SkillForge: AI-Driven Adaptive Learning and Exam Generator

Milestone Presentation

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Project Type: Individual Project

Project Introduction

SkillForge is a full-stack e-learning web application designed to deliver personalized education and intelligent assessments using Artificial Intelligence.

The platform focuses on structured learning, performance tracking, and adaptive exam generation to improve student outcomes.

Problem Statement

Lack of Personalization

Traditional platforms offer one-size-fits-all content

Static Course Structures

Rigid learning paths that don't adapt

Manual Exam Creation

Time-consuming assessment development

Limited Performance Tracking

Insufficient insights into student progress

These limitations reduce learning effectiveness and student engagement.

SkillForge aims to solve these challenges by introducing role-based access, automation, and AI-powered learning models.

Project Objectives

To design and develop a smart learning platform that:

- **Supports role-based user access**
- **Provides structured and adaptive learning paths**
- **Tracks learning progress effectively**
- **Generates intelligent exams**
- **Simplifies course and content management**

User Roles and Responsibilities

Student

- Secure registration and login
- Access to personal learning dashboard
- Progress tracking and course access

Instructor

- Course creation and content management
- Monitoring student performance
- Updating learning materials

Admin

- User and system management
- Monitoring platform performance
- Managing permissions and system controls

Current Implementation Status

The following components have been successfully implemented:

- Responsive homepage design
- Login and signup system
- Role-based authentication logic
- Separate dashboards for Student, Instructor, and Admin
- Navigation bar with smooth scrolling
- Local storage-based session management

Technology Stack

Frontend Technologies

- HTML5
- CSS3
- JavaScript

Planned Technologies

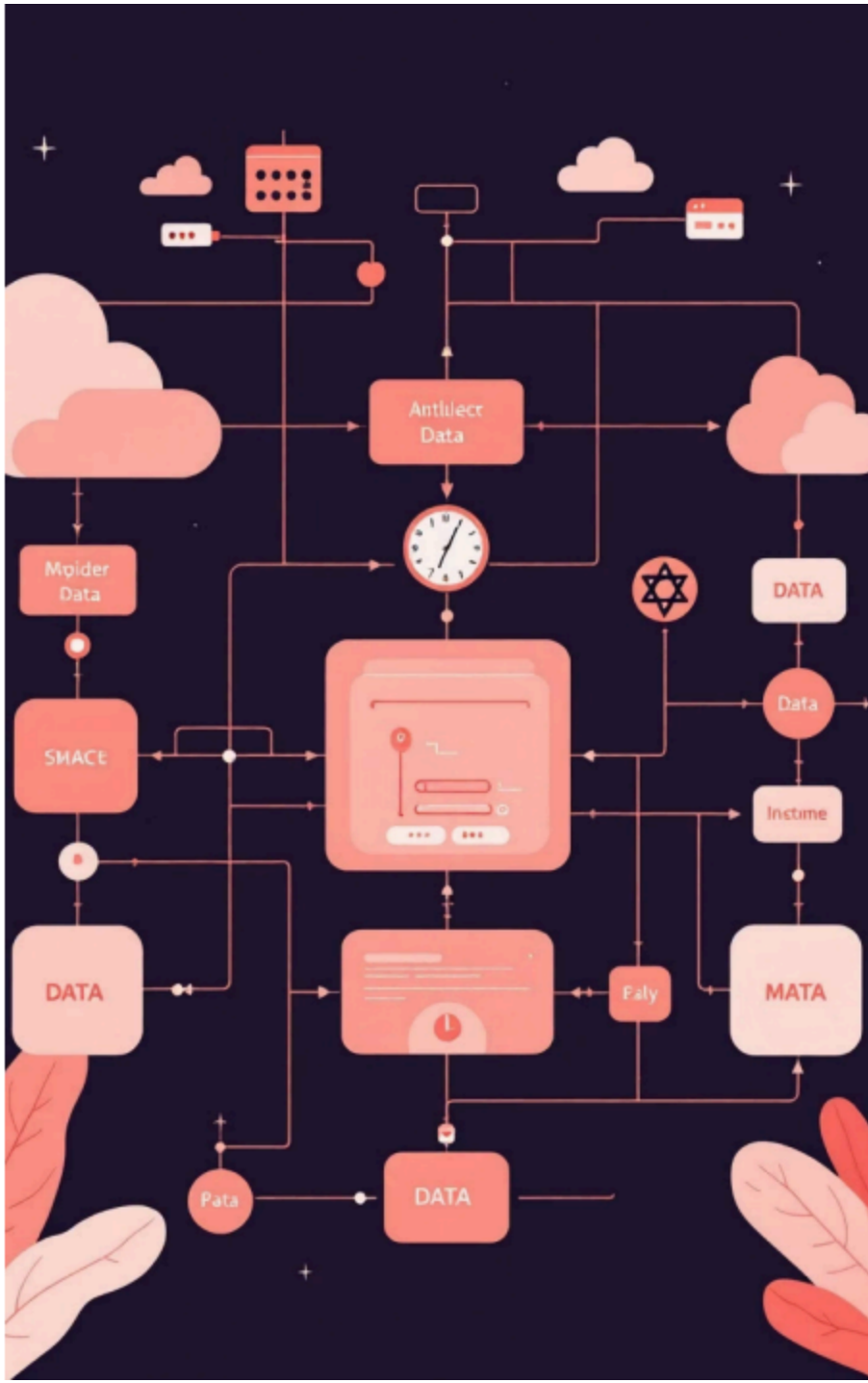
- Java with Spring Boot Framework
- Database Management System
- Python-based AI models

System Architecture

Overview

1. **User Interface (Browser)**
2. **Frontend Logic (HTML, CSS, JavaScript)**
3. **Planned Backend APIs (Spring Boot)**
4. **AI Engine for adaptive learning and exams**

This architecture ensures scalability, security, and modular design.



Sprint Planning and Backlog (Individual Work)

Sprint Goals (Self-Planned):

- Designed homepage UI
- Implemented authentication system
- Created role-based dashboards
- Built navigation structure

Backlog Management:

- Maintained personal task list
- Followed phase-wise development
- Reviewed completed tasks regularly

Personal Development Process

Development Process Followed:

Self-planned daily work schedule

Regular GitHub commits

Feature-wise implementation

Manual testing after each functionality

GitHub was used to manage versions and track project progress.

THANKYOU