Development of a Digital Library Management System for AAU

PRESENTED BY

Biniyam Moges

Project Overview

The goals of the Development of a Digital Library Management System for AAU

- ✓ To create a user-centered platform
- ✓ To create a unified platform
- ✓ To enhance academic productivity and accessibility

Introduction to Digital Libraries

The goals of the Development of a Digital Library Management System for AAU

✓ To enhance accessibility and usability for students at AAU

✓ To transform the academic experience through modern technologies

Problem Statement

The current state of the Digital Library at AAU

- ✓ The library is fragmented and difficult to navigate
- ✓ This leads to frustration among users
- ✓ It causes reduced academic productivity
- ✓ A unified platform is essential for improvement

Project Objectives

CENTRALIZED PLATFORM

The project aims to establish a **centralized online platform** that consolidates all digital resources, ensuring seamless access for users across various departments and faculties at AAU.

FUNCTIONAL LOAN SYSTEM

The system will implement a **functional loan system** with clear service descriptions, enabling users to borrow materials efficiently while ensuring transparency in the borrowing process.

SEARCHABLE CATALOG

A comprehensive **searchable catalog** will be developed, allowing users to easily locate books, journals, and other materials, significantly enhancing their research and study experience at AAU.

AI-BASED RECOMMENDATIONS

By integrating **AI-based recommendations**, users will receive personalized suggestions based on their interests and usage patterns, fostering a more engaging and tailored academic experience.

Justification for Development

This project is essential due to:

- ✓ Inefficiencies in AAU's current digital library system.

- ✓ Aiming to enhance academic experiences.

- ✓ Support accessibility for all users.

Agile Phases

REQUIREMENTS

Gather user requirements and define project specifications through stakeholder engagement and initial planning sessions.

DESIGN

Create wireframes and prototypes, focusing on user experience and interface design based on collected requirements.

IMPLEMENTATION
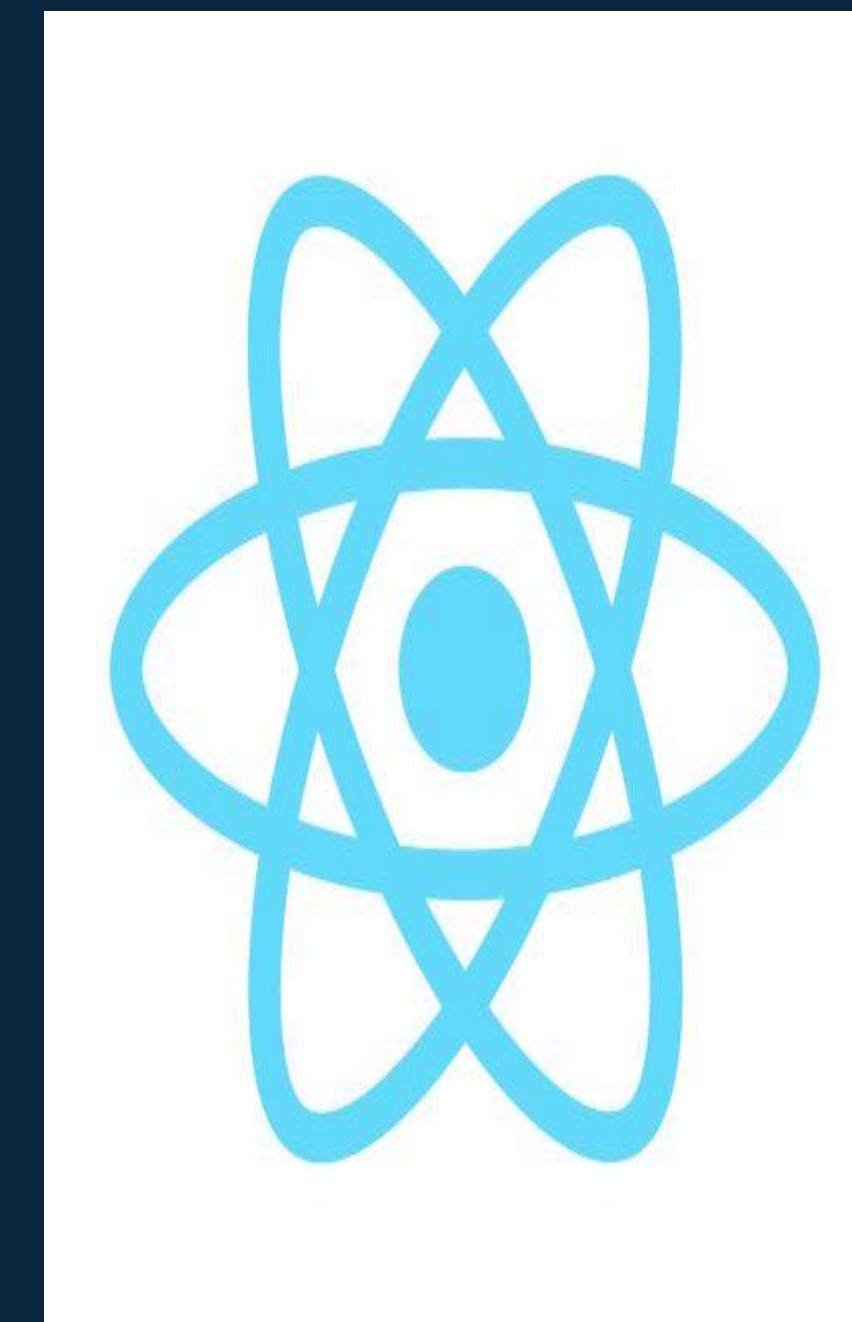
Develop the system according to design specifications, followed by rigorous testing to ensure functionality and user satisfaction.

# Tools and Technologies
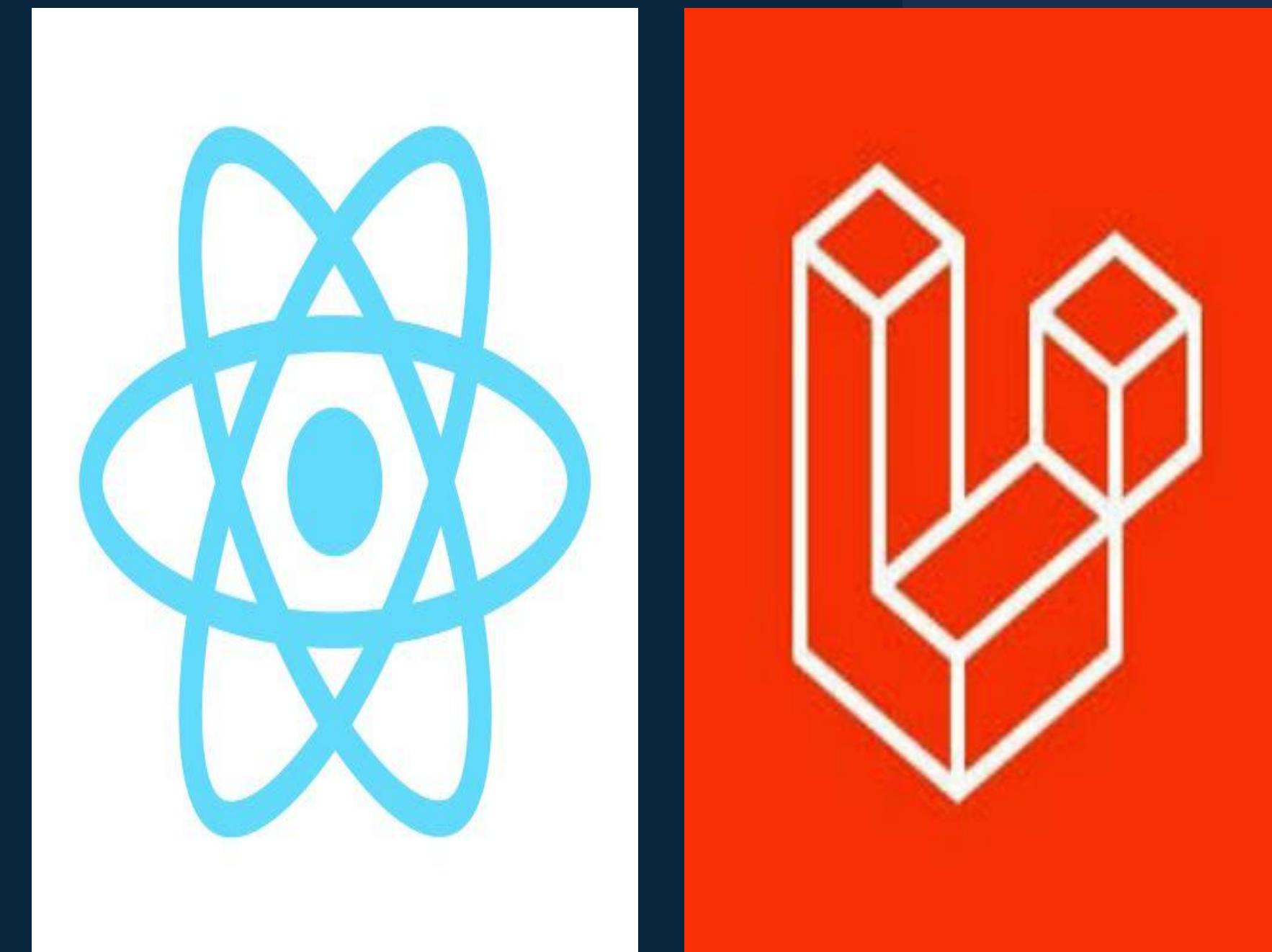
FRONTEND TECHNOLOGY

React.js

BACKEND TECHNOLOGY

Laravel (PHP)

DATABASE TECHNOLOGY

MySQL

Data Collection Methods

SURVEY FORMS

Gathering insights
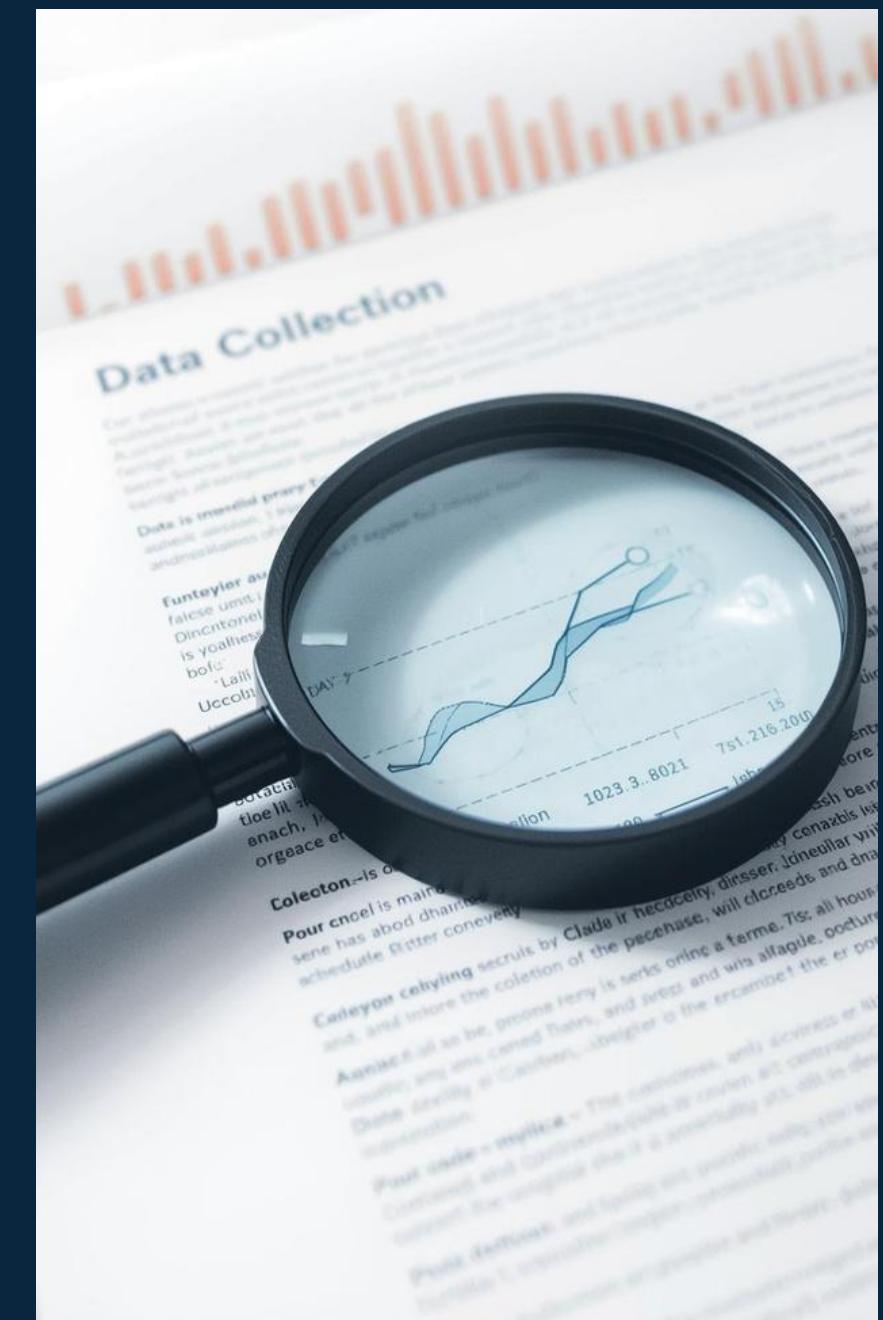
GROUP DISCUSSIONS

Collaborative feedback

MAGNIFYING GLASS

Detailed analysis

Project Scope

The **inclusions** and **exclusions** of the Digital Library Management System project, ensuring clarity on what will be delivered and what is outside the project's scope.

In Scope

- ✓ Development of a centralized digital library web platform that consolidates all electronic resources and services.

- ✓ Implementation of a functional book and journal search system with filtering and categorization capabilities.

- ✓ Integration of personalized recommendations and AI-assisted search for improved content discovery.

- ✓ Design of an accessible and user-friendly interface, compliant with accessibility standards for users with disabilities.

- ✓ Creation of a basic loan and borrowing management system to streamline requests and returns.

- ✓ Development of usage analytics dashboards to help administrators monitor and improve library performance.

Out of Scope

- ✓ Integration with external library networks or third-party databases beyond AAU's current holdings.

- ✓ Physical infrastructure upgrades or digitization of printed materials.

- ✓ Comprehensive mobile application development (a responsive web version will be provided instead).

- ✓ Long-term maintenance or post-deployment technical support beyond the pilot phase.

- ✓ Implementation of complex AI features such as natural language chatbots beyond the initial prototype stage.

Project Timeline
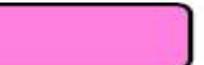
|	Week 1 – 2	Week 3 – 5	Week 6 – 7	Week 8 – 9	Week 10 – 12	Week 13 – 14	Week 15 – 16	Week 17 – 18
Planning and Requirement Definition	▰							
Core System Setup and Design		▰						
Resource Management Module			▰					
Loan and User Management Module				▰				
Personalization and AI Features					▰			
Accessibility and Analytics Enhancement						▰		
Integration, Testing and Pilot Deployment							▰	
Evaluation, Documentation and Final Reporting								▰

Figure : *Gantt Chart* (Agile Timeline Overview).

Budget

Total Development Resources

Category	Description	Estimated Cost (ETB)
Development Resources	Basic compensation for developers and testers	100,000
Software & Tools	Web hosting, domain registration, and premium API or design tool subscriptions	7,000
AI & Integration Resources	Small-scale model training, cloud compute credits, or API integration fees	10,000
Research & Data Collection	Surveys, interviews, user testing logistics, and data preparation	3,000
Maintenance & Miscellaneous	Documentation, printing, minor updates, and contingency	2,000
Total Estimated Cost		**122,000 ETB**

Thank you !