



# Project Portal for Student Hub with Project Exchange

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## ABSTRACT

*In today's digital education system, technology plays an important role in improving the learning experience for students. students require smart tools to complete their academic work faster and more accurately. Many students face problems while preparing PowerPoint presentations, project reports (PPR), micro-project documents, and assignment answers. Preparing these manually takes a lot of time and effort.*

*This paper explains the design and development of EduGenix AI, which is a web-based student academic assistant system. The system is developed using FastAPI for backend development, HTML, CSS, and JavaScript for frontend, and Generative AI APIs for intelligent content generation.*

*The EduGenix AI helps students to generate PPT content, project reports (PPR), micro-project documentation, and answers a questions that related to academic in a structured format. The system is designed in a modular way, where each academic feature works as a separate part, but it is connected to one main AI-powered engine.*

*The Main goal of EduGenix AI is to reduce Students' workload reduce and provide properly formatted academic content in a simple and easy-to-use and user-friendly way.*

**Keywords :-** FastAPI, Generative AI, Student Assistant, PPT Generator, Project Report Generator, Academic Automation

## 1. INTRODUCTION

Students regularly prepare assignments, project reports, micro-projects, and PowerPoint presentations as part of their academic curriculum. Many students spend hours searching for content and arranging it properly in documents. Formatting according to college guidelines is also difficult for some students.

EduGenix AI is developed as a smart academic assistant to solve this problem. It is a web-based system that automatically generates well-structured academic content based on the user's input. The system is simple, easy to use, and designed specially for students.

The backend of the system is developed using FastAPI, which handles user requests and connects with Generative AI APIs to generate the required content. The frontend is developed using HTML, CSS, and JavaScript to provide a clean and interactive user interface.

### 1.1 Background of EduGenix AI

In many colleges, students are required to submit: PowerPoint presentations, Project reports (PPR), Micro-project documentation, Assignments

Most students prepare these manually using word processors and presentation software. This process takes time and sometimes results in improper formatting.

EduGenix AI provides a single platform where students can generate structured academic documents quickly.

### 1.2 Problem Statement

Students face the following problems: Students face difficulty in writing structured project reports., Time-consuming PPT preparation, Improper formatting of documents, Students have to put repeated manual effort for different subjects., Students lack proper guidance while preparing micro-projects.

There is a need for a system that can automatically generate academic content in a proper format.

### 1.3 Research Objectives

The main objectives of this project are:

- To develop a web-based student academic assistant.
- To generate structured PPT content automatically.
- To generate formatted Project Reports (PPR).
- To generate Micro-Project documentation.
- To provide AI-Based answers for academic questions.
- To design a simple and user-friendly interface.

### 1.4 Scope of the Study

This project focuses on developing a web-based academic assistant system using FastAPI and Generative AI.



The system includes: Question Answering Module, PPT Generation Module, Project Report (PPR) Module, Micro-Project Module. The system does not include plagiarism detection, college database integration, or mobile application development.

**2. LITERATURE REVIEW**

Earlier, students prepared academic documents manually. They used notebooks, MS Word, and PowerPoint for preparing content, this method required manual research, typing, and formatting.

With the development of Generative AI, content generation has become faster. However, most AI tools provide general answers and do not generate properly structured academic documents.

Therefore, there is a need for a student-focused academic assistant that generates structured and properly formatted content suitable for submission.

**Existing Methods**

Traditional methods include: Manual typing of reports, Creating PPT slides individually, Searching content from multiple websites, Copy-paste formatting

These methods are time-consuming and may lead to formatting errors.

**Limitations of Existing Systems**

No proper structured academic formatting, No single platform for PPT, PPR, and Micro-Project generation, Requires manual editing after AI output, Time-consuming process

Tab - 1: Comparison Between Traditional Academic Preparation and EduGenix AI System

Feature	Traditional Method	EduGenix AI
<b>PPT Creation</b>	Manual slide design	Auto-generated structured slides
<b>Project Report</b>	Manual typing & formatting	Structured automatic generation
<b>Micro-Project</b>	Manual documentation	Auto formatted documentation
<b>Time Required</b>	High	Low
<b>Formatting Errors</b>	Possible	Minimal

**Need for Proposed System**

EduGenix AI is designed to: Provide structured academic format, Reduce student workload, Save time, Provide multiple academic tools in one system, Generate organized content instantly

**3. METHODOLOGY**

The development of EduGenix AI follows a simple and structured approach.

First, student academic requirements were analyzed. Based on these requirements, the system modules were defined.

The backend is developed using FastAPI, which handles user requests and connects with Generative AI APIs.

The frontend is developed using HTML, CSS, and JavaScript to create a simple and interactive user interface.

The system follows a modular structure where each academic tool works independently but connects to a central AI engine.

**System Architecture**

The system follows a three-layer architecture:

**Frontend Layer:** HTML, CSS, JavaScript, User dashboard, Input forms

**Backend Layer:** FastAPI framework, Request handling, AI API integration, Data processing

**AI Processing Layer:** Generates structured academic content, Formats output based on selected module

**Implementation Modules**

EduGenix AI includes the following modules:

**Question Answering Module** – Provides academic answers

**PPT Generator Module** – Generates slide-wise presentation content

**Project Report (PPR) Module** – Generates structured project report

**Micro-Project Module** – Generates formatted micro-project documentation

Each module is connected to the backend and AI engine.

**System Testing**

The system was tested to check: Correct content generation, Proper formatting, Smooth backend response, Accurate module functioning

Testing confirmed that the system works properly and generates structured academic outputs.



#### **4. CONCLUSIONS**

EduGenix AI is a student-focused academic assistant system developed using FastAPI and Generative AI technologies. The main purpose of this system is to reduce student's academic workload by automatically generating PPT content, Project reports (PPR), Micro-Project documentation, and academic answers.

The system provides a simple and user-friendly interface where students can enter required details and receive structured and properly formatted academic content instantly. This reduces the time required for manual research, typing, and formatting. The system uses a modular architecture, where each feature works independently but still stays smoothly connected to the main AI engine.

During development and testing, all modules were verified to ensure correct functionality and structured output generation. The backend works properly, takes user requests, and connect them with the AI system to Generate accurate academic content. The system also minimizes formatting errors that usually occur in manual document preparation.

EduGenix AI shows how Artificial Intelligence can be used in education to help students complete their academic tasks more easily and efficiently. The system not only saves time but also improves productivity and organization in academic work.

Overall, the project achieves its objective of creating a smart, reliable, and scalable academic assistant platform. EduGenix AI can be improved and expanded in the future to include more academic tools and advanced educational features.

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