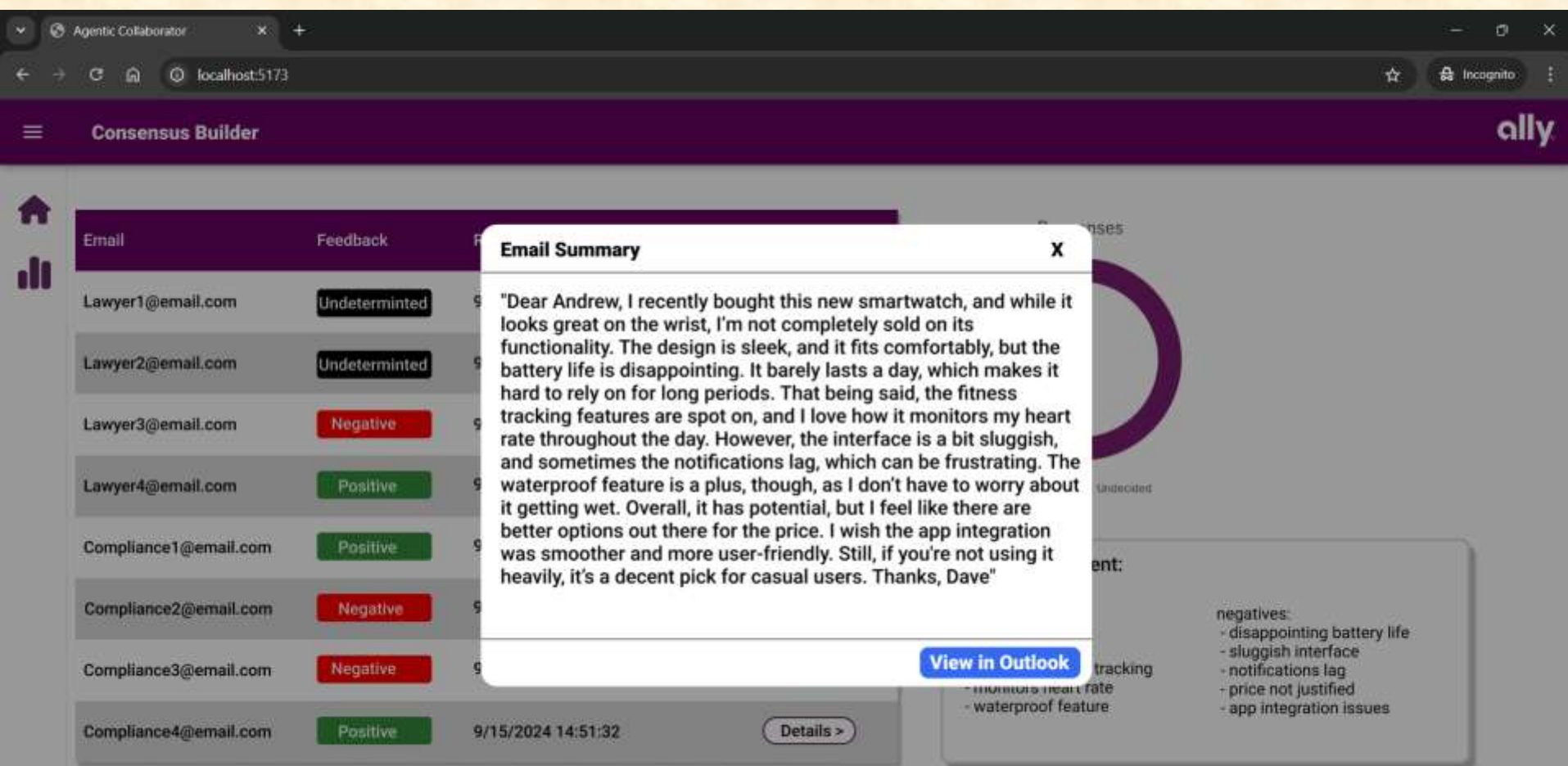
Activity Log

ally Clear Log

Thread ID ↑↓	Action Taken ↑↓	Time ↑↓	Affected User ↑↓	Agent ↑↓
XXXXXXXXXX	Consensus derived from Agent....	09/16/24 16:39:21	lawyer@email.com	Email Consensus
XXXXXXXXXX	Consensus derived from Agent....	09/16/24 16:39:21	lawyer@email.com	Email Consensus
XXXXXXXXXX	Consensus derived from Agent....	09/16/24 16:39:21	lawyer@email.com	Email Consensus
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XXXXXXXXXX	Consensus derived from Agent....	09/16/24 16:39:21	lawyer@email.com	Email Consensus

< 1 2 3 4 5 6 >

Screen Mockup: Email Summary Modal

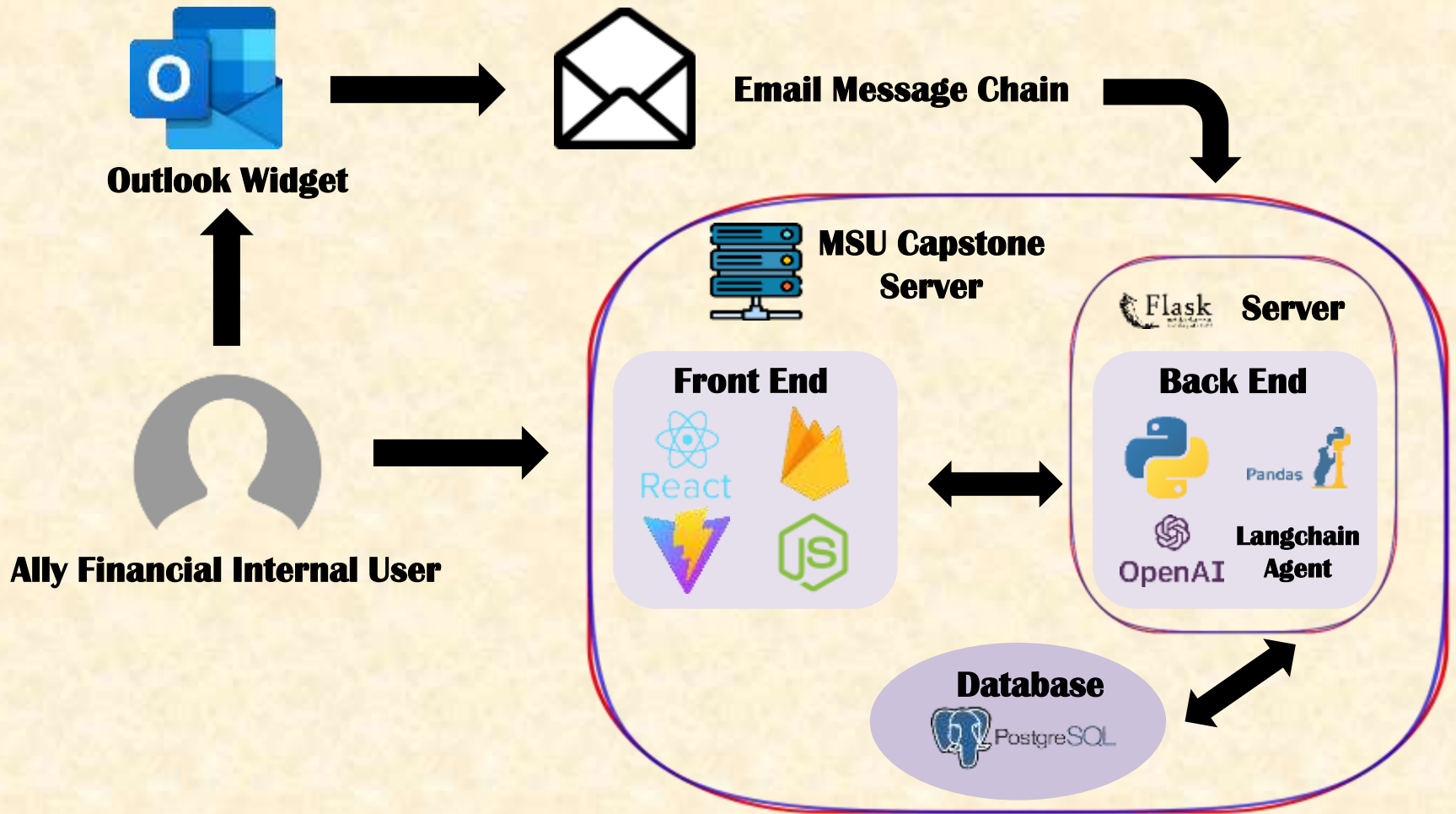


Project Technical Specifications

- Combination of an Outlook widget and a React web application
- Utilizes Python, OpenAI API, and PostgreSQL database with a Flask server for backend processes
- React for frontend, supported by Node.js
- Server Rack using to host all services
- LangChain provides a framework for building AI agents



Project System Architecture



Project System Components

- Hardware Platforms
 - Server Rack
- Software Platforms / Technologies
 - Flask
 - PostgreSQL
 - Google Firebase
 - LangChain/LangGraph
 - Python
 - React.js
 - Node.js



Project Risks

- Integration of insights into Outlook
 - What AI insights can be displayed directly in Outlook?
 - Develop experimental add-in with dummy data
- Email parsing
 - How can we consistently and accurately extract text from the email body and subject?
 - Create a mechanism that resorts to static parsing if model based parsing produces low-confidence results
- Opening specific emails from web app
 - Is it possible to open an email in outlook directly from web app?
 - Investigate outlook REST-API capabilities to understand whether limitations exists, develop a backup solution where web app provides a link
- Handling images in text focused attachments
 - Can we process images embedded within outlook attachments?
 - Assess images impact on the attachment context/use image processing tools like OCR software



Questions?

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