JobEchoAI: AI-Powered Candidate Evaluation Platform

Presenting by Code Wizards

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Problem Statement-1

- In the modern hiring landscape, evaluating a candidate's skills efficiently is crucial.

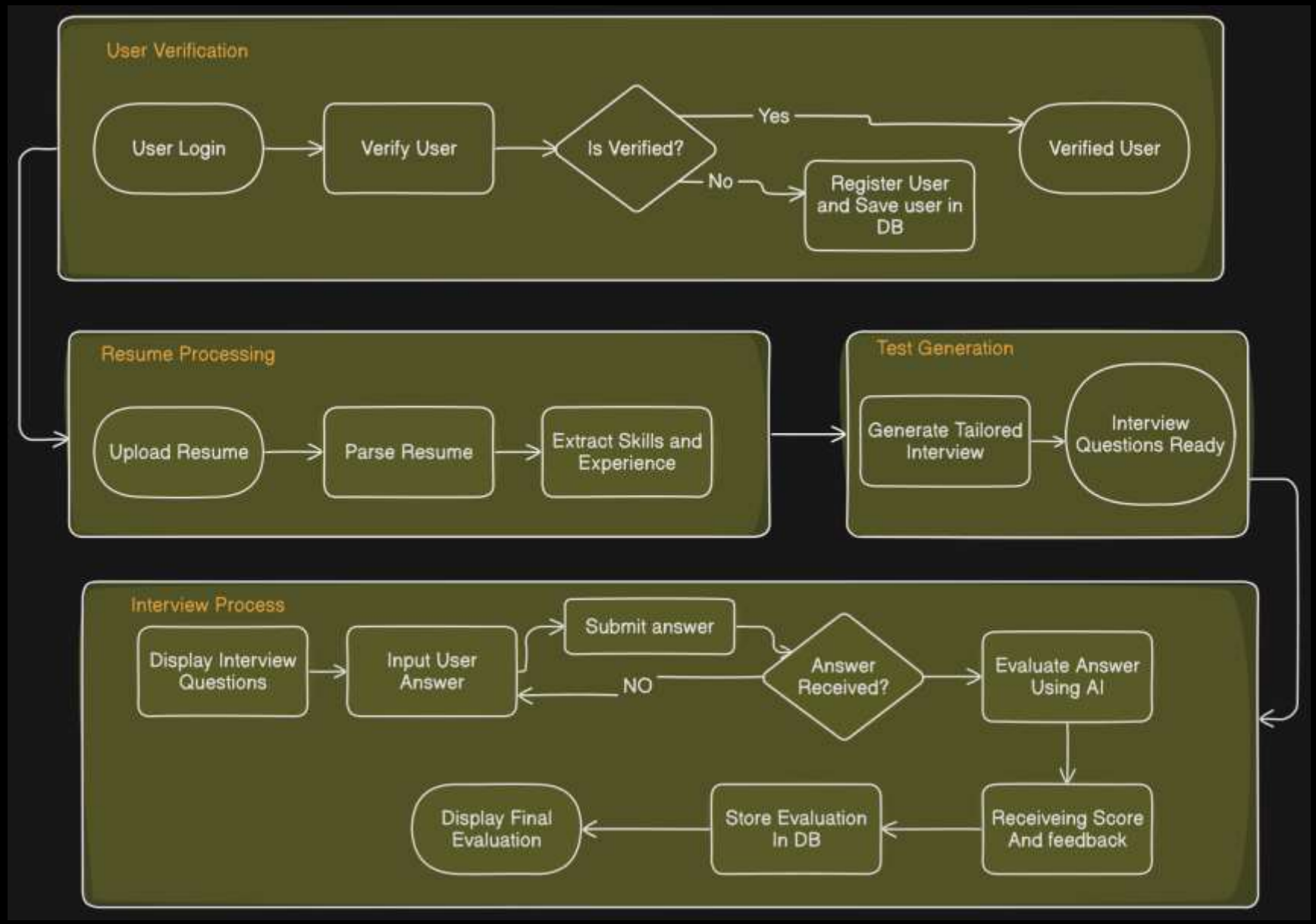
  Your task is to develop a platform where users can upload their CVs, and based on their skills and experience, they will be assessed through a tailored test.

  The system should generate a personalized evaluation and provide an assessment score reflecting their expertise.

  Key Features:
  - CV parsing to extract relevant skills and experience.
  - AI-driven test generation customized for each candidate.
  - Automated scoring and detailed performance feedback.

  Objective:
  Create an intelligent assessment tool that helps job seekers identify their strengths while enabling recruiters to make informed hiring decisions.

Workflow of our project



Techstacks of Our website

Frontend

Next.js and Tailwind CSS build a responsive UI for seamless user interactions. Sadcn Components for better UI design.

Backend

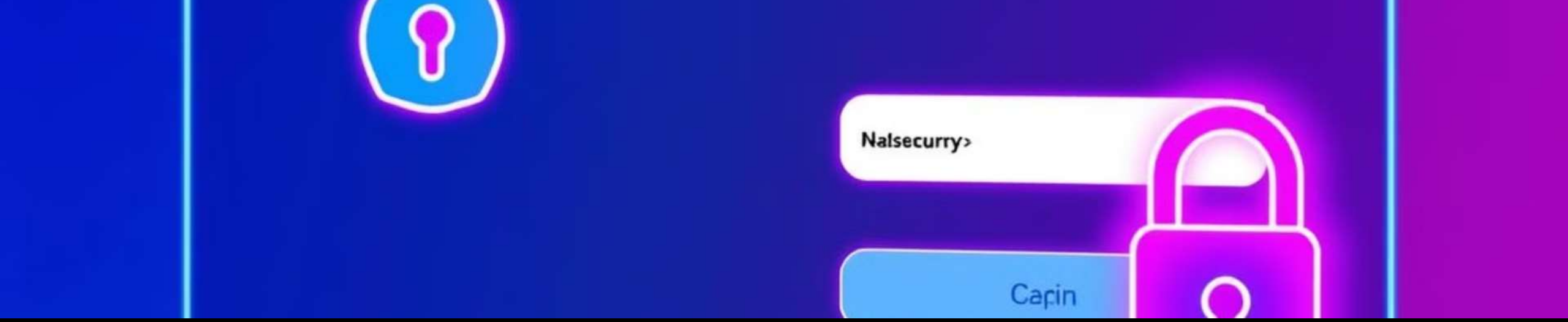
Next.js API routes handle logic, processing CVs, generating tests, and managing user authentication. Google Gemini AI API for resume evaluation and test case generation.

Authentication

Clerk ensures secure user management, handling signup, login, and role-based access control.

Database

Neon Database provides scalable data storage for user data, CV information, and test results.



User Authentication and Data Security

Clerk integration handles secure user signup, login, and session management.

All user informations are stored in Neon database.

Data is encrypted at rest and in transit, ensuring confidentiality and integrity.

CV Upload and Processing

1 Users upload their CVs (PDF, DOCX) via the Next.js frontend.

2 The backend API receives the CV file and utilizes PDF parsing libraries (e.g., *PDF.js*) to extract text.

3 Google gemini AI identify key skills and year of experiences from the extracted text.

4 Then gemini AI generates test questions as per the skill sets and make the difficulty level of those questions as per experience.

Personalized Test Generation

1. The backend API retrieves the extracted skill profile associated with the uploaded CV.

2. An algorithm(Gemini AI) selects relevant test questions from the Neon Database based on the user's skill profile.

3. Test formats include descriptive type questions, providing a comprehensive assessment.

4. The difficulty of questions is dynamically adjusted based on user experience, ensuring an appropriate level of challenge.

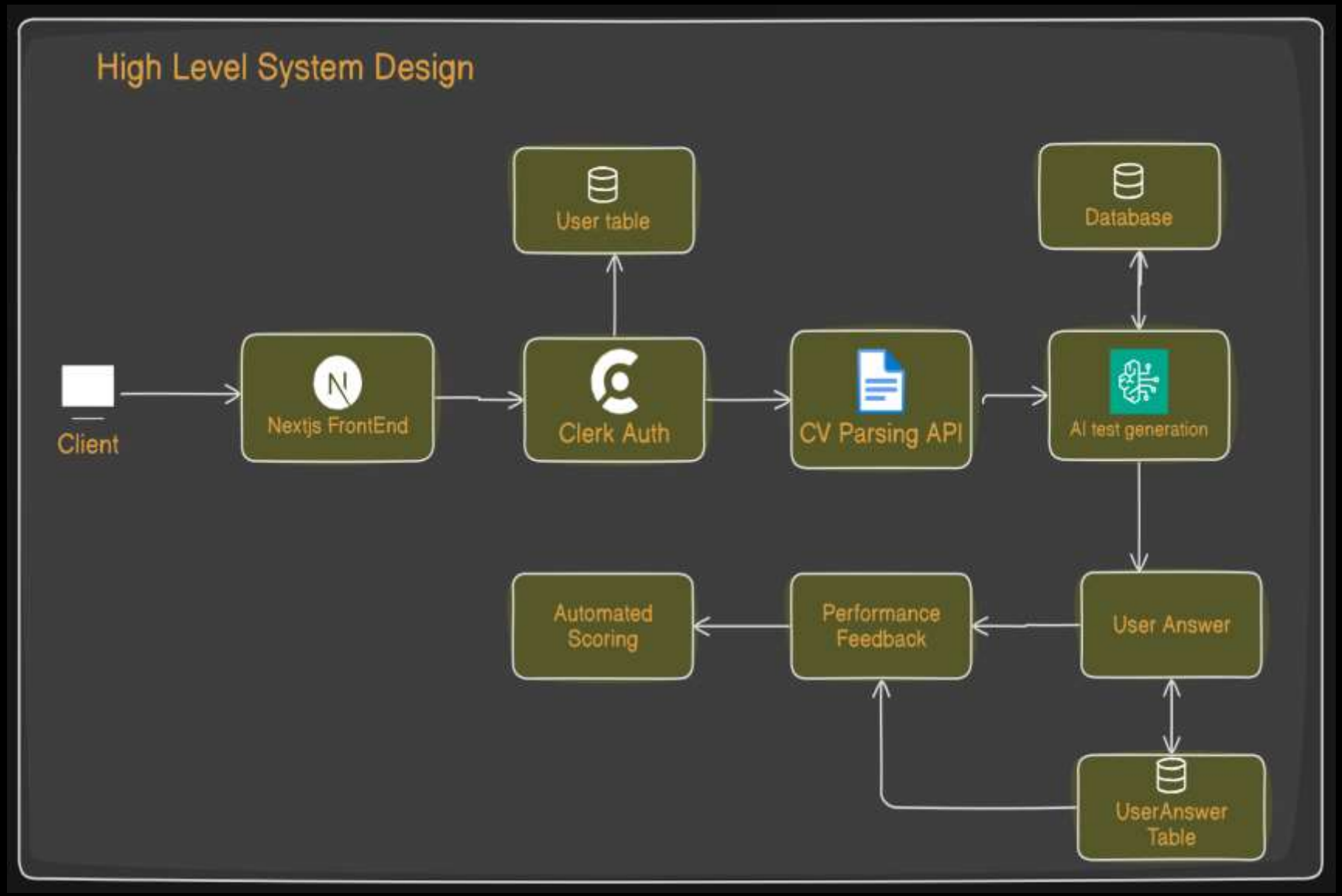
Real-time Test Execution and Result Analysis

1. Users answer test questions via typing, and their responses are sent to the backend API.

2. The backend API(Gemini AI) evaluates answers and calculates scores in real-time, with an automated gemini api calling.

3. Result analysis provides a comprehensive breakdown of the user's performance, including overall scores, skill-based scores,user answer,correct answer, and areas for improvement.

High-level Syatem Design



Database Schema (Neon PostgreSQL)

Table name
users

COLUMNS Add column

```
id SERIAL PRIMARY KEY
name VARCHAR NOT NULL
email VARCHAR UNIQUE NOT NULL
imageUrl VARCHAR
```

CONSTRAINTS Add constraint

```
CONSTRAINT users_email_unique UNIQUE (email)
CONSTRAINT users_table_pkey PRIMARY KEY (id)
```

INDEXES Add index

```
UNIQUE INDEX users_table_pkey … USING BTREE (id)
UNIQUE INDEX users_email_unique … USING BTREE (email)
```

User Table(store user info)

Table name
resumeScanDetails

COLUMNS Add column

```
id SERIAL PRIMARY KEY
email VARCHAR NOT NULL
skill VARCHAR
yearOfExp VARCHAR NOT NULL DEFAULT '0'::character varying
createdAt VARCHAR NOT NULL
scanId VARCHAR NOT NULL
```

CONSTRAINTS Add constraint

```
CONSTRAINT resumeScanDetails_pkey PRIMARY KEY (id)
```

INDEXES Add index

```
UNIQUE INDEX resumeScanDetails_pkey … USING BTREE (id)
```

Resume Deails (Store Skills and experience)

Table name
mockInterview

COLUMNS Add column

```
id SERIAL PRIMARY KEY
jsonMockResp TEXT NOT NULL
jobDescription VARCHAR NOT NULL
jobExperience VARCHAR NOT NULL
createdBy VARCHAR NOT NULL
createdAt VARCHAR NOT NULL
mockId VARCHAR NOT NULL
```

CONSTRAINTS Add constraint

```
CONSTRAINT mockInterview_pkey PRIMARY KEY (id)
```

INDEXES Add index

```
UNIQUE INDEX mockInterview_pkey … USING BTREE (id)
```

Interview Details

Table name
userAnswer

COLUMNS Add column

```
id SERIAL PRIMARY KEY
mockId VARCHAR NOT NULL
question VARCHAR NOT NULL
correctAnswer TEXT
userAnswer TEXT
feedback TEXT
rating VARCHAR
userEmail VARCHAR NOT NULL
createdAt VARCHAR
```

CONSTRAINTS Add constraint

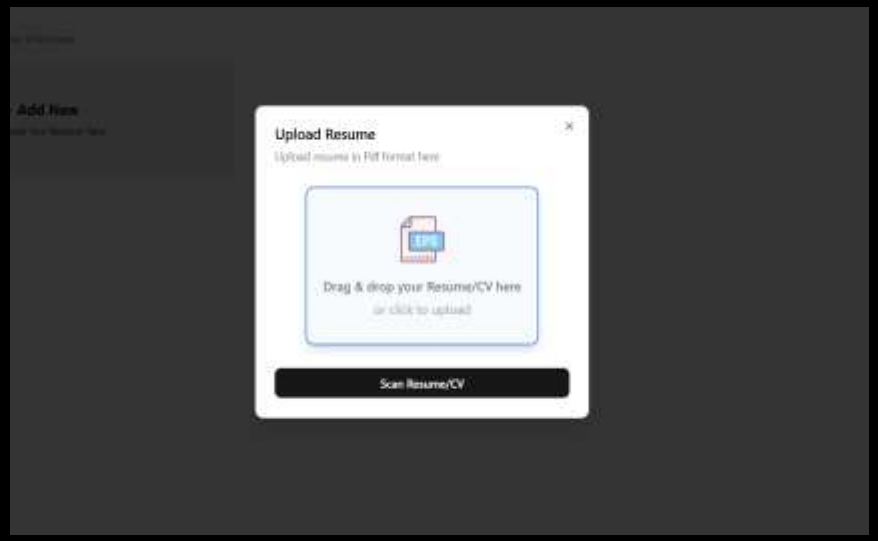
```
CONSTRAINT userAnswer_pkey PRIMARY KEY (id)
```

INDEXES Add index

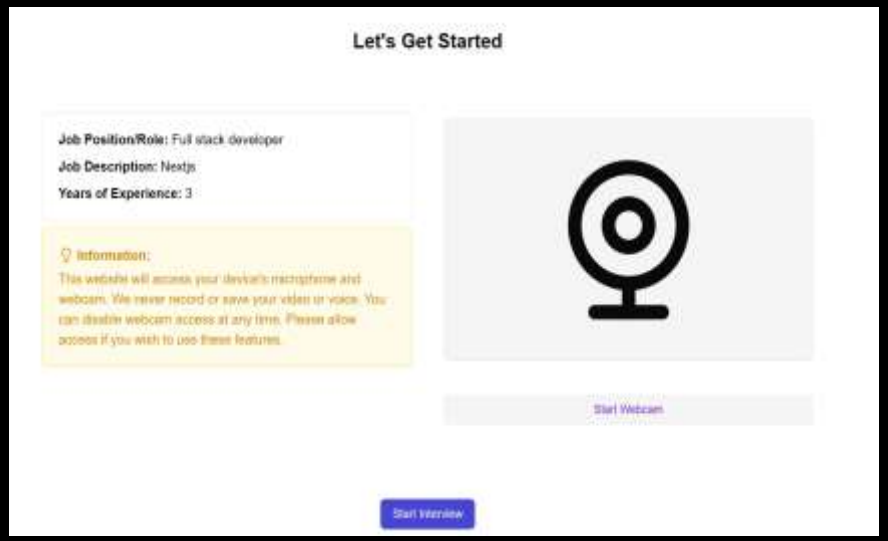
```
UNIQUE INDEX userAnswer_pkey … USING BTREE (id)
```

User Answers Details

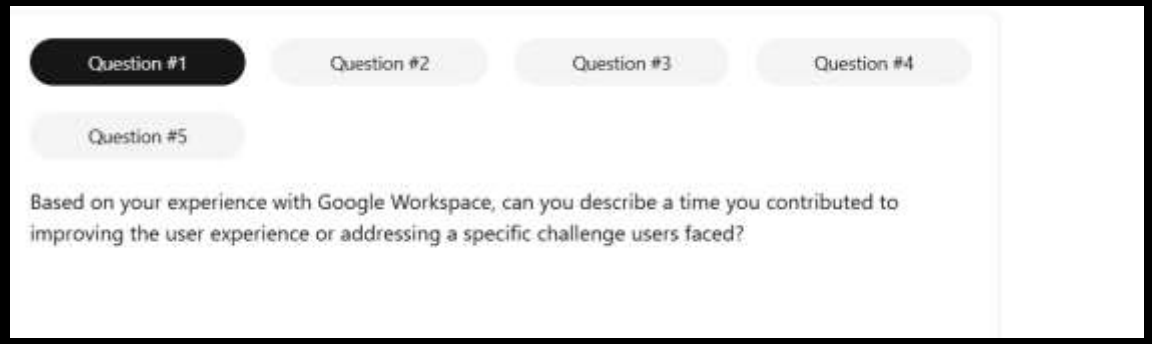
UI/UX Design with Tailwind CSS



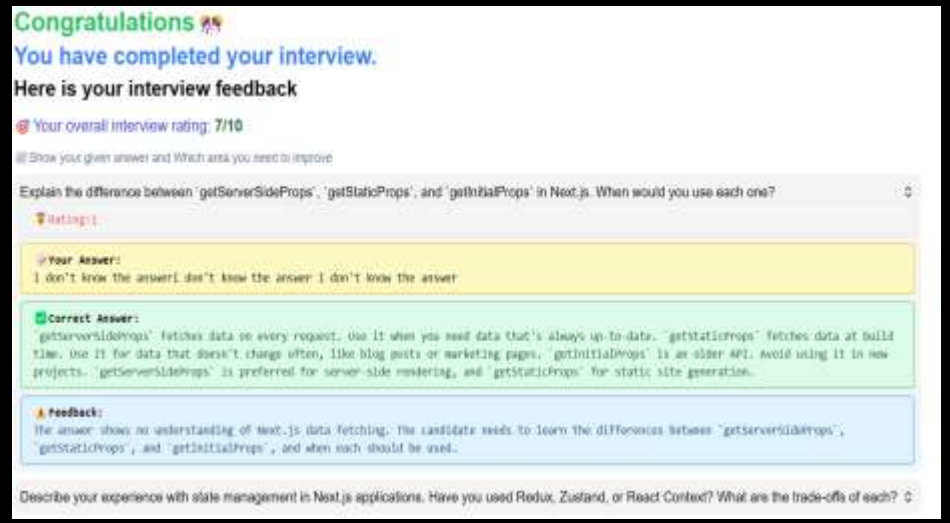
CV Upload Form



Skill Profile Display



Test Presentation



Result Visualization

Business Idea behind the project

For Job Seekers: Personalized assessments help candidates understand their strengths, improve their skills, and showcase their expertise beyond just a CV.

Revenue Model:

- *B2B SaaS Model:* Subscription-based pricing for companies to access automated assessments.
Tiered pricing based on the number of assessments per month.

- *Pay-Per-Test Model:* Employers can pay per assessment generated.

- *Freemium for Job Seekers:* Basic assessments are free, but detailed reports and skill improvement suggestions are premium option to purchase premium AI coaching or interview preparation guides.

Thanks You