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Institute Finder

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Abstract: *The Institute Finder platform, developed with Django, is a comprehensive web-based application designed to assist students in making informed academic choices. It features interactive tools such as a Counsellor AI that provides personalized academic advice, a Mock Test module for entrance exam preparation, and advanced search functionalities to explore colleges and courses based on location, ranking, and user preferences. The platform leverages AI to enhance the academic planning experience, offering tailored guidance and simplified decision-making for students across various educational levels.*

Keywords: Institute Finder

I. INTRODUCTION

Choosing the right educational institute and course is a critical decision for students, often influencing their future career path. However, many students face challenges due to a lack of proper guidance, limited access to accurate information, and the overwhelming number of options available. The motivation behind Institute Finder is to simplify this process by providing a centralized platform that offers intelligent, personalized, and data-driven support to students in making informed decisions about their education.

OBJECTIVE

- Develop a robust recommendation framework utilizing Decision Tree. Scripping algorithms.
- Integrate student data such as academic performance, preferences, minority, reservation, courses, region and location for accurate predictions.
- Enable real-time processing with efficient data handling mechanisms.

II. LITERATURE REVIEW

Institute Finder is a web-based platform developed using the Django framework, designed to assiststudents in navigating the complex process of academic decision-making. It brings together critical toolsand technologies into a single, user-friendly interface, offering smart and personalized guidance forselecting institutes and courses.
The platform is structured around four major features:

1. Counsellor AI

A virtual assistant powered by artificial intelligence that interacts with users to understand theirinterests, strengths, academic background, and career aspirations. Based on this input, it providespersonalized guidance on suitable courses and career paths.

2. Mock Test

An interactive module that allows students to take practice tests for various entrance exams. Ithelps them assess their preparedness, identify areas for improvement, and track progress over time.
The mock tests are structured, timed, and may include detailed feedback.

3. Search College

A powerful search feature that enables users to explore a wide database of colleges across differentregions, disciplines, and rankings. Filters such as location, course, fees, and accreditation helpnarrow down the options and support informed choices.

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4. Search Courses

This tool allows students to discover and compare academic programs across various institutions. Itprovides detailed information about course content, eligibility criteria, duration, and careeropportunities.

The goal of Institute Finder is to reduce confusion and decision paralysis often faced by students andprovide them with reliable, AI-driven support.

III. TECHNOLOGICAL IMPLEMENTATION

Hardware Requirements

- Server for data processing
- Cloud storage for student records
- Web interface for user interaction

Software Requirements

- Python with Scikit-Learn for machine learning
- Web technologies for user interface.
- Database management system for storing student data.

IV. METHODOLOGY

1. Requirement Gathering: The first phase involved gathering detailed requirements to define the project's scope, functionalities, and constraints.
2. Feasibility Study: The AI-Based College Guidance System is technically feasible using Django, Bootstrap, and OpenAI API.
3. System Analysis: The proposed AI-Based College Guidance System aims to streamline the college selection process by addressing key challenges students face, including fragmented information sources, lack of personalized guidance, and limited access to quality mock tests.
4. Software Design: The software design follows a modular architecture with Django handling backend logic and Bootstrapensuring responsive frontend interfaces.
5. Testing: The testing strategy employs unit testing with Django's TestCase to validate database models and business logic, while integration testing ensures seamless module interactions like search filters with AI responses.
6. Integration: Chatbot API, Database Sync, Dynamic UI, PDF Viewer.
7. Implementation: Backend Setup, Frontend Development, AI Integration, Testing & Deployment.
8. Deployment: The system was initially deployed on local host using Django's development server for testing and debugging purposes.

PHASES OF IMPLEMENTATION

Phase 1: Research and requirement gathering.
Phase 2: Data collection and preprocessing.
Phase 3: Model implementation, testing, and deployment.

CHALLENGES AND FUTURE DIRECTIONS

1. Real-time Processing – Ensuring quick response times for student queries.
2. Scalability – Expanding the system to accommodate a larger number of students.
3. Explainability & Interpretability – Enhancing transparency in recommendations to gain user trust.

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