

Final Report
CST 291-2

Group No: 12

EMPLOYEE MANAGEMENT SYSTEM FOR A COMPANY

Department of Computer Science and Informatics

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1] Introduction

1.1 Project Title.

EMPLOYEE MANAGEMENT SYSTEM FOR SOFTWARE COMPANY

1.2 Project Background.

Employee management system is a project, which aims in developing a computerized system to maintain all activities of a software company in order to make Employee Management more efficient and easier to handle. It is the effort to help employees do their best work each day in order to achieve the larger goals of the organization (*Employee Management System*, 2021).

When we handle this system through manually us face lots of struggles. The paper document is less secure compared to technology system. Handling of each and every document and store them safely is not easy. It's not only about security but also about transporting or carrying out documents at different places. It takes more effort and physical space to keep track of paper documents, to find information, make changes and to keep details secure. So we reduce these problems by using technological way.

Employee Management system is a new digital technology that allow the company's business to automate manual processes. This project has many features, which are generally not available in manual Employee management systems. Achieving effective and efficient employee management system through an innovative system can drive businesses to the next level with increased productivity and employee satisfaction. It is a platform where all work-related as well as important personal details of an employee is stored and managed in a secure way.

Overall this project of ours is being developed to maintain the whole company in the best way possible and also reduce the human efforts. This system is useful for running a smooth organization. The goals of this project are to provide simplicity as well as security and efficiency to the management of Company. Throughout the project the focus has been on handling the all thing in an easy and intelligible manner and increasing the targets of the company.

1.3 Project aims / objectives

The project aims and objectives that will be achieved after completion of this project are which is expecting to accomplish. It is discussed in project background. The aims and objectives are as follows:

- Provide an improvement in control and performance.
- Provide the job vacancy details through the advertisements and announcements to the user.
- Increasing the rate at which projects are completed accurately by employees.
- It tends to be more accurate rather than manual system.
- To facilitate the HR manager and administrator to manage their works easily.
- To maintain the employee details and financial details easily by the administrator.
- Save time and cost.
- Provide an option of feedback.
- Provide safety and performance to the management of company.
- Provide 24/7 service.

2] System Analysis and Design

2.1 Requirements Analysis

Functional Requirements

1. Employee login and registration
 - Admin can only register each employee.
 - All the employees can login to the system.
2. User accessible module
 - Provide access control. It is the technique that regulates who can view or use resources in this system based on their job role.
3. Email verification
 - Provide email verification for the purpose of fraud prevention.
 - When each employee login to the system at first time should verify that via email.
 - If any employees forget their password they can be access the system via their email by update their password.
4. Admin maintenance
5. Employee maintenance module
 - Admin can register employees and he can manage the employee details.
6. Project maintenance module
 - There is a facility to assign project for employees and manage it.
 - Maintain the project documentation by the administrator.
7. Salary calculation and maintenance
 - HR manager can calculate each other employee's salary and also calculate the EPF and ETF amount and make a salary report.
 - Administrator also views and maintains the salary report.
8. Payment Registration
 - According to the salary report administrator records the payment registration.
9. Loan service maintenance module
 - There is a facility to get a loan service for each employee.
 - Administrator can assign the loan services which are available.

10. Advertisements and announcements.

- There is a facility to provide the job vacancies or any other announcements.

11. Job applications and maintenance.

- Based on the job vacancy, any of the users (viewers) can apply the job without any registration.
- HR manager can view the job applicants and maintain their details.

12. Leave apply maintenance module

- All the employees can apply leave via login to this system.
- Administrator can approve or reject the leave application.

13. Rewards addition.

- It facilitate rewards addition for the purpose of encourage the employee's performance by the administrator.

14. Feedback addition.

- User can be contact the administrator for the job vacancy and any other purpose.
- All the employees have a facility to give feedback.

15. Search option

- It facilitates the search option to easily get any of the employee's details.

Non-Functional Requirements

- Usability Requirement

The system is designed for a user-friendly environment so that Admin, HR manager and other employees of company can perform the various tasks easily and in an effective way .

- Efficiency Requirement

After the employee management system will be implemented User, Admin, HR manager and other Employees will easily do their works very fast and maintain the whole company in the best way.

- Reliability Requirement

The system should accurately perform vacancies' announcements adding, employee validation, project maintenance, salary calculation, leave and loan service management.

- **Delivery Requirement**

The whole system is expected to be delivered in three months of time with a weekly evaluation by the Admin.

- **System Implementation Requirement**

In implementing whole system it uses html, CSS and Bootstrap in front end with php as server side scripting language, which will be used for database connectivity and the backend i.e. The database part developed using MySQL.

- **Security**

The whole system is expected to be secured. We will facilitate email verification and password encryption. We will provide the access control technique also.

2.2 User Roles

- **Administrator**

- **Account**

- **Admin login.**

- Username & password authentication.

- Forget password.

- **My profile**

- **Logout.**

- **Employee validation.**

- Employee addition.

- Modify and manage employee details.

- View employee details.

- Response the leave application.

- Rewards addition.

- Advertisements and announcements addition.

- Add, View and modify job vacancy.

- Add, View and modify other annousements.

- **Handle the projects.**

- Project addition.

- choose the project teams

- Supervise the projects' groups.

- Maintain the loan service.
 - Supervise the salary reports.
 - Payment registration.
 - View Feedbacks.
 - Maintain Rewards
 - Add Rewards
 - View Rewards
 - Modify Rewards
 - Response Leave application
 - Approve
 - Reject
- HR manager(Human resource)
 - Account
 - HR manager login.
 - Username & password authentication.
 - Forget password.
 - My profile
 - Logout.
 - View job applicant details.
 - Salary calculation.
 - Apply for leave.
 - Apply for loan services.
 - View rewards.
 - View project details.
 - Feedback
- Other Employee
 - Account
 - Employee login
 - Username & password authentication.
 - Forget password.
 - My profile
 - Logout.
 - Apply for leave.

- Apply for loan services.
 - View rewards.
 - View project details.
 - Give Feedback.
- User(viewers)
 - View company info.
 - View job announcements.
 - Apply for job.
 - Give Feedback

i. Class Diagram



ii. Use Case Diagram.

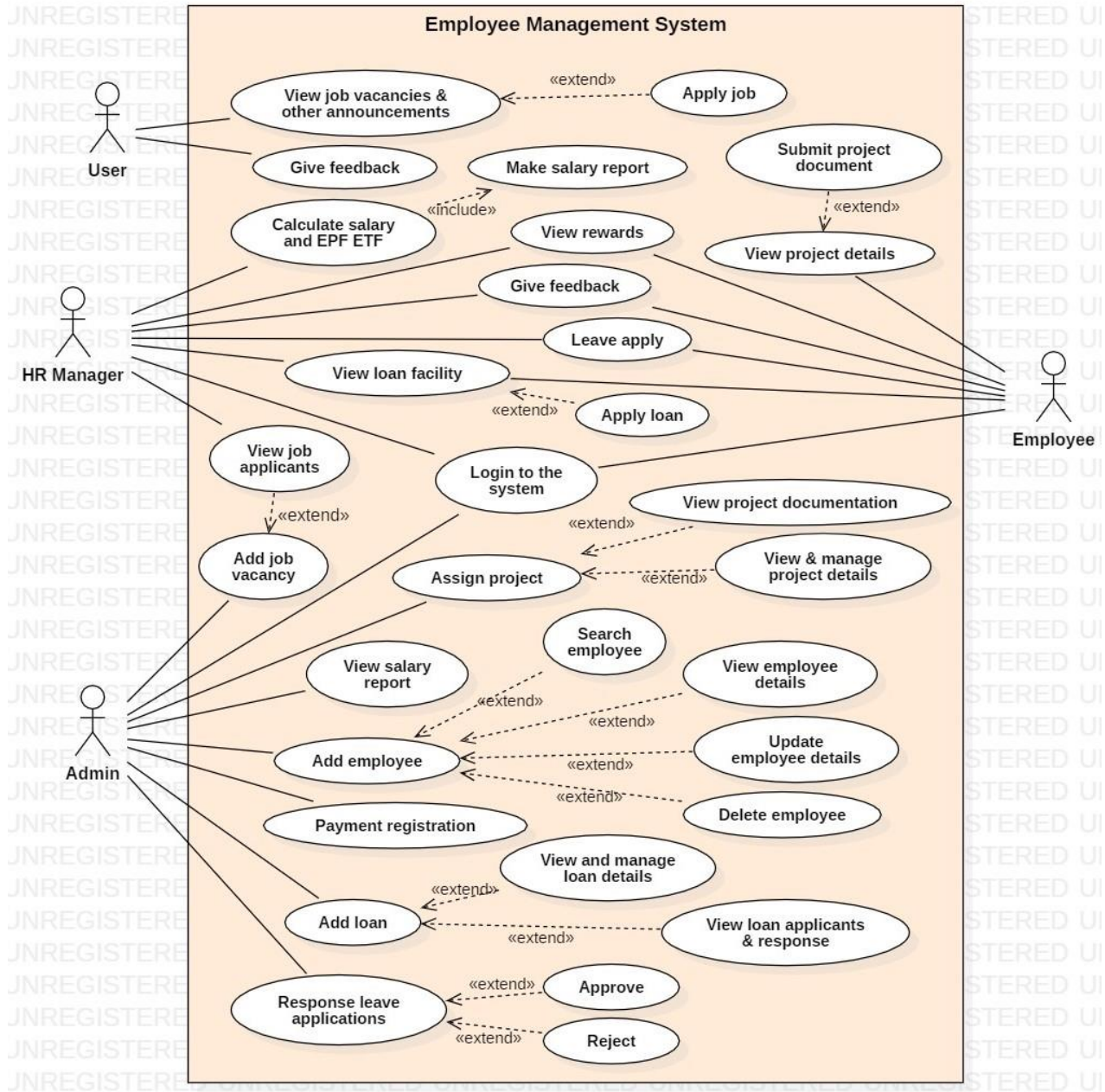


Figure 2.3.ii: Use Case Diagram of Employee management system.

2.4 Entity Relationship Diagram

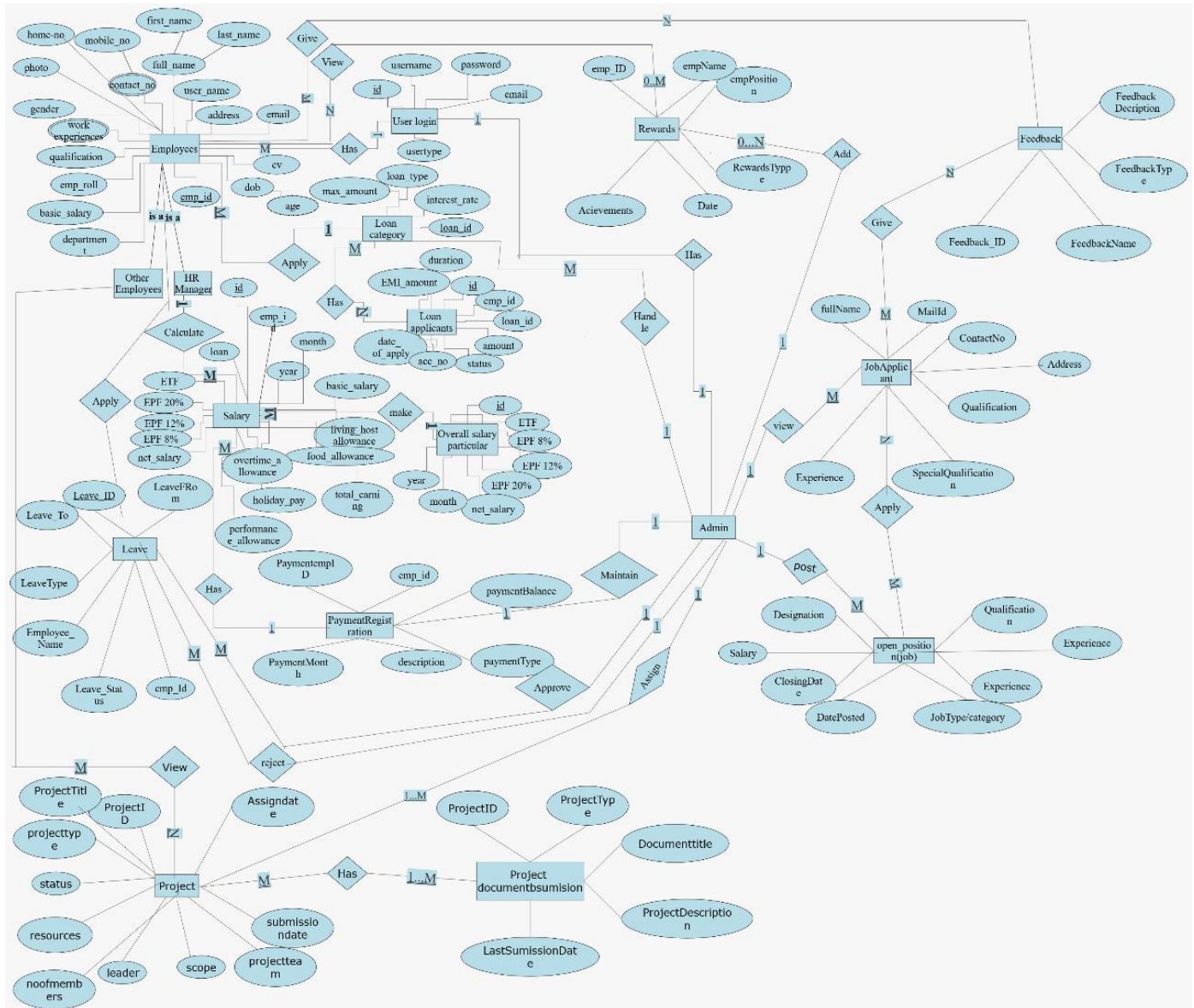


Figure 2.4.i: Entity Relationship Diagram of Employee management system.

3] Methodology / Implementation

We choose the Agile model for this system because we can make small objective changes without huge amendments. Agile is very flexible and allows making changes in any phase (*Agile Methodology*, 2021; Lu Bauer, 2021). In Agile, project requirements can change frequently.

- Requirements gathering

Requirement gathering process will be achieved by the field visit to the company. And we understood the requirements which company want to achieve its 'goal. We gathered the information from informal interviews with the employees.

- Analysis.

We actively work together on a just-in-time basis to understand the structure of the system, to identify what needs to be built, to estimate that functionality, to prioritize the functionality.

Likewise we implement our system like this. All the details of the company, advertisements and announcements for the vacancies of various departments are provided through an online. User can Access it throughout the local internet. It also has login facility of admin, HR manager (Human resources) and other employees. After logging into the system Admin, HR manager, other employees can access their functionalities which are available for them.

- Design

We use the Star UML diagram for our designing.

- Coding

We are going to use language technologies to design our system.

Ex: html, php, java script, jQuery, Bootstrap, CSS

- Testing

The testing begins at the start of the project and there is ongoing integration between testing and development. By this set up we can achieve a high product quality (*Agile testing principle methods*, 2021).

- Maintenance

Here we usually involve small numbers of changes that will be grouped together in a release build to increase the quality of the product without breaking it in other ways. Develop the system according to the feedback.

3.1 User Interface Design

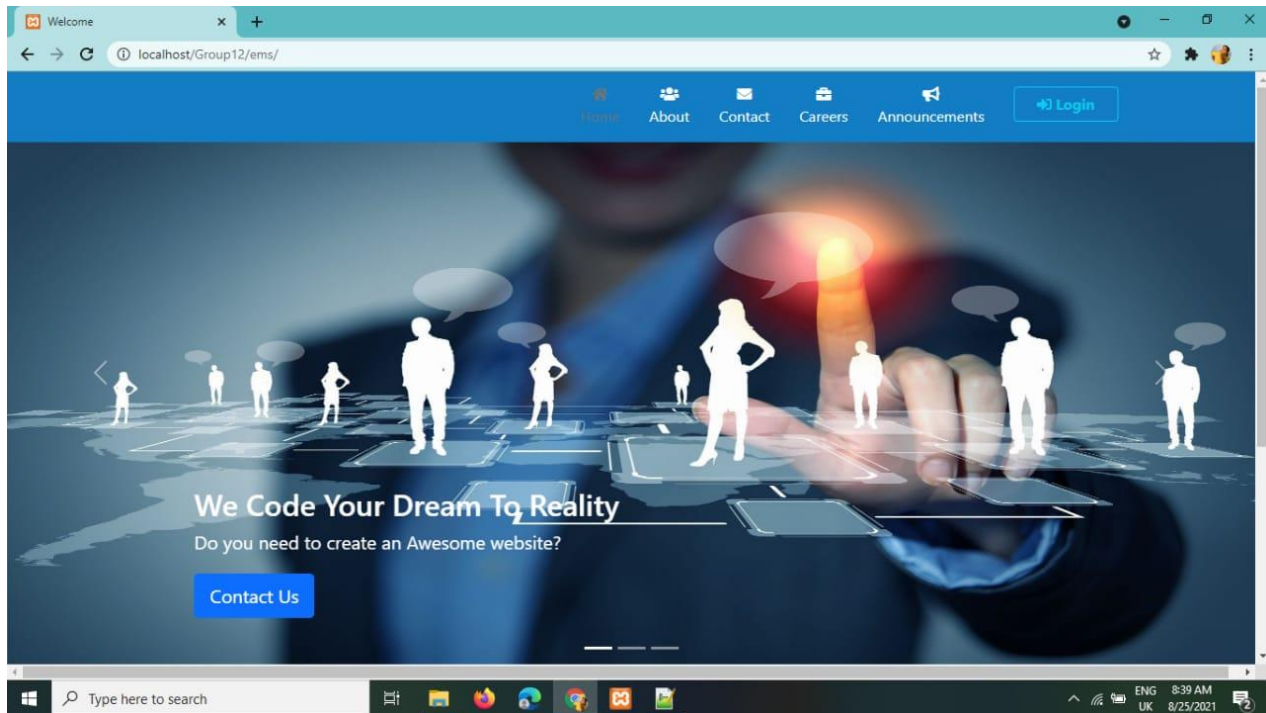


Figure 3.1.1:Home page

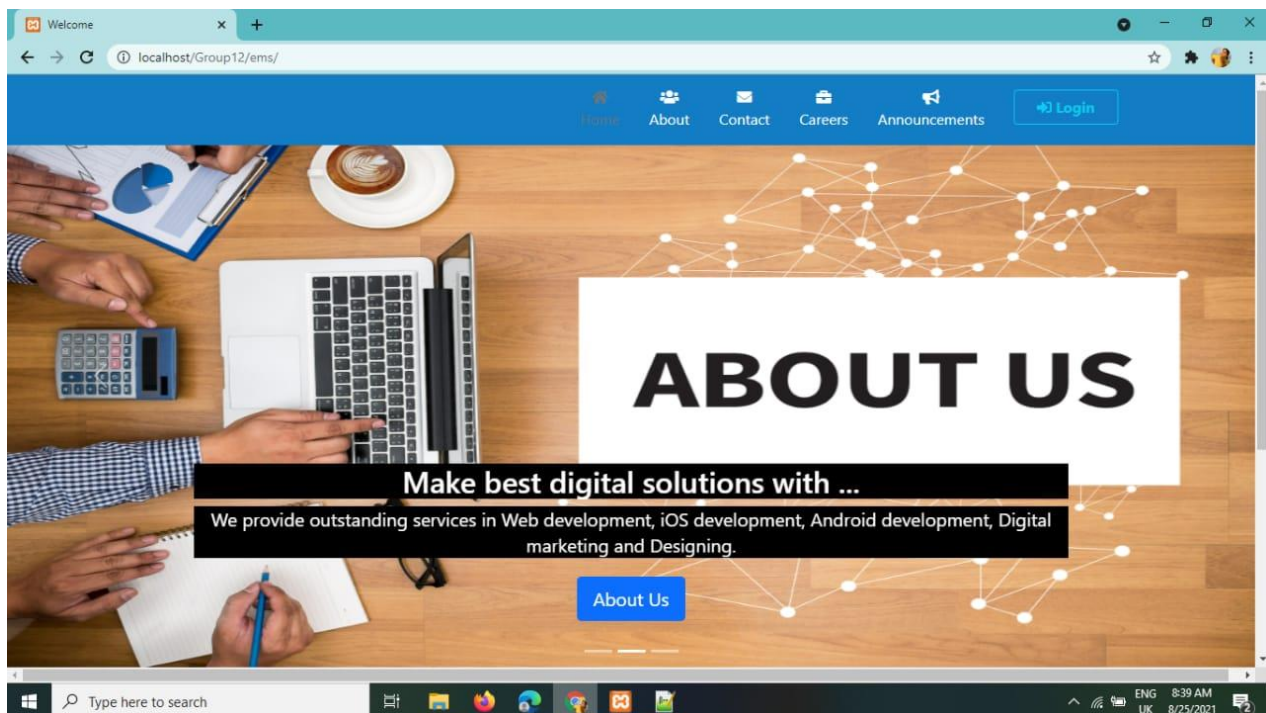


Figure 3.1.2:Home page

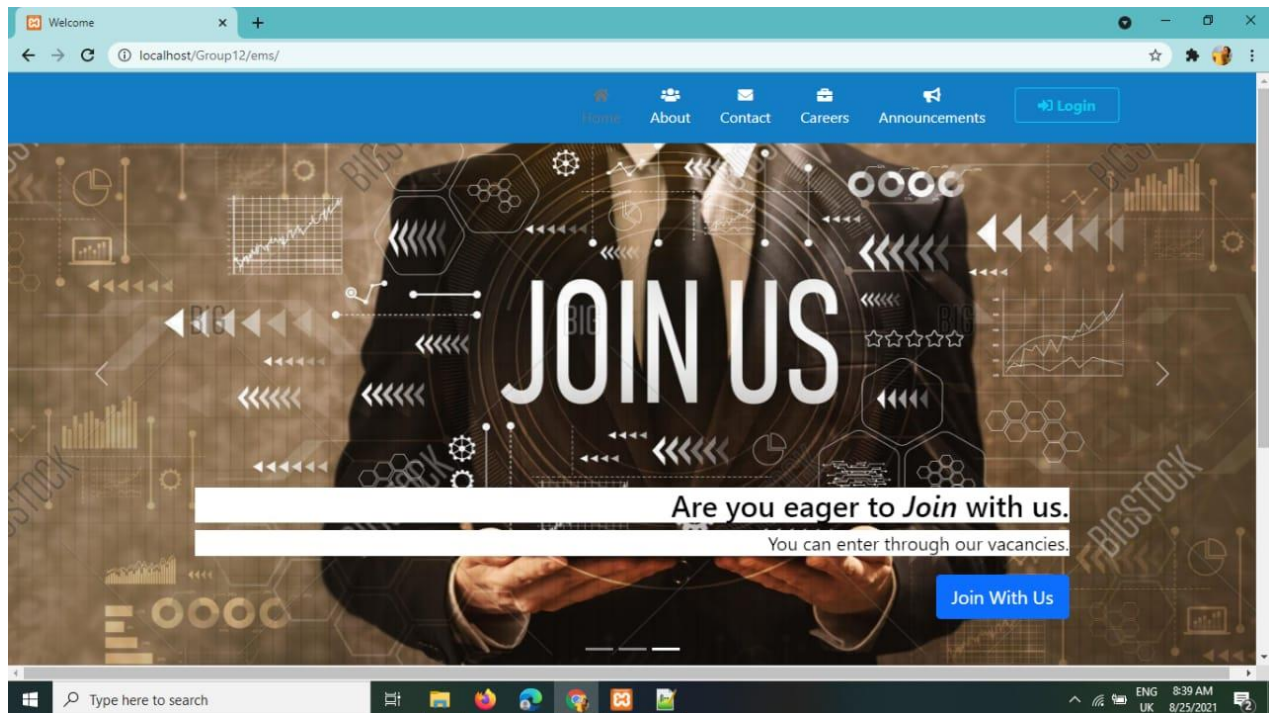


Figure 3.1.3:Home page

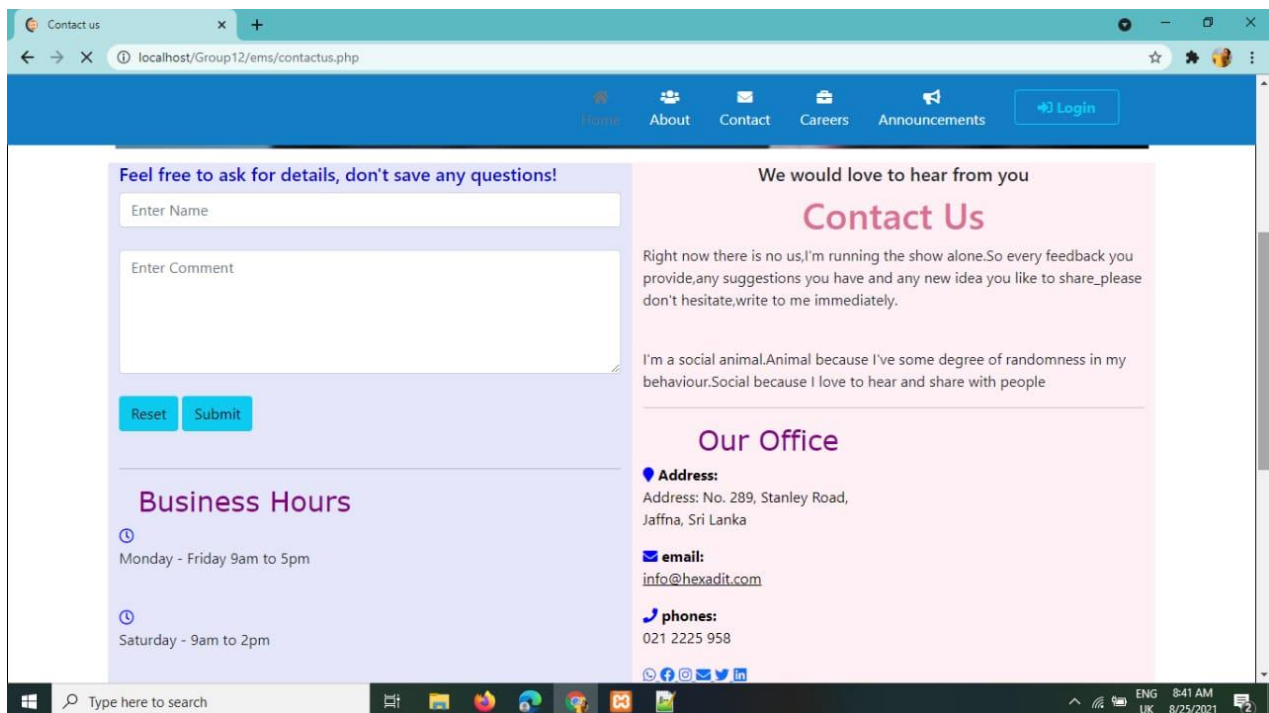


Figure 3.1.4: Contact us page

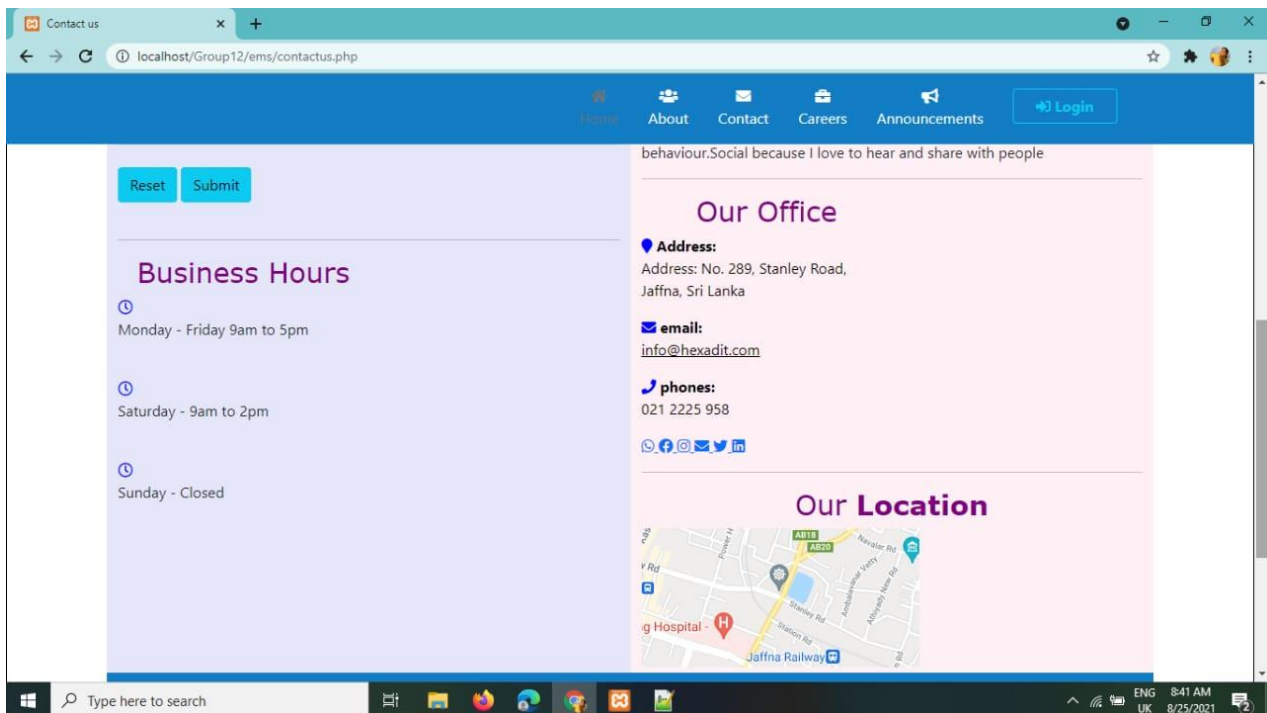


Figure 3.1.5: Contact us page

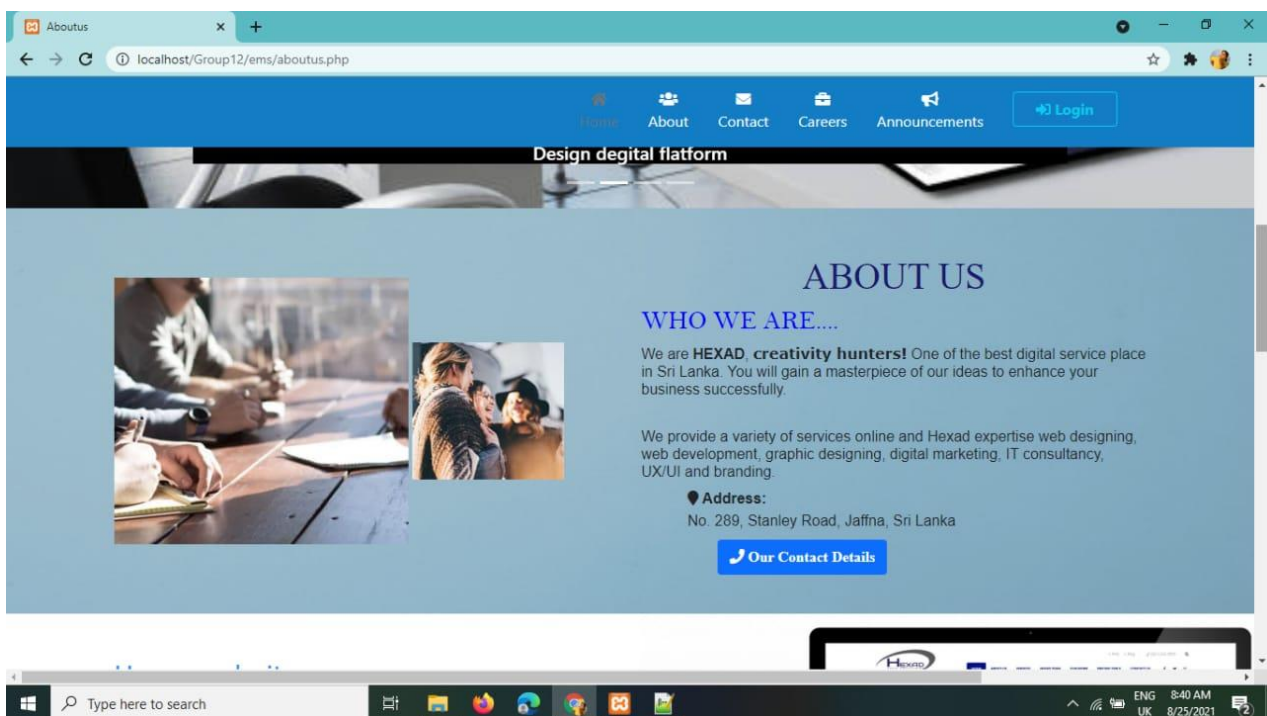


Figure 3.1.6: About us page

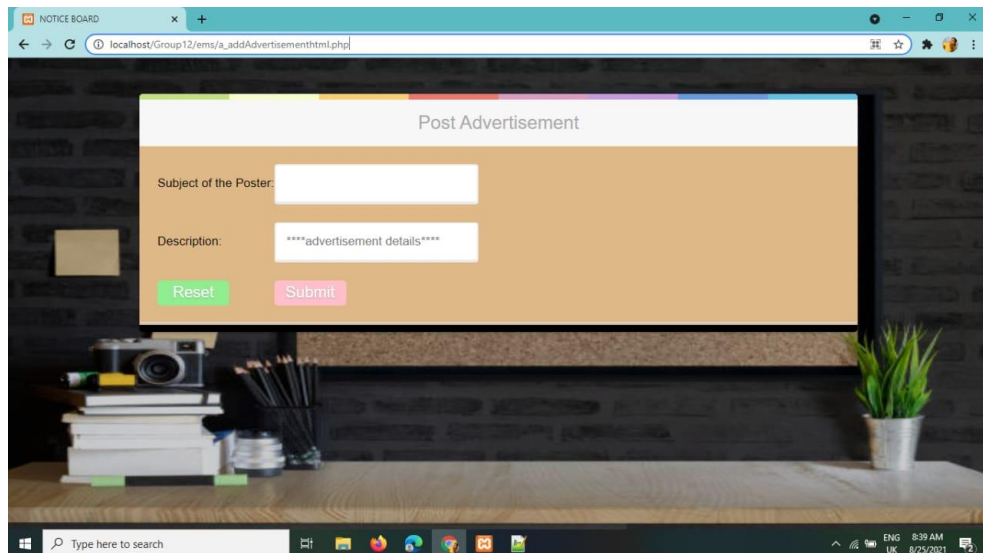


Figure 3.1.7: Post Advertisements

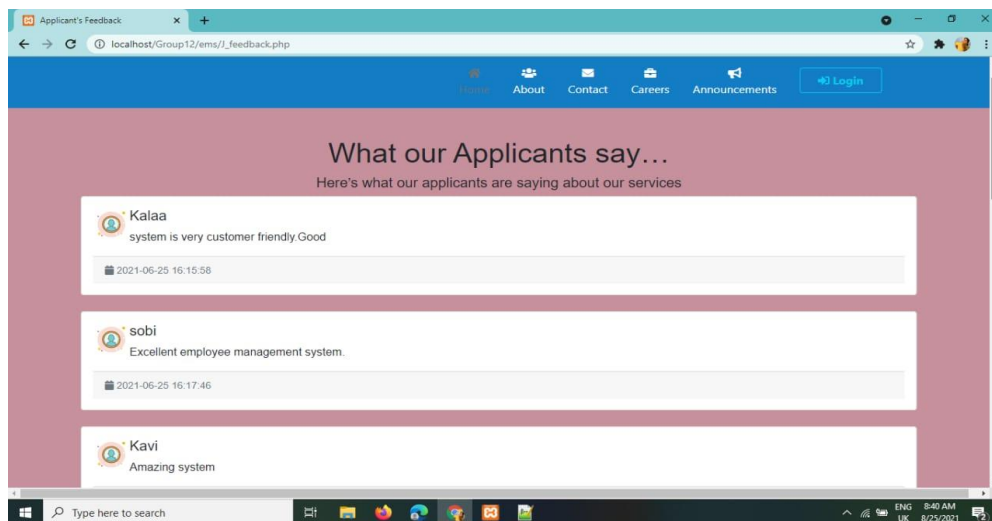


Figure 3.1.8: User Feedback Addition.

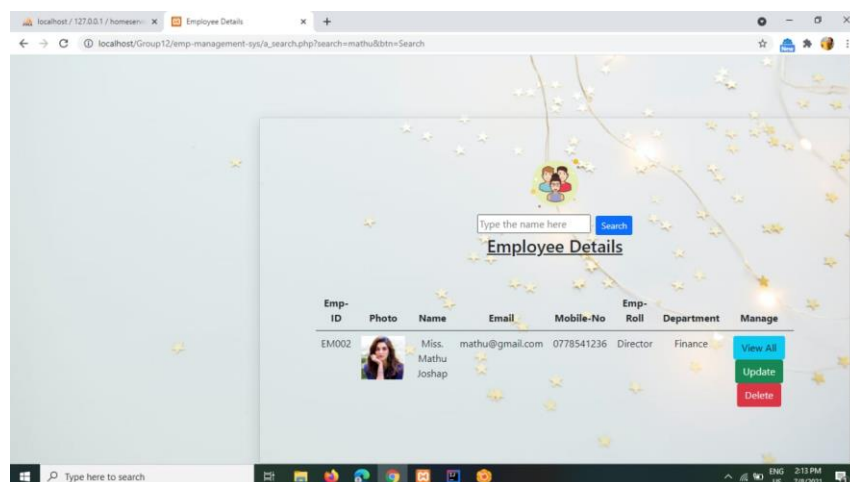


Figure 3.1.9: Search function.

4] Evaluation

4.1 Testing Methodologies

According to the Agile model here we use the Acceptance Testing method to our system. The main aim of this testing is to determine the working process of the system by satisfying the required specifications and it is acceptable for delivery. According to the future technology the requirements can be changed in the future. Therefore the methodology should be facilitated with accommodate changes of the user requirements. Also, we have to deliver a useful system within a short period of time.

Testing Methodologies As the development team of the our System we have

- Unit Testing
- Integrated Testing
- System Testing

Unit Testing

Unit testing is a software testing method using which individual modules are tested to determine whether they are fit for use by the developer himself.

Unit test of the login system was carried out by displaying a console message depicting the validity of the username and password of different users and user roles.

The test of update the job vacancy details was done by displaying a message whether the inserting details was placed successfully or not, it was also checked whether the data is correctly entered into the database.

The profiles of the admin, HR and Employees were individually checked by ensuring that display only the relevant information depending on the user and user role. E-mail option was tested separately by sending an email for a known E-mail address respectively to make sure that they are delivered and carry the relevant messages.

Data is entered into the databases manually and using forms in PHP pages to ensure the data is inserted to the correct tables of the database.

Integrated Testing

The individual components of the system were combined together with their integrating components and tested them for correct functioning.

Ex: The login system was combined with the user profiles with session handling and its correct functioning was ensured by testing it for different combinations of username and password for different user roles.

System Testing

Here we create a complete version of the system by integrating components of the system and then test the system for its correct functioning.

All the components of the system were combined together to create the complete version of the system and all the functions were tested and verified after combining the system as a whole system. System testing verified that the correct data is transferred to and from the database to the system.

4.2 Project Plan (Gantt chart)

Task	Time (Weeks)														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Finding Topic & requirement gathering															
Proposal Presentation															
Design the system															
Website development phase1& Database development phase 1															
Interim Presentation															
Web development phase2															
Database development phase 2															
Testing& validation															
Final submission & Presentation															
Documentation															

5] Future Works

- Integrating the new system into the business
- Help the users to transfer from the existing manual based system and train them to work with the new system
- Identify the areas of the system for further development
- Troubleshoots after launching the system

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- 2021. [online] Available at: <<http://sagarinfotech.com/>> [Accessed 10 July 2021].

7] Individual Contribution

Registration Number	Name	Contribution
UWU/CST/18/004	S.Mathushan.	<ul style="list-style-type: none"> • Project maintenance module. <ul style="list-style-type: none"> ▪ Assign project function. ▪ Add, view and update the details. ▪ Project documentation submission form. ▪ View Documentation. • Rewards addition. <ul style="list-style-type: none"> ▪ Add rewards function. ▪ View and update the details.
UWU/CST/18/010	S.Ketheeswaran.	<ul style="list-style-type: none"> • Advertisements and announcements. <ul style="list-style-type: none"> ▪ Add announcements ▪ Add job vacancies ▪ View and update the details. • Job applications and maintenance. <ul style="list-style-type: none"> ▪ Job application form. ▪ View the job applicant details. • Career page development. • About us page. • Contact us page. • Index page. • Search function. • User Feedback addition <ul style="list-style-type: none"> ▪ Add feedback details function. ▪ View the feedback details

UWU/CST/18/013	J.Thayakunan.	<ul style="list-style-type: none"> • Login and Forget password with Email verification. • Home pages for admin and all employees • Employee maintenance module for admin <ul style="list-style-type: none"> ▪ Add employee & manage details(view, update, delete) • Loan service maintenance module <ul style="list-style-type: none"> ▪ Add loan & manage (view, update, delete) ▪ Loan Application for all employees ▪ View loan applicants & response ▪ View loan borrowers account details • Salary calculation. • Dashboard. • Profile. • Change Password.
UWU/CST/18/024	B.Sivarajah.	<ul style="list-style-type: none"> • Leave apply maintenance module <ul style="list-style-type: none"> ▪ Employee apply for leave ▪ View and response leave application ▪ View own leave history • Employee Feedback addition <ul style="list-style-type: none"> ▪ Add feedback details function. ▪ View the feedback details • Payment registration. <ul style="list-style-type: none"> ▪ View payment details.

8] Appendix

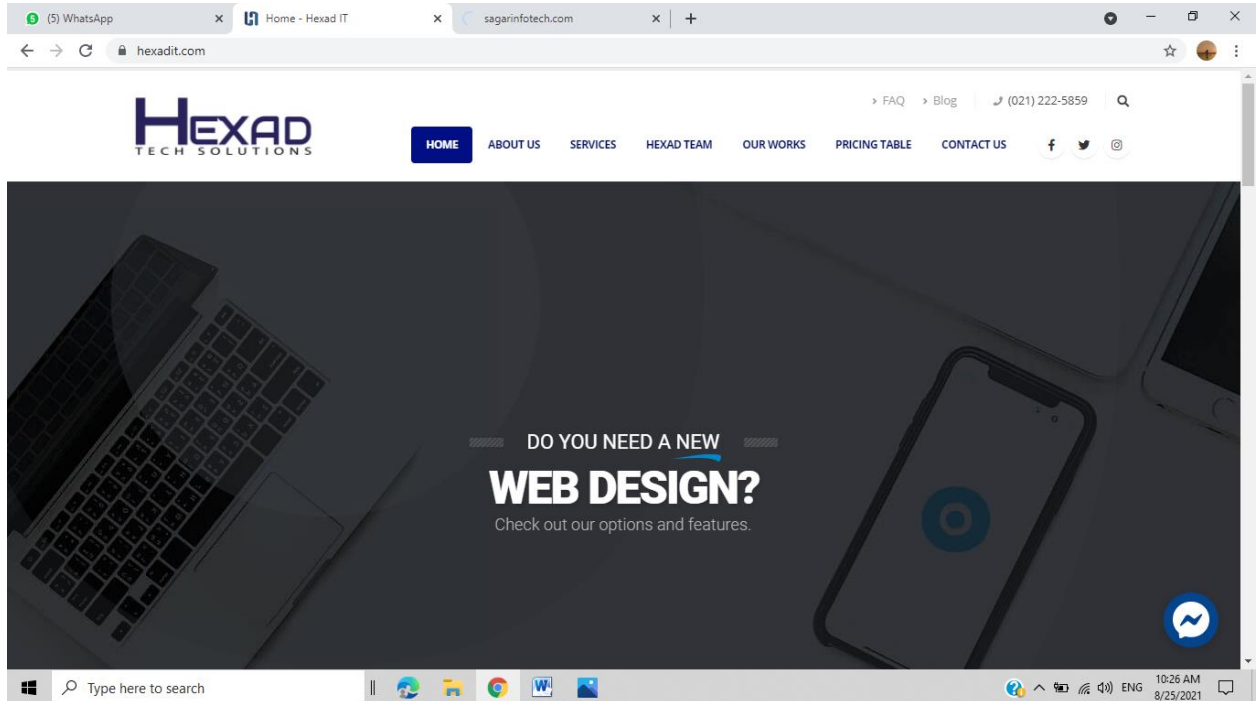


Figure 8.1: Sample Website page.

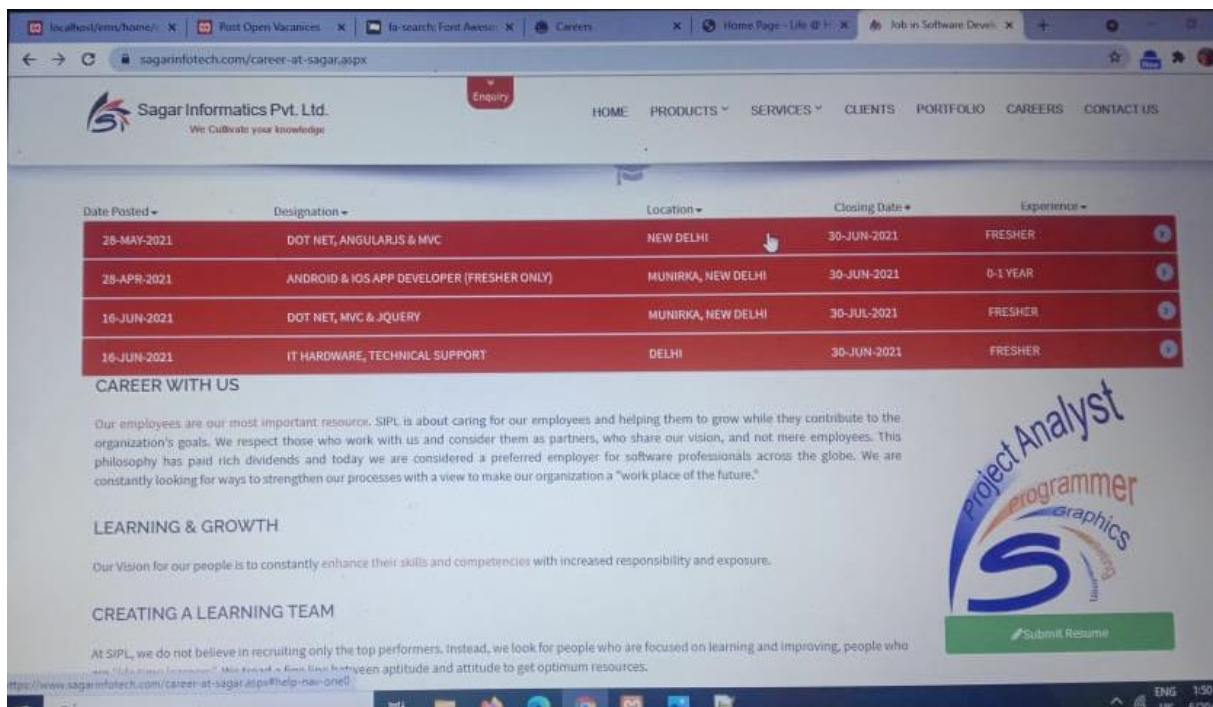


Figure 8.2: Sample Website page.