WebX Lab CA - Report

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Class Roll No	13
D.O.P.	
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Sign and Grade	

TITLE : AI Career Counselor

PROJECT DESCRIPTION

The **AI Career Counselor** project is a **Full stack AI Career Recommendation System** developed using **Flask, MongoDB, React, and TypeScript**. It is an AI-powered career recommendation/guidance platform that delivers personalized guidance to help users navigate and achieve their career goals efficiently.

The **backend** is built using **Flask (Python)** to handle API requests and communicate with the database. **MongoDB** is used for storing user data in authentication. The **frontend** is developed using **React with TypeScript**, ensuring a responsive and dynamic user interface.
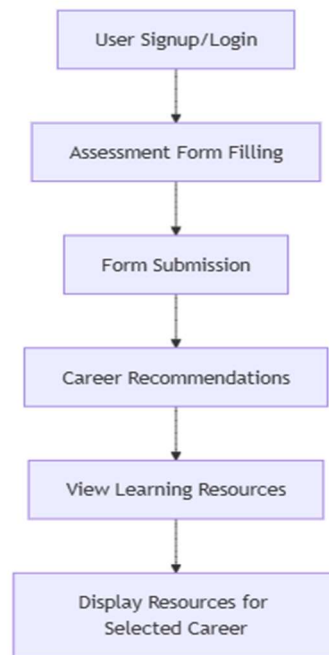
TECHNOLOGIES USED

- **Frontend:** React, TypeScript, Tailwind CSS
- **Backend:** Flask (Python)
- **Database:** MongoDB (Atlas)
- **Development Tools:** VS Code, Postman, Git

FEATURES IMPLEMENTED

- **AI Career Recommendations:** Get personalized career suggestions based on your skills, interests, and experience level.
- **Learning Resources**: Access tailored learning resources including courses, books, and websites for specific career paths.
- **User Registration**: Sign up with a username, email, and password for secure access.
- **Detailed Career Insights**: Receive comprehensive career descriptions, fit assessments, and preparation steps.
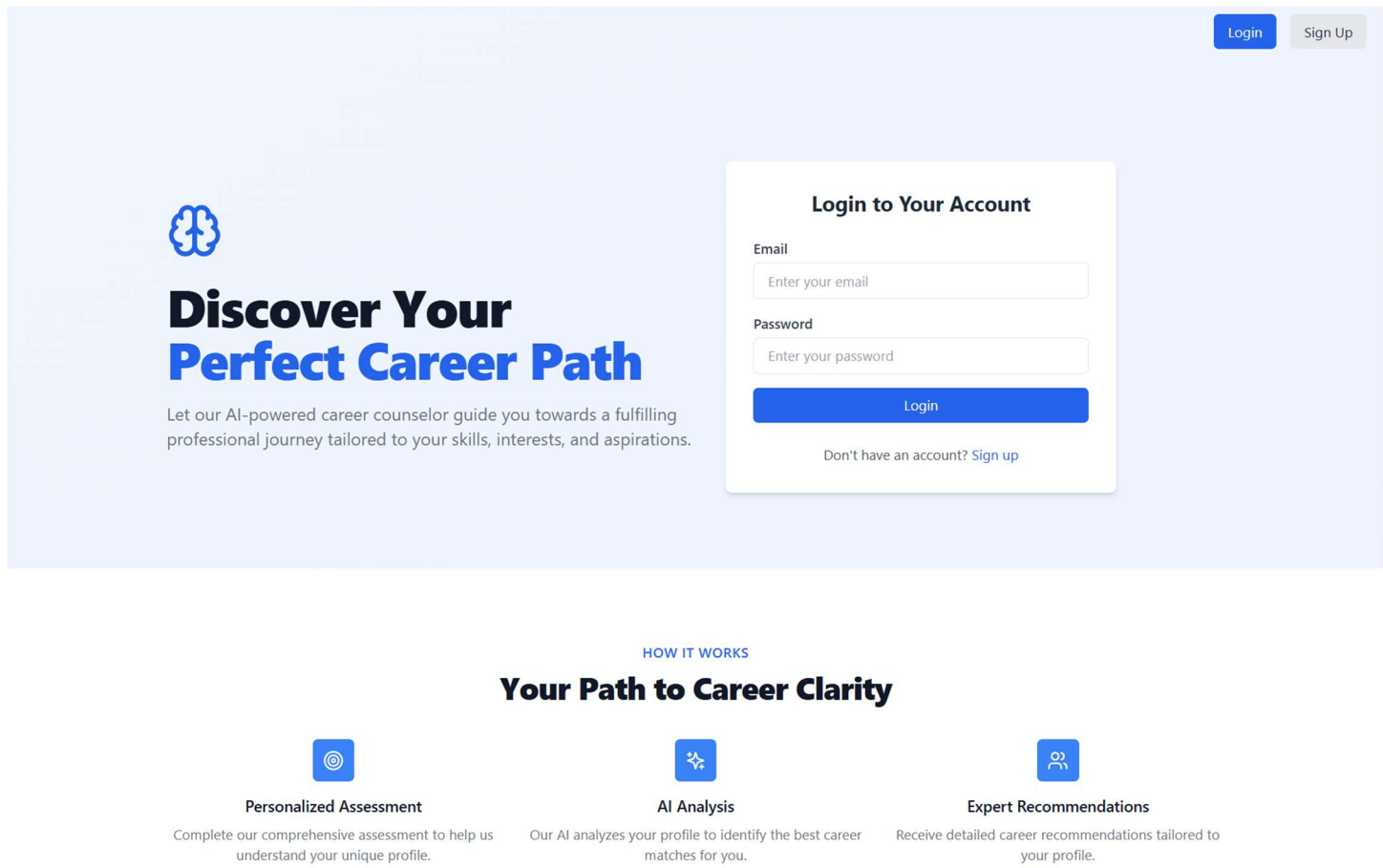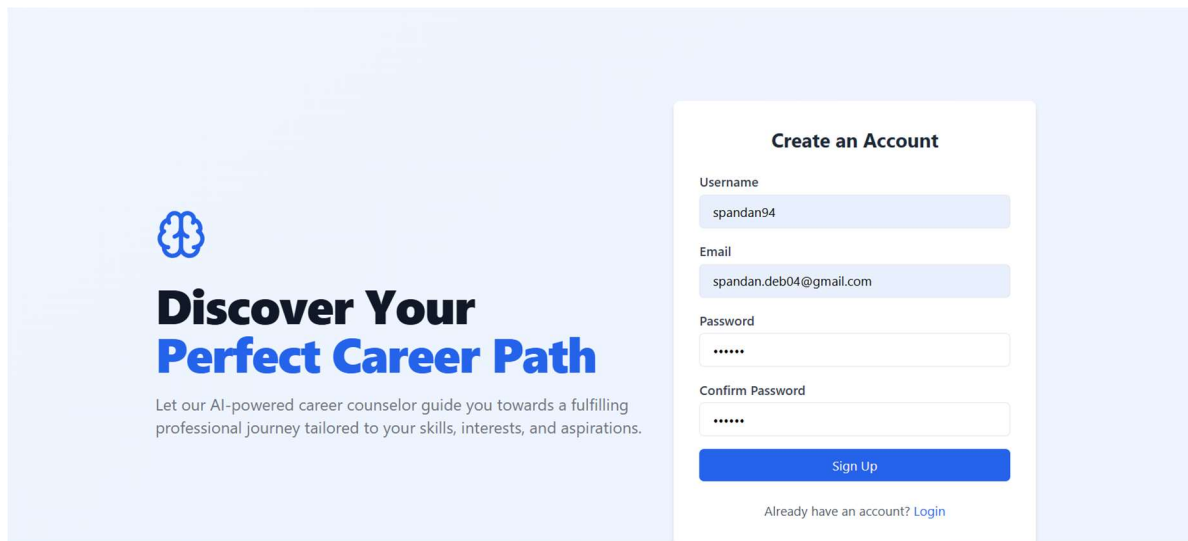
GITHUB LINK - https://github.com/spandandeb/WebXCA/tree/master

Flow Diagram:

OUTPUT:

Homepage:

This is the homepage of AI Career Counselor where the user has to login or signup to fill the assessment form and below this page the user can use how the website works.

Logged in as spandan94. After logging start assessment page comes.

When the user clicks on the start career assessment then they have to fill the form giving details like education, technical skills, professional interests etc.

🧠 AI Career Counselor

Personal Information

Full Name *

Age *

0

Education *

Email *

Next >

🧠 AI Career Counselor

Skills & Expertise

Technical Skills *

Python, React, Typescript, Node, Express

< Previous   Next >

AI Career Counselor

Interests & Hobbies

Professional Interests *

DataAnalyst, Consultancy

Hobbies

Chess, cricket, badminton

‹ Previous   Next ›

AI Career Counselor

Work Preferences

Preferred Work Environment *

hybrid

Work Style *

Team-based

Preferred Location *

Mumbai

Expected Salary Range *

1000000

‹ Previous   Next ›

AI Career Counselor

Review & Submit

Summary of Your Information

Name: Spandan Deb

Education: B.tech

Skills: Python, React, Typescript, Node, Express

Interests: DataAnalyst, Consultancy

Work Environment: hybrid

‹ Previous

Get Recommendation ⟁

After filling the form it will give a overview of the main details submitted and when the user clicks get recommendation button it will get career recommendations via GenAI.

Your Career Recommendations

← Back

Your Profile

Skills:
Python, React, Typescript, Node, Express

Interests:
DataAnalyst, Consultancy

Experience Level:
Beginner

Assessment Date:
4/14/2025, 1:00:59 AM

AI-Generated Recommendations

Okay, here are a few career recommendations tailored to someone with Python, React, Typescript, Node, and Express skills, an interest in Data Analysis and Consultancy, and a beginner experience level:

View Learning Resources

1. Junior Data Scientist/Analyst with a Focus on Web Data

Description

This role involves collecting, cleaning, and analyzing data, often scraped or extracted from websites using your Python skills. You'll use your understanding of data structures and algorithms to identify trends, patterns, and insights. Your findings will then be presented to stakeholders, potentially influencing business decisions related to web presence, marketing, or user experience.

Why It Fits

Your Python proficiency is crucial for data manipulation and analysis (using libraries like Pandas and NumPy). Your interest in Data Analysis is directly addressed. The beginner level aligns with entry-level positions that will focus on teaching the fundamental data science and analysis. Web frameworks knowledge, such as React, can be helpful in building interactive dashboards to showcase your data.

How to Prepare

Focus on strengthening your statistics and data visualization skills. Practice working with real-world datasets (Kaggle is a great resource). Build a portfolio project showcasing your ability to collect data from a website, clean it, analyze it, and present findings in a clear and compelling manner. Learn the basics of SQL for efficient data querying.

View Learning Resources

Here are the recommendations from GenAI. When clicked on learning resources it will generate the from where the user can learn their skill from for these career recommendations.

🧠 Learning Resources   ← Back to Recommendations

1. Junior Data Scientist/Analyst with a Focus on Web Data

Okay, here are 4 detailed learning resources for someone interested in a Junior Data Scientist/Analyst role with a focus on web data:

1. Online Course: Web Scraping & API Fundamentals

Why It's Great

Mastering web scraping and API interaction is fundamental for extracting web data. This resource is fantastic because it empowers you to gather your own data, learn ethical considerations, and directly apply techniques to real-world websites and APIs. It bridges the gap between theoretical knowledge and practical skills highly valued in junior roles. Specific Courses/Websites: Coursera: "Web Scraping with Python" (University of Michigan): This course covers the basics of HTML parsing using Beautiful Soup and regular expressions, navigating web pages, and handling form submissions. It's valuable because it provides a solid foundation in Python for web scraping. Udemy: "Web Scraping for Data Science": This course delves into more advanced techniques, including handling dynamic content with Selenium, dealing with CAPTCHAs, and storing scraped data in databases. It's great for handling websites where the content is generated by JavaScript.

2. Online Course: Data Visualization with Python (specifically using libraries relevant

CONCLUSION:

AI Career Counselor is a GenAI-powered platform designed to offer personalized career guidance using state-of-the-art technologies. Built with **React**, **TypeScript**, **Tailwind CSS**, **MongoDB**, and **Flask**, it showcases a seamless integration of modern frontend frameworks with scalable backend services. At its core, the platform leverages **Gemini Flash 2.0** to dynamically generate custom career roadmaps based on users' skills, interests, and goals. This project demonstrates strong expertise in full-stack development, intuitive UI/UX design, and the practical application of generative AI in the edtech and career advisory domain. It stands as a compelling, real-world solution empowering individuals to make informed career decisions with confidence.