Developing a website for freelancers' in Sri Lanka (NEmployee)

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Project Report for the fulfilment of course unit CSC 3232 – Project for the degree of Bachelor of Science in Applied Mathematics and Computing

Freelancing Website for household works in Sri Lanka

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Department of Physical Science

Faculty of Applied Science

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2022

DECLARATION

We hereby declare that this report submitted for evaluation of the course module CSC3232 leading to the award of Bachelor of Science in Applied Mathematics and Computing is entirely our own work and the contents taken from the work of others has been cited and acknowledge within the text. This report has not been submitted for any degree in this university or any other institution.

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Thank You

ABSTRACT

Freelancers are breed the software process by providing their skills and abilities to generate high quality outputs. Online micro-work and online freelancing platforms enable tasks to be performed over distance. The purpose of this project is to identify the motivational factors which fascinate freelancers and engage them to stay in industry.

This project is also an attempt to connect the employers and the employees together to fulfill the necessary requirements. The proposed website provides the detail review of conceptualization of a freelancer, describing its skills, jobs, language, certifications, freelancer locations etc. the freelancers can also share their skills, service pricing. Having a freelance business website is an important digital asset because these websites can also be a marketing tool.

Freelancing offers the lot of freedom and flexibility which regular jobs cannot. They can decide the type of work, the time of the day can work, the volume of work take on etc. there is no proper local freelancing platform in Sri Lanka. They register through foreign freelancing platforms; these sites charge a higher percentage of their revenue as a service charge. And also Sri Lankan freelancers cannot get gross profit for their services. lack of job security, tax consequences are some other bottlenecks in freelancing websites. The system is developed to overcome these drawbacks and to build client base within limited time period. The technologies used for the system are CSS, html, JavaScript, PHP, MySQL, Bootstrap. the system is designed by using EER diagrams and the use case diagrams.

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1.0 Introduction

Freelance websites are places where we can earn money for our self, rather than for a particular company. People can use freelance websites to send unlimited proposals to client. Online freelancing is one of the benefits to world of work enabled through internet. Online freelancing is small and simple jobs distributed through online platforms to workers for greater cost efficiencies across geographic boundaries. Based on nationally representative survey LIRNEasia estimates, there are 17,000 to 22,000 online freelancers in Sri Lanka registered with multiple platforms and selling their skills for buyers around the world (Helani, Suthahran and Senanayke, 2016) Fiverr, Freelancer and Upwork are the popular platforms used by Sri Lankans.

Although there are many platforms to selling the skills in other countries, there is no proper online platform for Sri Lankan Freelancers to sell their skills and abilities. They need to hold higher amount of taxes for registering for those platforms. And also with the covid 19 pandemic most of the people lost their jobs and their income streams were stalled. So most of the people inclined to freelancing. but everyone didn't find the proper online platform to hire their skills due to crossing of the assets. So our main aim was to create a better online platform for Sri Lankan freelancers without wasting their valuable time and cost.

Problems

Highest Cost:

In real world by there be a huge cost for hiring a worker by traditional way because it causes a very amount of commission in middle.

Speed:

When we are in our home or related premises if we want to do an immediate work there are lack of difficulties to find a worker for our needs.

Consistency:

From the freelancing side the It is the ability to apply the same level of performance throughout your work without any compromise on quality

Communication

By considering an area (eg: Vavuniya) there some people have language conflicts, so we cannot select flexible worker according language skills.

Quality:

In real world we don't have an authorized way to review the standard of particular work.

So, we decided to develop a web application "N Employee" for Freelancers in Sri Lanka. The proposed management system helps to find the client/employee easily according to the requirement of the client and the Employee. Actually it helps in connecting Employer and the Employee. We provide online payment opportunities in there. The Stakeholders in this project are Employer and Employee.

Benefits

- Can get workers in short time.
- Can avoid money and energy is wasted in searching as well as in maintaining.
- By considering pandemic we can organize our works.
- Can Earn money by getting back commission, advertisement and job Bank.
- Some charities can post their requirement and get aids from freelancers/Companies.
- Flexibility: To attain a healthier work-life balance.
- Independence: Working patterns (Short/long-term projects)

2.0 Literature Review

According to Allan Jay (n.d) “freelance platforms are a meeting place where qualified and skilled freelancers from anywhere in the world can find work and get payment.” According to him some major benefits of using freelancing platforms are accesses talent anywhere, Appeal to millennials, cut costs, higher talents and demand, natural merit based systems etc.

Fiverr, Freelancer, and Up work are the most renowned websites used by Sri Lankan online freelancers. Further, online freelancers are ranked based on their work performance, and the future market for them would depend on the current performance. Therefore, the quality of work has to be maintained properly. Table 1 shows the various online platforms used by current online freelancers of Sri Lanka and it clearly explains that fiverr is the most famous platform among people (Galpaya et al., 2016).

According to Galpaya, Suthaharan and Senanayaka, 2016 “Online freelancing and micro-work platforms are catering to two different groups of workers and employers. In Sri Lanka online freelancing work is conducted by skilled people who have some level of web developing, designing, Photoshop skills and have obtained training for such skills. On the other hand, micro work is normally undertaken by those who are less skilled compared to freelancers.”

According to our point of view companies were use the sourcing functionality of freelance platforms to join with freelancer management systems, which help businesses manage availability, and project completion for all of the freelancers that the businesses use. There are some existing freelancing sites in world. some of them are Fiverr, Guru, Upwork, Servicescape, Hub staff Talent etc. Fiverr offers job related to digital Marketing, writing, translation, audio editing, video editing etc. Fiverr available in English, Spanish, French, Dutch, Portuguese, Italian, German. Guru is freelancing site helps beginners to create a profile. In this web site, freelancers can do finance, marketing, engineering administrative, etc. job. One of the major problem in here is that these websites give priority in white collar jobs.so we decided to give priority to the blue collar job holders with the flexibility on selecting the languages and the location according to the client’s favor in our web application. both clients and freelancers should pay higher taxes for accessing the platforms and in Sri Lanka there is no proper freelancing platform. These two factors are also taken in to concern when we developing the web application.

3.0 Methodology

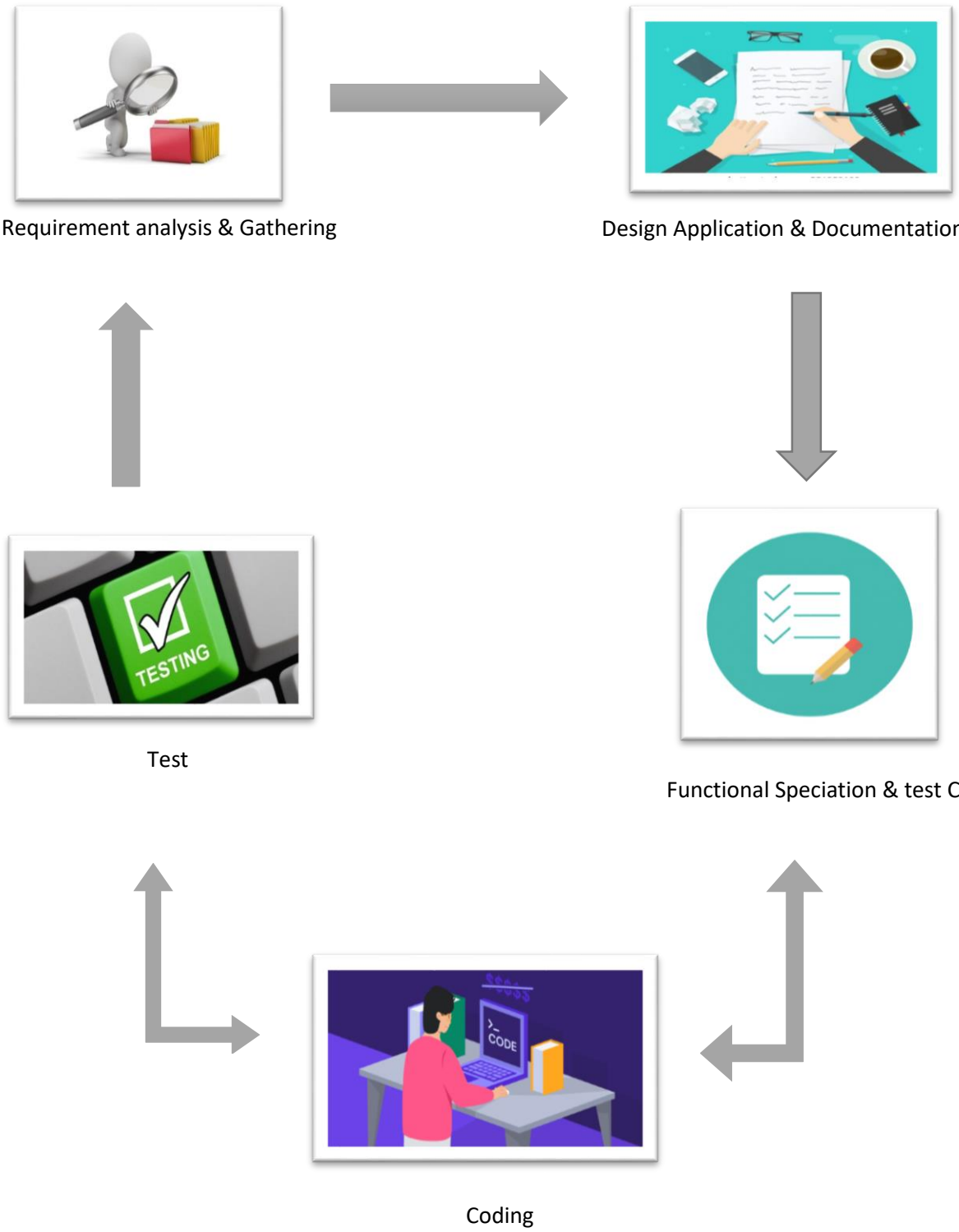

Fig 3.0.0 Methodological cycle

3.1 Software Process Model

In here we use incremental method to implement our project as this model is based on the idea of developing an initial implementation, exposing this to user comment and evolving it through several versions until an adequate system has been developed. We can go easily with the previous steps in this model if we want to add requirement or to find any error at any phase. Other benefits of selecting this method are The cost of accommodating changing customer requirements is reduced, it is easier to get customer feedback on the development work that has been done, Parallel development can be planned, Testing and debugging during smaller iteration is easy.

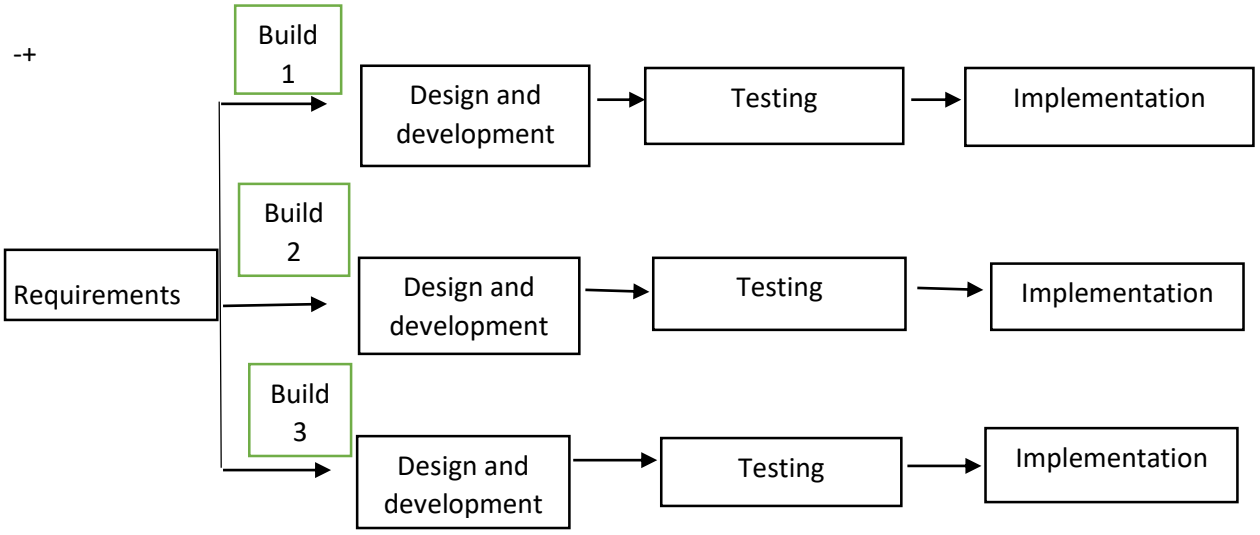

Fig 3.1.1 Incremental Model

Step 01: Requirement Analysis

In here we are identified the product requirements, and checked whether those are compatible or not.

Step 02: Design, Development and coding

In here we found a development method and system functionality design. The design is proposed according the way on how to archive and implement these requirements. after that coding was done according to the purpose of the requirement.

Step 03: Testing and Implementation

In this phase the performance of each of the existing functions, as well as other additional functionalities are checked incrementally until the product is finished.

3.2 Requirement Analysis

Requirement analysis is the process of studying and analyzing the stakeholders needs to arrive at a definition of software requirements. Those requirements either be functional or non-functional. In this project, it was taken some considerable time and effort in analyzing those functional and non-functional requirements since there aren't any application related to our application in Sri Lanka.

It is essential to gather user and system requirements before developing any software project. Both Freelancers and users are the target beneficiaries of our application. And they are the ones who can define the constrain setting. So we espoused them as a part of our requirement gathering. We gathered information from freelancers by interacting with them directly by asking some questions. Firstly, we collected data from the University Maintenance branch. Then after we interact some other freelancers who having different occupations in some areas. And also we visited few companies to get knowledge on how they hire the freelancers for their needs. And also we gather some information from public on what are the employee needs they have and how they meet those requirements. We got better understanding on what we should include in our web application. According to the requirements we selected one of the software process models to develop our system. Following are the functional and non-functional requirements in our web application.

Functional Requirement

- The employer can see the private history of hiring the employees
- The both employee and the employer can manage and see their profiles
- The employer can analyses the employee details according to the required location
- The employer can analyses the employee details according to the ratings given by others
- The employers can add their updated skills and abilities.

Non-Functional Requirements

Product Requirement

- **Quick respond in system and if anyone registered in the system they can create a profile very quickly and maintain it in convenient way**
- **Our developed system is very easy to register as employee and employer according to their purposes.**
- **If any employees need to change their desired experience, qualification, language preferences they can easily update on their profile very quickly.**
- **For using this web application basic webpage knowledge is required.**
- **Every sort of house holding works from each of district can register in our webpage.**

Hardware Requirement

- **Smartphone(Android/iOS)**
- **Laptop, PC**

Software Requirement

- **Web Browser (Firefox, Chrome, Safari)**

3.3 Context Diagram

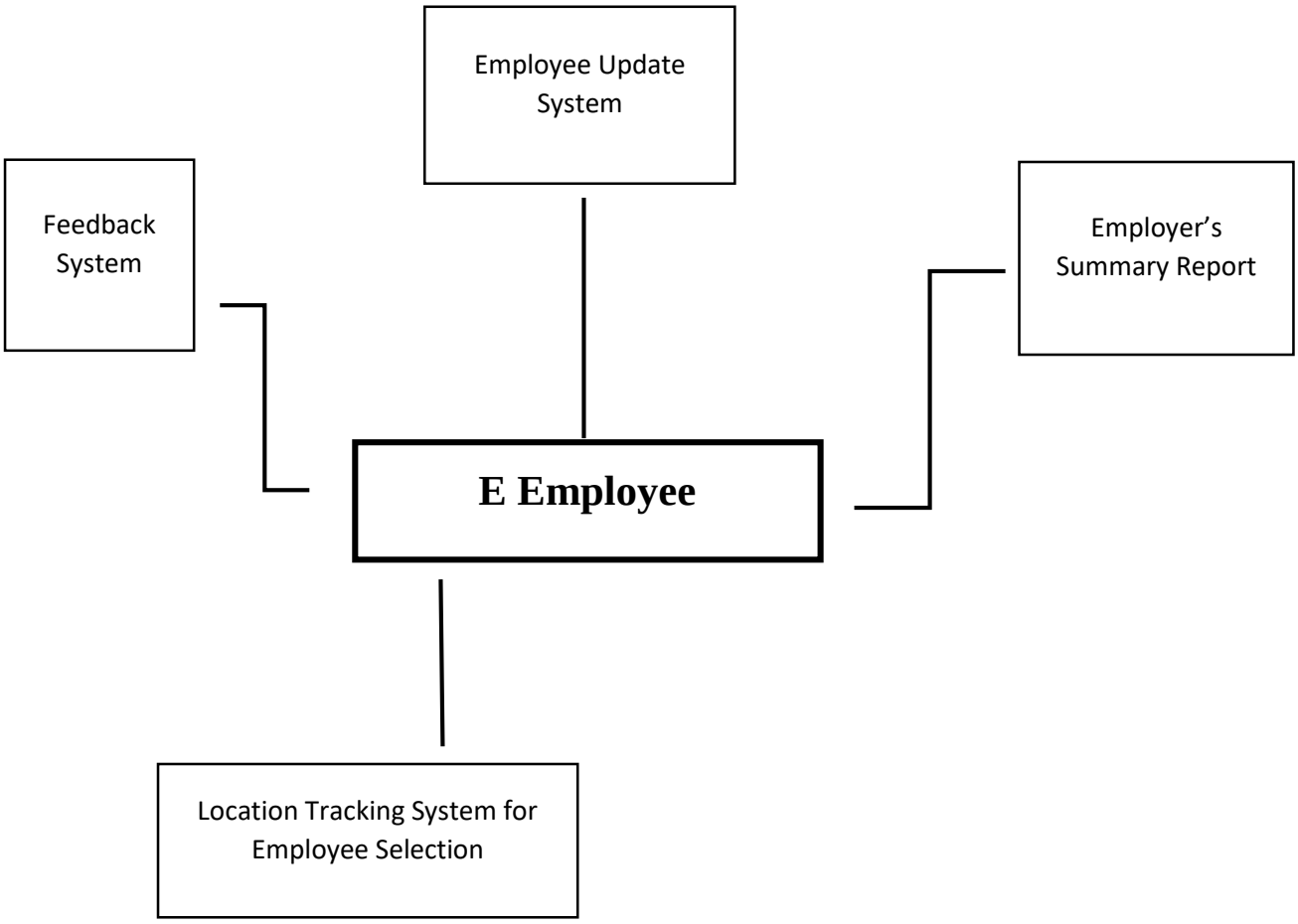

Fig 3.3.0

3.4 Use Case Diagram

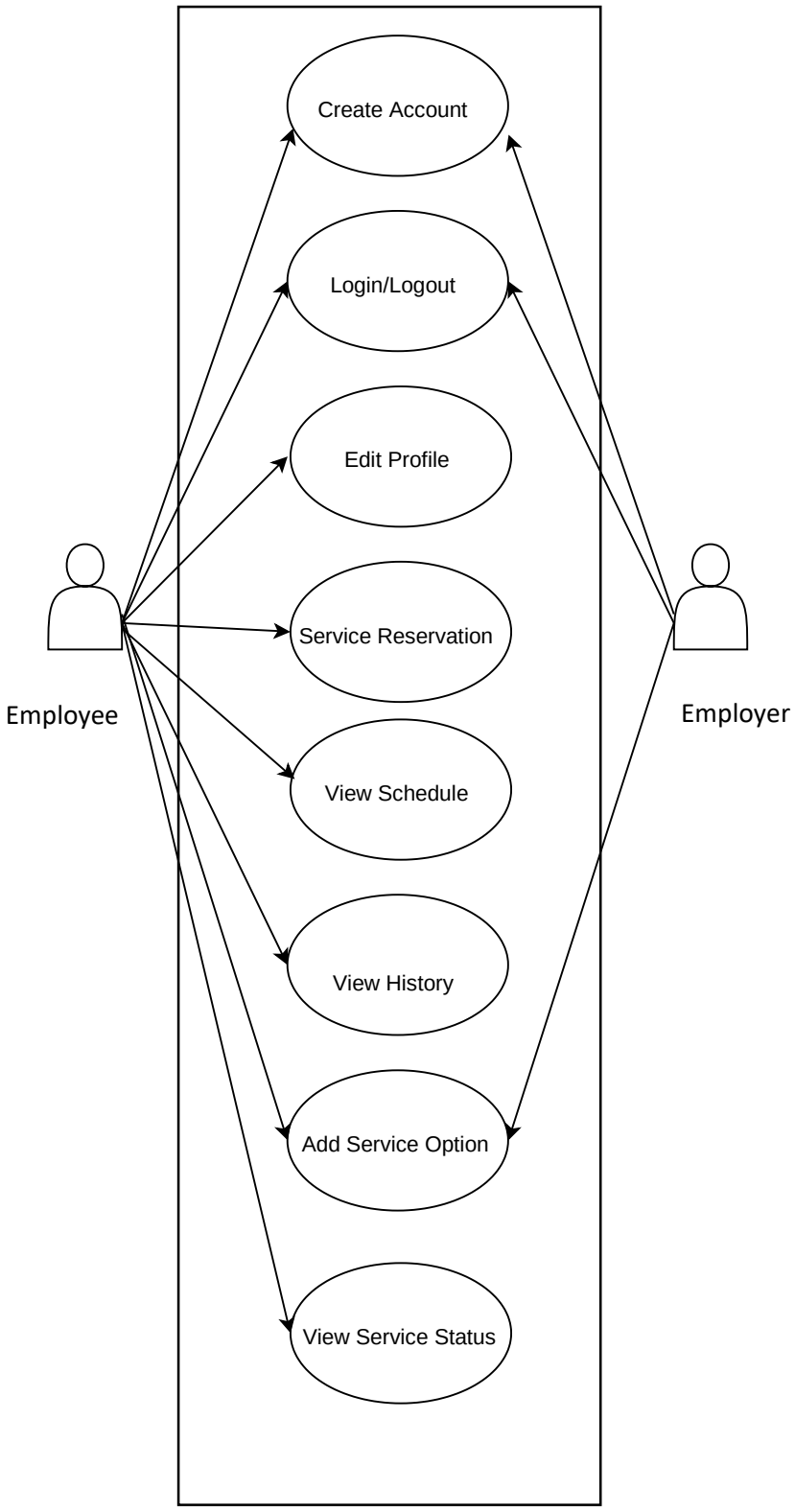

Fig 3.4.0

3.5 Activity Diagram

Employer Base

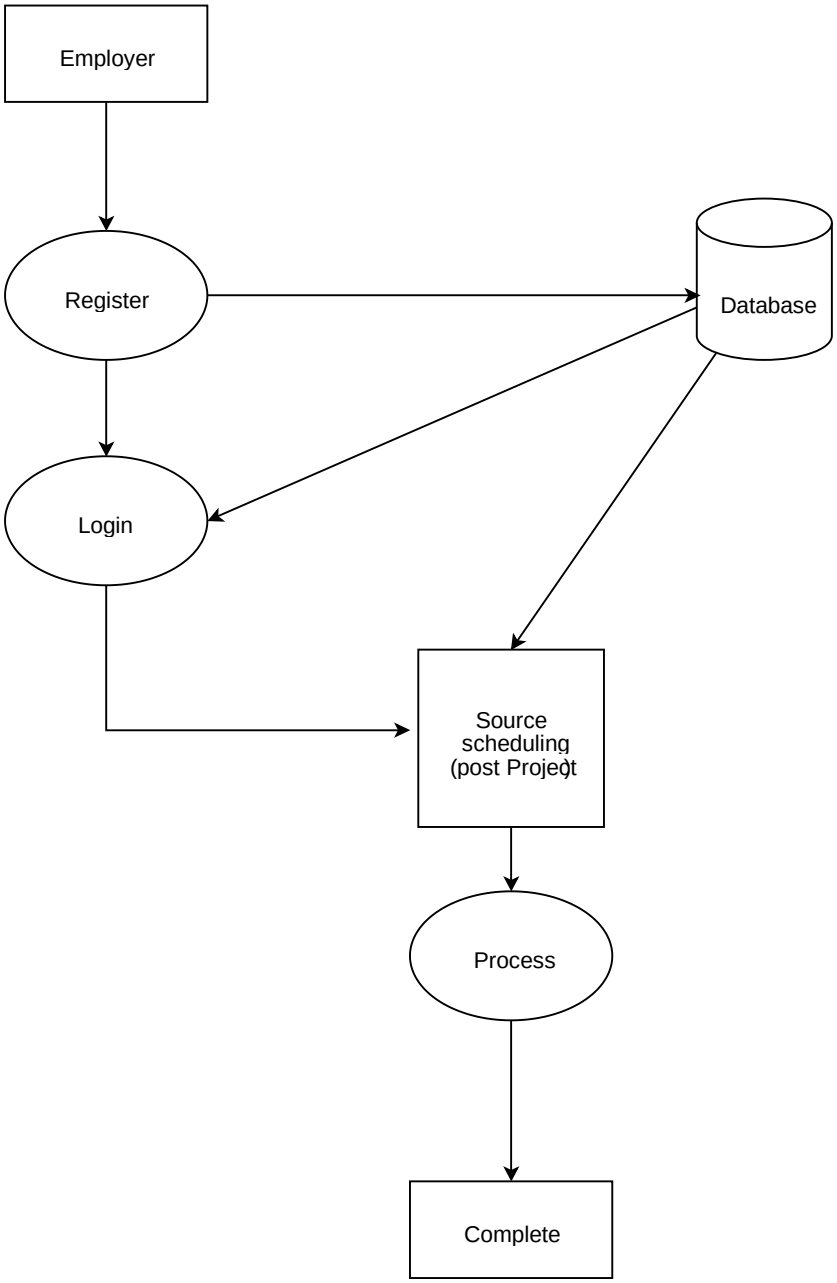

Fig 3.5.1

Employee Base

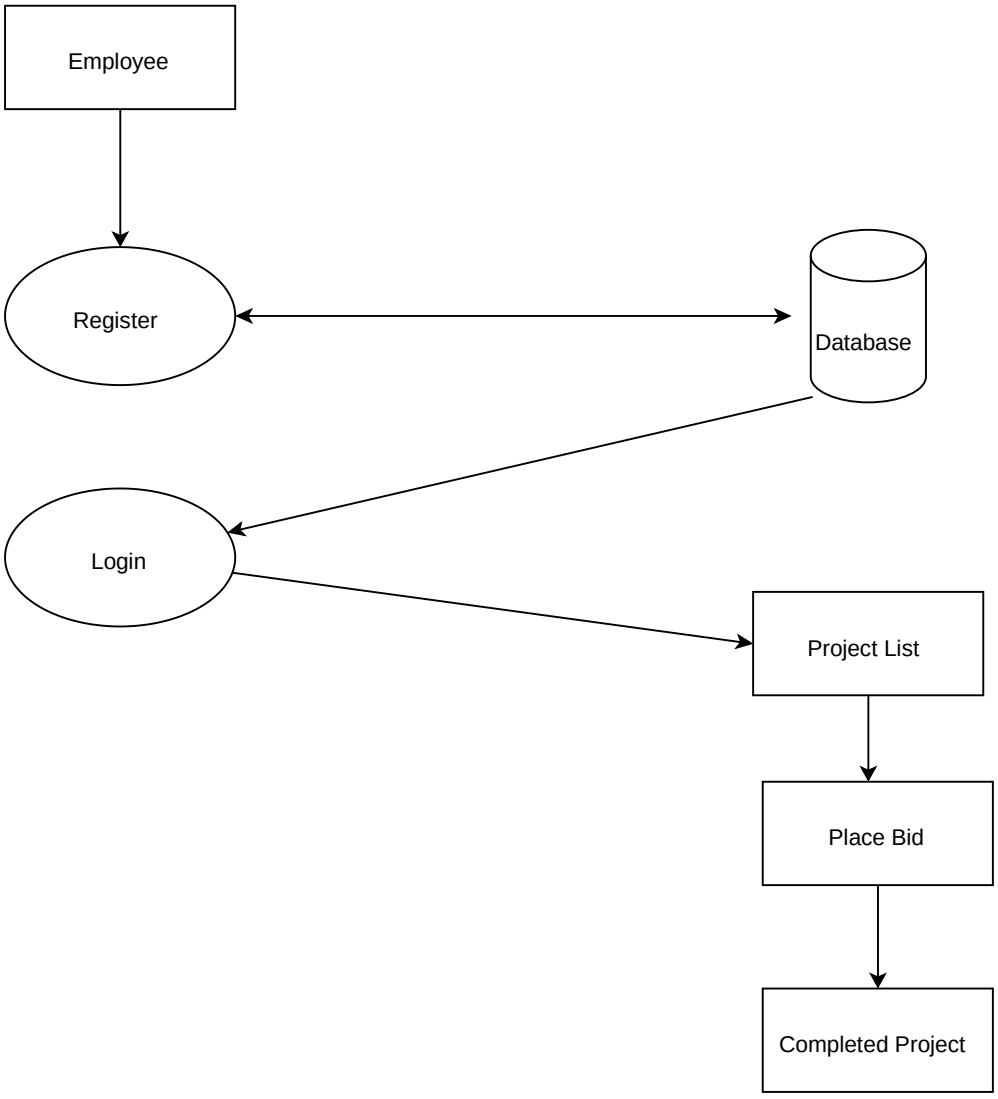

Fig 3.5.2

3.6 Database Design

3.6.1 ER Diagram

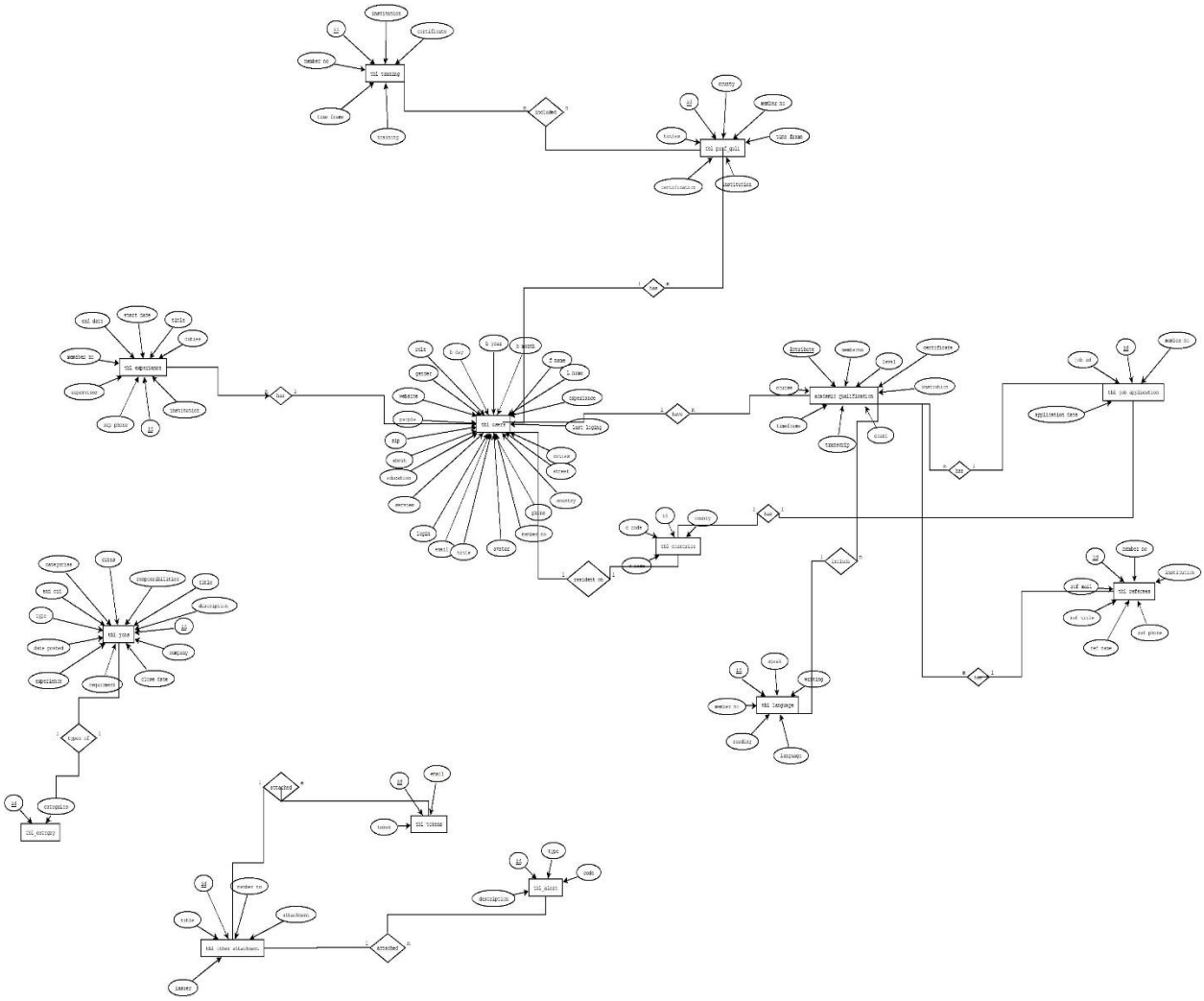

Fig 3.6.1

3.6.2 Class Diagram

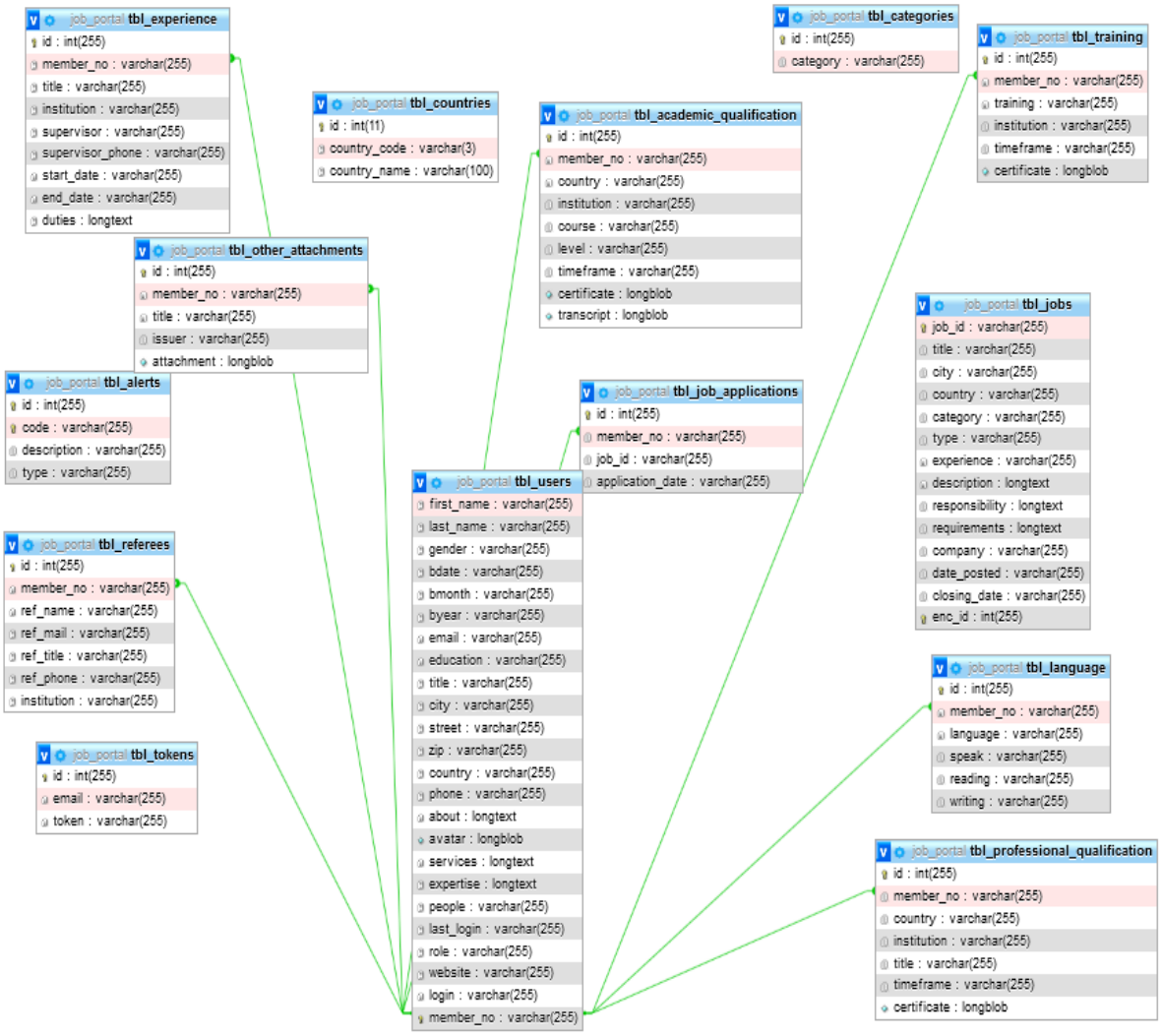

Fig 3.6.2

3.7 User Interface Design

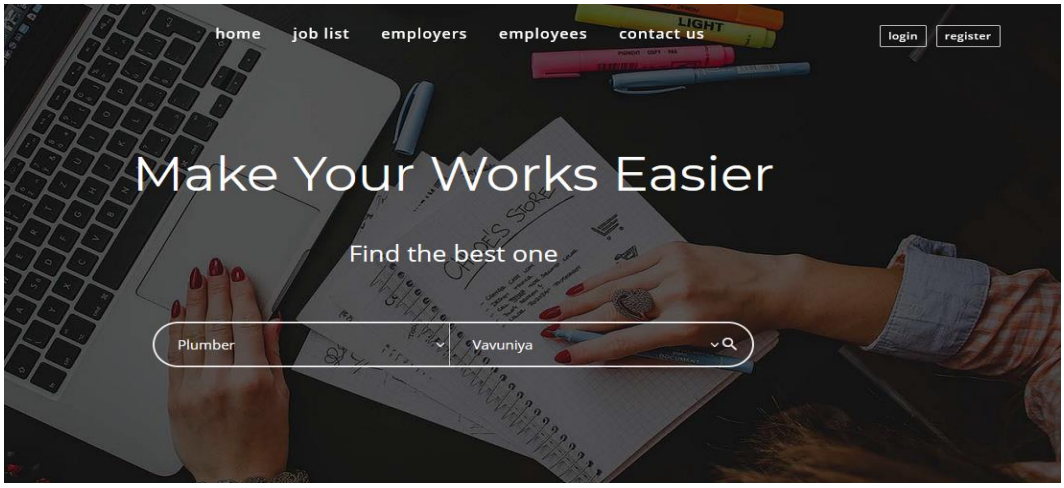

fig 3.7.1 Home Page

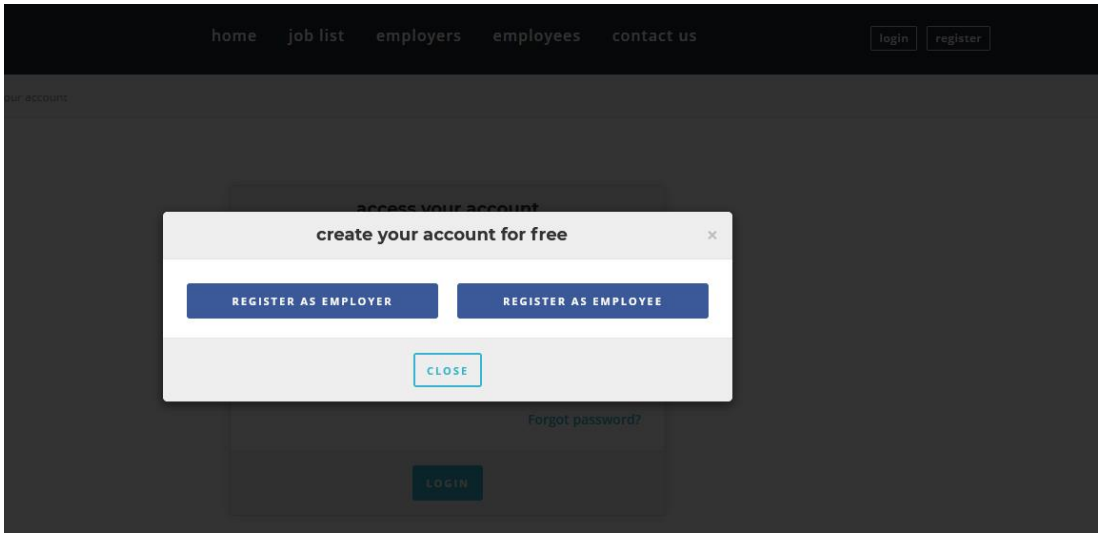

Fig 3.7.2 Register

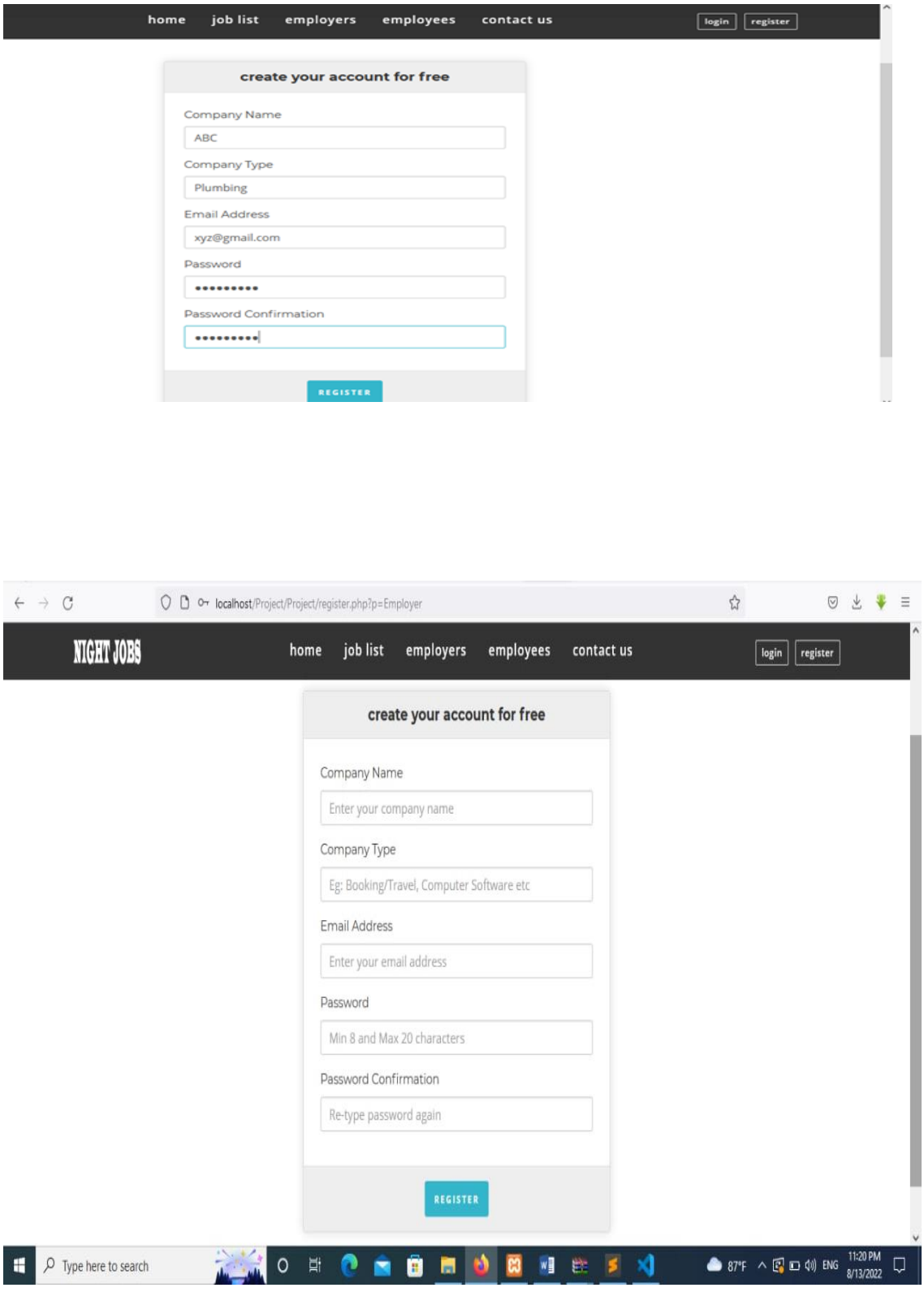

Fig 3.7.3 Register as an Employer

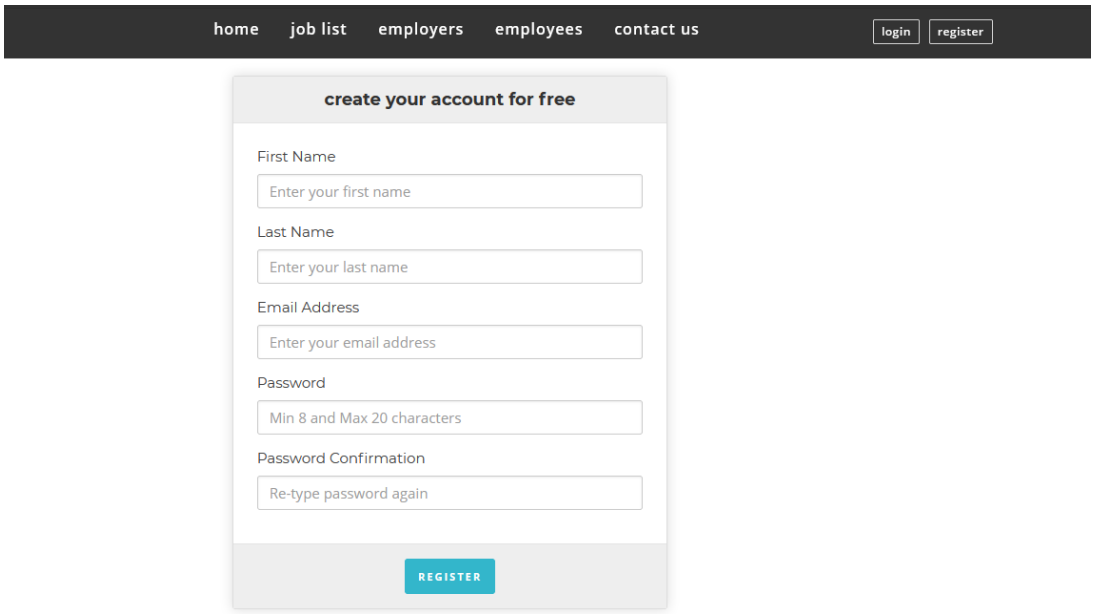

Fig 3.7.4 Register as an employee

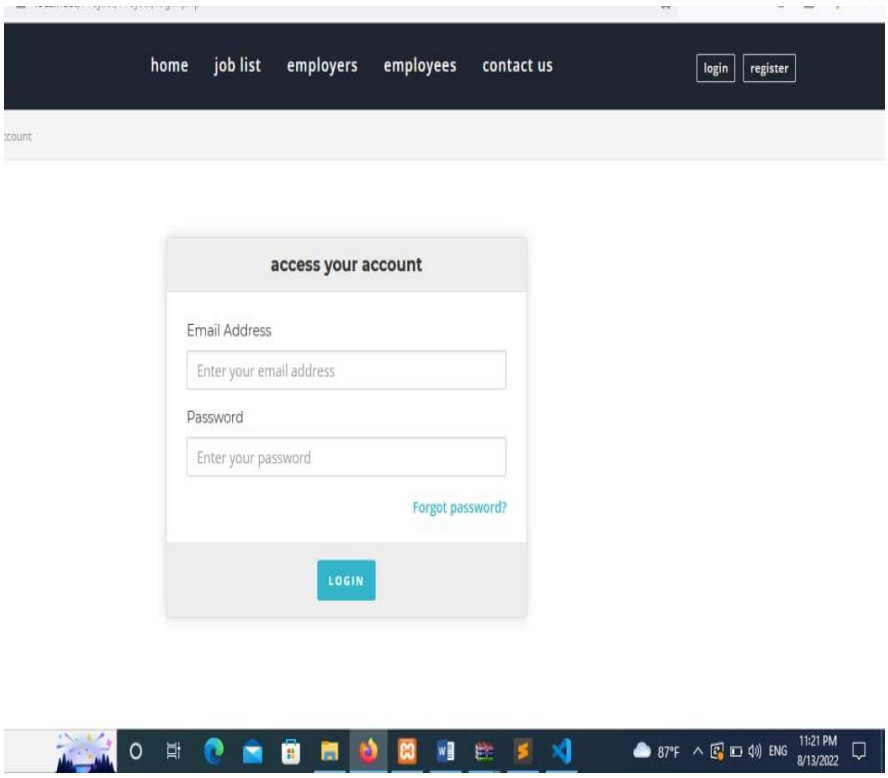

Fig 3.7.5 Login

4.0 Design and Implementation

This web application provides many features and advantages for the both employers and employees in Sri Lanka. Our application is going to be used as a server based system. So we have developed it as a web application. Web application mainly focusing on connecting employees and the employers. It will provide fast and efficient way of finding employers for the requirements. And the blue collar job holders are the targeted freelancers in our web application. This web application will act as an online freelancer management system.

Our web applications can be written in HTML, CSS, Php, MySQL and JavaScript. Web application development will typically have a short development life-cycle lead by a small development team.

Our web application development will typically have a short development life cycle, front end development for web applications is accomplished through client-side programming and the client refers to the computer application such as a web browser. Client-side programming will typically utilize HTML, CSS and JavaScript. HTML programming will instruct a browser how to display the on-screen content of web pages, while CSS keeps displayed information in the correct format. JavaScript will run JavaScript code on our web page, making some of the content interactive.

Server-side programming powers the client-side programming and is used to create the scripts that web applications use. Scripts can be written in multiple scripting languages. Server-side scripting will create a custom interface for the end-user and will hide the source code that makes up the interface.

Database such as MySQL can be used to store data in web application development.

JavaScript runtime used as a backend programming tool.

HTML: HTML is a programming language used to describe the structure of information on a webpage. Front end developers use the HTML element to specify what kind of information each item on a webpage contains.

5.0 Testing

Software testing is the method to check whether the actual software product is matches with the expected requirement. If there are any bugs or errors in the software, it can be identified and can be solved before launch the software product. The software is firstly evaluated by the development team and then the application was given to the users to check whether all the requirements are accomplished or not.

Short Description of testing	Steps Follow	Expected Result	Obtained Result
Login with incorrect username, password or both	Login with wrong entries	Message box have to show "Invalid email or password"	Message box showed "Invalid email or password"
Create new account	Select Register option	Window will allow to add new account	Window will allow to add new account
Find workers from particular location	Give job title and district	Found the result of employee from particular district.	Found the result of employee from particular district.

Table 5.0.0: Testing

6.0 Conclusion

This web based application will help to public who are need to hire employee for their household works. Conclusion on overall, the 'N Employee' will be helpful for all the freelancers who are willing to higher their skills and for the clients who are wishing to hire employers for their needs with low limited time period.

By staying home, we can select employee in convenient way it is help us to do our works easily, and we can trust employee by their experience, skills and professional qualifications. In here we have given option to select an employee from overall district, if an area remote from town an employer can select their employee from overall district that help public to find employee very easier in other way employee can get contract/works from overall district.

7.0 Future Works

Some Limitations in our web application are;

- There's no admin panel
- Cannot find the actual location employee and employer
- Unavailability of employee cannot be displayed
- Featured works of employee cannot displayed
- Couldn't create separate hubs for both employee and employer

To overcome these limitations, the following future works will be done;

- We are looking to add online payment system in this system who are hiring the employee can settle their payments using their bank accounts.
- We are looking to develop android and iOS applications and give workforce hub to employees this may convenient for the employees to get instant updates.
- Add option who in charity foundations they can freely hire employee who are willing to work as volunteers.
- We are looking to take enough steps to take locate a nearby employee from employer's location.
- Looking to add rate per hour for employees.
- Adding review button.

8.0 References

- Allan Jay (n.d). what are Freelance Platforms? Analysis of Features, Benefits and pricing. Retrieved From https://financeonline.com/freelance-platforms-anlysis-features-benifits-pricing/
- Galpaya, H., Suthaharan, P., & Senanayake,L. (2016). "Online Freelancing: Emerging new employment opportunity", LIRNEasia. Retrieved May 25, 2017 from http://lirneasia.net/wp-content/uploads/2016/12/Online-Freelancing_6th_Dec_Final.pdf
- https://www.researchgate.net/publication/351314541_Online_Freelancing_website
- https://www.goatsontheroad.com/how-to-create-a-freelance-website/
- https://www.pdfdrive.com/mastering-full-stack-react-web-development-e158341779.html