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CAREER ENGINE

By

Bhargavi Kasetti
Bachelors., Ellenki College of Engineering and Technology, 2018

GRADUATE CAPSTONE SEMINAR PROJECT

Submitted in partial fulfillment of the requirements

For the Degree of Master of Science,

With a Major in Computer Science

Governors State University
University Park, IL 60484

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ABSTRACT

Everyone's learning is increasing in this competitive environment, to the point that professional chances are becoming scarce. Companies desire the greatest personnel in their areas. It was difficult to find persons who were bright enough to be recruited at the time. Companies' attempts to find qualified employees are also increasing. The purpose of this application is to provide a system that allows employers and candidates to communicate with one another. The idea is to speed up the recruiting process by facilitating contact between interested parties. A career engine is a website that offers recruiters and job seekers with online information. Our application helps both job searchers and recruiters choose the finest company for their workers. For job seekers, the employment site presents a list of companies based on their educational credentials, experience, and interests. Furthermore, it offers appropriate candidates from a pool of shortages to recruiters.

In this project, we utilized MySQL to store the data, and the frontend is constructed using HTML5, CSS3, Bootstrap, JavaScript, and the backend for PHP is made with the MVC CodeIgniter framework. In our application, we use the technological stacks listed above. Our application presented three responsibilities: job searchers, recruiters, and administrators. The responsibility of the job seeker is to apply for the position and offer feedback to the business. The following recruiter's role is to publicize job vacancies, contact job seekers, and conduct interviews on their behalf. All users, including job seekers, recruiters, and job listings, must be tracked by the administrator.

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1 Project Description

A career engine called HIKEPRO created to give job seekers access to an interactive job board. In its current condition, this online application should be considered a dynamic website that constantly requires updates from both users and businesses. The project's objective is to make it possible for job seekers to submit their resumes and find appropriate employment, while companies may post openings and find competent candidates. On the website, job searchers may upload their resumes, do a job search, and view listings for individual positions. A variety of organizations will be able to browse candidate resumes and post job opportunities on the website. An admin module will be accessible in addition to the jobseeker and company modules, allowing for the administration of the whole Portal.

1.1 Competitive Information

There are several job portal websites available, however for the time being, we decided to match our application with Dice and LinkedIn. We can browse at job seekers' profiles and apply for positions on Dice and LinkedIn. Similar to this, the front page of an online job site features the newest job information as well as the top categories for job search filters by category. Based on input from users or job seekers, we provide star ratings.

1.2 Relationship to Other Applications/Projects

This project provides an all-inclusive solution that may be used for any purpose. On order to search for available positions in the market, job searchers may utilize this project. In addition to communicating with one another about it, recruiters might look for job seekers who are looking for work. The hiring manager can choose to shortlist or reject a job candidate, and the candidate can choose to apply for positions that are still open.

1.3 Assumptions and Dependencies

A fundamental grasp of how to utilize the website is required for all users. Anyone else filling the role of administrator has to be knowledgeable about the process, how to handle recruiters, job searchers, job advertisements, and other administrative duties.

1.4 Future Enhancements

The goals and objectives of the system have been met, yet there is still potential for development. SMS integration for OTP is used to stop recruiters or job seekers from registering without permission. This effort's scope encompasses all information relating to jobs. Additionally, we may give recruiters access to a database of application profiles and training for prospects' self-improvement. Some of the limitations of older job search techniques have been eliminated.

1.5 Definitions and Acronyms

- XAMPP - XAMPP is a free and open-source cross-platform web server package that consists mostly of the Apache HTTP Server, MySQL database, and interpreters for PHP and Perl scripts [1]. The acronym XAMPP stands for: X: any of the several operating systems (Windows, Linux, Mac OS X), to be understood as "cross," which means "platform."
- HTML (hypertext markup language) - HTML stands for hypertext markup language. It's a hypertext markup language (HTML) that's used to make web pages. It's written with HTML components in mind.
- CSS - Cascading Style Sheets is a prominent design language with a full name of CSS. It simplifies the work of displaying webpages and is a relatively easy language to use.
- Hypertext Preprocessor (PHP) (earlier called, Personal Home Page) PHP is a server-side scripting language for web development that is incorporated in HTML.

2 Project Technical Description

This application's architecture and development tools were as follows:

- Database: MySQL; Operating System: Microsoft Windows 10
- Front end components include PHP, HTML, CSS, and JavaScript [3].
- Local host components include Apache Server (XAMPP) and Chrome.
- Any text editor is OK. We preferred Visual Studio Code.

The CodeIgniter Framework's MVC architecture [4] is used by us. Since this is a one-time operation, we decided to utilize the auto-load database library instead of loading it each time you query the database. We employed session variables for the authentication of administrators, recruiters, and seekers. For Notification, we utilized the jQuery basic toast capability. PHP was chosen because it is flexible, affordable, easy to set up, safe, quick, and dependable, and it can interface with a variety of relational database management systems. One of the most widely used open source database management systems worldwide is MySQL. Users may create databases using this free and open source database, as well as carry out various data transformations and database management operations. Because of its advanced features, including data security, on-demand scalability, fast speed, and comprehensive workflow management, MySQL was chosen for this project.

2.1 Application Architecture

Administrator Functionalities

Login - A legitimate username and password are entered into the system by the administrator to login.

Dashboard - The administrator may view the system's total number of candidates, companies, job postings, and registered applications.

Active / Inactive - Job seekers' and employers' accounts are activated by the administrator, who also adds accounts for both parties.

Category - To filter job posts by category, the administrator must first establish the category.

Profile - Administrators have the ability to edit their profile information and password.

Logout - The administrator logs out of the system after each activity.

Employer Functionalities

Employers Registration - A company registers as an employer and generates a new account.

Employer Login - Using a legitimate email account and password, the company logs into the system.

Post a Job - An employer post the jobs without any restrictions.

Profile update - An employer makes changes to their profile.

Job List Details – Employers locate the positions they listed.

Candidate List – The employer may browse all the applicants, arrange interviews, and pick or reject individuals.

View resume – Look through the resumes of the candidates who applied.

Chat - An employer will communicate with a registered job seeker to discuss the interview and other matters.

Logout - After the action is over, the user logs out of the system.

Job Seekers Functionalities

Registration - A applicant must create a new account to register.

Login - The candidate logs in to the system with a legitimate email address and password.

Find Job. - A job seeker searches for job postings to find a job.

Edit Profile - Changes are made to a seeker's profile using the editing feature.

Upload Resume - An applicant enters their résumé into the system by uploading it.

Job Application - An applicant who is interested in a position submits an application for it.

Search company profile - Candidates can use the system to look up firms by name and location by searching the company profile.

Send Feedback - Sending feedback to the recruiter is an option for candidates.

View applied jobs - A candidate has access to a list of all the positions for which they have applied.

Logout - When the candidate has finished the activity, he or she logs out of the system.

2.2 Application Information flows

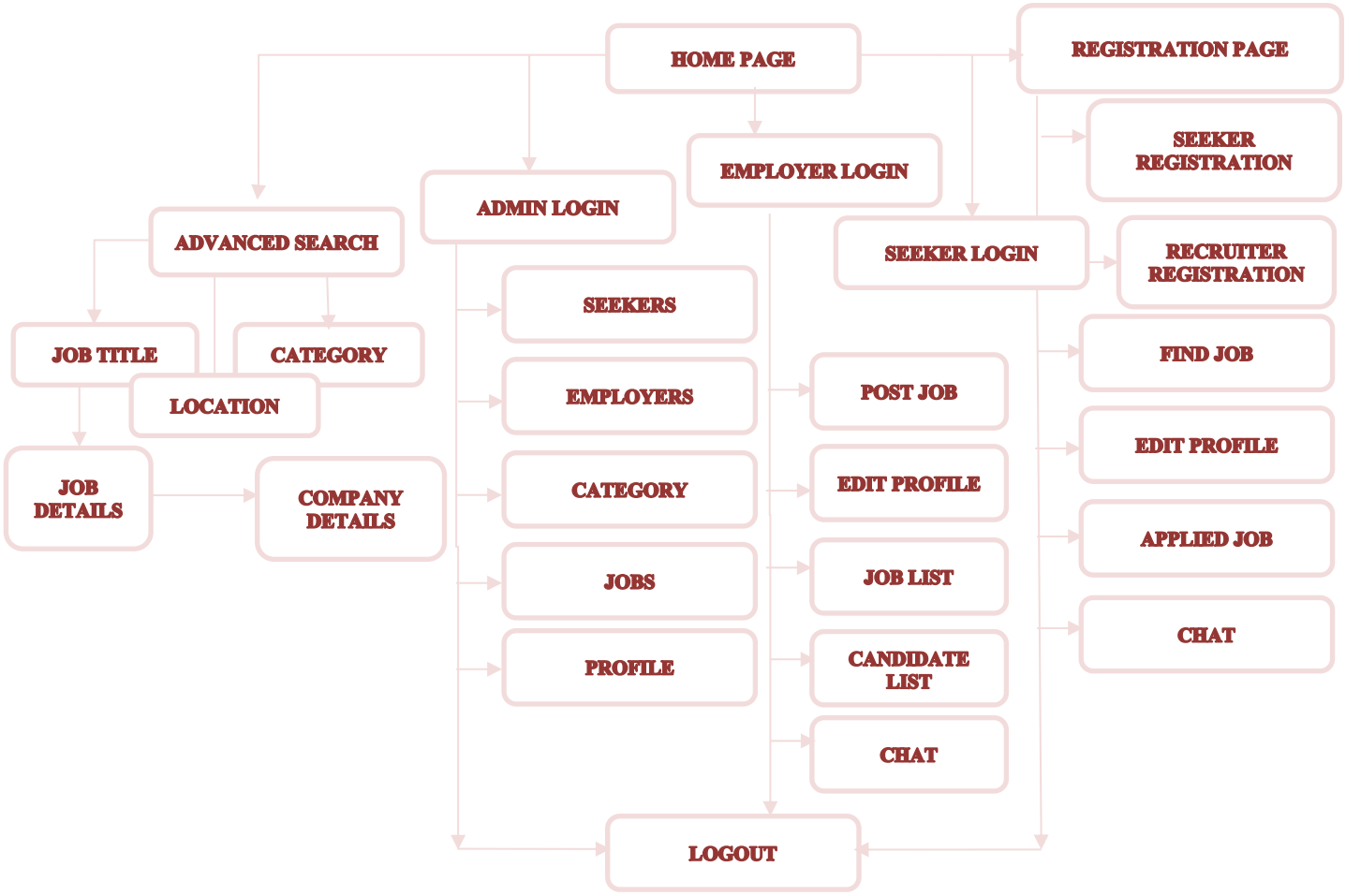

Figure 1: Application workflow

2.3 Interactions with other Applications

We provide job specifications, seeker data, and company details on this platform. We can also offer training in technology and personality. That is determined by how well they performed in the interview, which is better for job seekers in terms of extending their knowledge and for recruiters in terms of discovering more competent applicants for their vacant positions.

2.4 Capabilities

- It maintains a database of recruiters and job opportunities and accepts resume submissions from job seekers [2].
- Job applicants' personal information, educational level, skills, and experience are among the data it saves.
- Employers and job seekers can exchange messages. It includes feedback mechanisms.

2.5 Risk Assessment and Management

The right risk management procedures were followed, and backup plans were established, such as task management process error termination, to make the system easier to use in the event of a mistake.

3 Project Requirements

3.1 Identification of Requirements

<HikePro_CareerEngine_2022-1 User-capability-“CE1”>

Responsive Design - On whatever device, users can anticipate the finest user experience.

< HikePro_Career_Engine_2022-2 User-capability-“CE2”>

Advanced Search: Job searchers may look for openings based on a variety of parameters, including job location, job type, and job title.

< HikePro_Career_Engine_2022-3 User-capability-“CE3”>

Registration: The registration process is voluntary for recruiters and job searchers, but it is a prerequisite to carrying out the required action on their portal.

3.2 Operations, Administration, Maintenance and Provisioning (OAM&P)

There is no requirement for user registration or login in order to use the website. You have access to the main pages as a guest. The data acquired through the search option ought to be kept in the company's or job seeker's database. The admin may view all of the data in the dashboard for easy access. Pages load more quickly for complex web apps like this when large file sizes are reduced. This program ensures that a regular backup of the entire website and data is produced in order to protect the integrity of the website and data. This program verifies that the settings are accurate. The capacity to monitor user progress and place access restrictions.

3.3 Security and Fraud Prevention

The method for establishing security and fraud detection may be established using security planning and planning for fraud prevention. The following phases make up the fraud prevention planning process. Regular updates should be made to the application. As a consequence of the required registration process, all user information is saved.

3.4 Release and Transition Plan

The website must be properly finished and tested prior to being pushed to the live server. The website shouldn't be made available for job consultation until the problems are fixed. The data storage procedure will start after the computer has booted, and the maintenance process will be used to maintain the application's continued operation.

4 Project Design Description

The MVC framework, which is the most modern and effective, speedier than any other platform, open source, and independent of any environment, was used to develop all the features in the Career engine project. The MVC design pattern, which offers greater space and simpler code, is used in project development. Model, View, and Controller are the three main divisions used by MVC to organize all code segments. Depending on the controller function, it retrieves data from the model, utilizes it, and shows it in the view. This controller is used to redirect user requests. In this project, we also used to ajax for notification alerts, and we designed the sites so they wouldn't need to be reloaded. As a result, we used a single instance to develop toast notification for the alert messaging service. The administrator has the ability to create the category. The first step is for the administrator to create a category since in order for a recruiter to post a position after registering they must first select a category. A recruiter's profile can be updated. Everyone wants to visit the website except for the recruiter who advertised the position once the administrator activated it. The applicant can submit an application after the administrator is engaged in the post. If the recruiter likes the applicant's profile, they select them from the shortlist; if they don't think the applicant is a good fit for the position, they reject the application. In the case of an emergency, recruiters will use the applicant they are holding onto while searching for a better fit. The chat feature enables communication between the recruiter and the candidate. Among the advantages of this job application are the following: availability, learnability, user-friendliness, and simplicity of usage Access is available to authorized users around-the-clock. Any computer or portable device with internet connectivity can use this system. Efficiency, speed, and maintainability are all taken into consideration, as well as the validation of data in fields like names, phone numbers, and email addresses.

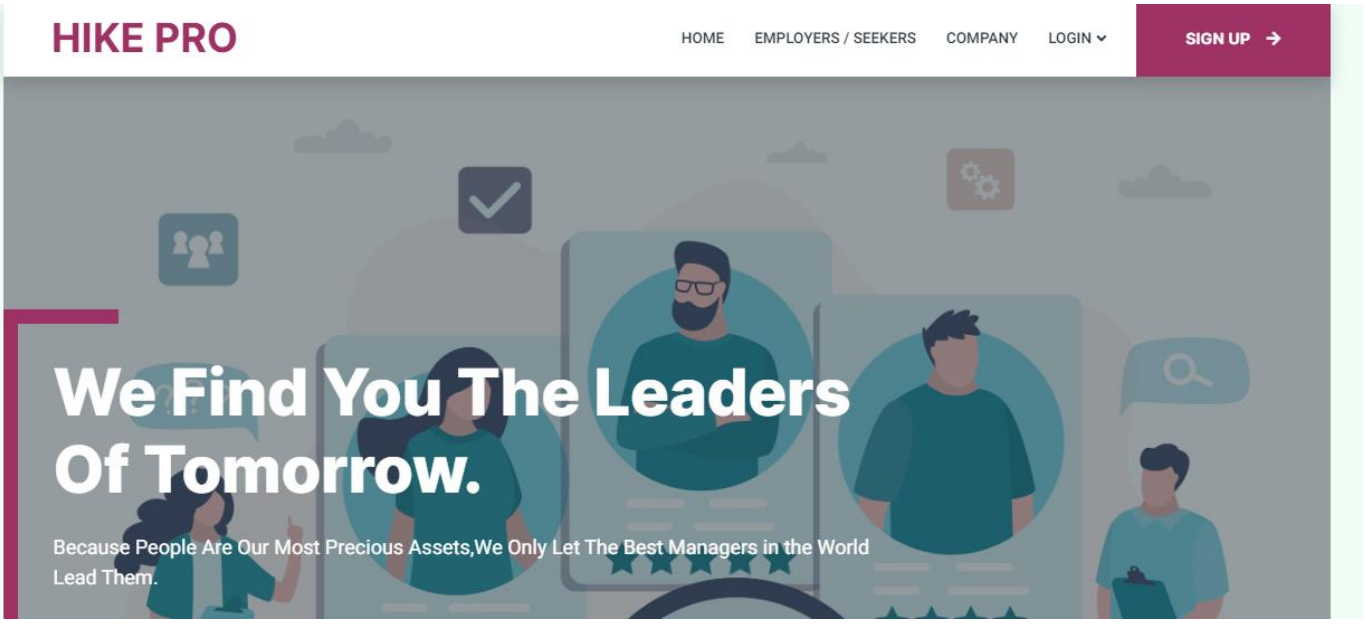

Figure 2: Guest Page

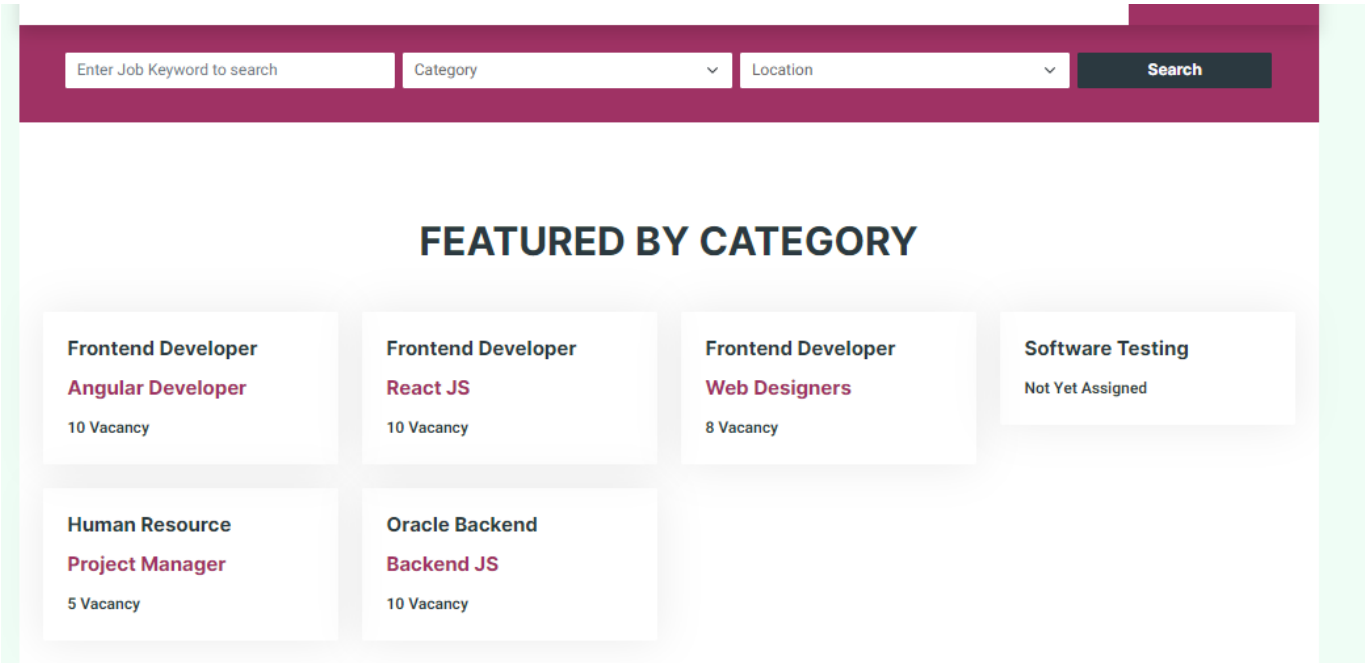

Figure 3: Feature Category

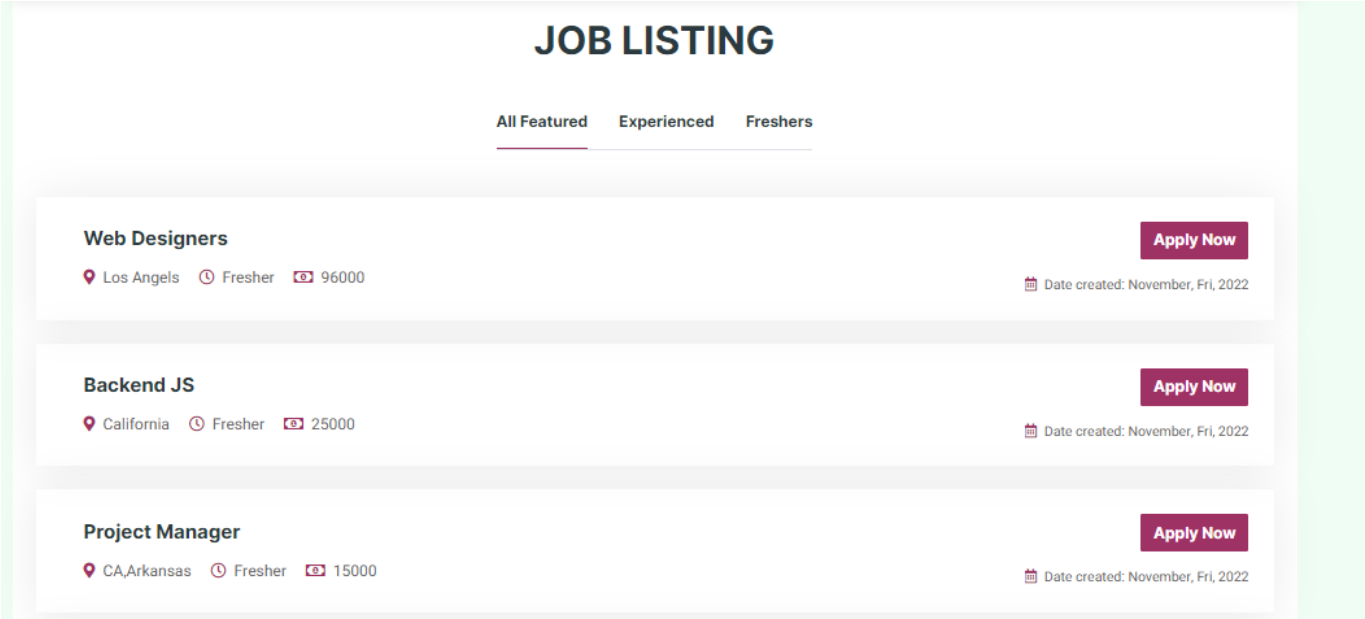

Figure 4: Job Listing

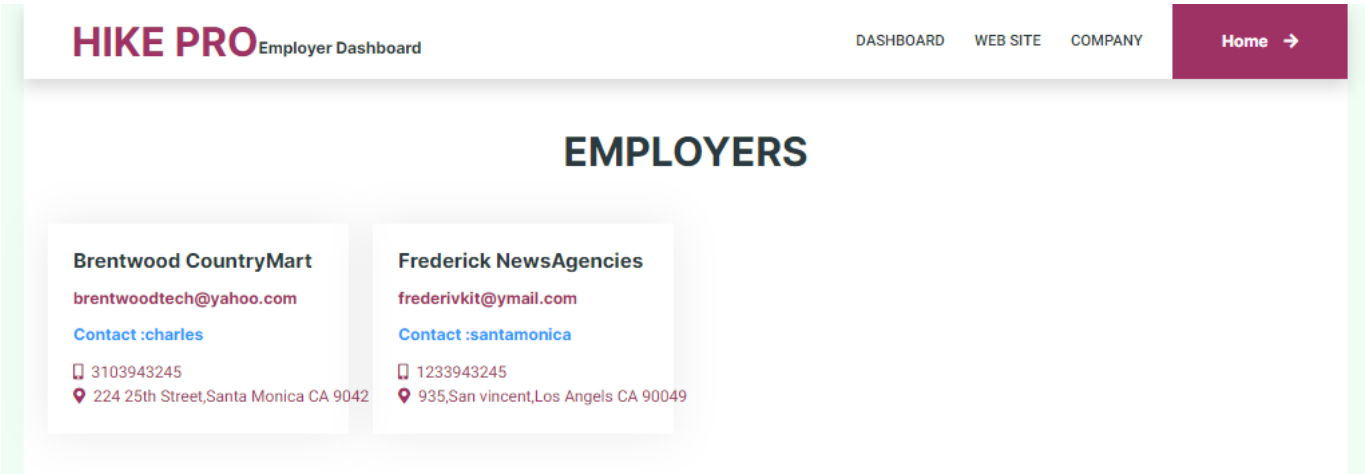

Figure 5: Company List

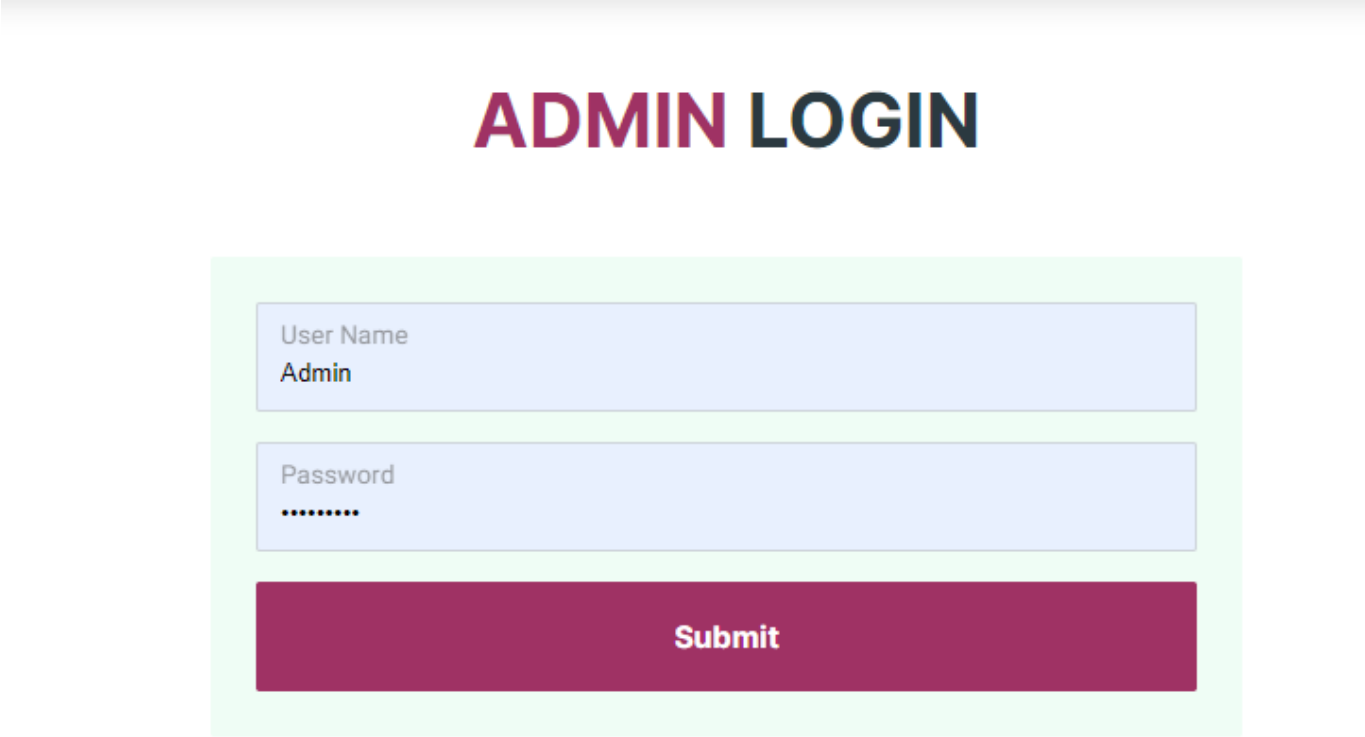

Figure 6: Admin Login View

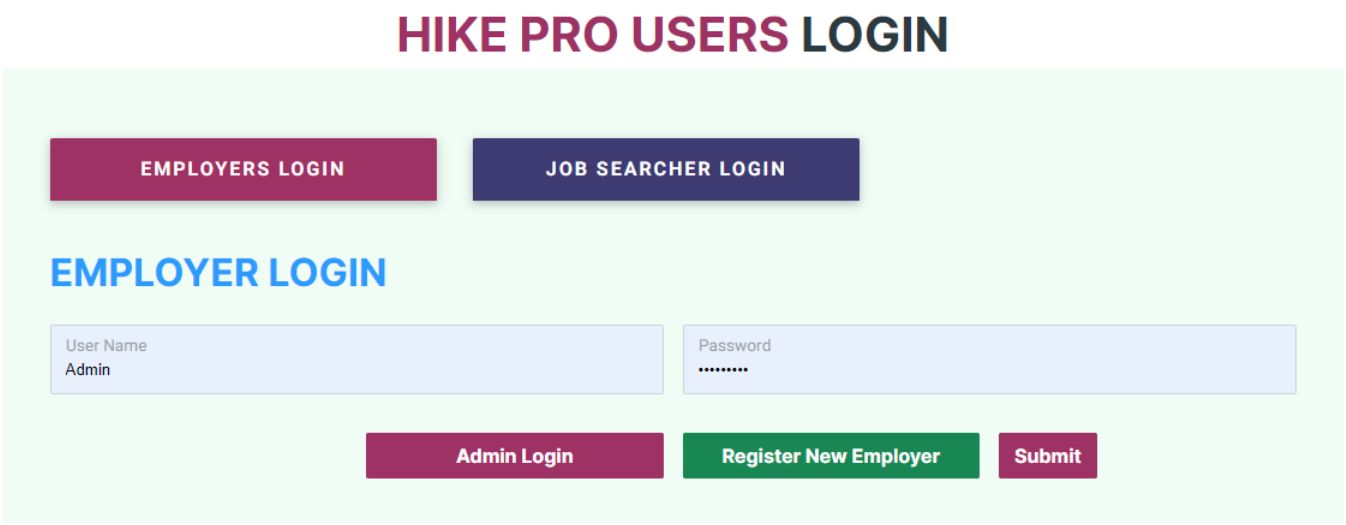

Figure 7: Employer / Job Searcher Login

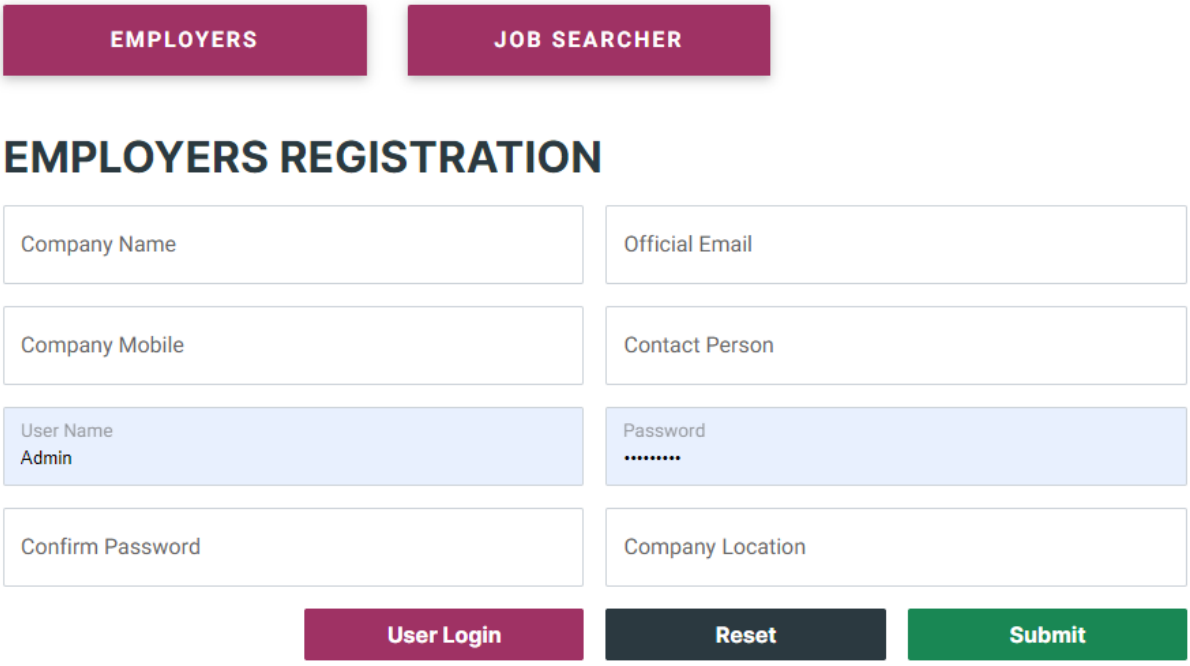

Figure 8: Employer / Job Searcher Registration

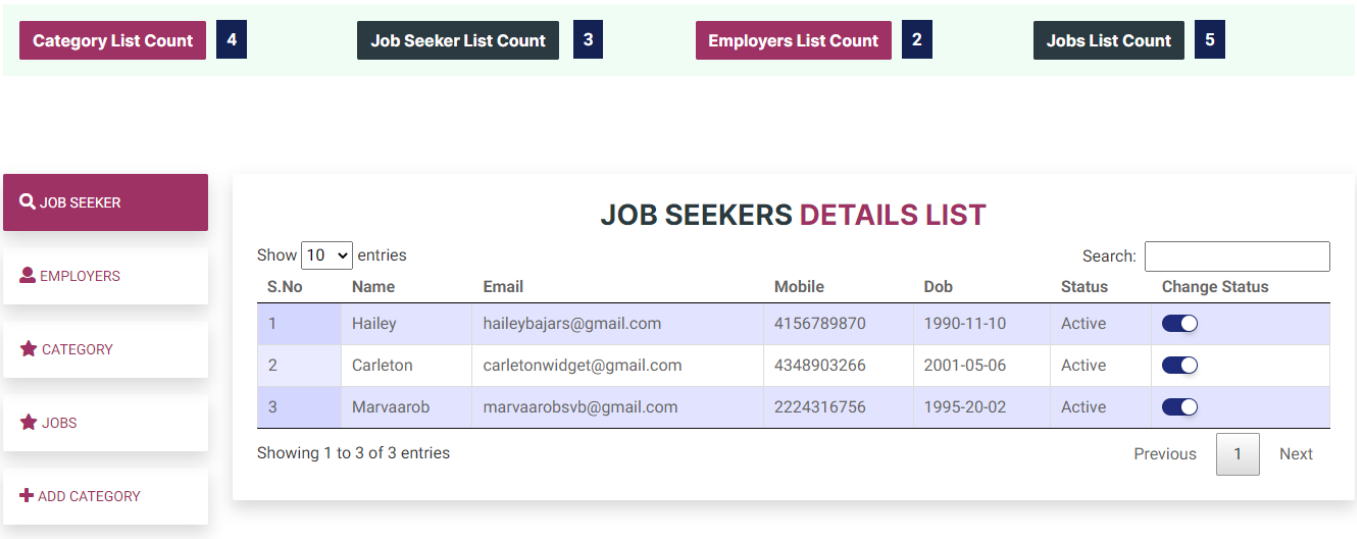

Figure 9: Admin Layout

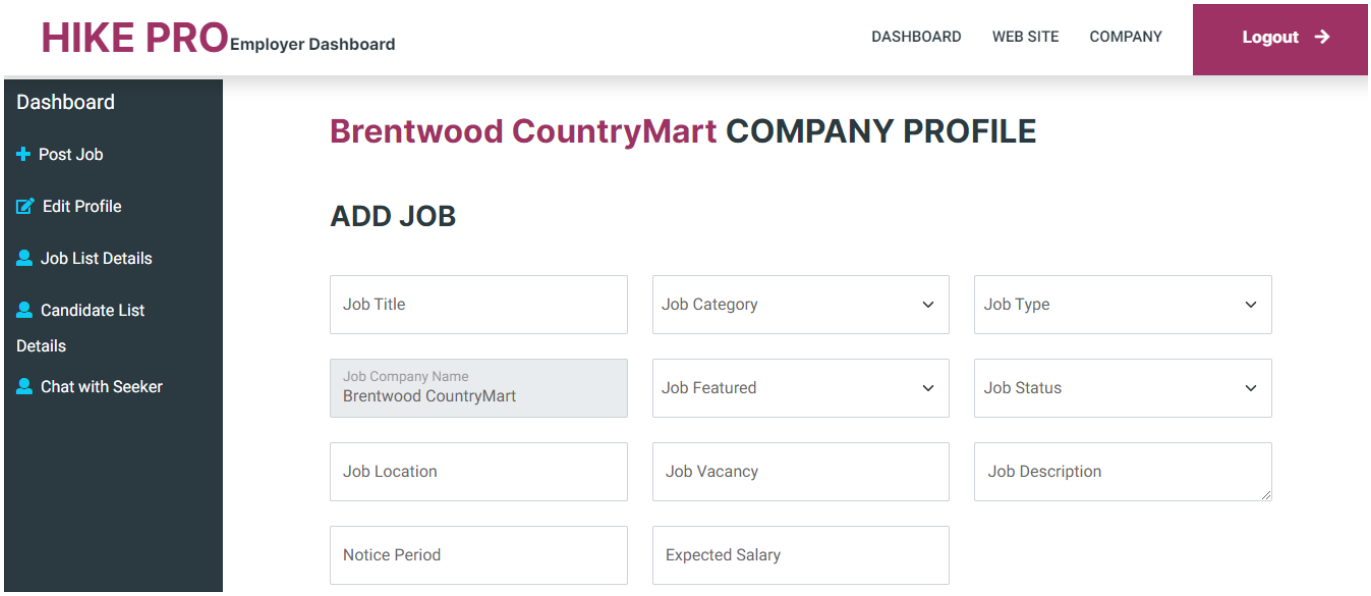

Figure 10: Employer Layout

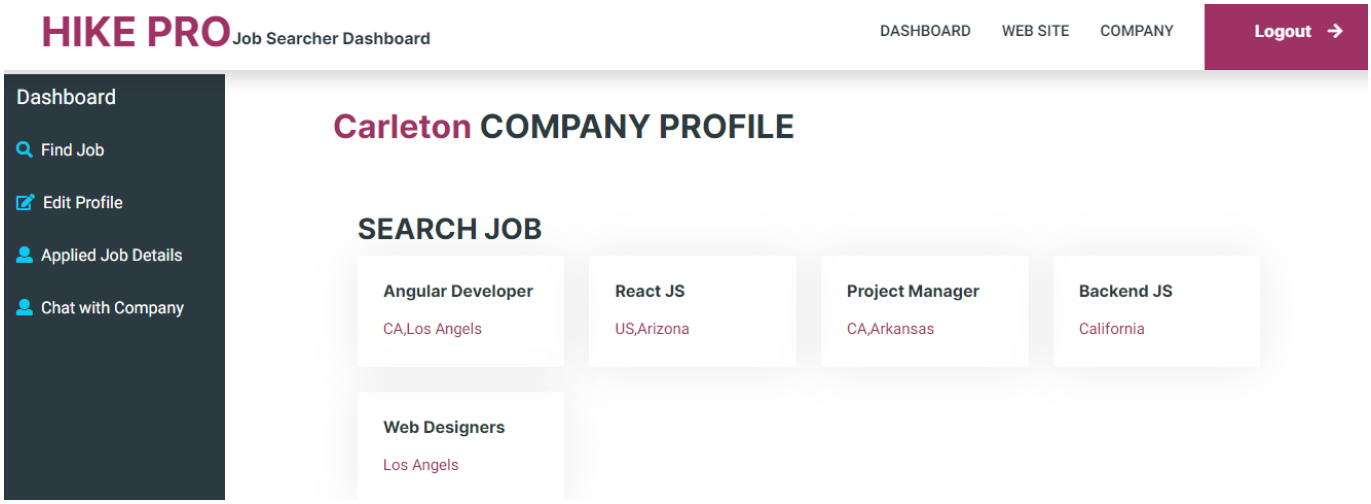

Figure 11: Job Searcher Layout

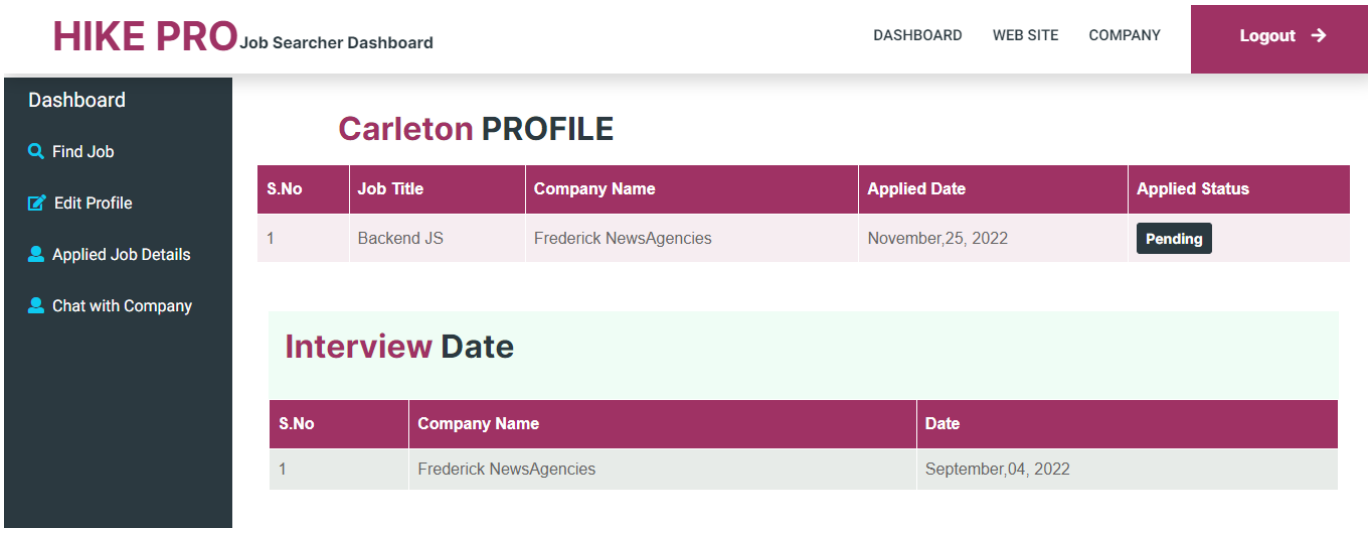

Figure 22: Applied Jobs

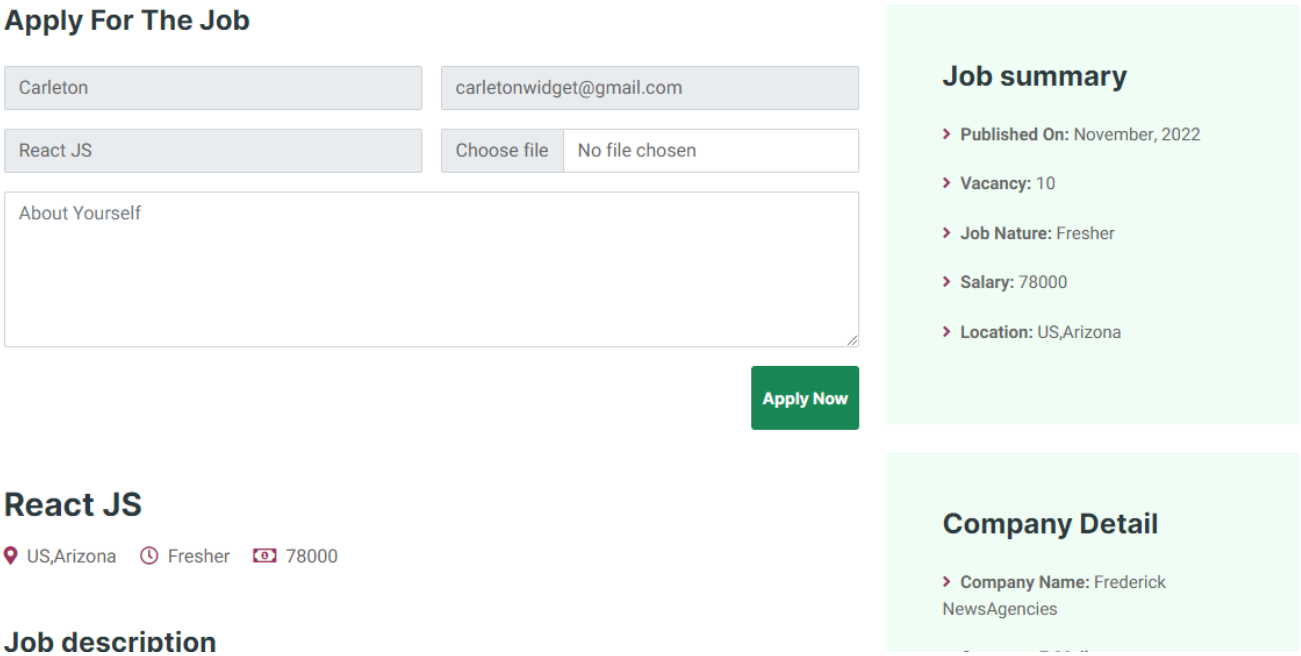

Figure 33: Specific Job Information

5 *Internal/external Interface Impacts and Specification*

The software requirements specification includes a complete description of the system's behavior. This lists the hardware and software requirements that the system must have in order to function optimally. Before they can extract system requirements, developers must have a thorough understanding of the products or systems being created. This is achieved by staying in close contact with system users. The architecture of a system, which specifies its structure, behavior, and other perspectives and analyses, is the main emphasis of the architectural design of that system. Three-tier architectural design was used to create this system. The user interacts with the software through the client tier, which is often an interface like a web browser. Web browsers include those like Internet Explorer, Mozilla Firefox, Google Chrome, Microsoft Edge, Opera, and others. Application logic that transmits data or information between the first and second levels makes up the second/middle tier. The database management system, which is in charge of managing databases, is part of the database tier.

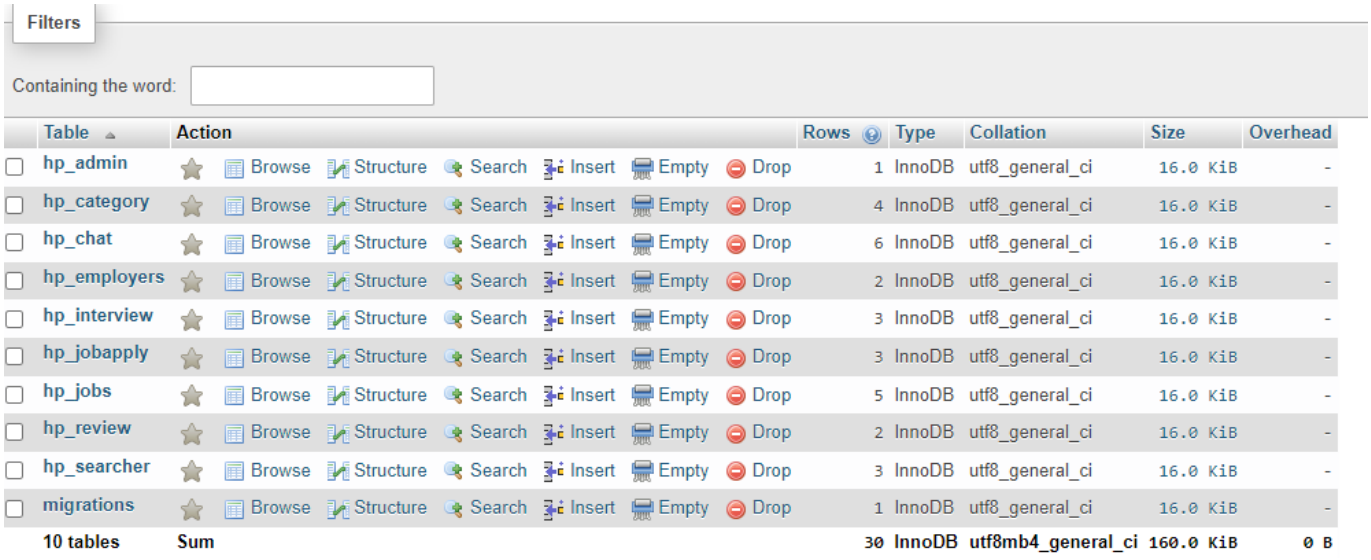

Figure 44: Database Information

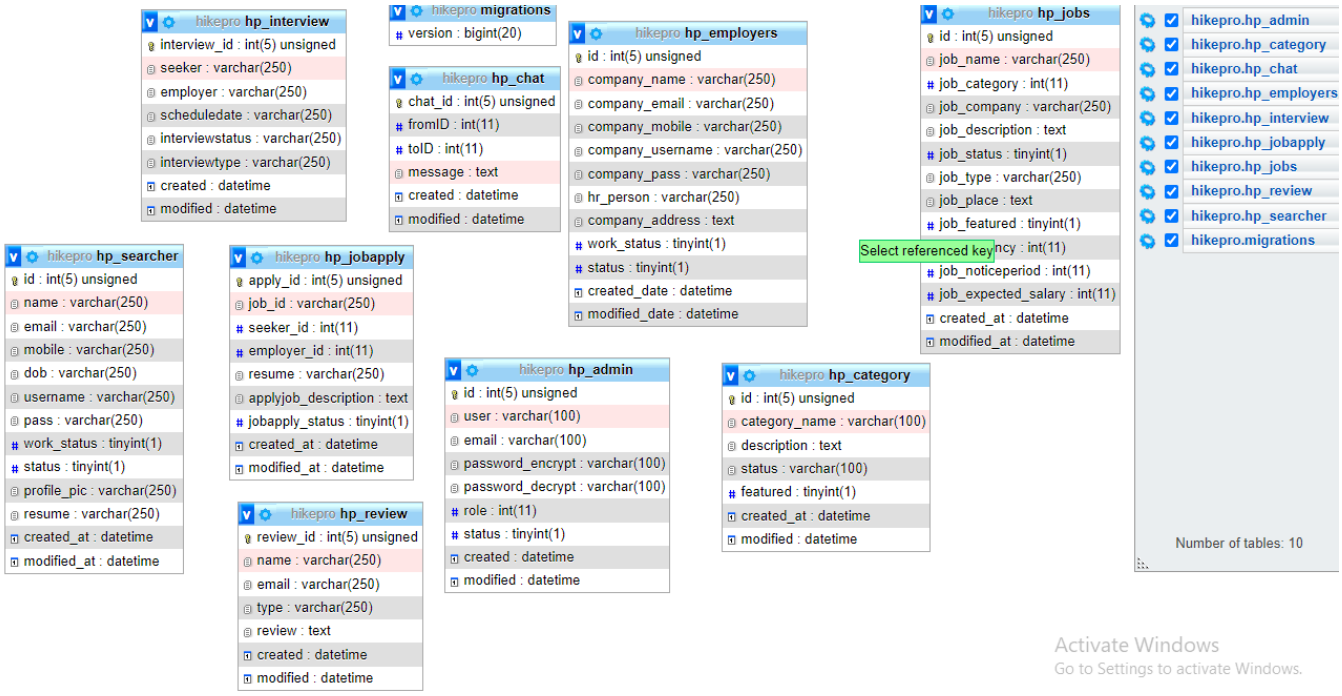

Figure 55: Database Diagram

6 Design Units Impacts

Applications are developed to carry out certain tasks, therefore satisfying the demands of the user. According to a theoretical application development process, the designer gathers all the specifications, develops the system, performs a verification test to make sure his creation adheres to the guidelines, and finally sends it to production. In the majority of product development processes, one of the most challenging challenges is identifying all demands. It could improve your productivity, efficiency, and the worth of your goods and services. It can also reduce costs and risks.

6.1 Functional Area A/Design Unit A

6.1.1 Impacts

The workflow method and design unit for the seeker, administrator, and recruiter controller are adapted to the operational and client needs. The work process includes authentication, updating data and user information, backing up and recovering data, and administering processes.

6.1.2 Requirements

Users are authenticated by the administrator. For access to this web application, neither registration nor login are required. Both the employer and the candidate's progress should be tracked by the admin. Interfaces between systems must be properly designed and dependable on both the inside and outside. A data backup strategy should be implemented for the protection of customer data.

7 *Acknowledgements*

God Almighty deserves all the praise for the mercies, unwavering goodness, and abounding love He has shown me. I sincerely appreciate Dr. Dae Wook (Wooky) Kim advice and assistance during the development of the project. I'd want to thank my teammates for their assistance in getting the assignment completed.

8 *References*

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[3] Saikia, R. D. (2016). Comparison of Procedural PHP with Codeigniter and Laravel Framework.
[4] Utomo, H. a. (2014). Implementing Code Igniter Framework in Open Source Mobile Learning Application.

9 *Appendices*

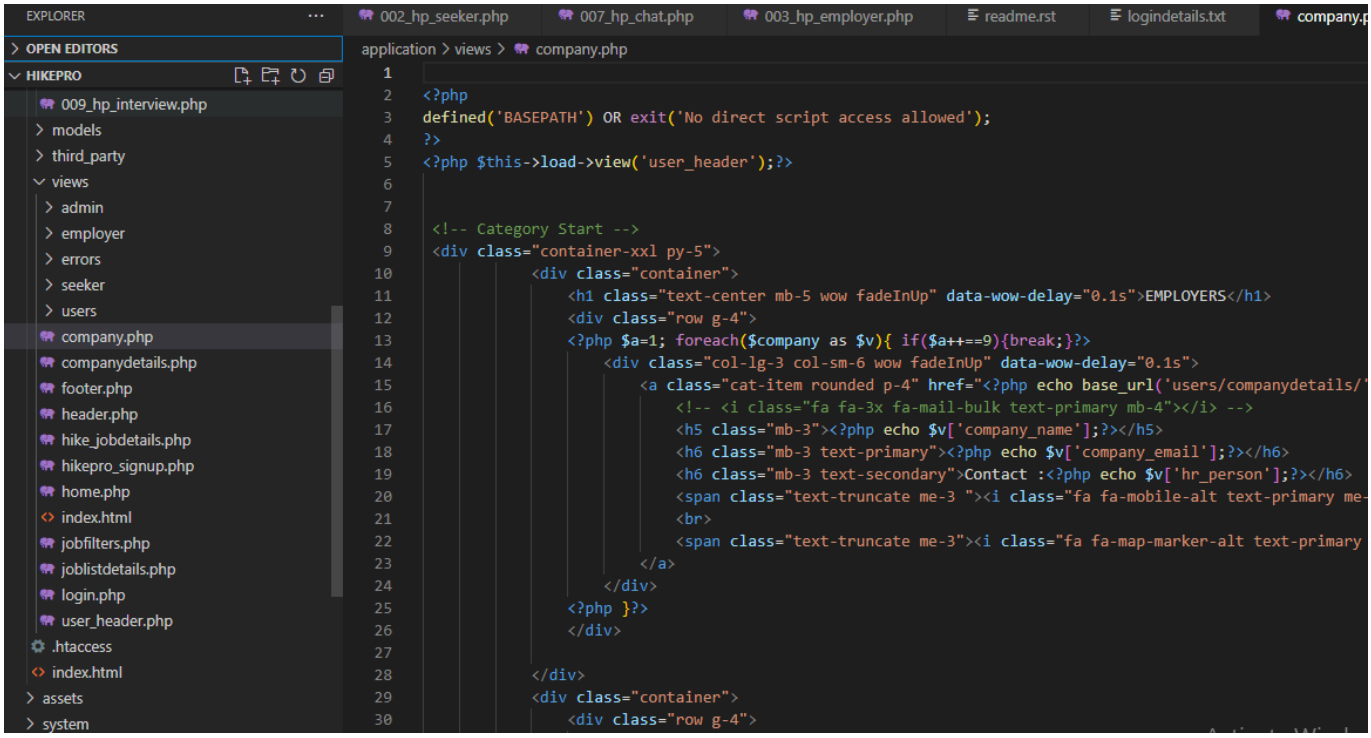

Figure 66: Company View

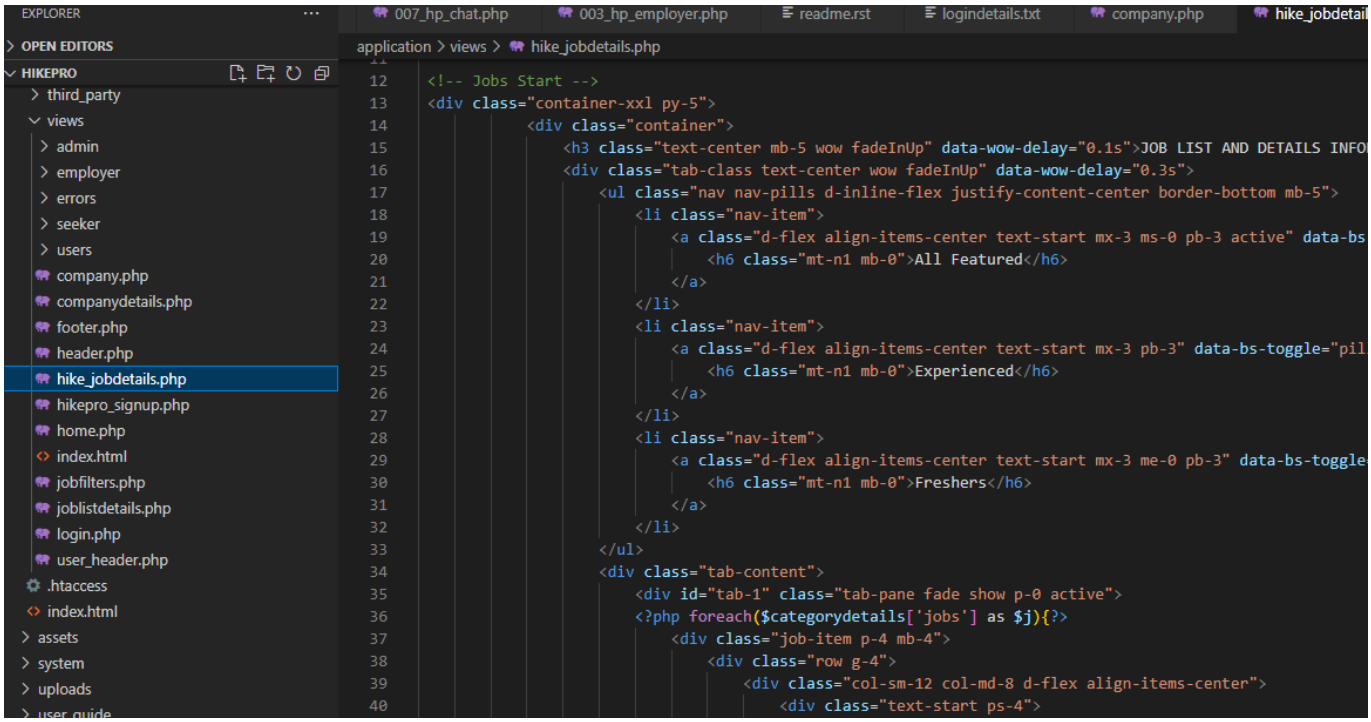

Figure 77: Job Details View

Figure 88: Job Filter View

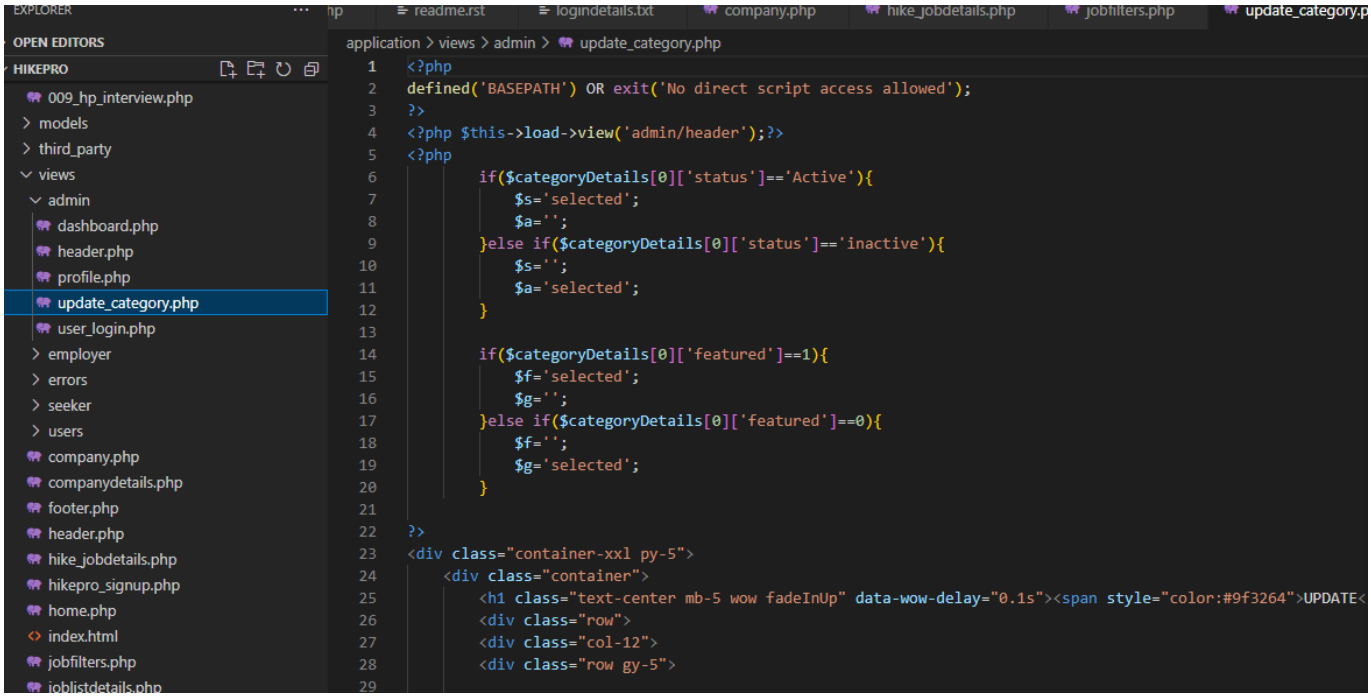

Figure 99: Update Category View

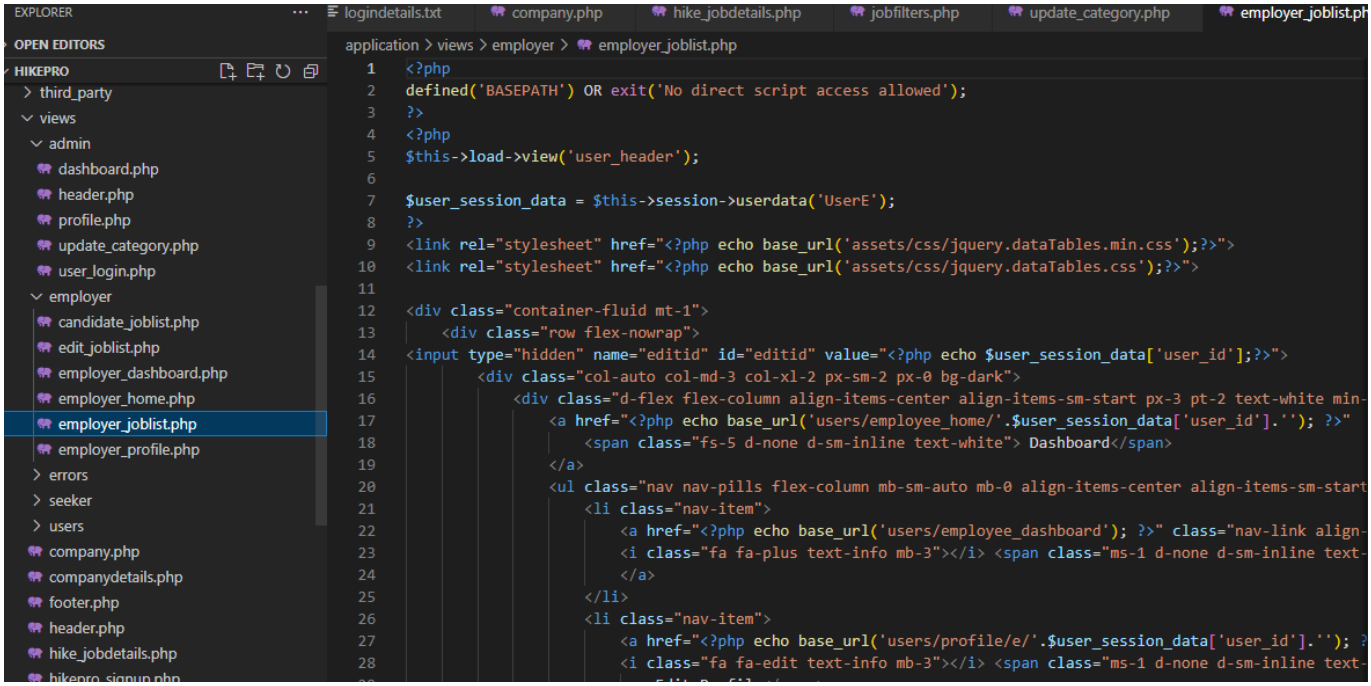

Figure 20: Employer Job List View

Figure 101: Seeker Home View

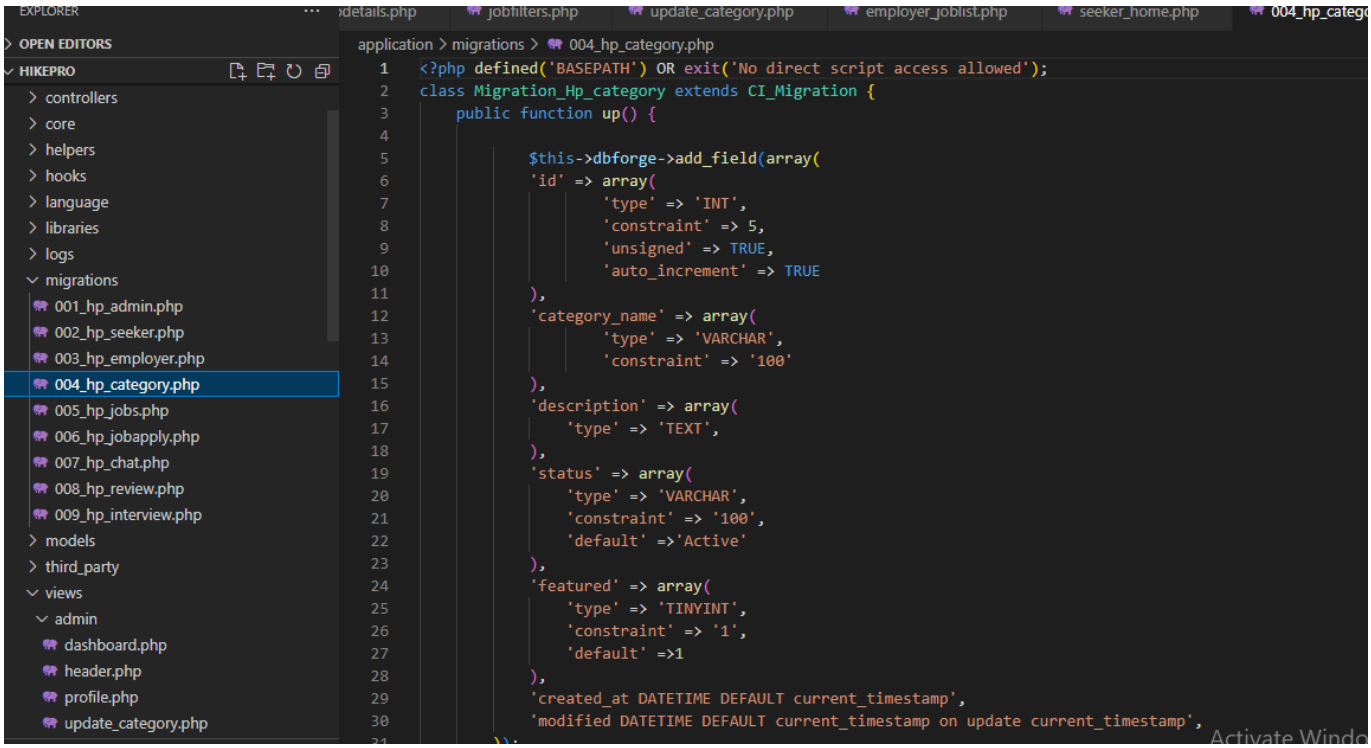

Figure 22: Migrations

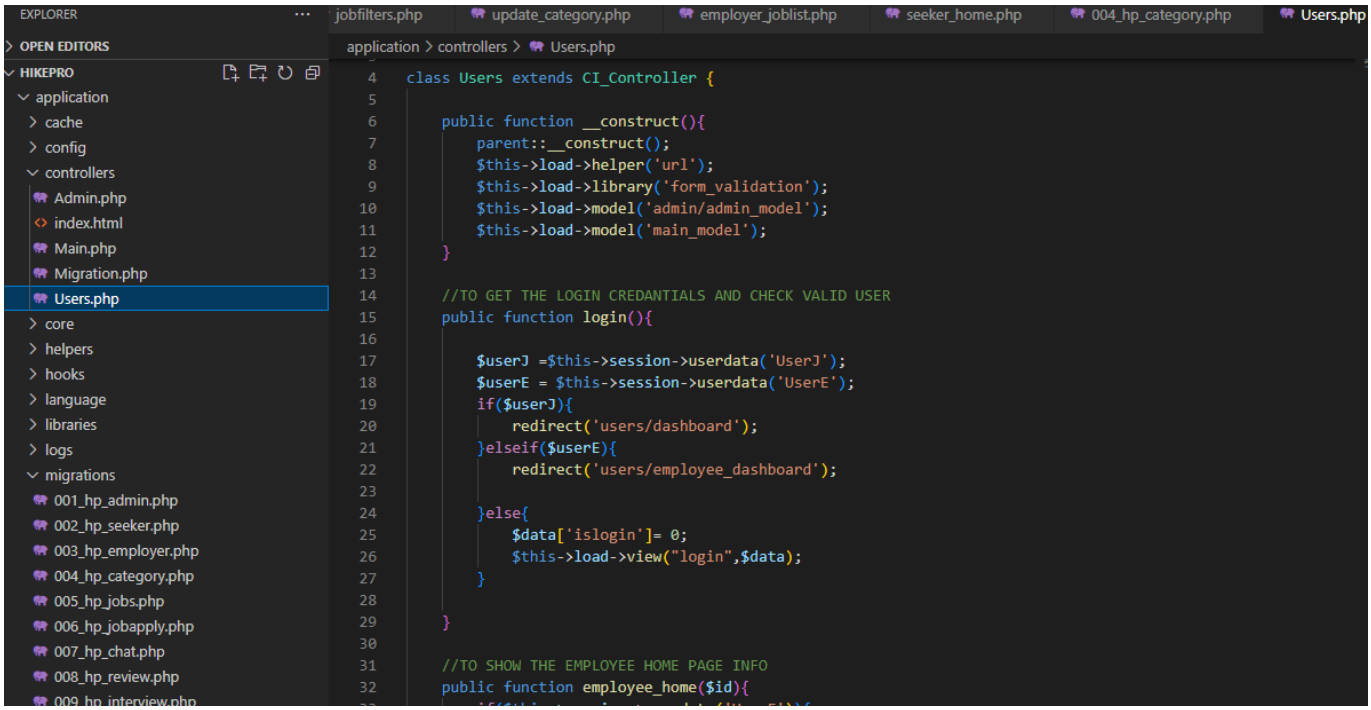

Figure 113: Users Controller

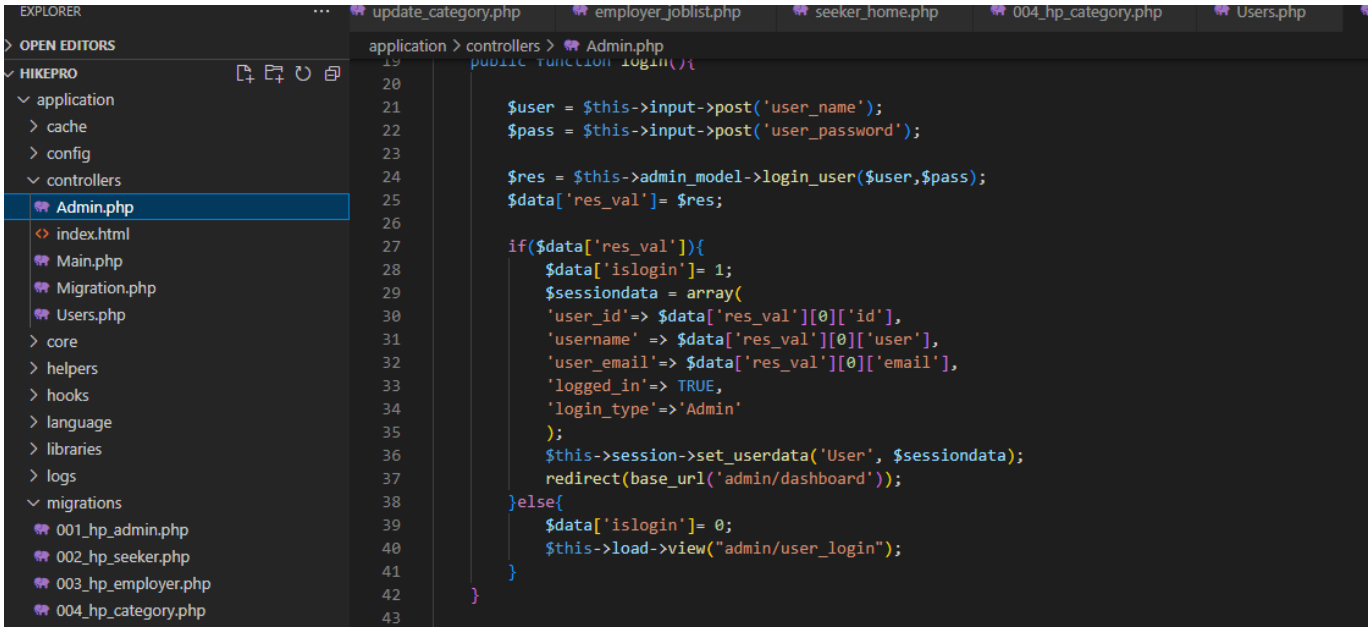

Figure 124: Main Controller