ResourceEase : An AI-Powered Academic Resource Sharing Platform

Team: Phantom Black

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Submitted To:

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Project Overview:

The ResourceEase project aims to develop a sophisticated web-based platform that facilitates seamless sharing of academic resources among students, educators, and researchers. This platform will harness advanced technologies to provide efficient document conversion and AI-driven assistance.

Objectives:

The primary objectives of the ResourceEase project include:

- Creating a user-friendly platform for both administrators and users.
- Implementing an AI tool for converting various types of documents into formal doc files.
- Integrating a chatbot powered by OpenAI's GPT-3.5 for Interactive assistance.
- Promoting efficient academic resource sharing and collaboration.

Motivation:

We experienced some inconveniences to study academic resources that are available in some websites including newly introduced 'OneByZero'. Most of the resources are handwritten which create troubles sometimes to read it.

So we realized a necessity of having a system or module that can convert any handwritten document into Microsoft doc file including editing accessibility which will provide a hustle free learning & enhance our learning experience. It also serves as a learning opportunity in web engineering and deep learning, with potential for future expansion. ResourceEase can create economic and social value by saving costs, boosting productivity, and improving resource access, inclusivity, quality, knowledge sharing, environmental impact, and global collaboration.

Requirements:

- Frontend: HTML, CSS, JavaScript, Python
- Backend: Python
- Database: MySQL
- AI Integration: OpenAI GPT-3.5
- Document Conversion: Convolutional Neural Network (CNN), Tesseract, Docxtemplater
- Framework: Django

Project Scope:

Included:

1. Development of a user-friendly online platform.
2. Implementation of an AI tool for document conversion.

3. Integration of an AI chatbot for user assistance.
4. Promotion of academic resource sharing and collaboration.

Excluded:

1. Hardware procurement and maintenance.
2. Extensive customizations beyond specified features.

Key Features, Functionalities, and Deliverables:

1. User registration and authentication.
2. User-friendly interface for administrators and users.
3. Dashboard for resource and interaction management.
4. AI-powered document conversion.
5. File upload and conversion interface.
6. Integration of OpenAI's GPT-3.5 for chatbot functionality.
7. Resource sharing and collaboration features.
8. Resource upload and sharing capabilities.
9. Resource search and discovery functionalities.
10. Data encryption and secure storage.

Stakeholders:

1. Users:
    - Students
    - Educators
    - Researchers
2. Administrators:
    - Platform administrators
3. Clients (if applicable):
    - Educational institutions
    - Organizations
    - Individuals (commercial service users)

Constraints and Limitations:

1. Time constraint for project completion.
2. Budget limitations impacting project scale and features.
3. Technology availability and compatibility.
4. Required skills in AI, web development, and project management.
5. Availability of high-quality training data for AI models.

Development Plan:

1. Database

2. Authentication & Authorization for both Admin and User.

3.A professional GUI for both admin & user panel.

Admin will have

- Register
- Login
- User Details
- Resource
- Logout

User will have

- Register
- Login
- Profile [Basic info (Edit), Setting, Credits]
- **Share & Get Resource [Get Resource (search, download), Share Resource(upload)]**
- **ASK AI [Asad]**
- Library
- Logout

Task Distribution:

Md. Asad Mondall -> **1,2, Share & Get Resource, ASK AI**

Shakil Ahmed & Sumia Jahan Jyoti -> **3**

Budget:

Field	Cost $ (BDT)
Hardware (if we build & train our own CNN model to maximize the accuracy of document conversion)	60k
Server	40k
Deployment & Maintenance	20k
Others	20k
	Total: 1 lac 40 k BDT

Timeline:

Week 1: Database Design

Week 2: Backend Development for User and Admin Panels.

- Authentication & Authorization
- Document conversion Tool integration
- Chat-GPT 3.5 API integration

Week 3: Frontend Development for User and Admin Panels.

Week 4: Testing, Bug Fixes, and Optimization.

Team and Resources:

Md. Asad Mondall: Database, Backend, Machine Learning

Shakil Ahmed: Backend, Frontend

Sumia Jahan Jyoti: Backend, Frontend

Conclusion

The ResourceEase project aspires to revolutionize academic resource sharing by leveraging cutting-edge technologies. By creating an intuitive platform that incorporates AI assistance and location-based services, ResourceEase aims to foster col laboration and efficiency within the academic community.