Project Proposal – Team 2

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# **Project Title**

## **Project Overview**

Our project is a dynamic web application that enables users to track and engage with topics relevant to their interests through customizable widgets. Each widget provides AI-driven insights that include content summarization, intelligent recommendation, and topic based suggestions, ensuring that users stay informed without information overload.

## **Project Scope**

* **Customizable Widgets:** Users can personalize widgets to follow specific topics, sources, or keywords.
* **AI Summarization:** Automated content summarization that helps users quickly grasp key points.
* **Recommendation System:** AI-driven suggestions provide related articles, discussions, or content based on user preferences.
* **Real-time Updates:** Widget dynamically fetch and display the latest insights.
* **User-friendly Interface:**  Intuitive design allows seamless widget management and interactions.

## **Project Objectives**

* Develop an Interactive Widget System which allows users to create, configure, and interact with widgets that track specific topics.
* Integrate AI Summarization which leverage NLP techniques to condense long-form content into digestible summaries.
* Build a Recommendation System use machine learning to suggest relevant content based on user behavior and preferences.
* Implement secure data handling and protect user preferences and history with proper authentication and encryption.

## **Specifications**

#### *User Interface (UI) Design*

· Our platforms will be web and mobile

· Describe the key screens/pages and their purpose.

* There will be a main page that will consist of widgets
* There will be an introduction screen that greets the user to the application

· List any user interaction elements (buttons, menus, forms).

#### *Backend & APIs*

· Outline the database and API structure.

* The database will either be Firebase, PostgreSQL, or MongoDB

· Specify authentication and security considerations.

* We’re considering using Google’s authentication service if we use Firebase

## **Tech Stack**

· **Frontend:** React

· **Backend:** Spring Boot/Maven

· **Database:** Firebase or PostgreSQL

· **AI:** OpenAI, Claude, DeepSeek

· **Cloud & Hosting:** AWS, GCP, or Linux

## **Hardware Requirements**

* Our own computers with IDEs installed such as VS Code or IntelliJ
* We’re also considering using the university’s linux computers or AWS

## **Software Requirements**

* Frontend
  + HTML
  + Javascript
  + CSS
  + React
  + Next.js
* Backend
  + Java 17 (LTS)
  + Spring Boot (Light Weight Java Framework)
  + Maven (Dependency Management Tool)
* Database:
  + PostgreSQL
  + Firebase
* Deployment
  + Git (Version Control)
  + Github (Cloud Hosting for Repository)
  + Jenkins (CI/CD tool)
  + Docker (Containerization)
  + AWS/ Azure / GCP (Cloud Deployment options)
* Security:
  + OAuth
  + JWT
* Testing
  + JUnit (Unit Testing)
  + Postman (API testing)

## **Project Timeline**

| **Phase** | **Duration** | **Tasks** | | |
| --- | --- | --- | --- | --- |
| **Front end** | **Back end** | **General** |
| Phase 1 | February 7 - February 14 | Define scope, research, and setup | | |
| Phase 2 | February 14 - March 14 | UI/UX design, data collection, API setup | | |
| Phase 3 | March 14 - April 18 | Development and initial implementation | | |
| Phase 4 | April 18 - May 2 | Testing and integration | | |
| Phase 5 | May 2 - May 8 | Final testing, deployment, and presentation | | |

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## **Project Team**

| **Role** | **Team Member** | **Responsibilities** |
| --- | --- | --- |
| Frontend Developer | Aamir, Aidan | UI/UX development |
| Backend Developer | Brandon, Aidan, Aisha | API & Database |
| QA Tester | Vijay, Aidan | Testing & validation |
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## **Links**

· **GitHub Repository:** <https://github.com/BrandonMDallas/CS-4485-Project>

· **Agile Board:** [Backlog · CS 4485 Project](https://github.com/users/BrandonMDallas/projects/1/views/1)

· **Design Document:** FIGMA LINK: <https://www.figma.com/design/Bxy3ni7EFyz97U8cDVtWUh/Untitled?node-id=0-1&m=dev&t=WoYZNwZfNtXsaLHr-1>