

# AI for Bharat Hackathon

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Team Name : Pro\_Nakn

Team Leader Name : Adithya Nangarath

Problem Statement : AI for Learning and Developer Productivity

## Brief about the Idea:

### Project Name: MindStack

**One-Line Pitch:** An AI-powered "Second Brain" that automatically captures, organizes, and retrieves your learning journey—whether you're debugging code, watching a tutorial, or reading a research paper.

**The Concept:** Humans forget ~70% of new information within 24 hours.

**MindStack** acts as a passive background layer that indexes your "learning moments" (code fixes, video tutorials, article highlights) and makes them instantly searchable, turning scattered information into permanent knowledge.

## How different is it?

- **Universal Ingestion:** It doesn't just look at code. It ingests **YouTube summaries, PDF highlights, Blog posts, and VS Code diffs.**
- **Context-Aware Recall:** Unlike generic AI (ChatGPT) which gives general answers, MindStack answers based on *what you have actually learned and saved* in the past.

## How will it solve the problem?

- It eliminates the need to "re-learn" the same concept twice. If a student learned a specific math formula or a developer fixed a bug 6 months ago, the system retrieves that exact context instantly.

## USP (Unique Selling Proposition)

- **Multi-Modal Learning:** Supports Video (YouTube), Text (Web/PDF), and Code (IDE).
- **Passive "Study Buddy":** No manual data entry required; it works in the background while you learn.
- **Privacy-First:** Your personal knowledge base remains private to you.

## List of Features

### The Knowledge Clipper (Browser Extension)

- *For Learners:* Summarize and save YouTube tutorials or articles with one click.
- *For Devs:* Save code solutions and documentation snippets.

### IDE Integration (VS Code)

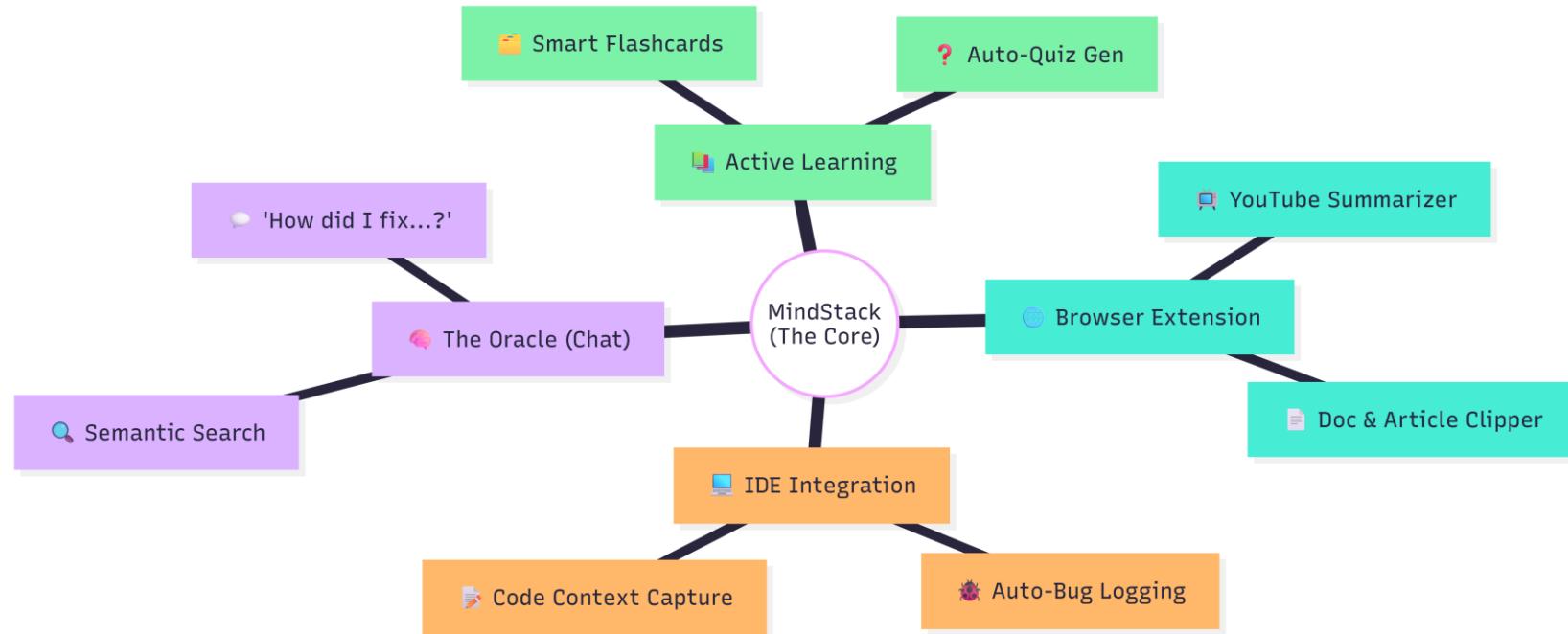
- Automatically captures code patterns, bug fixes, and successful compiles.

### The Recall Chatbot

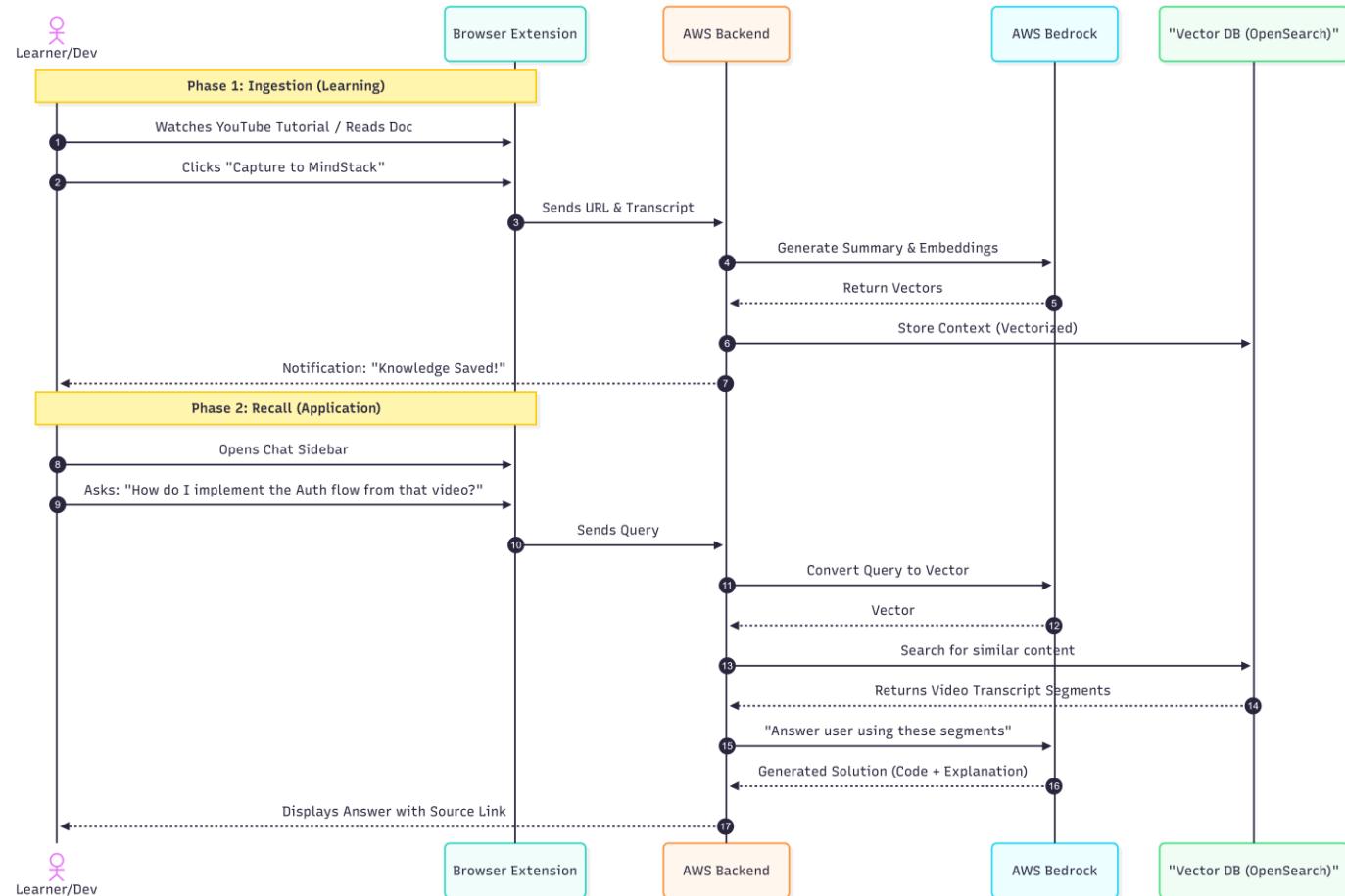
- A conversational interface where you can ask: "*What was that library I used for charts last month?*" or "*Summarize my notes on Thermodynamics.*"

### Smart Flashcards

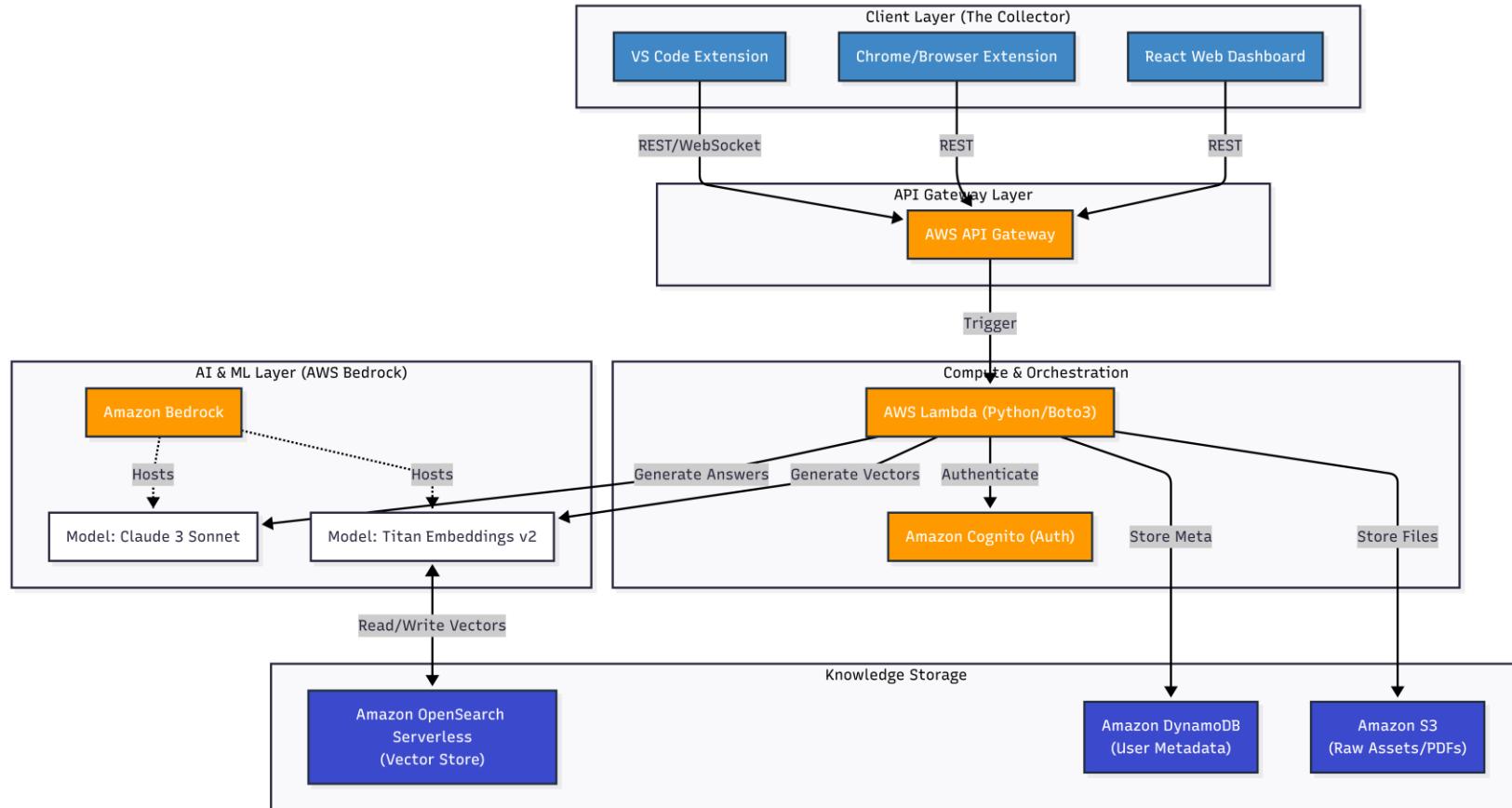
- Automatically generates quiz questions from your saved content to help you revise.



## Use Case diagram



## Architecture diagram



## Technologies to be used in the solution

**AWS Services:** Bedrock, Lambda, OpenSearch, API Gateway, S3.

**AI Models:** Claude 3 Sonnet, Amazon Titan.

**Frontend Frameworks:** React, Tailwind CSS.

**Development:** Python (Boto3), TypeScript.

## Estimated implementation cost

**Prototype:** Free (AWS Free Tier).

**Scale:** Cost-effective due to Serverless architecture.

- **Bedrock:** Pay-per-token (input/output).
- **OpenSearch:** Pay for storage/compute.
- **Est:** <\$5/user/month for heavy usage.

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