BANNARI AMMAN INSTITUTE OF TECHNOLOGY
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Stay Ahead

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DEPARTMENT   **:** ECE

PROJECT TITLE **:** *Content Recommendation Engine for Blogs: Technical Assessment*

TECHNICAL COMPONENTS:

Components	Technical Stack
Frontend	React (Vite), Tailwind CSS, Redux
Backend	Node.js Express.js
Data Base	MongoDB
Authentication	JWT

PROBLEM STATEMENT :

Create an engaging blog platform that leverages AI to recommend personalized content to users based on their reading history and selected interests. The solution should be full-stack, including user authentication, blog management, and AI-driven content recommendation, within a short development timeframe.

PROJECT - DETAILS :

Purpose :

The purpose of the project is to build a smart blog platform where users can read and write blogs, while an AI engine recommends content tailored to each user's preferences. This improves content discovery, engagement, and user satisfaction.

Scope :

The platform includes:
- User registration and login system with JWT
- Separate roles for readers and writers
- Blog creation and tagging features
- AI-powered content processing and recommendations
- User dashboards with analytics and engagement stats

Business context :
This system can be scaled for use in real blogging platforms, educational portals, or internal knowledge-sharing tools. By delivering personalized content, it boosts time-on-site, user satisfaction, and return visits.

Considerations :

- The recommendation system should be efficient and scalable
- The user interface should be fast and intuitive
- Blog content must be matched to extract meaningful vectors
- Recommendation scoring must consider both history and stated interests

Dependencies :

The successful implementation of the portal relies on the availability of a secure login system using college email credentials, integration with the college's existing infrastructure, and support from the management team to review and address grievances.

User Personas:
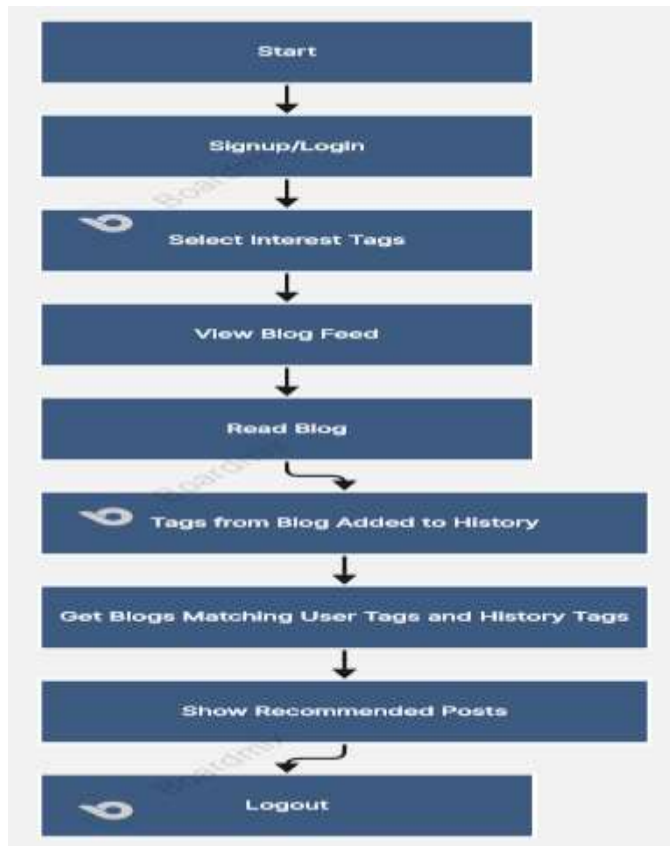
- Reader
- Creator

User Stories:

1. As a reader, I want to receive blog recommendations based on my interests and what I've read.

2. As a writer, I want to create and tag blog posts to help them reach the right readers.

3. As a reader, I want to see my reading history and engagement stats on a dashboard.
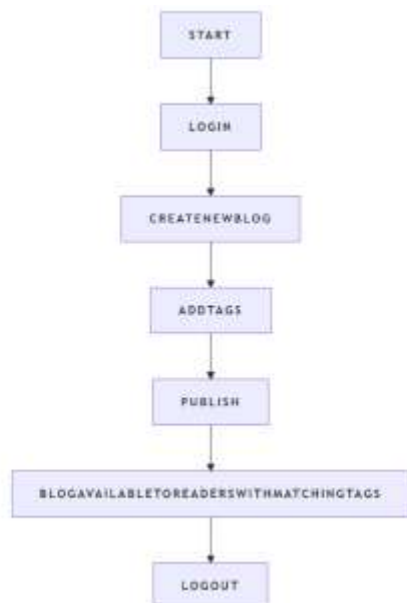
Functional Requirements:

- **User Authentication**: Secure signup and login using JWT, separate access for readers and writers

- **Interest Selection**: User selects preferred interest tags during signup or from profile

- **Blog Management**: Writers can create, edit, delete blog posts with multiple tags

- **Tag-Based Recommendation System:**
  - Recommendations fetched by matching user interest tags and read blog tags

- **Reading History:** Track which blogs a user has read and factor tags into recommendations

- **Dashboard:**
  - **Reader:** View recommended blogs and history
  - **Writer:** View created blogs and interaction stats

FLOWCHART:

Reader Flowchart :

Creator Flowchart:

ER DIAGRAM: