**PROJECT TITLE JOBPULSE MALAWI**

**Group Name: HEARTBEAT CODERS**

**TEAM MEMBERS**:

- Pilirani Mangani

- Patricia Sichali

- Blessings katondo

- Doreen

**TEAM INTRODUCTION**

Group 2, known as Heartbeat Coders, is a dynamic team of four passionate ladies driven

to build digital solutions that create real impact in the business and employment sectors

of Malawi. Our goal is to leverage technology to solve outdated systems, promote

efficiency, and ensure transparency.

**PROBLEM STATEMENT**

The current government job application process in Malawi relies on manual submission

of physical documents at offices such as the Civil Service Commission and District

Commissioner offices. This method is slow, inefficient, and prone to delays due to the

manual sorting of thousands of applications. Applicants often experience long waiting

times, lack transparency about their application status, and face logistical challenges such

as overcrowded interview venues. These issues result in wasted time, increased

paperwork, and frustration for both applicants and recruitment officials. There is a clear

need for a modernized, digital solution to streamline the application process, improve

transparency, and enhance overall efficiency in government recruitment.

**OBJECTIVES**

* Streamline the application process
* Improve transparency
* Enhance overall efficiency

**KEY FEATURES AND FUNCTIONALITIES**

**Job Posting and Management**

* Recruiters will be able to create, edit, and publish job openings.
* Set job descriptions, requirements, and deadlines, all this will be done on the recruitment dashboard.

**Online Application Submission**

* Job seekers will apply through an online portal.
* They will upload CVs, cover letters, and supporting documents.

**Resume Parsing and Screening**

* The system will automatically extract and analyse candidate data from resumes.
* The system will be able to screen qualifications and match them according to job criteria using AI.

**Applicant Tracking System (ATS)**

* The system will track applications throughout the recruitment process.
* It will filter, search, and sort candidates based on criteria.
* View candidate status (applied, shortlisted, interviewed, hired, etc.).

**Data Security and Compliance**

* Secure storage of candidate data
* User role-based access control, recruiters will be able to access their recruiter dashboard, applicants will be able to access their applicant dashboard, administrators will be able to access both dashboards

**TOOLS AND TECHNOLOGIES USED**

Frontend (User Interface):

* HTML5, CSS

Backend (Server-side):

* Python (Django)

Database Technologies

* Cloud database (Supabase)

**CURRENT MANUAL PROCESS**

Applicant writes letter, attaches CV and qualifications, Applicant drops letter at the

labour office, applicant awaits response. Recruiter opens the letters, sorts them according

to posts advertised, Recruiter reads through the letters, sorts them and filters out qualified

and non-qualified letters, recruiter shortlists the applicants. Recruiter sends out invitation

letters via post office, applicant receives or does not receive letters (no other formal

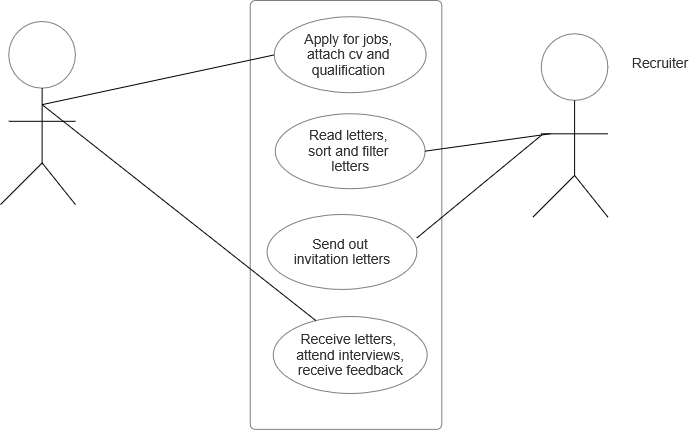
communication is involved so applicants sometimes miss their mail because not many

people check their post office boxes and some don’t have them at all).

Shortlisted applicants attend interviews, successful candidates are recruited, unsuccessful

ones receive no feedback at all.

Figure 1: Shows a usecase diagram depicting the current manual process.



**PROPOSED DIGITAL PROCESS (JOBPULSE MALAWI)**

To address the limitations of the manual system, our Jobpulse Malawi system will be able

to do the following processes:

**For Applicants:**

- Register/login using email and password.

- View all current job openings on the portal.

- Fill out an online application form.

- Upload their CV, cover letter, and certificates.

- Submit applications digitally.

- Track their application status: Processing, Approved, Rejected, Shortlisted.

- Receive system notifications and feedback.

**For Recruiters:**

- Post job vacancies on the platform.

- View and manage incoming applications.

- Use an AI-powered ranking system to automatically sort CVs based on

qualifications and relevance.

- Send interview invitations digitally to shortlisted candidates.

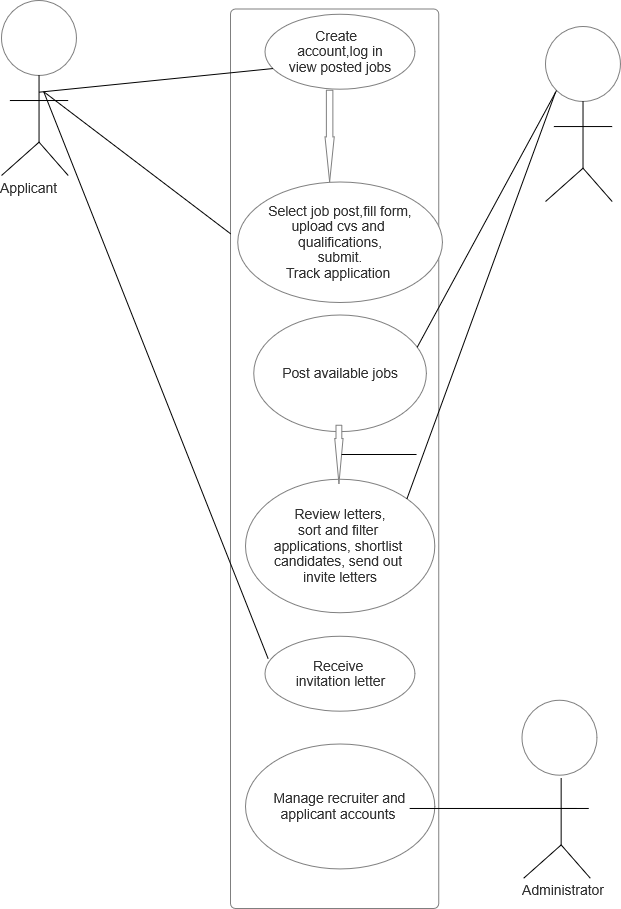
**For Administrators**:

- Manage and verify both recruiter and applicant accounts.

- Oversee overall system functionality and ensure smooth operations.

- Manage ad placements and system security.

Figure 2: below shows a usecase diagram depicting the proposed digital system.



**ROLES AND RESPONSIBILITIES**

Applicant: Apply for jobs, upload documents, monitor application status, receive updates.

Recruiter: Post jobs, review applications, view ranked CVs, send interview invites.

Administrator: Oversee system operations, manage user accounts, moderate recruiter

activities.

**MEANS OF GENERATING REVENUE**

For this system, we intend to generate revenue by selling the software to the government,

this will be done through annual subscriptions whereby they will have to pay us annually

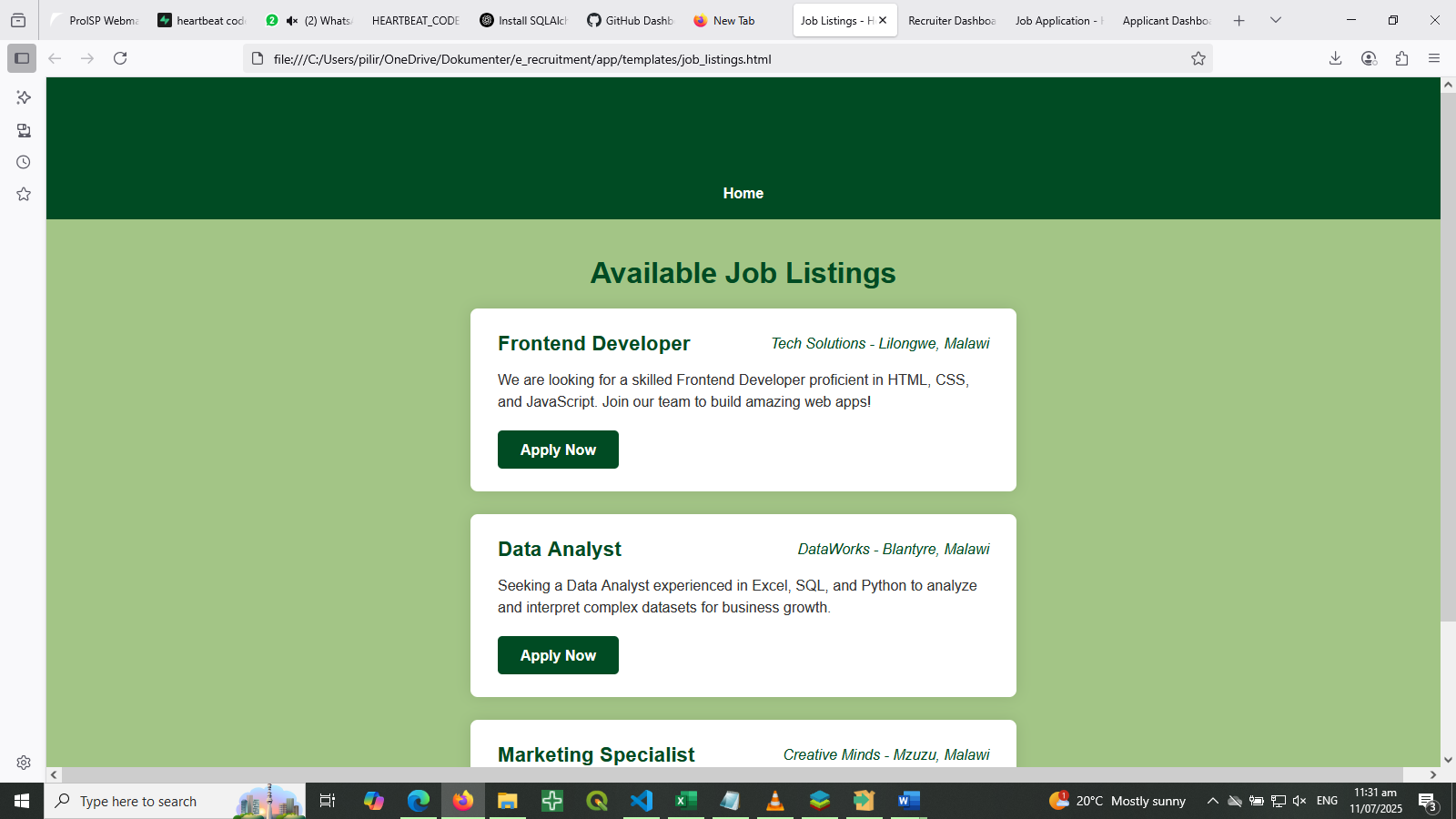
to host and maintain their E-Recruitment site. Another means of generating revenue will

be through the use of ads from various companies, these companies will have to reach out

to us and pay for their product or service to be advertised on our website.

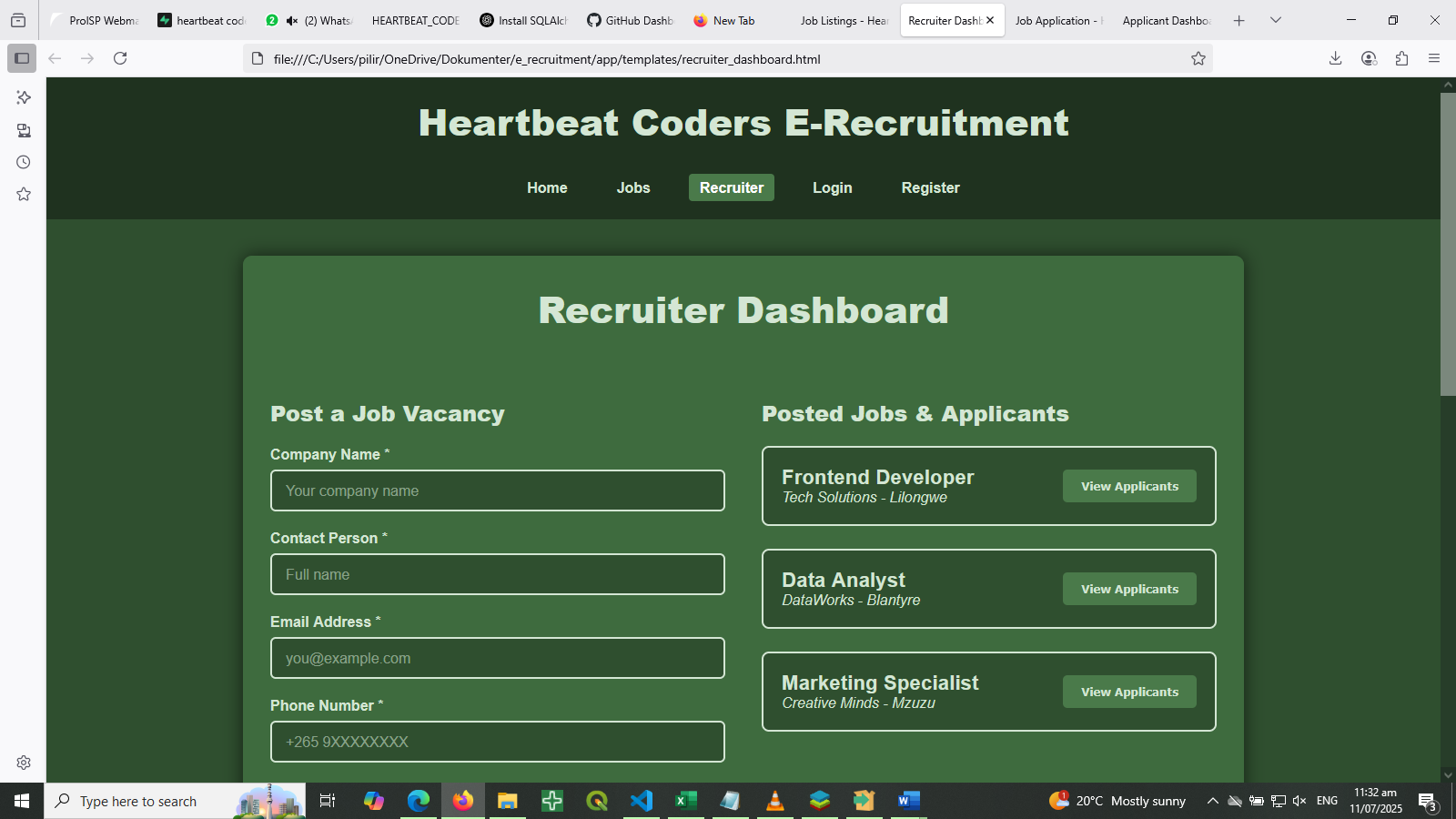
**USERGUIDE/SCREENSHOTS FROM THE DEVELOPED SYSTEM**

THE HOME PAGE



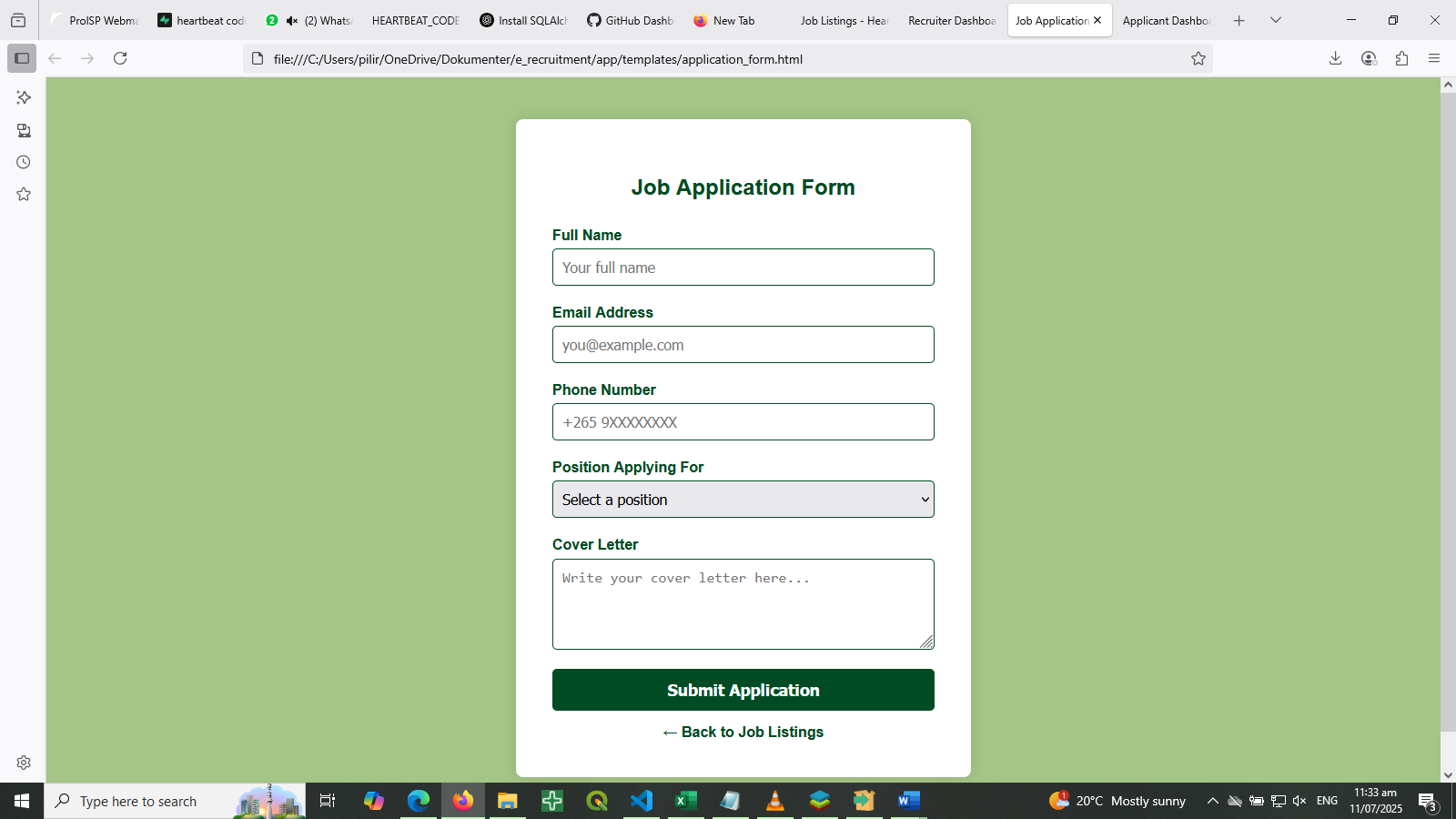
This is the page where applicants will view posted jobs and apply for jobs

**THE RECRUITER DASHBOARD**



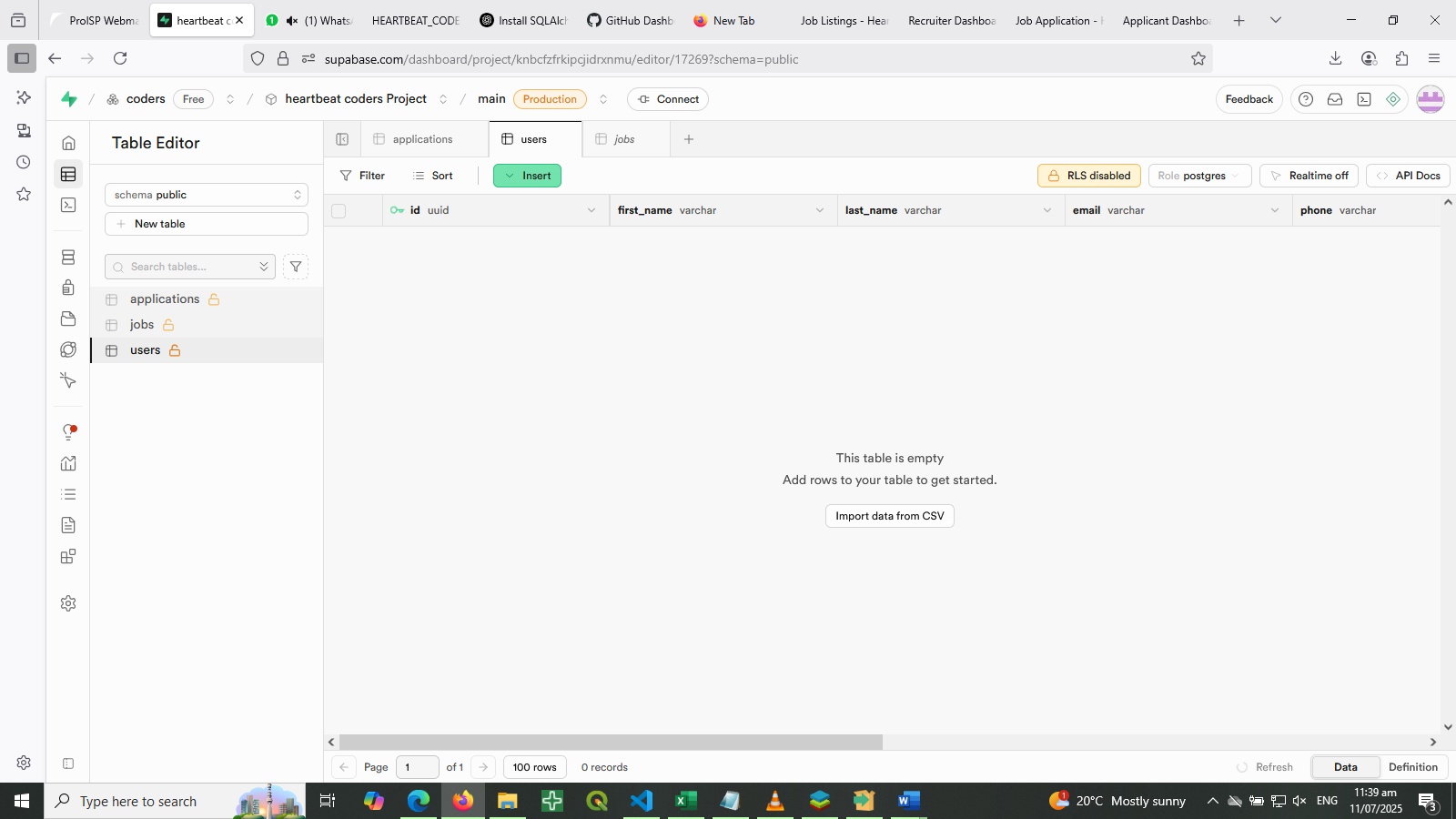
The recruiter posts vacancies on this window

**JOB APPLICATION FORM**



This is where applicants apply for jobs posted by filling in their details

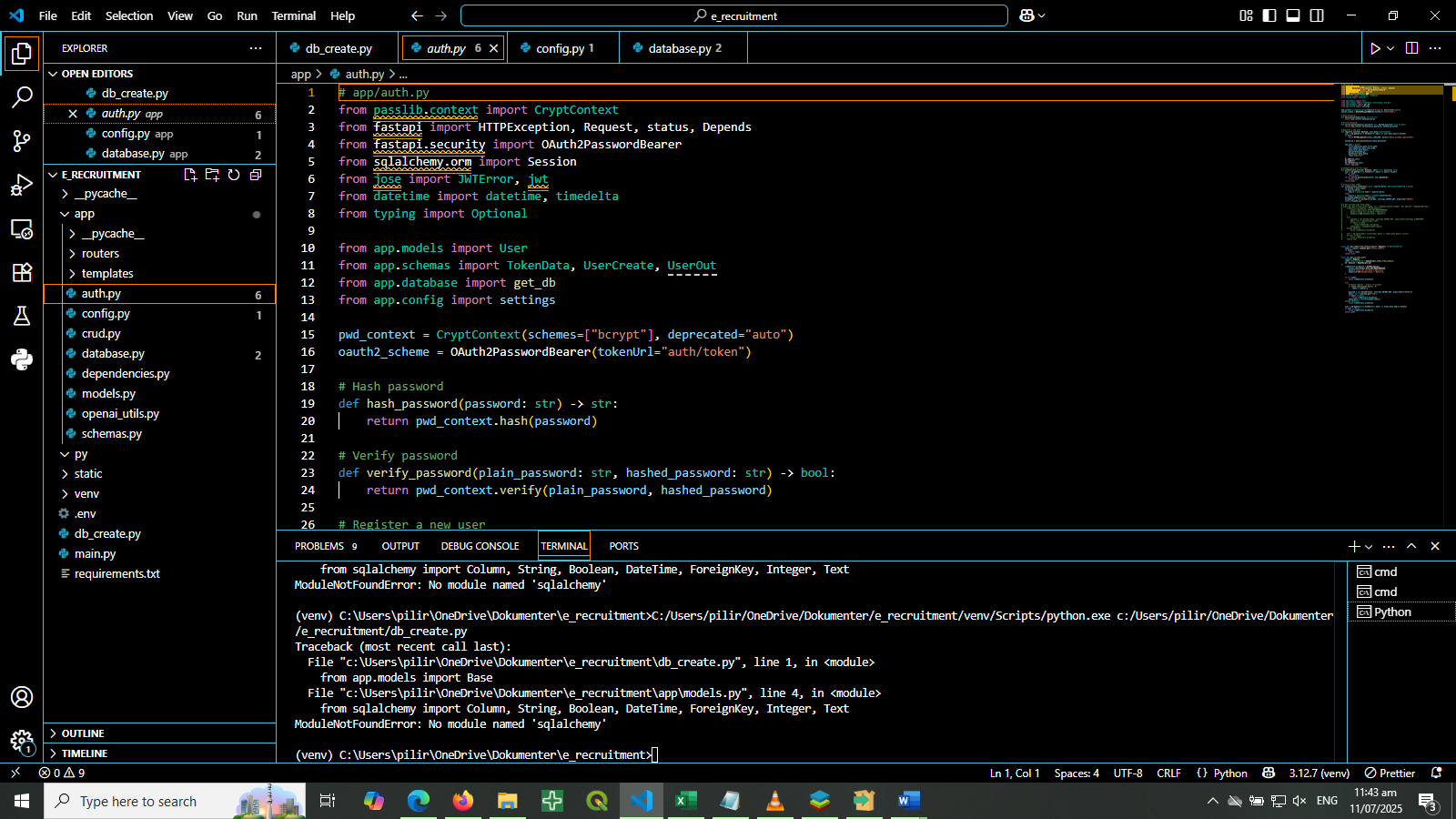
**JOBPULSEMW DATABASE**



For our project we used a cloud based database which is Supabase, Supabase is a hosted PostgreSQL database.

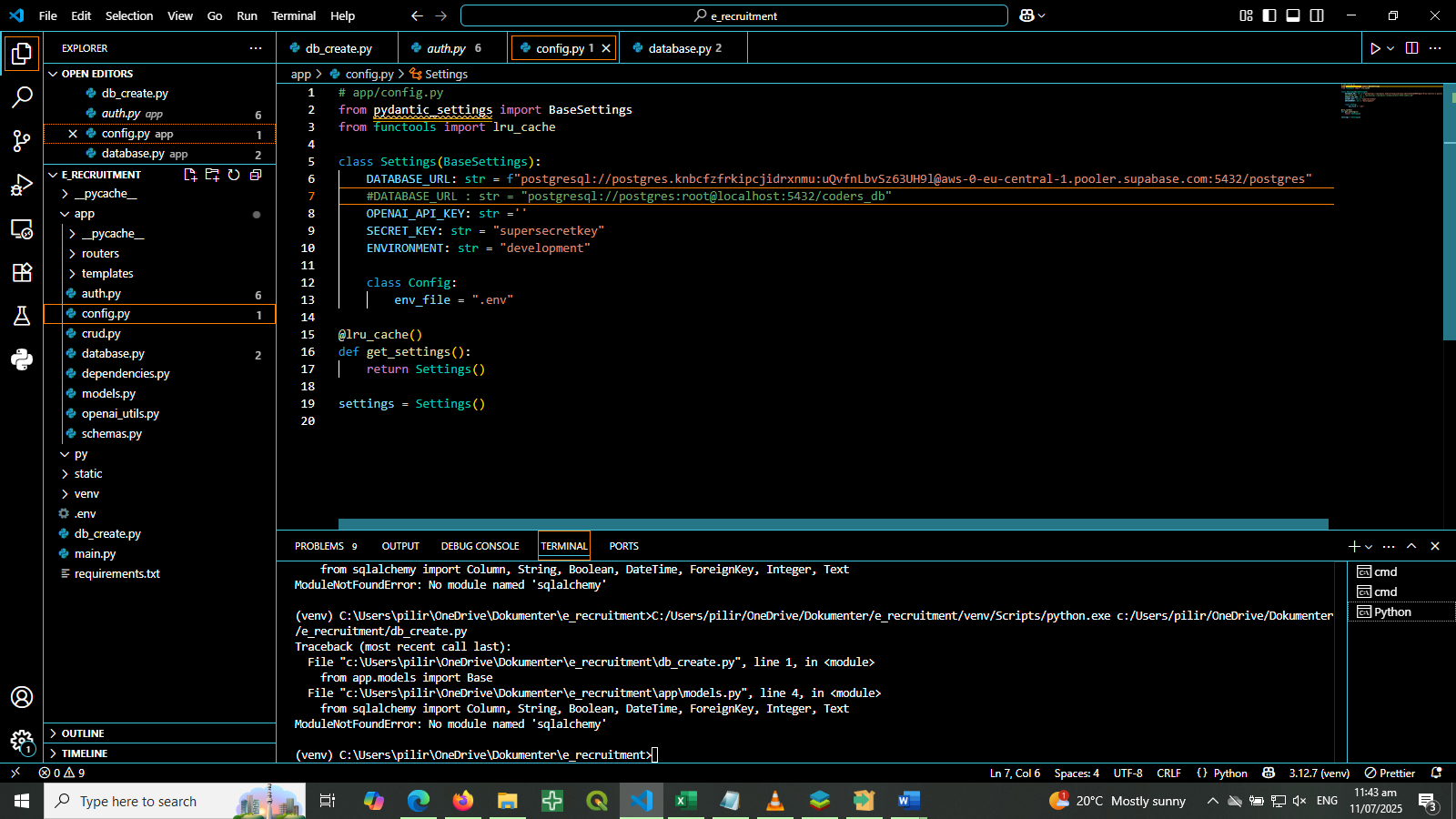
**USER AUTHENTICATION CODE**

The code auth.py is used when users log into the system, we used Python programming language throughout.

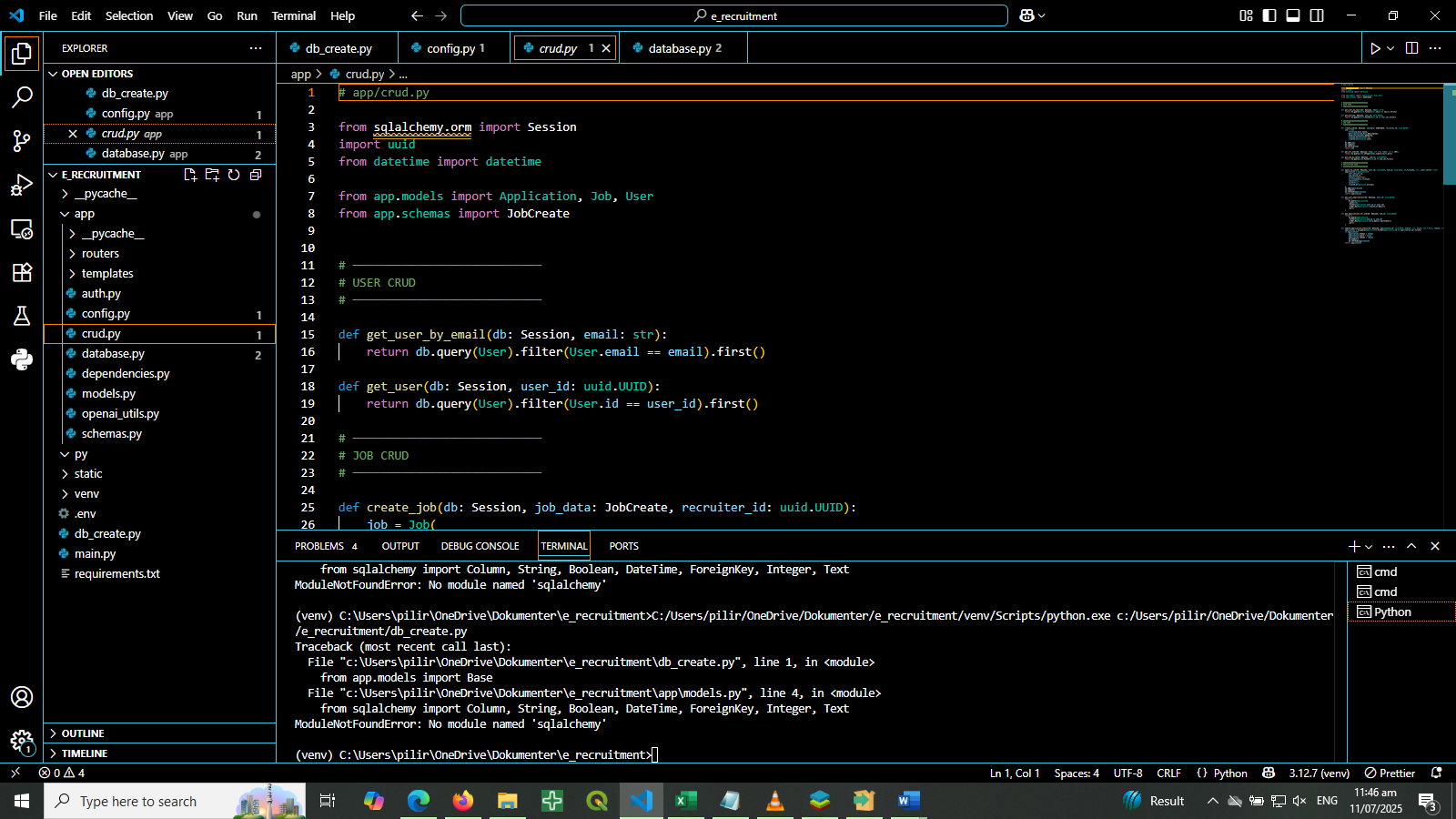


**CONNECTING TO THE SUPABASE DATABASE**

The code config.py connects the project to the cloud-based database by inserting the link  DATABASE\_URL:f"postgresql://postgres.knbcfzfrkipcjidrxnmu:uQvfnLbvSz63UH9l@aws-0-eu-central-1.pooler.supabase.com:5432/postgres" into our code

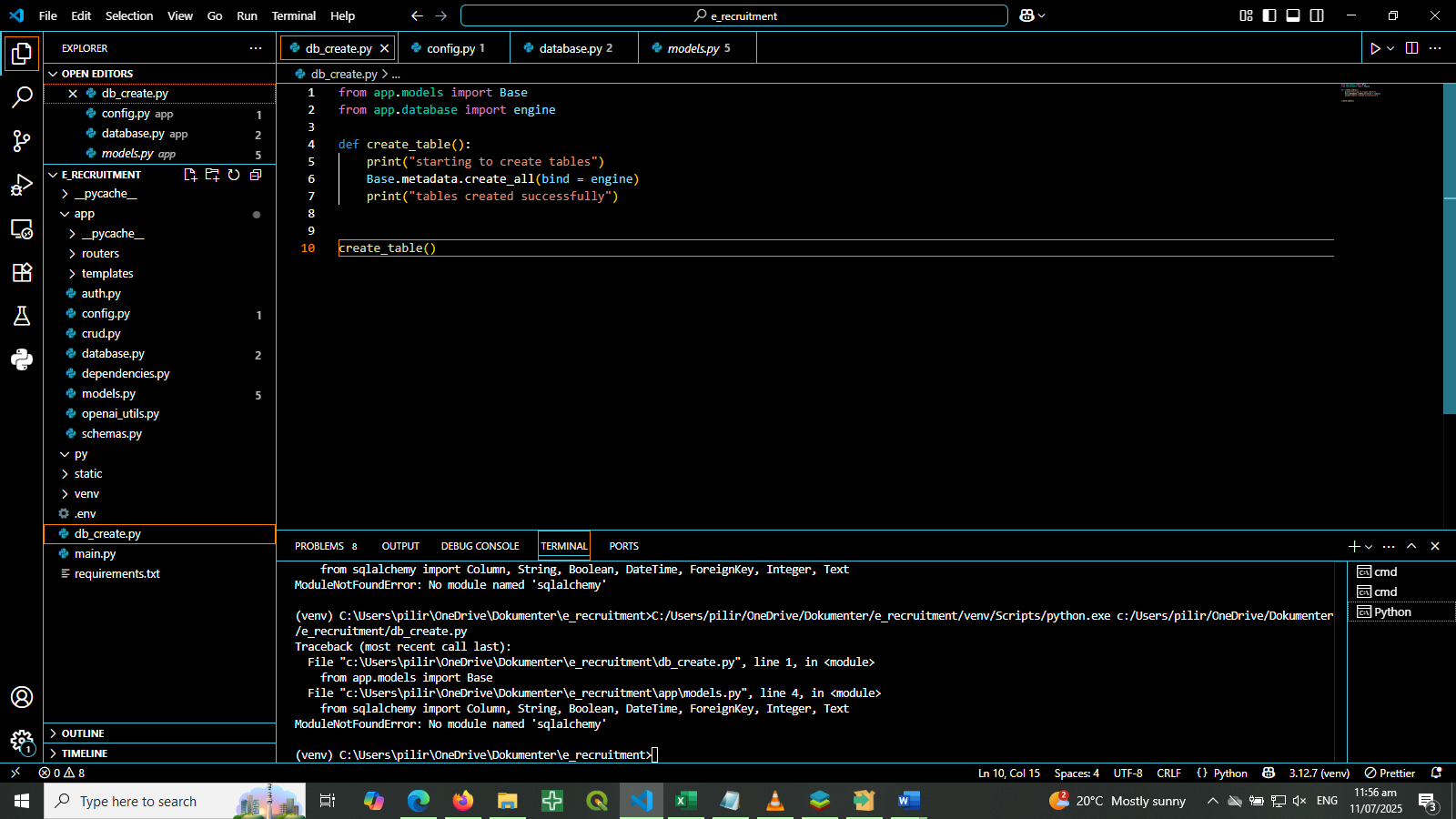


**TABLES IN THE SYSTEM**



The crud.py code represents the basic operations you can perform on data in a database or data structure, you can create, read, update and delete data in the database

**DB\_CREATE.PY**



The code db\_create.py creates tables in our vs that connects to the cloud based database

**CHALLENGES FACED**

We encountered various technical challenges such as network issues, we were working collaboratively online but due to slow network, some work was incomplete. We also had challenges in accessing laptops as we were using borrowed machines, this has also led to the project not being fully complete.

The last challenge encountered was time constraint, custom development, especially AI-based features, can be time-consuming, we had a hard time balancing time to do the bootcamp and school work as most of us were in exam season, so to come up with the full project, time was not on our side.

**CONCLUSION**

Jobpulse Malawi presents a transformative digital solution aimed at modernizing the outdated government job application process in Malawi. By replacing manual, paper-based submissions with a streamlined online system, the platform offers increased efficiency, transparency and accessibility for both applicants and recruiters

**LINKS**

Public repo

<https://github.com/piliranimangani1/JOBPULSEMW>

Cloud database

<https://supabase.com/dashboard/project/knbcfzfrkipcjidrxnmu/editor/17279>