

PROJECT 1

FINAL PROJECT HANDBOOK

BY: PROJECT TEAM 02

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ITECH3208

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Project Handbook

Previous data: 

Updated data: 

1. Preliminaries, Document Management, Vision Statement:

Project Purpose:

The prime goal of this project is to build, test, and assess the functionality as well as the design for an interactive course on the website, Employability.Life, such that it fosters student engagement. The aim is to complete this with the coordination and combined efforts of the SCRUM master, product owner, and the development team for the project.

Scope:

The scope of the project will involve the project team, and the stakeholders such as the registered users, mentors, and admin staff and would be limited to the development, testing, and assessment of all the features as well as functionalities of Website. The client will receive a well-tested website that meets all of their requirements. Website will be created in such a way that it is user-friendly and simple to utilise. All the students would have full access to the Influence courses that were created. In addition, a reporting dashboard for trainers and administrators will be created. The website would include a variety of functionalities and some of them are as listed below:

- ❖ Login and logout
- ❖ Lecture sessions (40-minutes long)
- ❖ Booking system for the mentor sessions
- ❖ Where required, design and implement the auto-evaluated submissions.
- ❖ An easy-to-use interface for trainers to evaluate the assignments
- ❖ Save the captured data in a data structure in a machine-readable form
- ❖ To enable students to create audio chat rooms that would allow them to invite presenters as well as participate in discussing career-related matters.
- ❖ Students could post the reviews
- ❖ FAQ (Frequently Asked Questions) webpage
- ❖ Booking system for course.

Objective:

The project objective is to develop, test, and evaluate all the functionalities of the website, Employability.Life, and thereby hand over a well-tested Website to the client. Moreover, the goal is to facilitate the clients, with a Website that is highly user-convenient, and easily operable by them. Additionally, the aim is to examine all the attributes of activities that are demonstrated under the tag Influence and thereafter furnish the clients with a few relevant recommendations to enhance the student engagement, as well as the efficiency of this implementation undertaken by the client.

Precisely, the target is to design and develop, a well-tested, and functional interactive course, along with functionalities, such as a self-paced course, consisting of 40-minute lecture sessions, a booking system for the mentor session, and tracking usage of multimedia content. Furthermore, we intend to design an interactive element for Website, by making usage of H5P and relevant technologies, then plan and deploy an auto-evaluated submission, wherever required, and equip the trainers with an easily operable interface for evaluating the assignments. Moreover, the emphasize would be on avoiding the data redundancy, and inconsistency, by implementing the data normalization stages, and thereby maintaining the data integrity of the project, that will be developed for Employability.Life.

2. Organization, Initial project plan, and processes:

1. Process Model

In this project “The Waterfall Model” will be used, as it would enable the project team, to maintain a systematic, sequential approach, towards the project development. The model, consists of 5 stages in particular, namely: 1) Requirement specification, 2) Designing, 3) Implementation, 4) Testing, 5) Deployment, and 6) Maintenance. Each stage involves a set of activities to be performed, in order to facilitate a seamless process of project development.

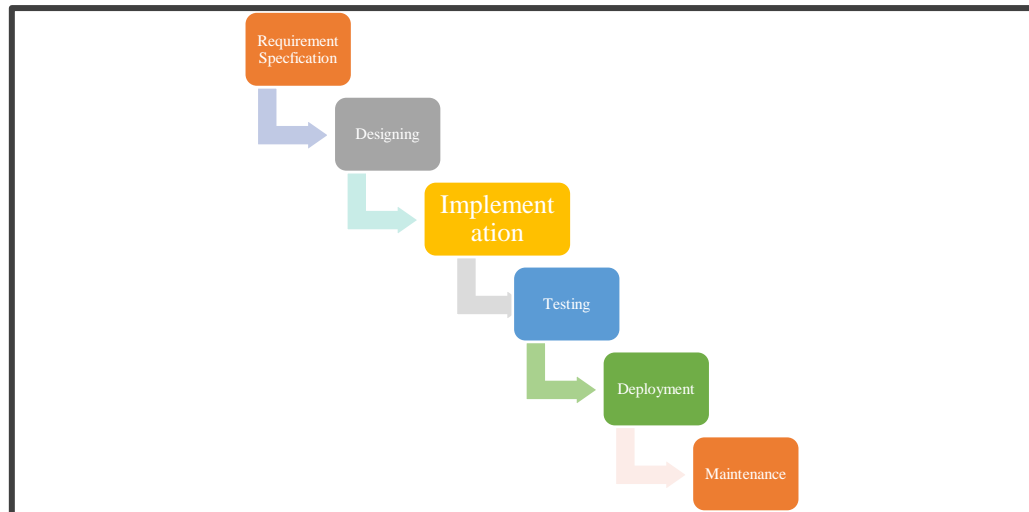


Figure 1 - Process model

2. A high-level breakdown of the activities in the project (project plan)

Requirement Specification:

In this initial stage of the waterfall process model, the needs, and requirements of the clients, will be analyzed, in-depth. Moreover, the specifications related to the project functionality, and purpose will also be noted, thoroughly. Additionally, the functional, and non-functional requirements of the input and output or that of the final project, would be efficiently examined. Wherein, the non-functional requirements, such as the platform to be used for project development, means of communication, system performance, security, privacy, usability, reliability, and modifiability, would be taken into consideration. This phase would also include documentation of essential requirements of the client, and project objectives, goals, assumptions, constraints, and deliverables.

Project Designing:

The second stage would be involving the process of designing the project based on the requirements gathered and analyzed in the initial stage. The project designed at this level would assist in specifying the hardware and system component requirements. Moreover, it would also help define the overall architecture of the project, by brainstorming and making usage of software such as GitHub, and diagrams like wireframes, and charts.

Implementation:

In the implementation stage, the development team of the project would work on the inputs received from the system design. The entire system of the project on Website will be first developed into small programs, termed units, which will be then integrated into the upcoming phase. Afterward, these small units will be developed, as per the functional requirements of the client.

Testing:

In this phase, the testing would be done for each unit developed earlier, this process is termed unit testing of the project by the tester. The testing will be done effectively, keeping in mind the client requirements, user security, and privacy. If anything functionality is found missing or is not working properly, then the respective unit will be developed, implemented, and tested again. The testing procedure would involve the testing of the background functionality, the processing, and the project structure, as well.

Deployment:

Followed by testing, there will be a deployment stage. When the functional and non-functional testing requirements are done successfully, then the project will be deployed in the client's environment.

Maintenance:

This is the final stage in the project development process, which will get commenced after the project will be installed successfully. In the maintenance stage, modifications will be made to the system, on a timely basis. Moreover, the individual components of the project might also be maintained, by altering the attributes, or by improving their performance. Such modifications will arise, either because of client requests or the defects discovered while using the system. The client will be facilitated with regular support and maintenance for the developed project.

Structure of the project team, in terms of scrum roles



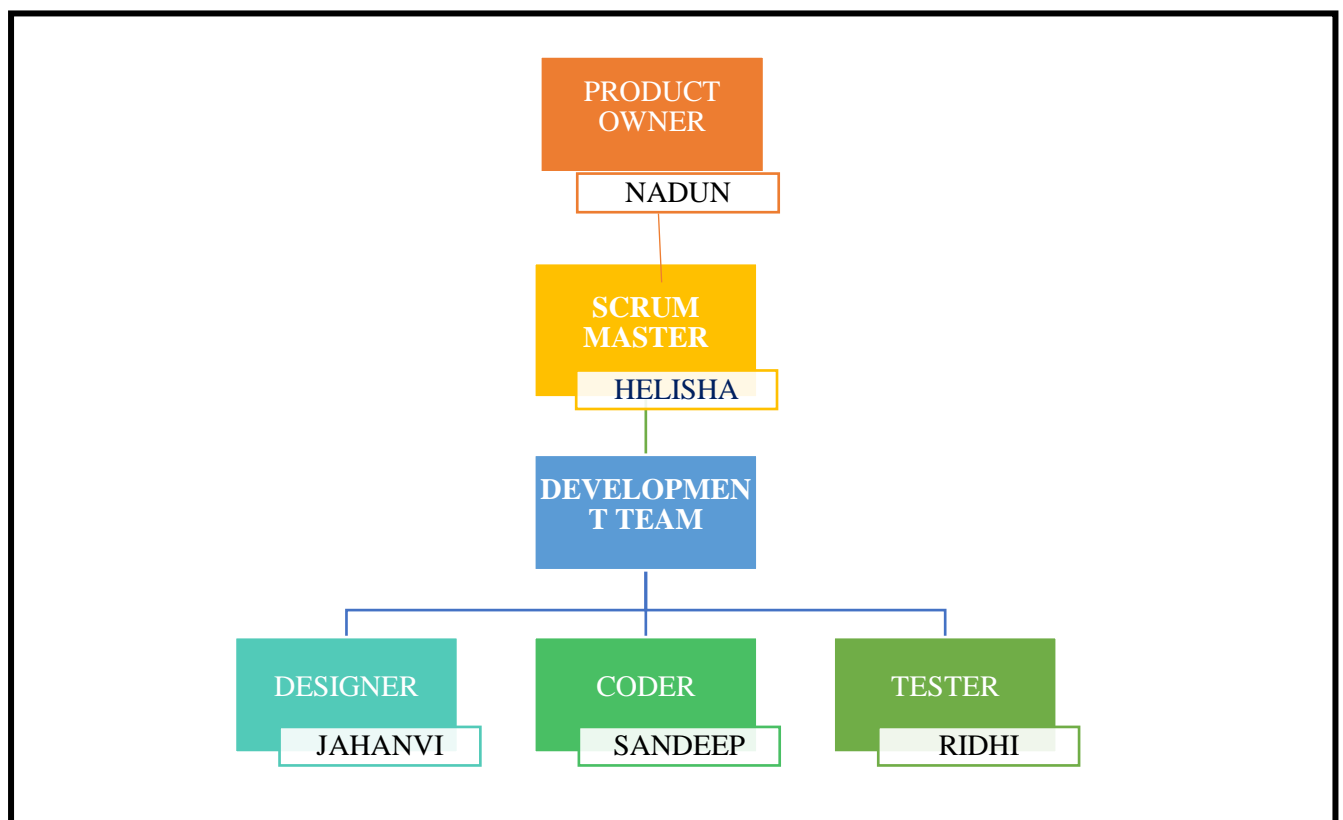
The structure of the project group is described below, along with the specifications of individual tasks distributed among the team members. For making the agile project, the SCRUM methodologies would be applied, wherein three significant roles, namely the SCRUM master, product owner, and the development team, have been adopted by our team members.

All the SCRUM roles and responsibilities of the project team members are as mentioned below: -

SCRUM ROLES	ALLOCATED MEMBERS	ASSIGNED RESPONSIBILITIES
SCRUM MASTER, PRODUCT OWNER, DEVELOPER	HELISHA PATEL	<ul style="list-style-type: none">❖ To educate the team members, about their roles, and responsibilities.❖ To plan, and organize stand-up group meetings, on daily basis.❖ To assist the product owner with the product backlog.

		<ul style="list-style-type: none"> ❖ To be capable enough to handle any obstructions witnessed during or between the implementation process. ❖ Accountable for enhancing the interactions between the development team members, and the client to foster the productivity of the team. ❖ To ensure good interaction between the development team and the product owner. ❖ To manage and prioritize the product backlog. ❖ To communicate the vision and requirements of the client to the development teams and the scrum master. ❖ To serve as a liaison between the product, and its development. ❖ To oversee the development stages of the project, and evaluate their progress at each iteration. ❖ To motivate the team members, and be accessible to them.
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DESIGNER, TESTER	JAHANVI DARJI	<ul style="list-style-type: none"> ❖ To provide all the intermediate results of the project work at the end of each sprint, to the scrum master. ❖ To test all the integrated units of the project, as per the client requirements. ❖ To participate in the daily scrum organized by the scrum master. ❖ To give an estimated amount of time required for delivering the tasks, assigned while developing the project.
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3. Interfaces with the client and other stakeholders. Who is responsible for communication, and how?

- ❖ Initially, the product owner will identify the requirements of the client, and the scrum master will integrate the team member and will guide them throughout the project. The development team will collaboratively work on the project to fulfill the needs of the client.
- ❖ Once the initial meeting to plan the project with all the team members is done, the product owner will present the budget to the client for approval.
- ❖ In between the process, if any changes are needed, the designer will modify the plan, and the development team will work on that.
- ❖ For communication, our team will use the following technologies, Teams, and Zoom for meetings; word, and PowerPoint for documentation; Visual Studio, and WampServer for coding purposes and GitHub for code and document configuration.
- ❖ The scrum master will conduct the meeting with the client and oversee the development of the project. If the client wants to update or needs some changes, will inform her, and further, the scrum master will hold a meeting with the team for a discussion on the same.
- ❖ After finalizing the project, the product owner will hand over the final product to the client and the client would approve the project as it matches all the functionalities and requirements.
- ❖ During the progression of the project, we used to conduct the meetings with all the client, through different medium. On campus, we did with Tabinda Khan as well as on Microsoft Team with Marketa Mojzisoova and Anirudh Phadke.
- ❖ As per their suggestions and feedback, we were making changes accordingly in our project, and at the end when we show them our work, they all were happy and appreciated our efforts.

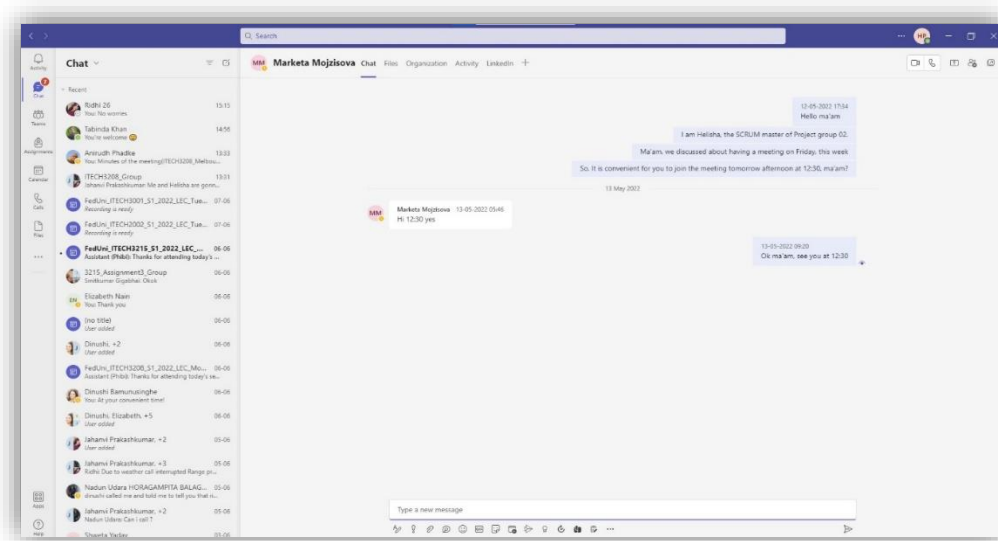
❖ **The client interaction and feedback received:**

Figure 3: Interaction with client - Marketa Mojzisova

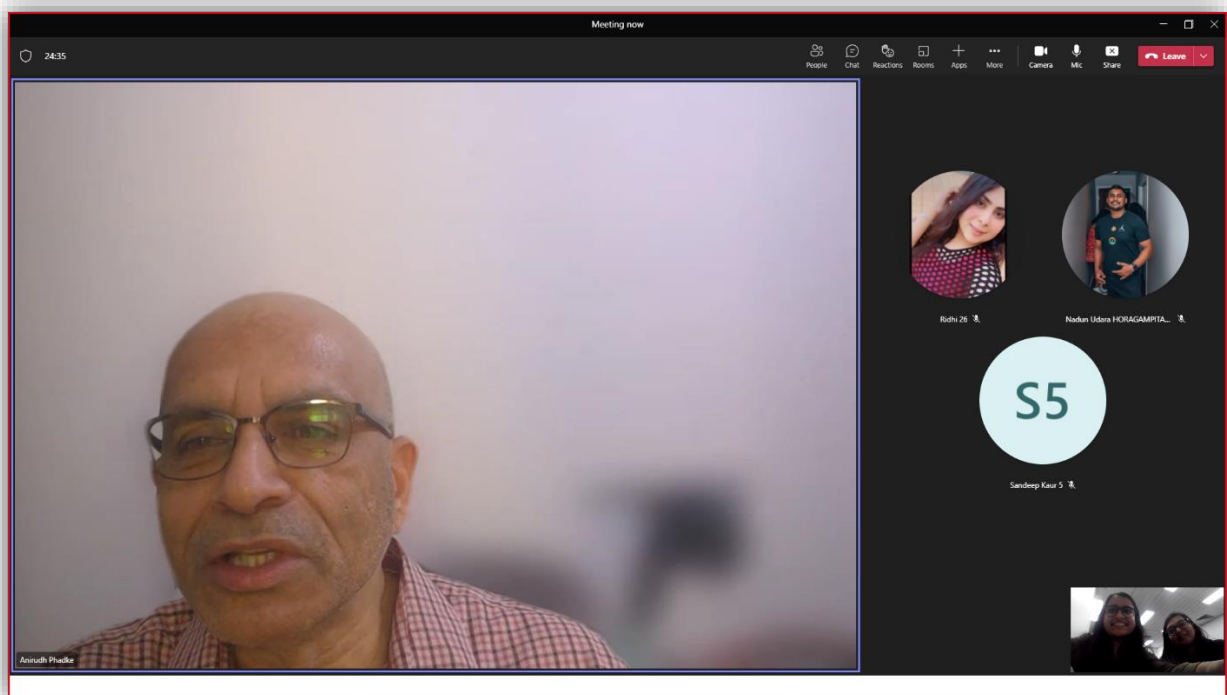
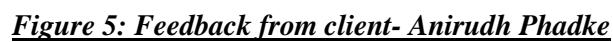


Figure 4: Meeting with the Anirudh Phadke



4. Responsibilities for each type of activity in the project (programming, designing, etc)

Responsibility assignment matrix:

R – Responsible **A** – Accountable **C** – Consult **I** – Informed

TASKS	TEAM	
	SCRUM MASTER, PRODUCT OWNER, DEVELOPER (Helisha)	DESIGNER, TESTER (Jahanvi)
Requirement Identification	A	C
Client Meetings	R	C
Release sprint plan	A	C
Design UI	C	R
Coding	I	C
Integration of team	R	A
Testing	I	I
Documentation	R	A
Modification in the project	I	R
Handover a final product to the client	A	I

5. Document and code configuration management systems specified

Document configuration management system:

Our project team has chosen the software, Microsoft Teams for configuring the management of documents. Common document types for instance are Word, Excel, PowerPoint, and One Note, which can be managed by utilizing the option, SharePoint. As a result of the optimization done by Microsoft, document management can be done by Dynamic 365 with the integration of Microsoft teams. This will allow the team members to co-author the project documents and thereby sync them, automatically.

Code configuration management system:

The project team has selected GitHub for code configuration. We are already using GitHub for our project board. Because of the enhancement, the code configuration and the electric project board are linked and could be easily handled, just by clicking a tab. We have created a team of all the members on GitHub for managing the code documents. It is the best platform, as it enables multiple team members to work collaboratively on the same project, and it even restores all the project documents securely. Moreover, any member of the team could add or update the code, so there is no need to send or exchange the files, as well.

6. Aligns with an electronic project board created in GitHub

All the project team members, including the product owner, the scrum master, and the members of the development teams have made their accounts on GitHub. The project team will communicate and function the project, through the platform GitHub.

The below is the link of repository created in GitHub:

https://github.com/Patel-Helisha/ITECH3208_Melbourne_P02

A photo has been attached below demonstrating, that all the five group members of the project have created a project repository on the GitHub:

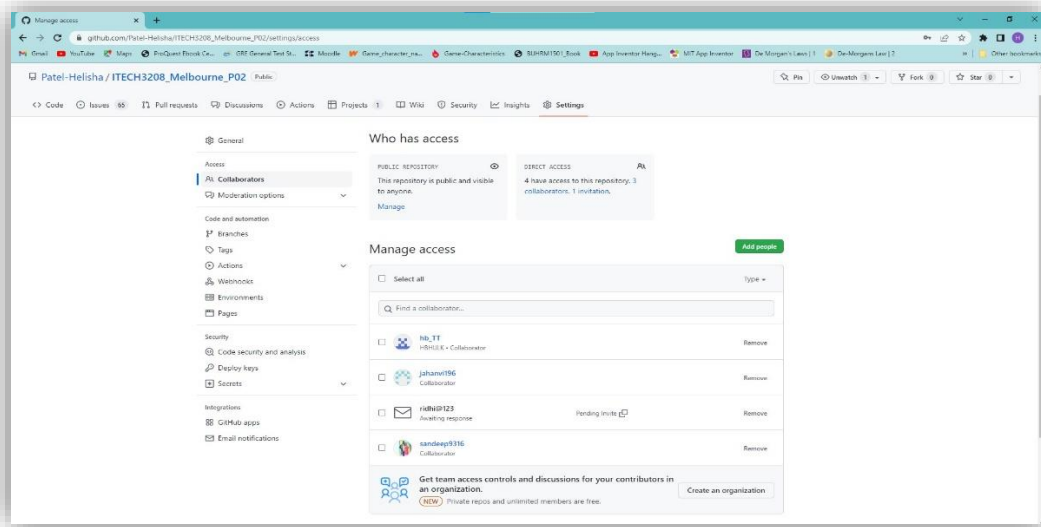


Figure 7 Project Repository on GitHub

Below displayed image demonstrates that all the document files of the project created up till now, are uploaded on GitHub:

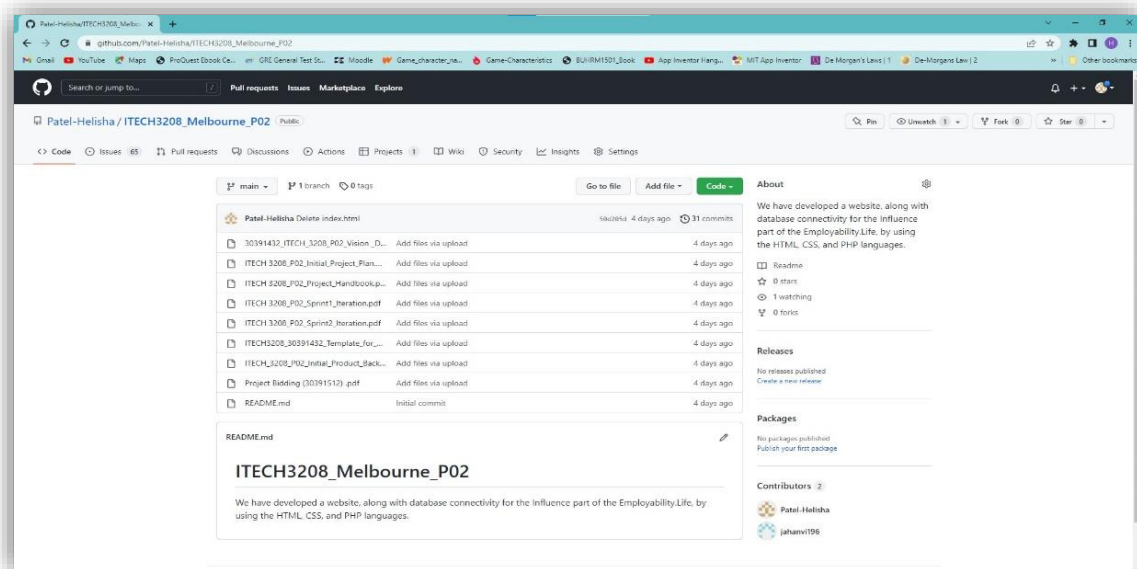


Figure 8 The Project files uploaded on GitHub

The image shown below describes that the project named E-Learning Product Development – Influence has been created on GitHub. Moreover, the to-do list for the project, as well as the product backlog items are also documented on it. Additionally, it could also be seen, that an in-progress tab is made for the project, along with the sprint 1 specifications.

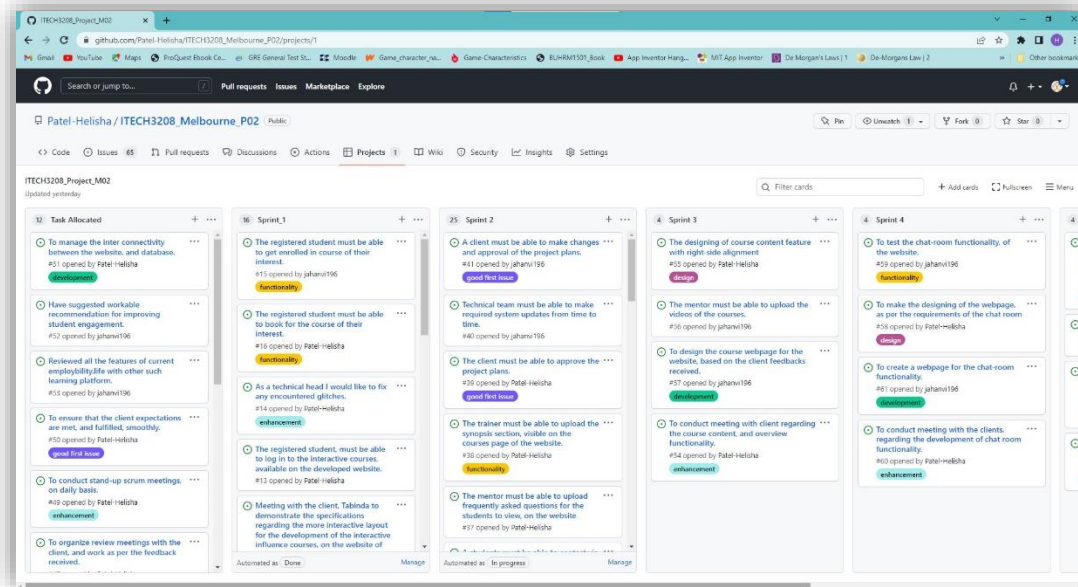


Figure 9 GitHub Electronic Dashboard 1

The image display below, shows all the other three sprints of the project, along with the specifications for the same: -

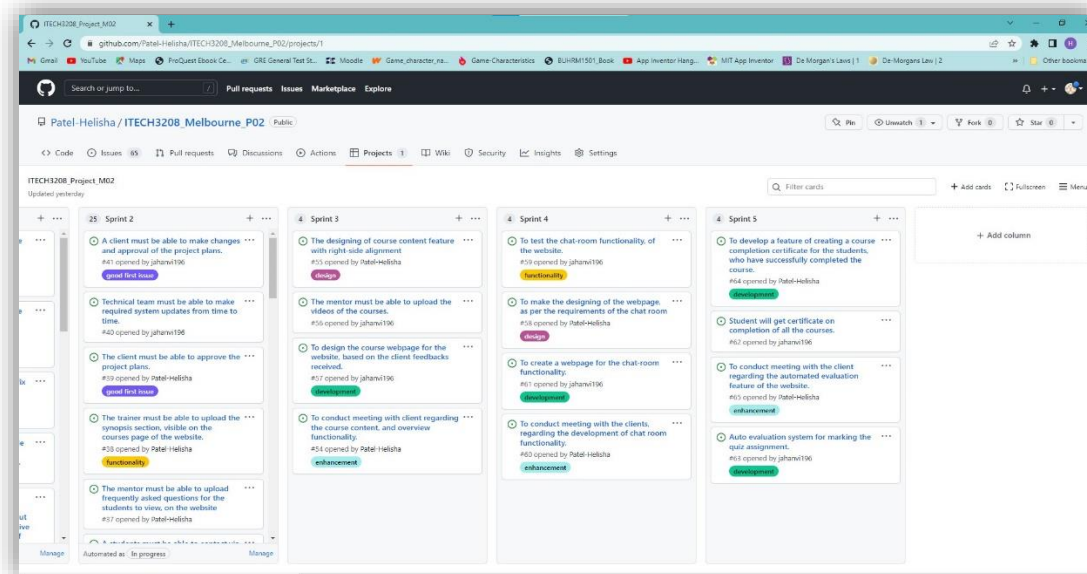


Figure 10 GitHub Electronic Dashboard 2

3. Management Process

Management objective and priorities:

- ❖ In the project, the SCRUM master, and the product owner would be accountable for maintaining the communication with the client via electronic mails, Microsoft Teams, audio calls, instant messaging, and other such mediums. The communication conducted, would be regarding the client requirements, and in relevance to the discussions related to the requirement of any modifications in the project.
- ❖ Moreover, daily work updates will be given to the scrum master, and the project owner, by the development team of the project. The Product Owner and Scrum master have the authority to assign the tasks to the development team. They will communicate with the development team regarding their roles and responsibilities, the documentation, related issues, and required modifications in the project by heading the group meetings, on Microsoft Team. The documentation of the project would be undertaken by the scrum master of the project.
- ❖ The prime objective of the project is to develop an Open-source Learning Management System that will be called Influence, for E/L. The system will be used by E/L to host their interactive courses. As a group, we are aiming to develop an App that will be of high performance to achieve the objectives of E/L. The development of the Influence App would even assist us to learn and advance our skills in software development as well as enhance our project management skills.
- ❖ In this project, there are two risks, in general, that the project team must take into consideration while developing the project. These two risk factors, that might hinder the successful development of the project, are the time and budget, allotted to the project team. The project team has to be cautious about delivering the project units, within the allotted deadlines. Moreover, the product owner and scrum master must plan out all the development requirements, to accommodate them within the budget allotted to the team, by the client.
- ❖ The client might request changes to the App that might suit further development of the application. Fulfilling these requests will enable the team to attain client satisfaction as well as achieve the overall objective of the project. The communication between the team and the client would be done on a timely basis, such that we can present the project within the set timeframe, and even make the required modifications, as early as possible. The official communication channel between the project team and client would be via email and Microsoft teams.
- ❖ The priority of our project team would be to fulfilling all the functional requirements of the client, within the specified timeframe. The project team will ensure, that the client is being updated on a timely basis, regarding the product being developed. Our concern would be to satisfy all the modifications of the client, within the allotted time, and budget.

Assumptions, dependencies, and constraints:**Project Assumptions:**

- ❖ It is believed that the student engagement and interactivity with the learning management system-Website of Employability.life, will be enhanced effectively after developing the project. Moreover, the courses under the tag Influence would be more efficient, easily operable, as well as accessible to all the students that are participating in those courses.
- ❖ Generally, it is presumed to develop, test, and deploy a fully functional and flawless interactive course on LMS, by making usage of technologies, namely, Moodle LMS, HTMS, Power BI, and H5P. It is expected that the developed self-paced course, would include 40-minutes long lecture sessions, a booking system for the tutor session, a tracking system for multimedia content, interactive attributes, an auto-evaluated submission facility, and a user-friendly interface for mentors to examine the assignments.
- ❖ During sprint 1, there were assumptions for improvising the student engagement such that including reviews features, FAQ (Frequently Asked Questions) section, booking system for course, course content and detail overview of course. All these additionally functionalities would help students for more interactions and learning different new courses.

Project Dependencies:

- ❖ The project will be dependent on a lot of factors, such as the time and budget limitations, resource dependency, and many other such dependencies. The product owner and scrum master would have to depend on the time deadlines set for the project. Moreover, the product owner will be liable to arrange all the resources required for the project, within the allocated budget.
- ❖ There will also be some project task-related dependencies. Under the task dependencies, the development team would be accountable for developing all the project units within the set timeframe, as other units would not begin without the completion of previous units. Hence, all such dependencies will be kept in mind by the project team, to facilitate the client, with seamless project delivery.
- ❖ The project is also depending on client satisfaction, all the requirements should be fulfilled. Also, according to client feedback the changes should be done. For instance, in our project, our client suggests that we should bright colours as theme of our website, so made changes accordingly. Moreover, we have to provide the project on time.

Project Constraints:

- ❖ The project is limited to some of its constraints, such as prioritization of the teamwork, within the given budget. The given budget is a constraint, as it involves a lot of factors, such as the salaries of each team member, and the cost of non-functional requirements, as well.
- ❖ Furthermore, time is a critical barrier, since the project is large, involving the evaluation, creation, and execution of courses on the Website in order to meet all client needs within the allotted timeframe, which might be a substantial time management challenge.
- ❖ Another, coordination among team member, this plays important role in the development of the project. Good team coordination will lead the project progression quick and in smooth way. Whereas team conflicts diverts the project and sometimes it is difficult to handle the situation.
- ❖ Lastly, the communication, and coordination among the group members, could be a huge task to achieve. Additionally, there is always a possibility of external factors that might act as an obstacle to flawless the delivery of the project, hence the scrum master, and product owner, along with the development team, should be making a mitigation plan, to rectify any such situations.

4. Non-functional Requirements

The Non-Functional requirement, particularly emphasizes the quality attribute of a system. These requirements, assist a project team, to comprehend the system usability, security, and other relevant non-functional attributes, that play a vital role in the successful deployment of the project.

Some of the non-functional requirements are as described below:

1. Platform

For effective development of the project, the hardware, and software platforms on which our system will execute play a crucial role, their specifications are as listed below: -

1.1 Server Software Requirements**❖ Supported Operating Systems:**

- a. Windows operating server 2022, 2019, 2016, 2012, and 2008.
- b. Windows 11, 10, 8, 7, and Vista.

❖ Supported Databases:

- a. Microsoft SQL Server:
- b. Microsoft Azure SQL DB

❖ Microsoft .NET Framework 4.5+ is required (default, installed for you)**1.2 Server Hardware Requirements**

- a. 64-bit processor (For Desktop)
- b. Octa-Core 2 GHz or higher (For smartphones)
- c. 16 GB RAM or Higher
- d. 8 GB free space

Since there would be a huge number of learns on Website, we would need a high-speed database and devices for the same.

2. Communication

Below listed are some ways through which the system could communicate with the other systems:

- ❖ Client-server model
- ❖ Transmission Media
- ❖ Shared information printers and different peripherals
- ❖ Network Interface Card
- ❖ Local Operating System
- ❖ Network Operating System
- ❖ Hubs and Switches

3. Performance

As high-tech hardware and software servers would be used for the project development, the system performance would be sufficient for usage by a large sum of students, tutors, and administrators, on Website. If in any case, the number of system users exceeds a certain limit in future use, then the system performance might get affected, and there would be a need to upgrade the system.

4. Security and Privacy

For the security and privacy of the system users, certain security protocols could be followed while project development, as described below: -

- ❖ To have a multilayer firewall setup on the system server.
- ❖ All the critical project-related data must be backed up on the server from time to time.

- ❖ The data of registered students, and tutors, must be encrypted.
- ❖ The assignment submitted by a particular student must be visible to the respective tutor only, and not any other student.
- ❖ In the audio chat rooms created by the students, the audio recorded must be deleted, if no incident is reported in the respective room.
- ❖ There should be records of the activity and task performed by each student, as a means of security.

5. Audience, Usability, and Accessibility

The tutors, administrators, as well as the students of Learning Management System, Website, would be using this interactive course, that is being developed, so language preference would be English, as being an international language, it would be easily operable by the users, all around the world. Moreover, the course to be developed under the Influence tag would be easily accessible by all the registered students, and tutors of Website.

6 Reliability

The system of the project to be developed must be reliable. Hence, all the functionalities, such as the 40-minutes long self-paced course sessions, the booking, and tracing system, all these functionalities would be tested effectively, thereby delivering a flawless project, with maybe a 99% uptime.

7. Modifiability

The project would be designed and developed keeping the modifiability factor in mind, thereby facilitating any updation or alterations, that might be required in the future. In the future, while modifying the project, more interactive, and interesting features could be added to the facility of creating audio-chat rooms, by making usage of advanced H5P technologies, thereby fostering even more student engagement.

8. Economic

Nowadays all the technologies required for the project development, and deployment, namely H5P, HTMS, and Power BI, gives free access to its users, to an extent. So, our project team would make use of such platforms, to successfully deploy the project, within the allotted budget.

9. Legal

The legal requirements that are taken into consideration while designing, and developing the website are as mentioned below: -

- ❖ The Accessibility requirement (ADA, and WCAG).
- ❖ The Confidentiality, and data collection requirements (CCPA, and GDPR).
- ❖ The anti-spam laws.
- ❖ The copyright and plagiarism requirements.
- ❖ The cookie requirements (GDPR).
- ❖ Content licensing, and attribution.

10. Standards

Following are some standards, the project team must abide by: -

The development team must adhere to W3C consortium standards, which is the international standard for the usage of H5P, and the standards recommended are as mentioned below: -

- ❖ Browser Compatibility: As per the set standards, the deployed website, or application must operate efficiently on all the main browsers, namely, chrome, Microsoft edge, and internet explorer.
- ❖ Consistent document types declarations: As the international standards are applied, it means that any HTML editor could be used for developing the web page.
- ❖ Enhanced availability: W3C recommends taking into consideration the visually impaired people while developing the website.

Our project team would abide by all the above-specified laws, to develop the project as per the international standards. ("Standards - W3C", 2022)

5. System Architecture and Design

System Architecture Objectives:

Our project is to make the Influence section of the Employability.life, more interactive and engaging for the students, wherein the students, mentors, trainers, administrative staff, and the IT team, could register, log in, and thereby exhibit a variety of functionalities, respectively. The key functions of the project are to facilitate the students to register for a particular course, get logged in, book mentor sessions, submit the assignments, create chat rooms, invite friends, and trainers, and thereby make their own community.

Likewise, the mentors and trainers should be able to log in to the website, upload the lecture videos, check the assignments submitted by the students, mark them, and resolve the student queries. Similarly, the admin staff must be able to view and make modifications to the student, mentor, and trainer's details.

High-level system architecture:

The higher-level architecture of the system is primarily based on a distributed system architecture structure, wherein the storage, as well as the system, is organized individually and interconnected through the network.

The database of the Employability.life website would be interlinked with the front-end functionalities performed by the student, mentor, or trainer. For instance, once a registered student provides his/her name on the website, all the details of the student such as the name, email-ID, and contact details will be fetched in the database, by the admin.

As the website adopts the distributed architecture structure, the system up-gradation process is undertaken by replacing the component blocks, while the system growth is done, by adding the extra blocks. Such an architecture is designed to facilitate the effective growth and scaling of a variety of workloads.

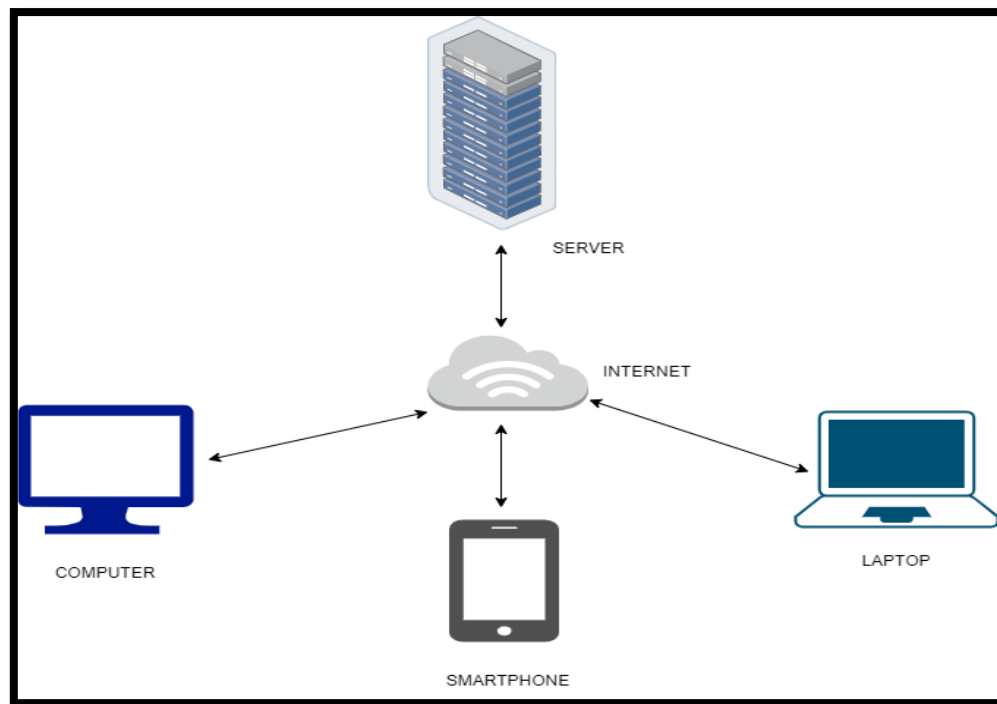


Figure 11 - Client server model

Some of the benefits and drawbacks of using this type of system architecture are described below: -

Benefits:

- ❖ **Openness** – As it is an open platform system, it could be easily accessed by the local server, as well as the remote server.
- ❖ **Reliability** – It is comparatively more reliable than the single systems, as even though there is a failure in one node's functioning, the other nodes would continue to function seamlessly.
- ❖ **Speed and content distribution** – This distributed system would be faster in processing, compared to the single-device systems, as all the queries would be routed to a specific server with the required information, and not to a single device.
- ❖ **Efficiency** – The distributed system is quite efficient, as they involve the usage of multiple devices, wherein each device functions independently to resolve the issues.
- ❖ **Cost-effectiveness** – Though the distributed system involves higher costs at the implementation stage, they are quite cost-effective, in long term.
- ❖ **Scalability** – This distributed system is made with the purpose of scalability, thereby enabling the addition of more workstations, whenever there is an increase in the workload.
- ❖ **Latency** – There is low latency observed with the distributed system, as it distributes the network traffic effectively, and reduces the serving time.

Drawbacks:

- ❖ **Setup cost** – The initial cost of implementing the distributed system is comparatively higher than the single system set-up cost. The infrastructure of this system is also quite expensive.
- ❖ **Complexity** – The process of implementing, maintaining, and troubleshooting the distributed system architecture, is a bit complex.
- ❖ **Security** – The distributed system is comparatively riskier, as it involves open system features.
- ❖ **Overheads** – This issue is generally witnessed among the distributed system, whenever each of the workstations, attempts to function at the same point in time.

System Context:

The key element of a good system design is to make sure, that all the features of the system structure have adopted a similar kind of style and functionalities, that are visible and comprehensible by the system user, as well as by the members of the admin, and tester team. The prime goal of this learning management system is to enable Employability.Life to perform the tasks with more ease, and convenience. This learning system would be integrated such that, it functions as a beneficiary for the smooth functioning of Employability.Life.

The system interfaces are designed in such a manner, that would assist in managing the interconnection between the website and the database of Employability.Life, thereby allowing us to fetch all the details, as and when required. The database management system of the website would be quite useful in storing, and managing the large dataset of Employability.Life.

The main users of the website, who will interact with the system are namely, the students, mentors, trainers, admin staff, and the IT team members. Each of these users would require particular data, that could be easily fetched from the database management system, and the admin could even make modifications to the stored data, such as update, or delete.

User Interface / Interaction Design:

At the initial level, during the phase of system designing, several mock-ups were made, to code, and create the website functionalities. Each of the mock-ups would impact the whole designing process, therefore the process was undertaken many a time. The inter-link between the front-end and back-end of the system database was done such, that whenever any specific data was required to be retrieved, then it could be fetched seamlessly, without any disturbance. Moreover, the student login feature had to be secured in order to facilitate authentic logins in the system. Each of the group members has a different set of ideas to propose for the user interface, hence a lot of brainstorming was performed to finalize the design of the system.

Below presented, is the site map of the Employability.Life website: -

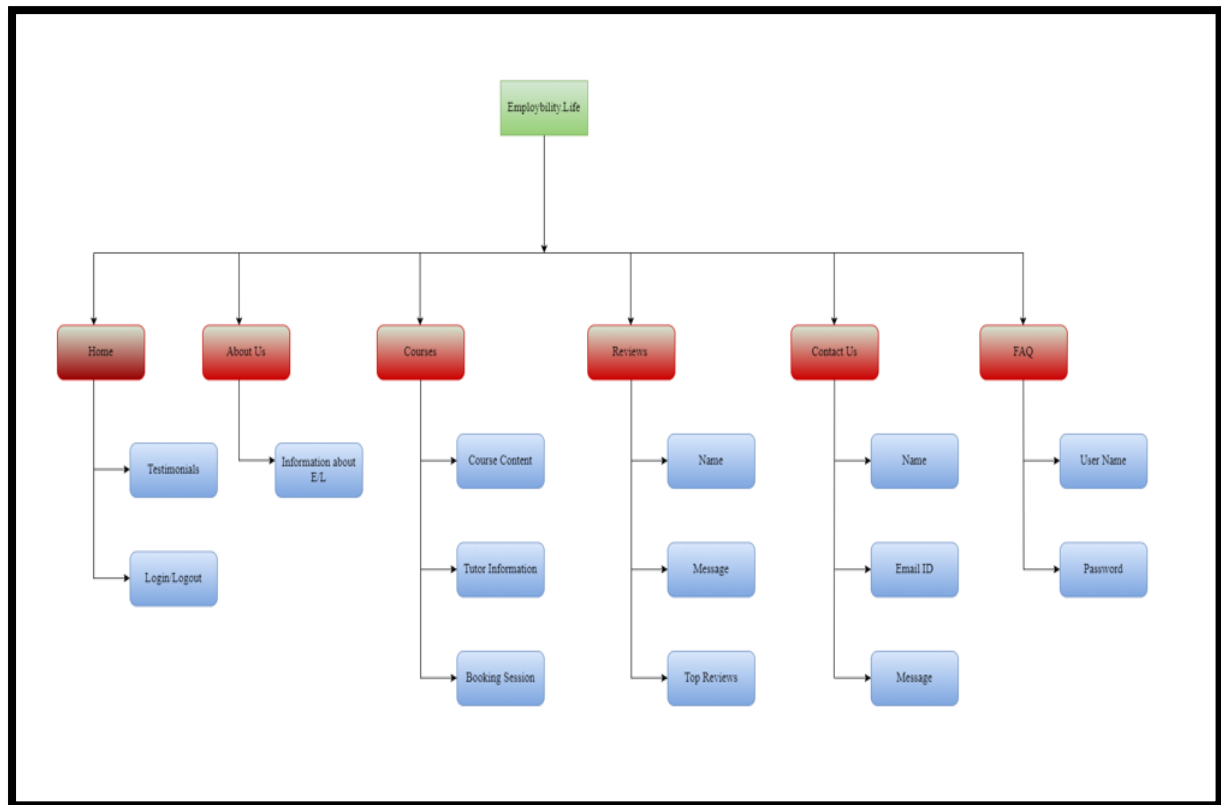


Figure 12 - Site map

The Use case diagram of the Employability.Life website is as demonstrated below: -

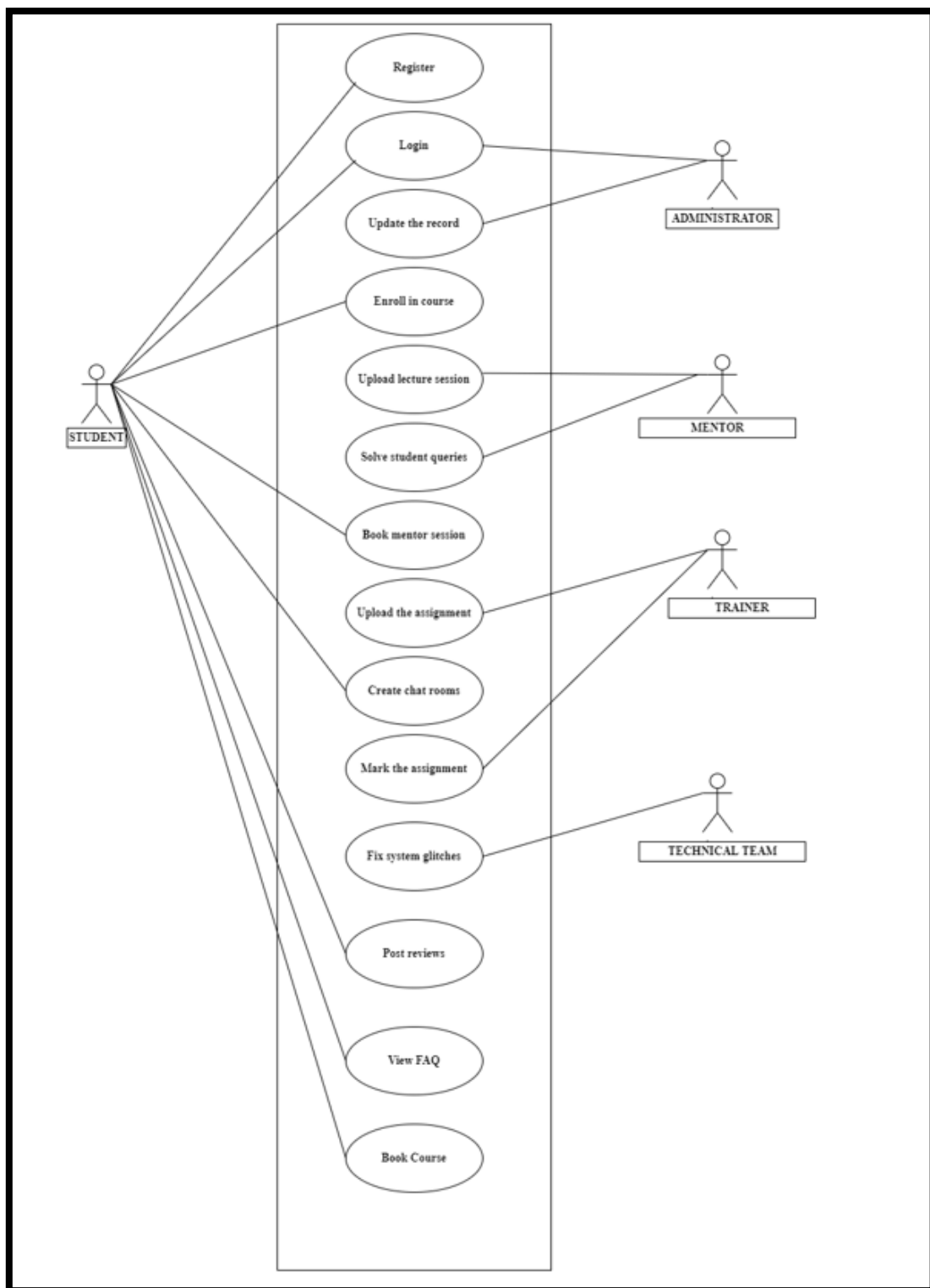


Figure 13 - Use case diagram

Data Model and Software Design:

The MYSQL database management system would be used to build the database of Employability.Life, by making use of Entity-Relationship Data Model. Each entity will have its own characteristic, and the relationship between other different entities, that are present.

Below demonstrated is the ER diagram for the Employability.Life database management system: -

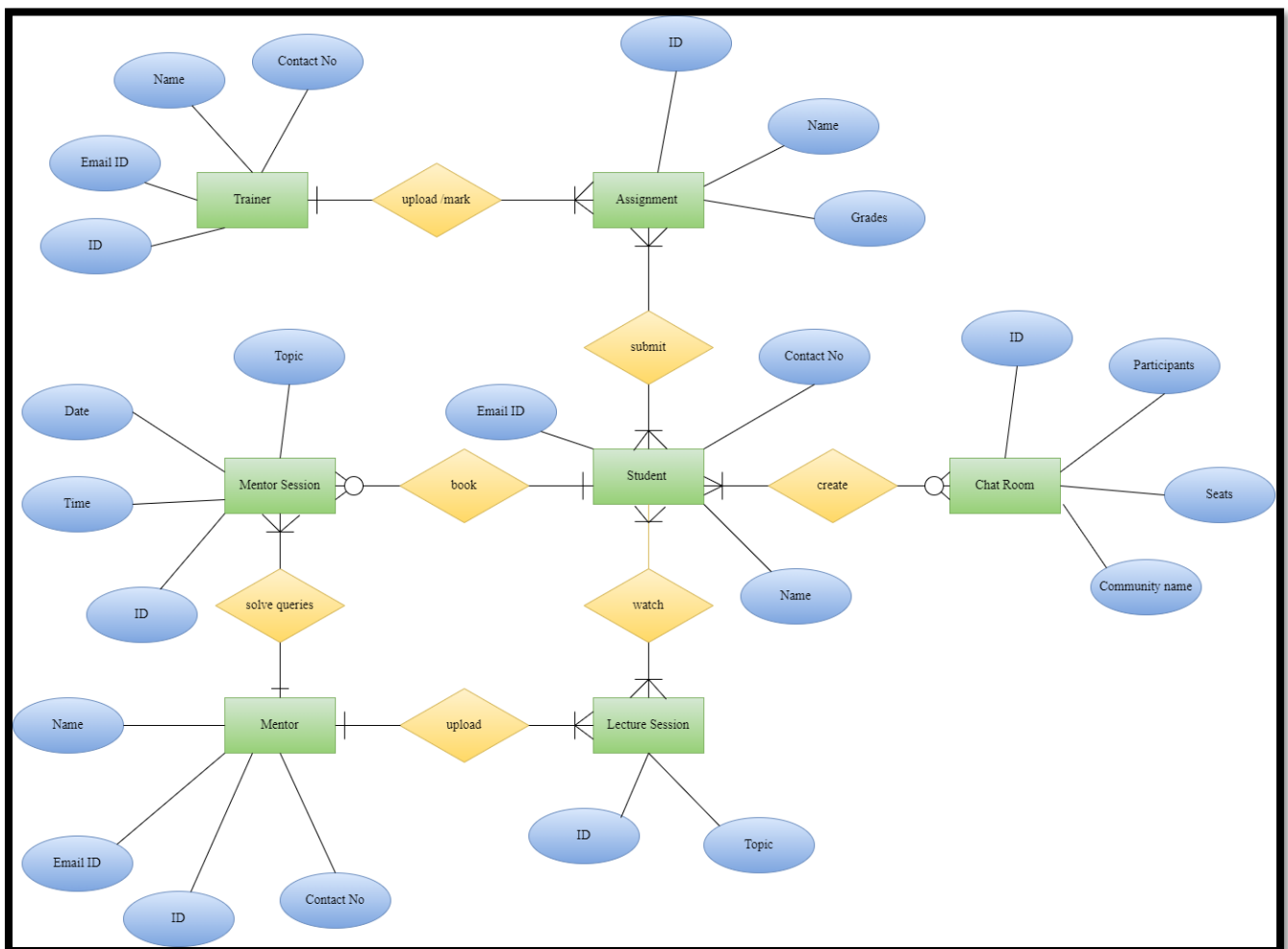


Figure 14 - ER Diagram

Below presented is the class diagram of the Employability.Life database management system:

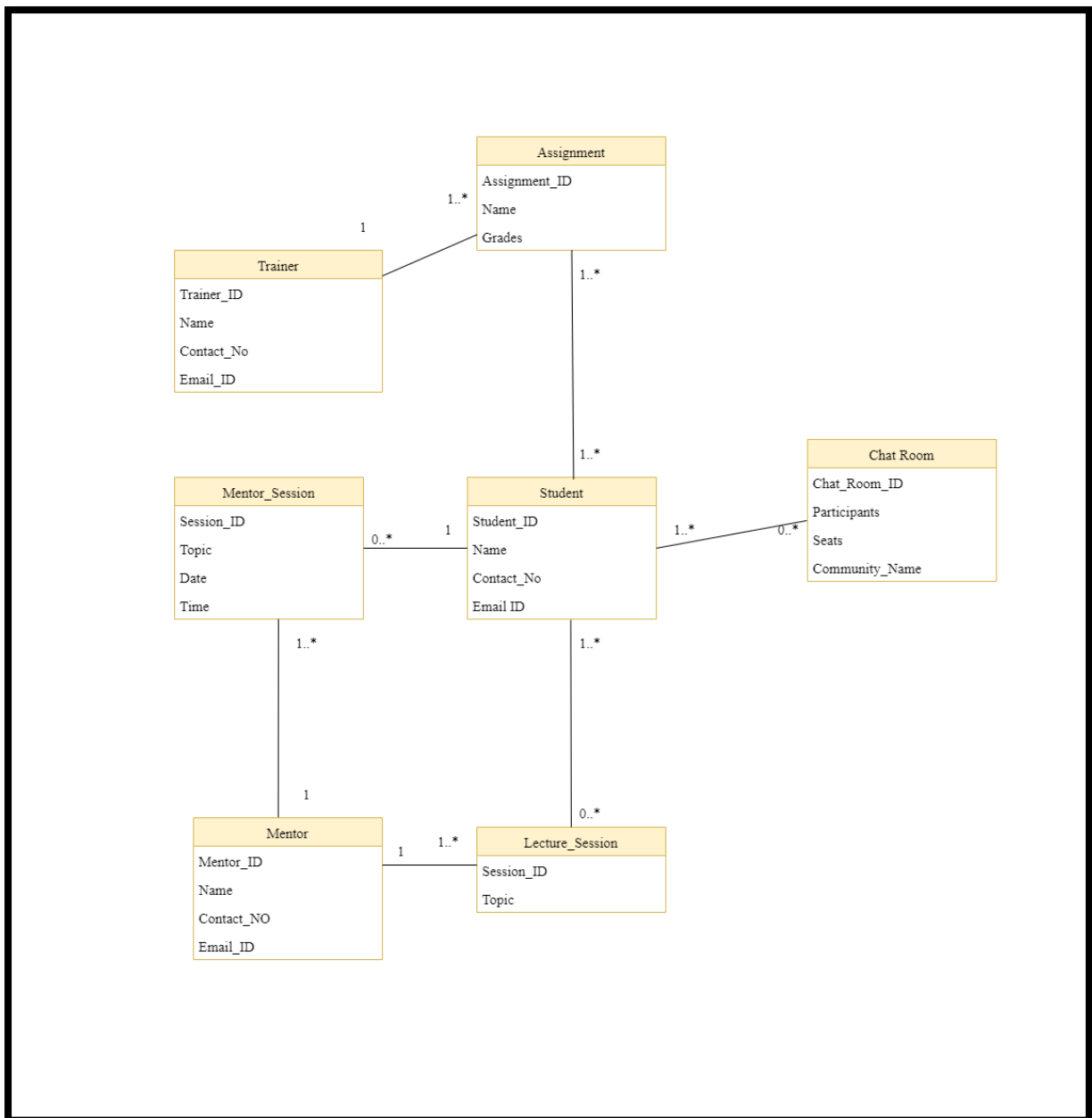


Figure 15 - ER class diagram

Assumptions:

It is assumed that the student engagement and interactivity with the learning management system-Website of Employability.life website, would be enhanced effectively after developing the project. Moreover, the courses under the tag Influence would be more efficient, easily operable, as well as accessible to all the students that are participating in those courses, as the website would have features like course content, overview, FAQ, and student reviews.

Generally, it is believed that the goal is to develop, test, and deploy a fully functional and flawless interactive course on LMS, by making usage of technologies, particularly, Website LMS, HTMS, Power BI, and H5P. It is presumed that the developed self-paced course, would include 40-minutes long lecture sessions, a booking system for the tutor session, a tracking system for multimedia content, interactive attributes, an auto-evaluated submission facility, and a user-friendly interface for mentors to examine the assignments submitted by the students and give constructive feedback for the same. *There were considerations for improving student participation, such as reviews, a FAQ (Frequently Asked Questions) section, a course booking system, course content, and a detailed description of the course. All of these extra features would aid students in having more interactions and studying new courses.*

External Dependencies:

The external dependencies that the project might have would involve the client, project end-users, and any other legal actor, such as the education department of the state. Among those, some dependencies could be outlined.

For instance, the Employability.Life would have a sufficient number of trained employees to ensure the smooth functioning of its website. Moreover, the admin and IT team of the website of Employability.Life would be able to provide flawless functioning of the website, and the database management system.

Concept art, storyboards:

A comparative study was undertaken to view, and understand the design specifications that could be proposed to make the functioning of the Employability.Life website is more interactive and engaging for the students.

The wireframe for the feature of the course content of the Employability.Life website: -

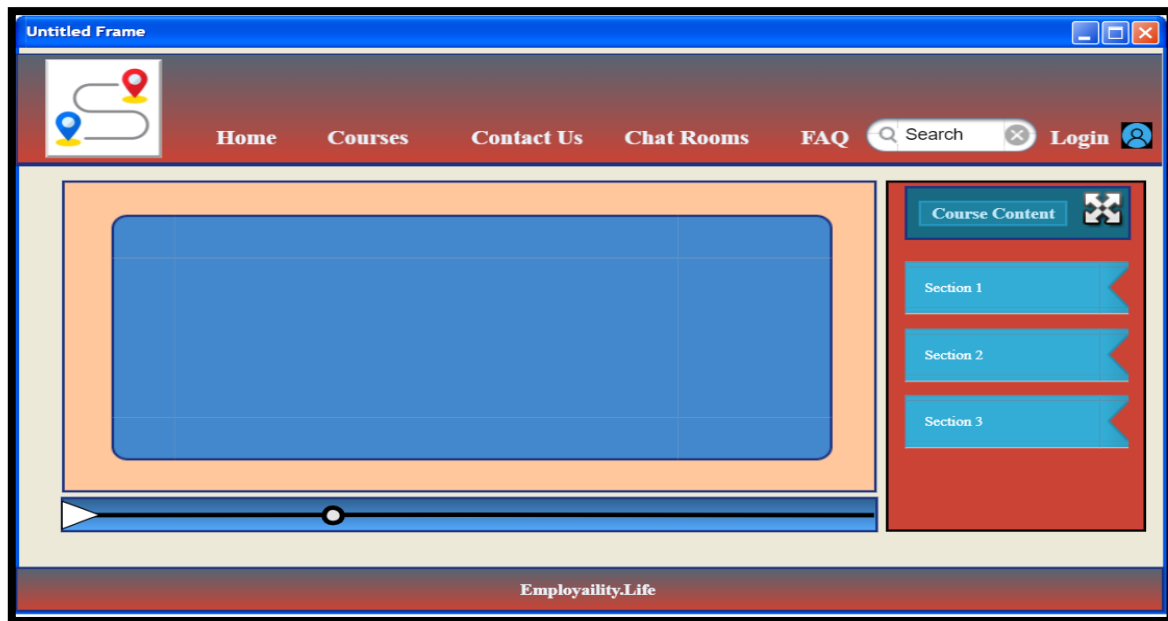


Figure 16 - Wireframe for Course Content facility

In the design, we have added the course content feature on the right-hand side, beside the video. Execution of this feature would enable the student to comprehend the contents of the video, more effectively.

The wireframe for the feature of an overview of the Employability.Life website: -

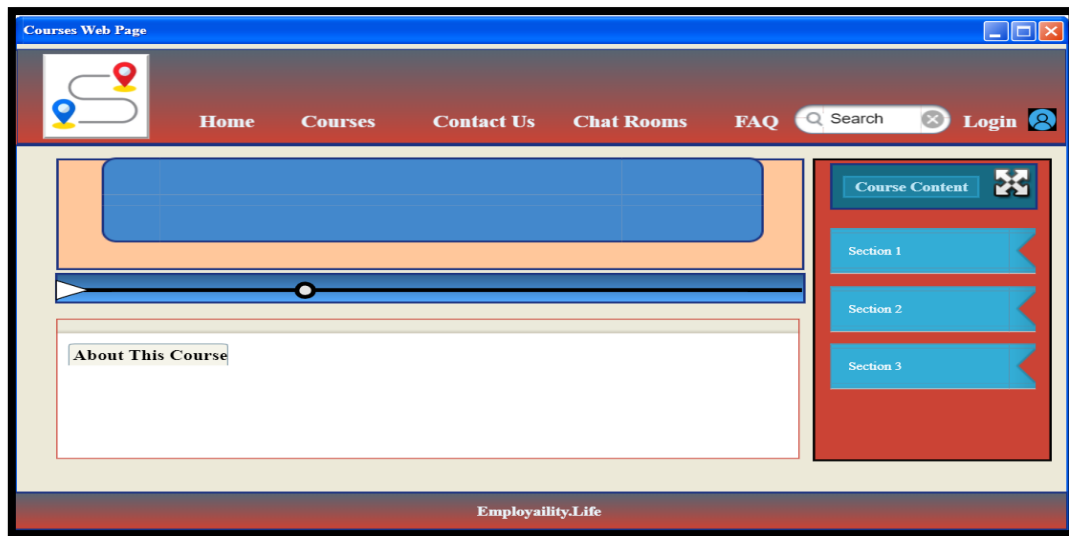


Figure 17 - Wireframe for Overview facility

In the wireframe for the functionality of overview, in the layout the overview feature is placed, below the video part., to enable the student to have a view of the overview of the video and watch the video, at the same given time.

The wireframe for the feature of student review of the Employability.Life website: -

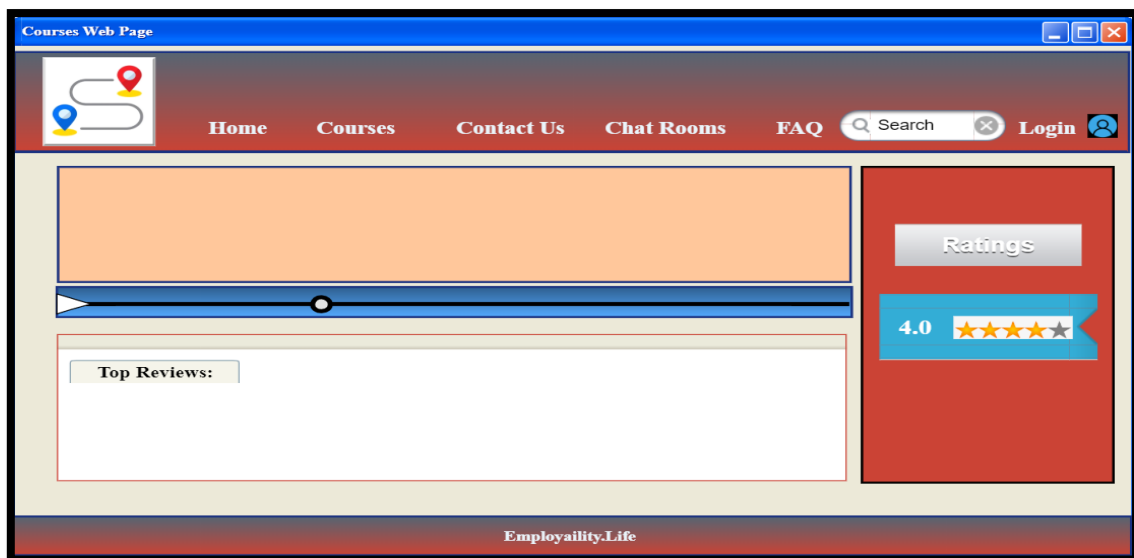


Figure 18 - Wireframe Student Review Facility

For the student review, the above-shown wireframe is designed, wherein the top review posted by a student would be visible at the bottom segment, and the rating for the same would be on the right side, beside the video.

The wireframe for the feature of FAQ of the Employability.Life website: -

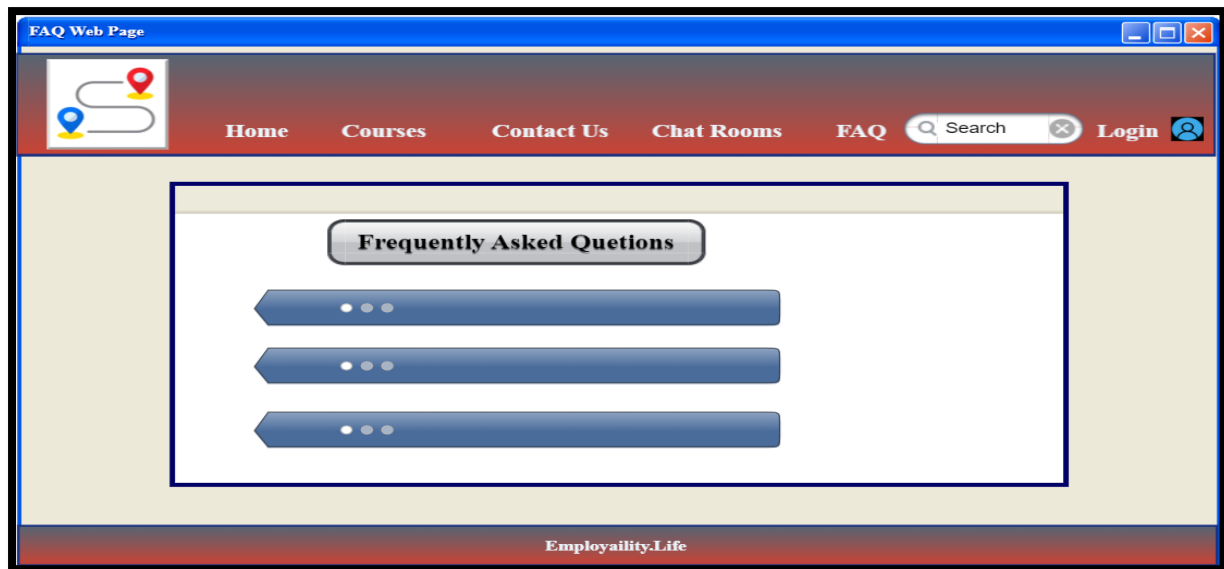


Figure 19 - Wireframe for FAQ facility

For the FAQ, as shown in the above wireframe, a separate webpage will be designed, displaying the frequently asked questions to assist in resolving the student queries, more effectively.

The wireframe for the feature for chatroom facility of the Employability.Life website: -

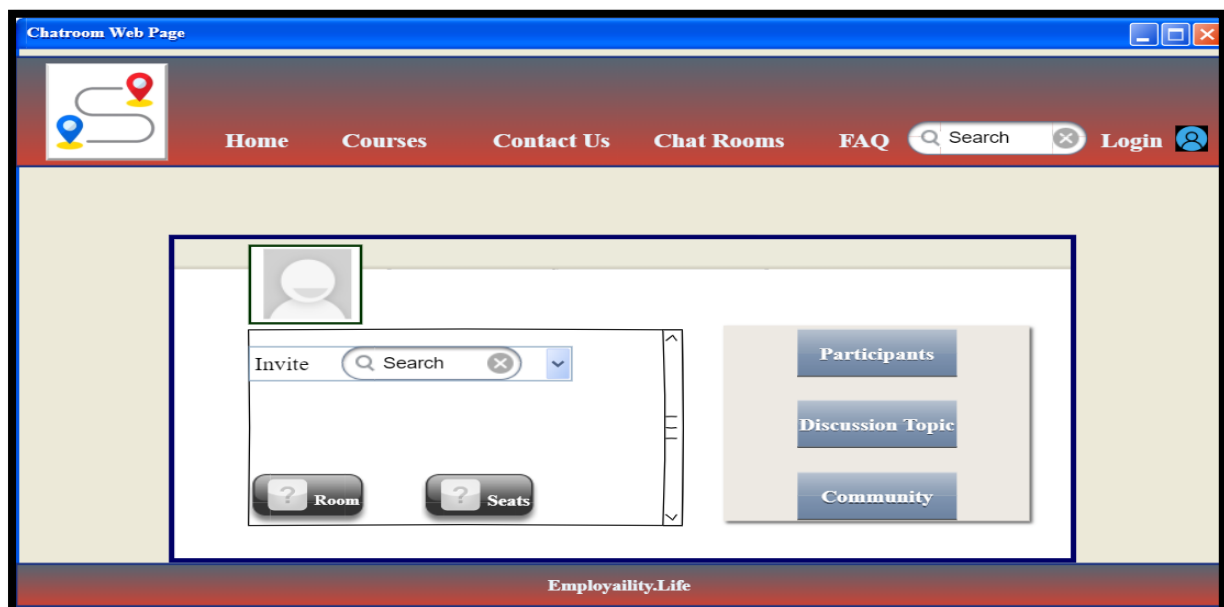


Figure 20 - Wireframe for Chatroom facility

It could be observed from the above-displayed wireframe for the chat room functionality, that the profile of the student who created the chat room will be visible, along with the number of rooms created, and seats available. Additionally on the right-hand side of the webpage, the list of participants, discussion topics, and community names, will be displayed.

The website built for the project:

The below displayed images are of different webpages of the website developed: -



Figure 21: Home Page of the Website

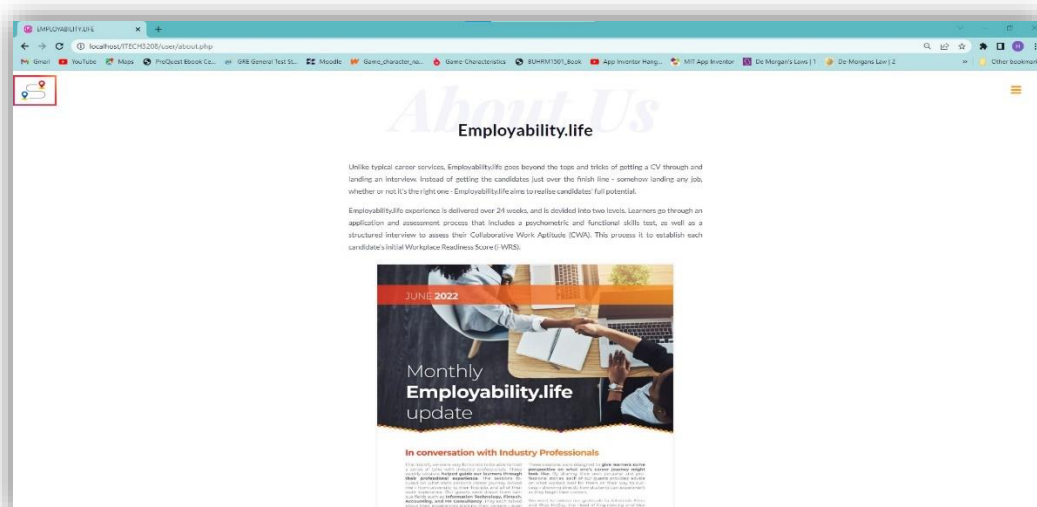


Figure 22: About Us Page of the Website

The screenshot shows a web browser window with the URL `localhost/ITECH3208/user/register1.php`. The page has a light blue header with the site logo on the left and a hamburger menu on the right. The main heading is "Get registered" in a large, light blue, italicized font, with "Register" in a smaller, black font below it. A subtext reads: "Get yourself registered, for further access of the website." Below this is a registration form with six input fields: "Your First Name", "Your Last Name", "Your E-mail", "Your Phone Number", "Your Password", and "Confirm Your Password". Each field has a light blue border and a small icon on the right. At the bottom of the form is a red "SUBMIT" button. Below the button is a link: "Already have an account? Click here to login".

Figure 23: Register Page of the Website

The screenshot shows a web browser window with the URL `localhost/ITECH3208/user/login.php`. The page has a light blue header with the site logo on the left and a hamburger menu on the right. The main heading is "Get Logged_In" in a large, light blue, italicized font, with "Login" in a smaller, black font below it. A subtext reads: "Already registered, then get yourself logged_in for booking the online courses of your preference." Below this is a login form with two input fields: "Your ID" and "Your password". Each field has a light blue border and a small icon on the right. At the bottom of the form is a red "SUBMIT" button. Below the button is a link: "Don't have an account? Click here to register". The footer of the page features a red-to-orange gradient bar with the site logo centered.

Figure 24: Login Page of the Website

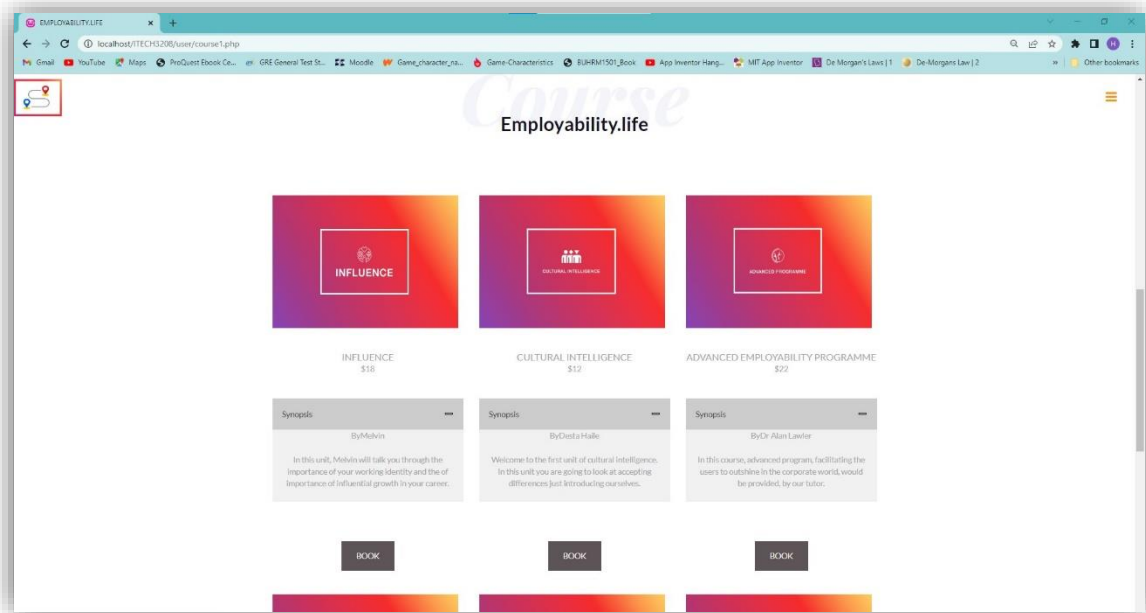


Figure 25: Courses page of the website

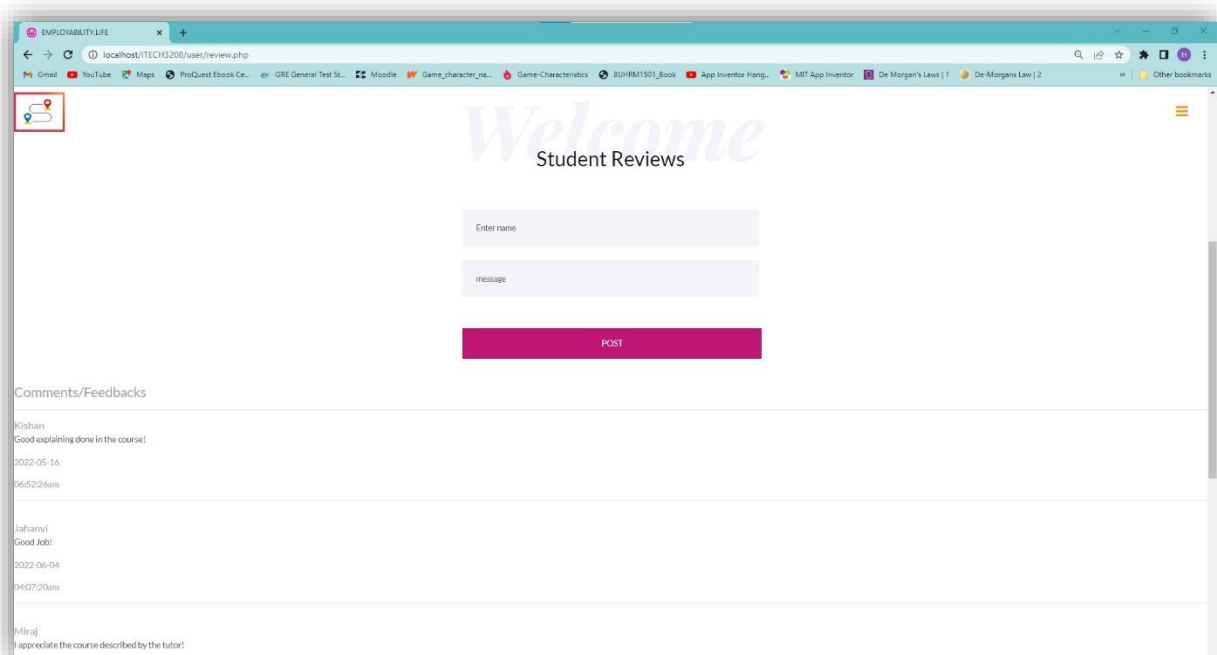


Figure 26: Review Page of the Website

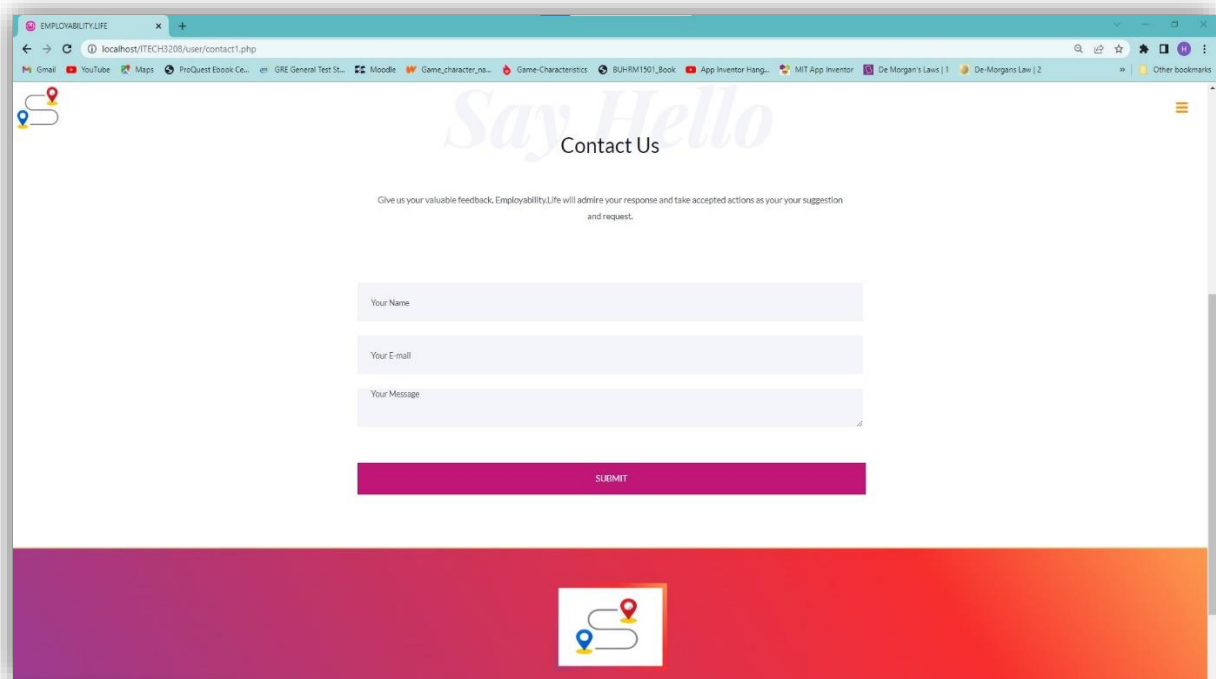


Figure 27: Contact Page of the Website

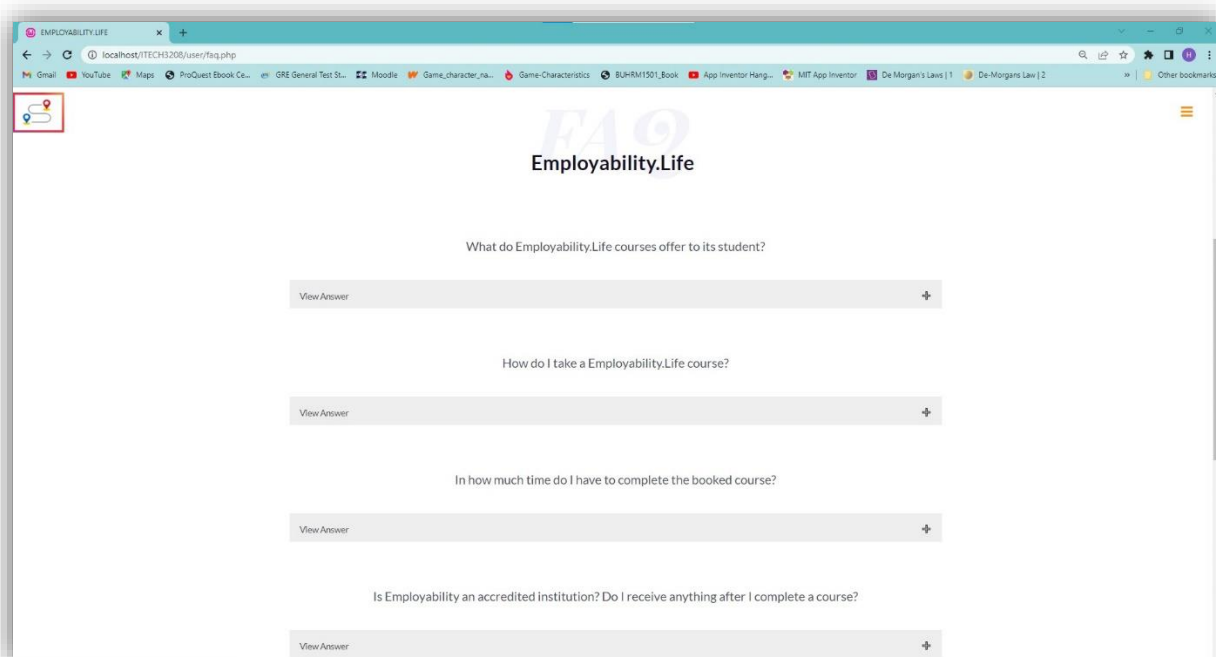


Figure 28: FAQ Page of the Website

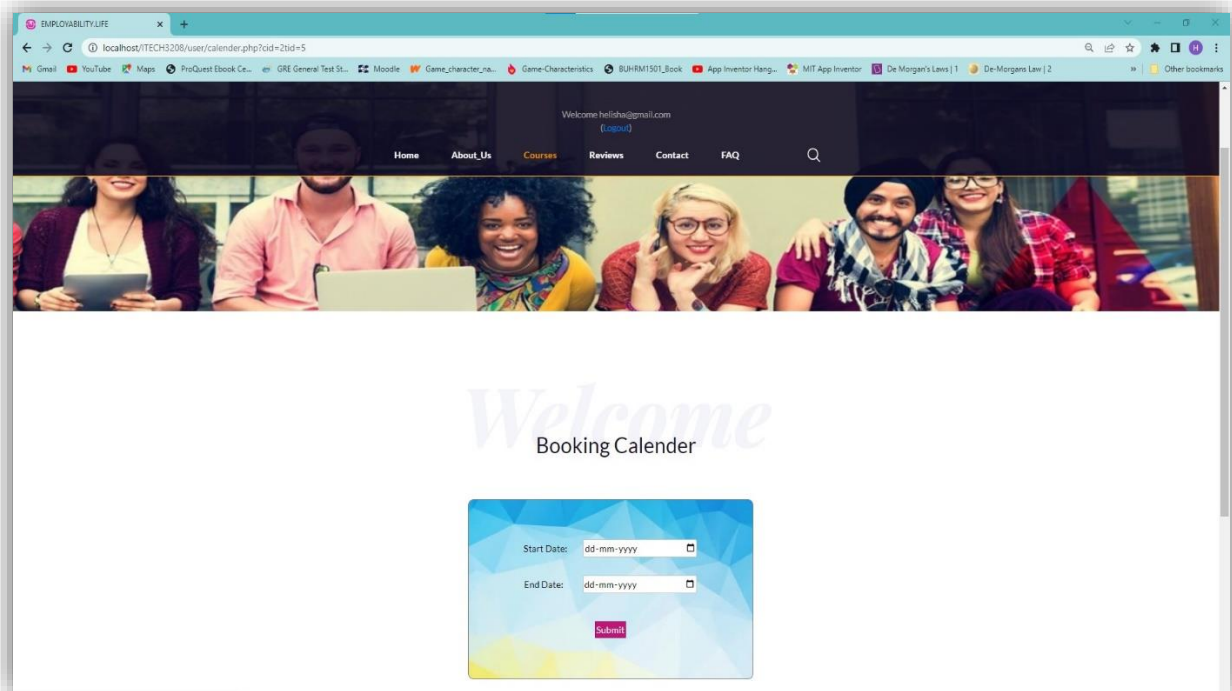


Figure 29: Calendar Page of the Website

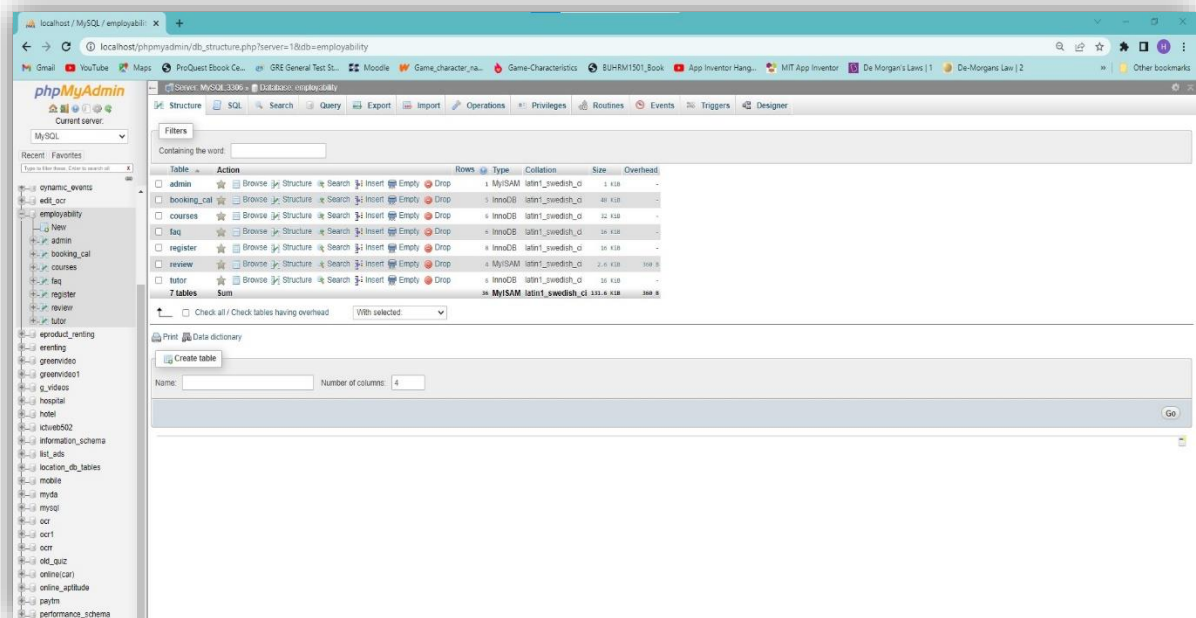
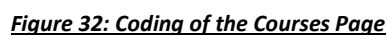
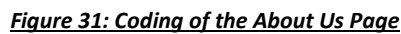


Figure 30: Database of the Website



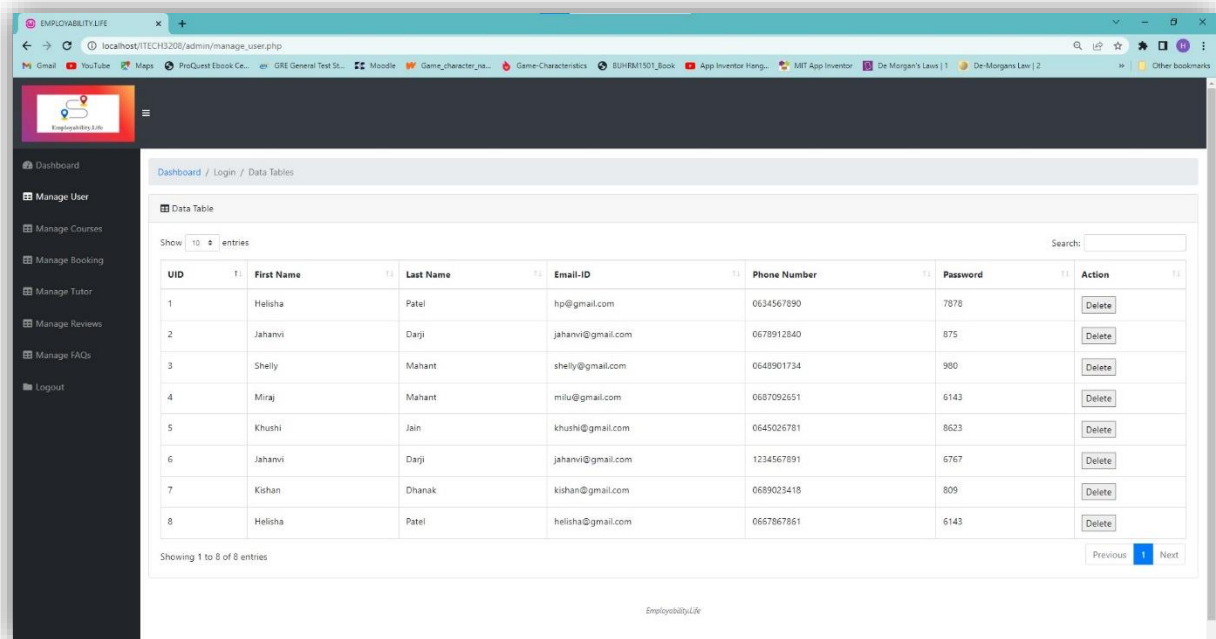


Figure 33: Admin Panel Manage_user.php

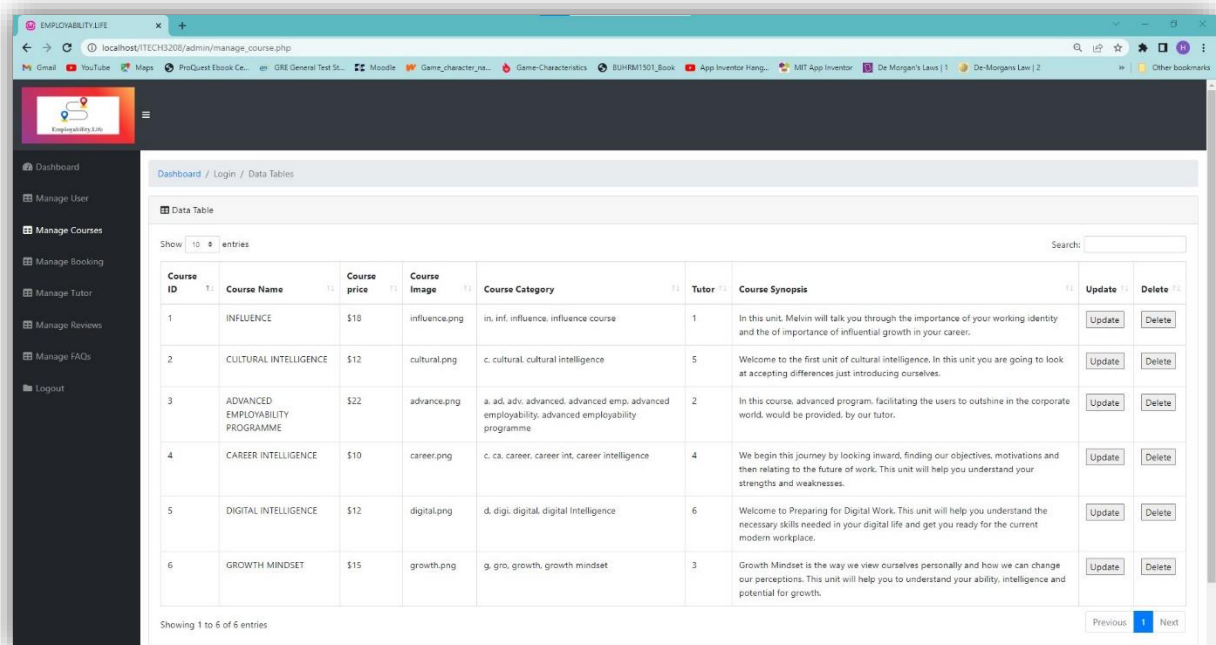


Figure 34: Admin Panel Manage_Courses.php

Reference:

Standards - W3C. W3.org. (2022). from <https://www.w3.org/standards/>.

Server Minimum Requirements. Docs.oracle.com. (2022). Retrieved from https://docs.oracle.com/cd/E28385_01/en/E28377/html/STA102_Planning_Install_Pr eInst.5.5.htm.