



AI POWERED TUTORING SYSTEM

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TABLE OF CONTENTS

01 **Project overview & Objectives**

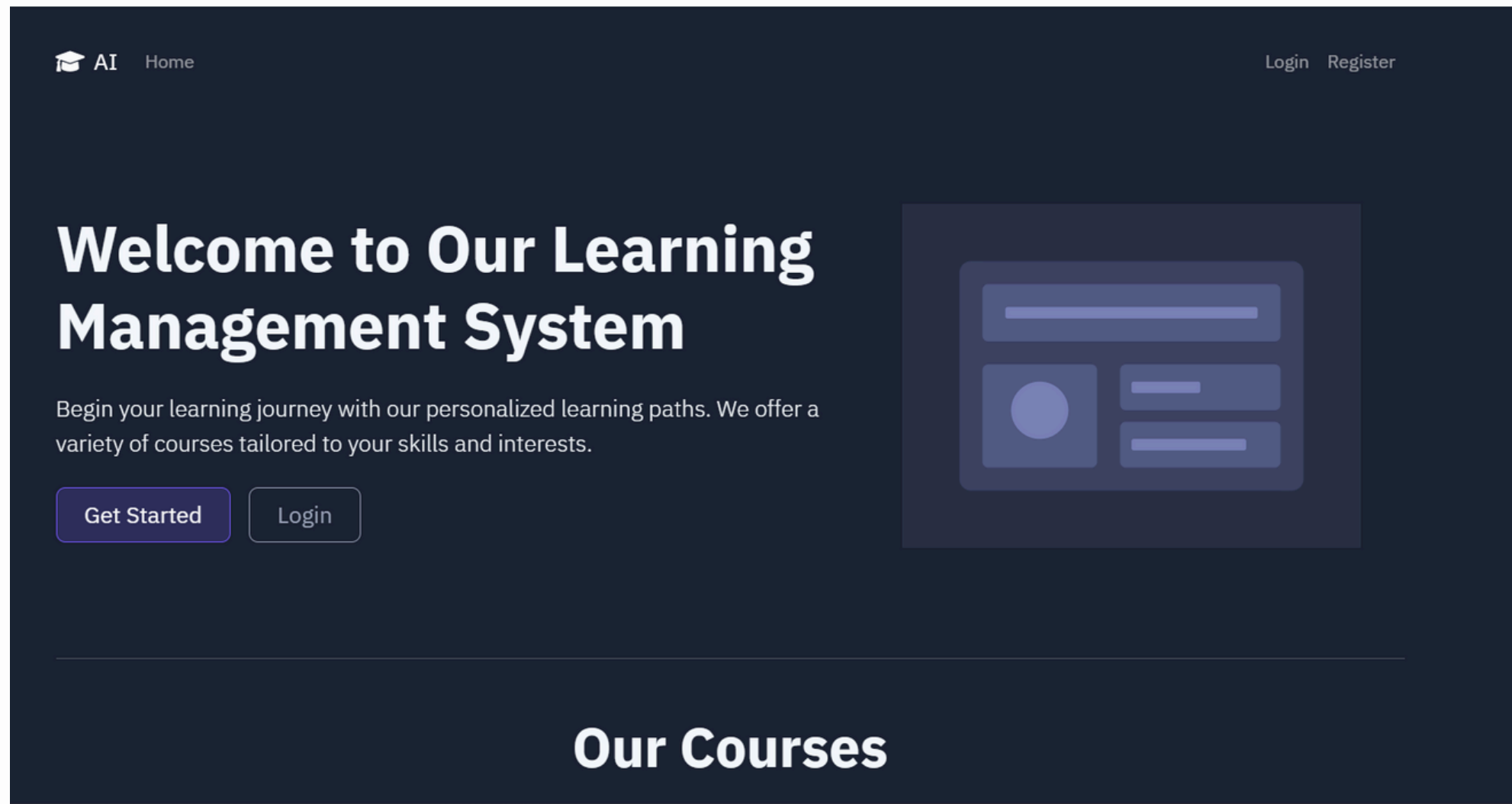
02 **Technologies used**

03 **System Functionalities**

04 **Output (Project Display)**

05 **Performance & Scalability**

06 **Problems Solved**

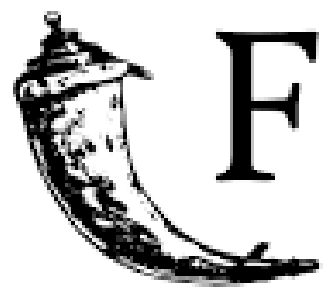


Project Overview

The AI-Powered Tutoring System is an intelligent learning platform that personalizes education using AI. It features adaptive learning paths, intelligent assessments, real-time feedback, and an AI chatbot to enhance engagement and efficiency. Built with Flask, JavaScript, and AI models, it dynamically adjusts content based on student performance. Optimized for scalability and smooth performance, it ensures a seamless learning experience. Future enhancements include voice-enabled tutoring, multilingual support, and advanced analytics, making digital education more interactive and effective.

- **Key features:** Adaptive learning, AI-generated assessments, and chatbot.

Technologies Used



Flask



SQLite

HTML



CSS



JS



To ensure a robust, scalable, and intelligent learning experience, the system is developed using advanced technologies across various domains.

- **Frontend Technologies:** HTML, CSS, JavaScript, Jinja2
- **Backend Technologies:** Flask, SQLite, Flask-Login
- **AI & Machine Learning Components:** NLP (AI chatbot, question generation), ML (personalized recommendations)
- **Data Processing:** Pandas, NumPy, Scikit-learn



System Functionalities

- 01 Adaptive Learning Pathways**

The system starts with an initial assessment to define a personalized learning track. Learners begin at an appropriate module, can skip familiar topics, and are redirected to previous modules if they struggle, ensuring effective learning.
- 02 Recommendation System**

AI suggests courses, alternative learning paths, and additional study materials based on performance. It provides personalized resources to reinforce understanding and improve retention.
- 03 Chatbot Integration**

An AI-powered chatbot provides instant query resolution, personalized guidance, and interactive support using NLP. It assists with concept clarification, module navigation, and course recommendations while tracking progress and suggesting remedial actions. This 24/7 virtual assistant enhances engagement and learning efficiency.
- 04 Assessment Engine**

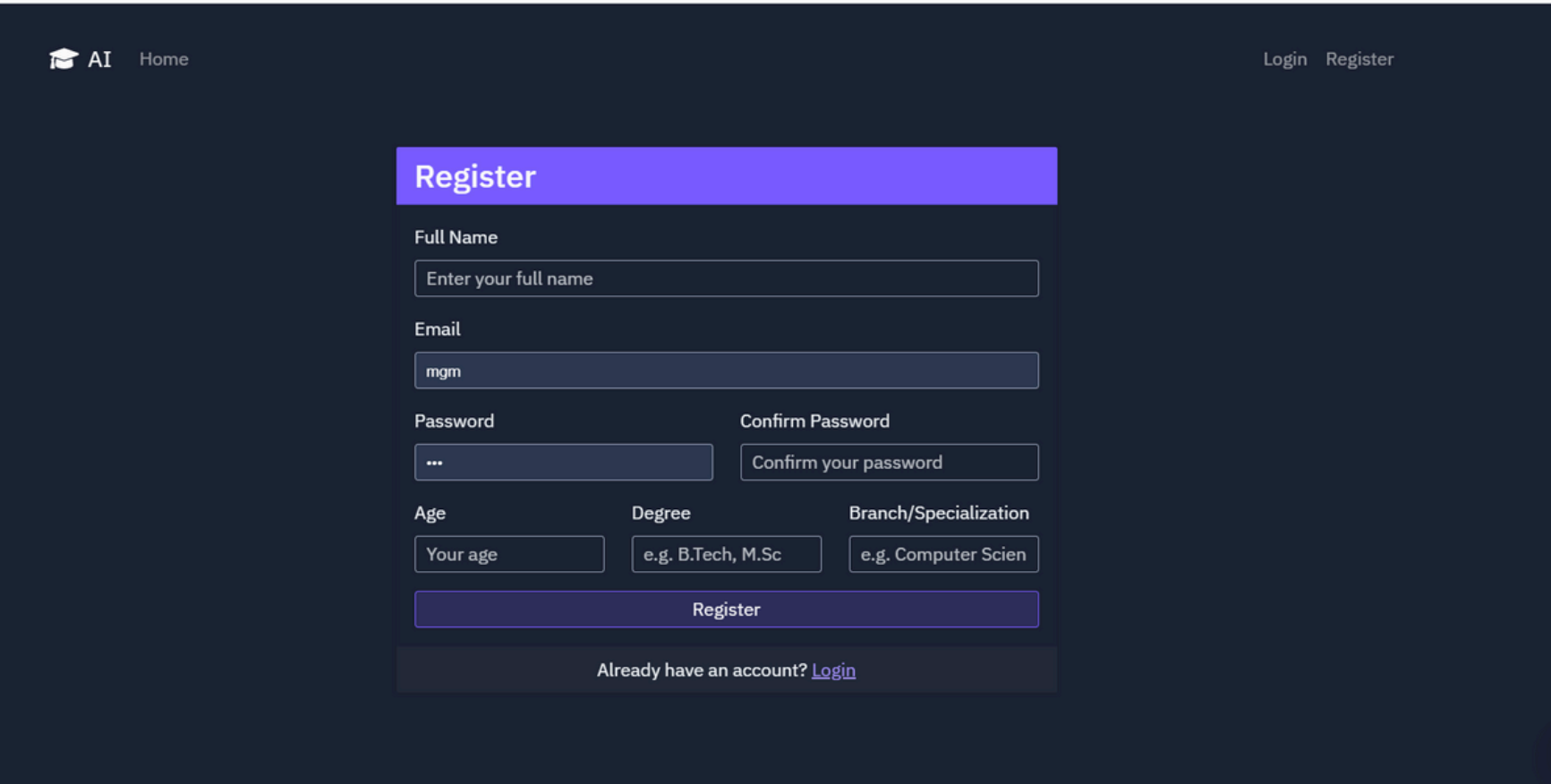
Each module ends with a test requiring 60% to pass. Learners get three attempts; failure leads to a previous module review. AI monitors progress and adapts learning paths dynamically.

Output (Project Display)

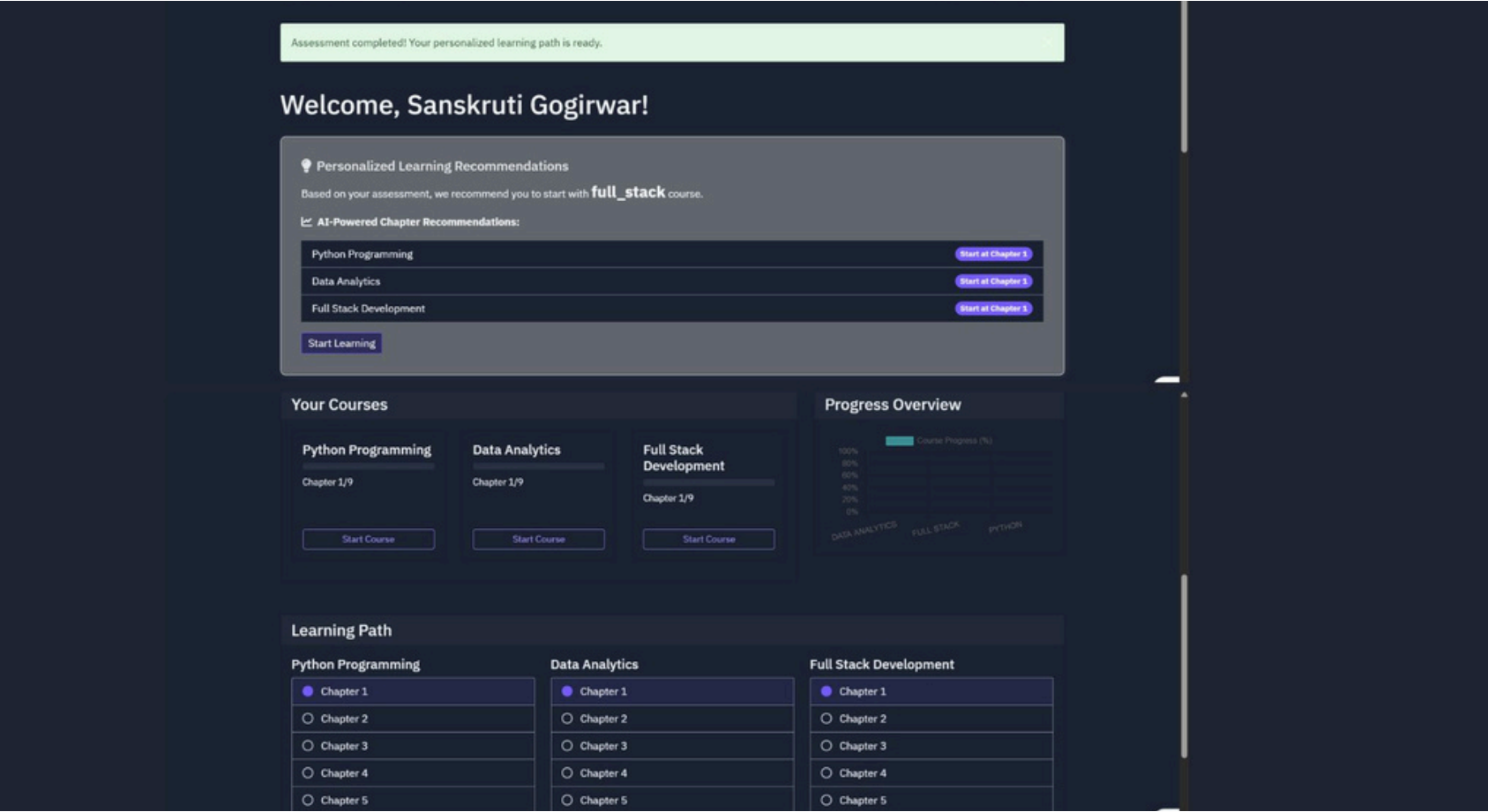
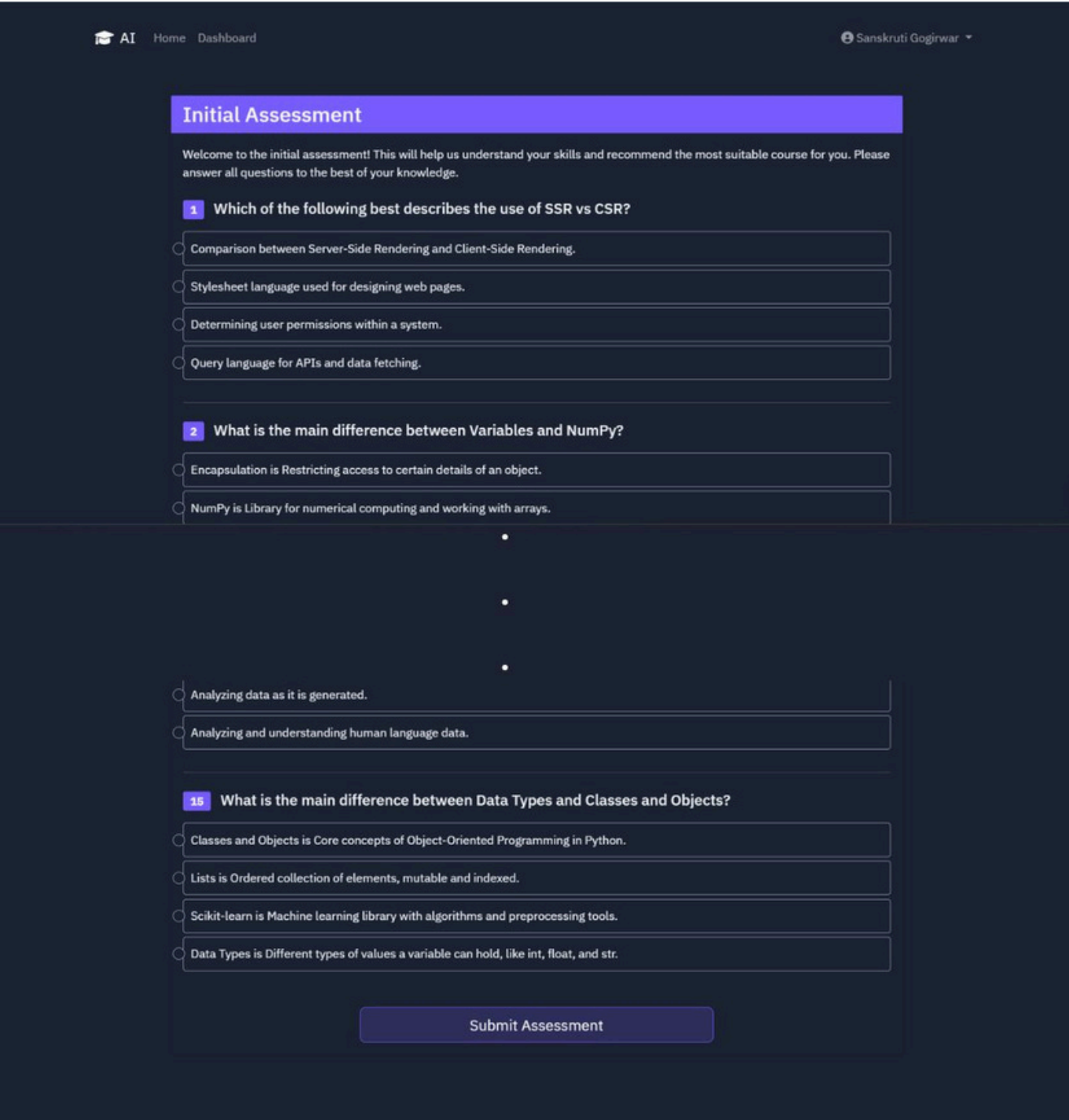


01 Users land on the home page and click "Get Started" to begin their learning journey with an intuitive onboarding experience.

02 New users register by creating a profile, while existing users log in to track their progress and receive personalized learning recommendations.



03 The Assessment Engine evaluates users' knowledge levels, determining their starting module to ensure an optimized learning experience.



04 A personalized learning path is assigned, adjusting based on progress. Users can skip, revisit, or retry modules, while an AI chatbot assists with queries and performance tracking.



Problems solved

Our AI-powered tutoring system addresses several challenges in online education:

	Problems	Solution Provided
01	Lack of personalized learning	AI-driven adaptive learning adjusts course content dynamically.
02	Static, non-engaging assessments	Intelligent assessment engine generates questions based on user performance.
03	Generic course recommendations	AI-based recommendation system suggests customized learning paths.
04	Lack of interactive support	AI chatbot assists with queries and learning guidance.



Thank You