Sri SAI RAM ENGINEERING COLLEGE
An Autonomous Institution
West Tambaram, Chennai - 44
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HACKTRONIX1.0

DEPARTMENT OF ARTIFICIAL INTELLIGENCE & DATA SCIENCE

Problem Statement Category : Software

Problem Statement ID :

Project Title :

Team Name :

College Name : Saranathan College of Engineering

Team Lead Name :

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PROBLEM STATEMENT

Many **students** and **self-learners** struggle to maintain a **consistent** and **effective study schedule**. The main challenges they face include:

- Not knowing **what to study daily** – Lack of a structured plan leads to **confusion**.
- Wasting time **searching** for learning materials – Finding the right **resources** takes too long.
- **No personalized schedule** – Fixed learning plans do not match individual availability.
- **Losing track of progress** – Without proper tracking, learners **feel lost and frustrated**.
- Lack of practical exercises – Learning without **daily practice** reduces retention.

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PROPOSED SOLUTION

A smart AI-powered study planner that offers **self-learning students a guided**, **customized**, and **objective-driven study process**

- **Domain & Duration Selection** – Users select what they **wish to learn** (e.g., GATE, Web Development, Machine Learning) and the duration to finish it.
- **Personalized Daily Plan** – According to the **available time of the user,** creates a **tailored learning plan.**
- **Intelligent Content Delivery** – Relevant content such as **YouTube videos, articles, and notes** are assigned automatically.
- **Progress Monitoring** – **Tracks** user **progress** and **resumes** from the last unfinished topic.
- **Quizzes & Practical excercises** –Provides **practical exercises** or **questions** based on the **day's topic**, helping learners **strengthen understanding through hands-on practice**.
- **Gamification** & Achievements – Awards badges and ranks learners on leaderboards.
- **AI Chatbot** for Instant Doubt Resolution – Provides **real-time support** for questions.
- Smart **Notifications** & **Reminders** – Sends **alerts** to ensure users stick to their **schedules**.
- Customizable **User Experience** – Offers **dark** and **light modes** for better accessibility.
- **Dashboard** – Provides an overview of **learning progress, personalized study plans, performance analytics**

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TECH STACK

🖥️ Frontend

HTML, CSS, JavaScript – Core UI development

React.js – For dynamic, responsive interfaces

🌐 Backend

Python (Flask/Django) – API and AI integration

(Or Node.js with Express for JS-based backend)

🧠 AI & Machine Learning

Scikit-learn / TensorFlow / PyTorch – ML models

- Resource recommendation
- Progress prediction
- Personalized learning paths

spaCy / Transformers – NLP for chatbot and input processing

Adaptive Engine – Adjusts difficulty based on user performance

💾 Database

MongoDB / PostgreSQL – Stores user data, study plans, and AI insights

🔐 Authentication

Firebase Auth / JWT – Secure login and session management

🔍 APIs & Tools

YouTube Data API – Fetch study videos

OpenAI API (optional) – Chatbot, summarization

Google Custom Search API – Smart resource discovery

📈 Analytics

AI-based Progress Tracker – Monitors learning patterns

Chart.js / D3.js – Visualizes user progress

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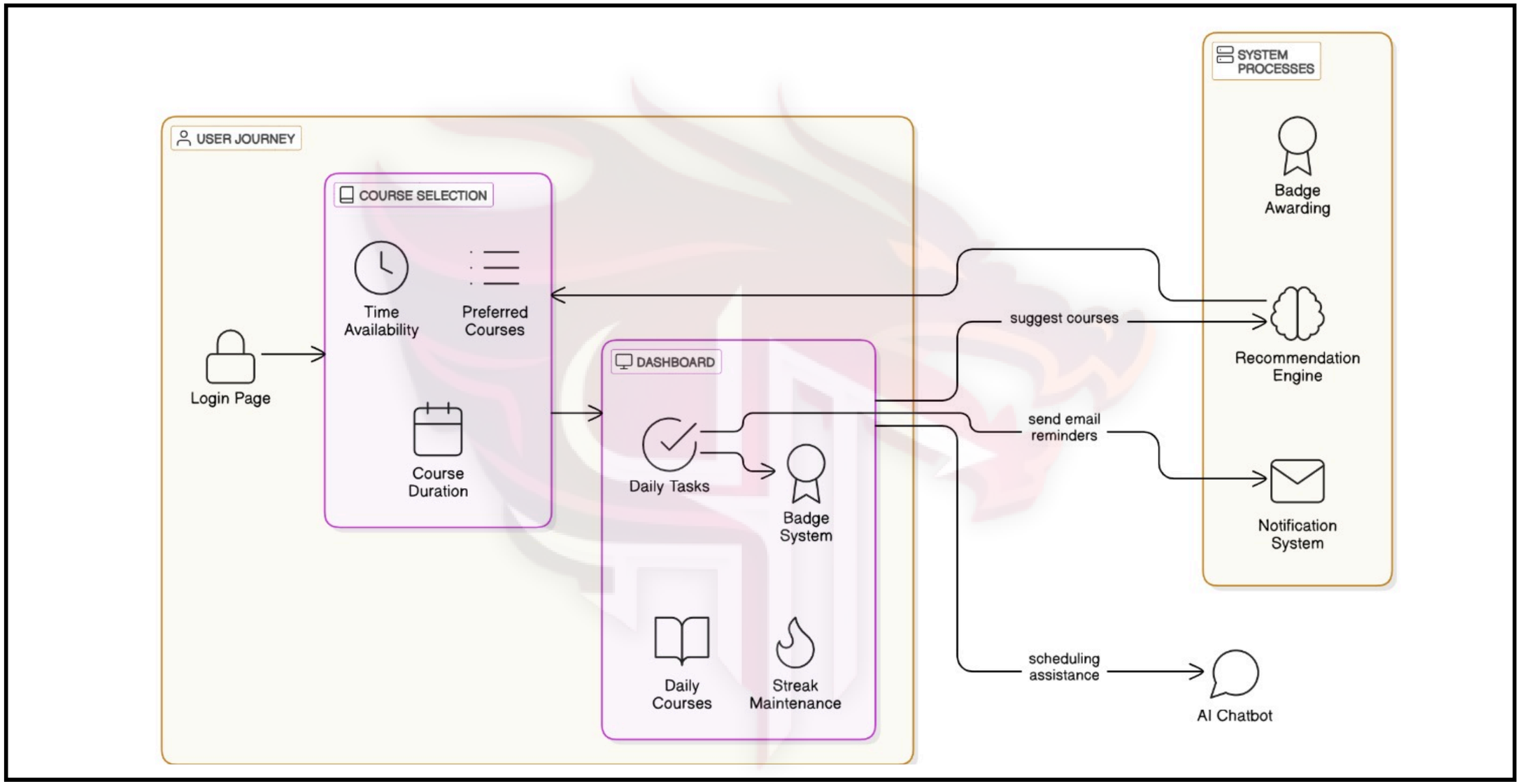
WORKFLOW



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RESULT/IMPACT

- Enabled students and self-learners to build consistent study habits, leading to improved retention and reduced procrastination.
- Users reported feeling more in control of their learning due to structured, trackable progress.
- The system's adaptability helped users recover missed days without falling behind, fostering a more forgiving and motivating learning environment.
- Time efficiency improved, as learners no longer spent hours finding the right materials — everything was organized and delivered based on their needs.
- Daily assignments led to stronger topic mastery, as users applied what they learned through real-world tasks and practice sets.
- Created a data-driven learning environment, offering insights into learning patterns, user engagement, and course effectiveness.
- Encouraged a shift from passive learning to active, outcome-oriented study, especially useful for competitive exam aspirants and goal-driven learners.

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