SWE573 - Software Development Practice

Final Project Report - **Majlis**

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GitHub Repo URL: *https://github.com/HammadSiddiqui/bounswe573-2022*

Release Tag: v0.9

Deployment URL: http://intersite.co

HONOR CODE

Related to the submission of all the project deliverables for the Swe573 2022 Spring semester project reported in this report, I MUHAMMAD HAMMAD SIDDIQUI declare that:

- I am a student in the Software Engineering MS program at Bogazici University and am registered for Swe573 course during the 2022 Spring semester.

- All the material that I am submitting related to my project (including but not limited to the project repository, the final project report, and supplementary documents)have been exclusively prepared by myself.

- I have prepared this material individually without the assistance of anyone else with the exception of permitted peer assistance which I have explicitly disclosed in this report.

MUHAMMAD HAMMAD SIDDIQUI

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Software Requirements Specification

Section 1. INTRODUCTION

Purpose

The purpose of this entire document is to document the requirements of a learning application that will be built for users to sign up and learn about new topics.

The audience for this document include the design and development team that will be working on building the application

Scope

Imagine that there exists a user in a segment that is seeking to gain knowledge on a new topic. The software with the help of crowdsourcing will help learners learn a new topic. The other type of user will be an author, who will publish a course (a set of videos) on a particular topic with the intention for the learners to watch it and gain knowledge.

Overview

The rest of the SRS document contains the breakdown of this project and how to take it forward at every stage.

Definitions, Acronyms, and Abbreviations

Term/Acronym	Definition
FE	Frontend
BE	Backend

nginx	Load balancer

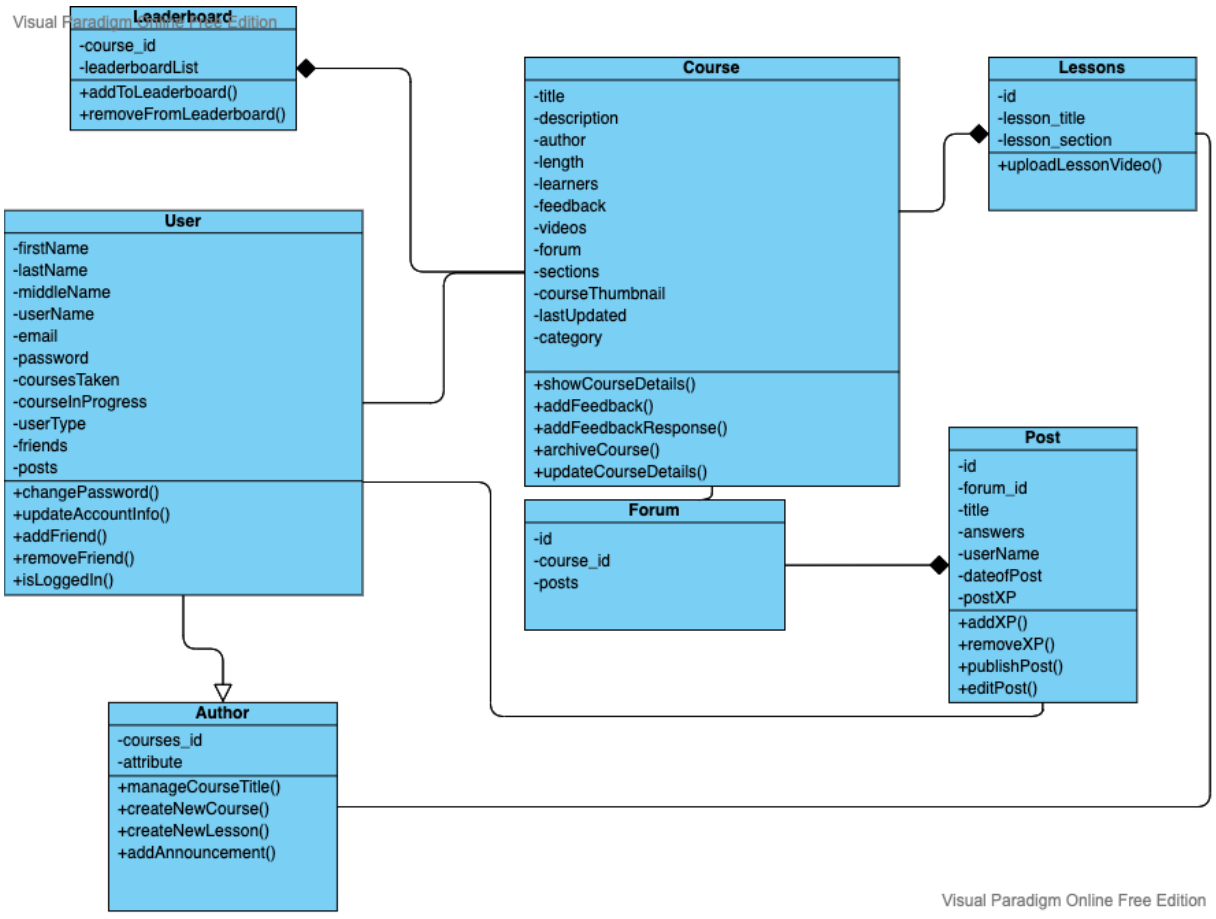
Section 2. General Description

Product Perspective

Imagine an online platform where users go and learn a new skill. For example, Coursera, where a lot of institutions post their courses on a wide range of topics and the learners sign up and take these courses. At the end of the course they are eligible to get a certificate of completion. Here, they are required to pay for the certificate and be able to use the credits of the course as well.

Product Functions

The class diagram for the platform can be found below:



User Characteristics

Persona:

John, 23 years old.

John is a student at a university doing his bachelors in business management.

He is interested in learning how he can combine his business knowledge with an analytical skill like programming. Although John is pretty good at business given his bachelors degree, he would like to learn programming.

As his coursework does not include programming, John has found this website and would like to enroll in a course. Since learning to program alone is a difficult process, John is looking for a platform where he can meet co-learners and start learning in a collaborative, gamificated manner. This will keep him motivated and social at the same time. The learning output of John will also be better than how he might have if he learnt it via a platform with no co-learning features.

General Constraints

Size of the question in character length
Number of questions a user can ask/answer in a given amount of time. (Too avoid spam)
Each user can upvote/downvote only once for a particular question/reply.
Avoid duplicate questions to be posted.
The Author can upload a file for upto 100 mb per video.
The app should be built using Django
The backend should be divided into logical microservices
The application should be hosted on a linux environment
The application should run on a docker environment

Section 3. Requirements

Functional Requirements

Module	As a <type of User>	I want to <perform a task>	so that I can <achieve some goals>
Registration	Learner	I want to be able to sign up on the platform	I can start learning
	Author	I want to be able to sign up on the platform	I can start earning
	User	I want to be able to reset my password in case I forget	Access my account again
	User	I want to be able to sign up using my Google or Facebook Account	I do not have to remember a new password for this platform
Platform	Learner	be able to enroll into a course	take the lessons and learn a new topic
	Learner	search for a course using the search bar	Find relevant courses using my keyword
	Learner	search for a course using the categories filter	Find relevant courses in a specific category
	Learner	be able to watch videos on the platform	understand the topic clearly
	Learner	be able to see recommended courses on the homepage	find interesting relevant topics
	Learner	be able to preview a course's intro video without enrolling	get a feeling of how interesting the course would look
	Learner	be able see all my courses that I am enrolled in, on the dashboard	I can access the course that I want to study at that particular time
	Learner	be able to attempt quizzes on the site	I can assess my learning skills so far
	Learner	be able to receive a certificate of completion	I can share it with my network
Feedback	Learner	be able to rate a course and provide text feedback	I can help improve the course or praise the author if it is a good course
	Author	be able to reply to a feedback	I can justify for any bias feedback
	Author	be able to report any spam feedback	to avoid spams
Co-learning	Learner	be able to see other people's profile	know how well they are doing on the course
	Learner	be able to add people as friends	I am subscribed to their learning updates

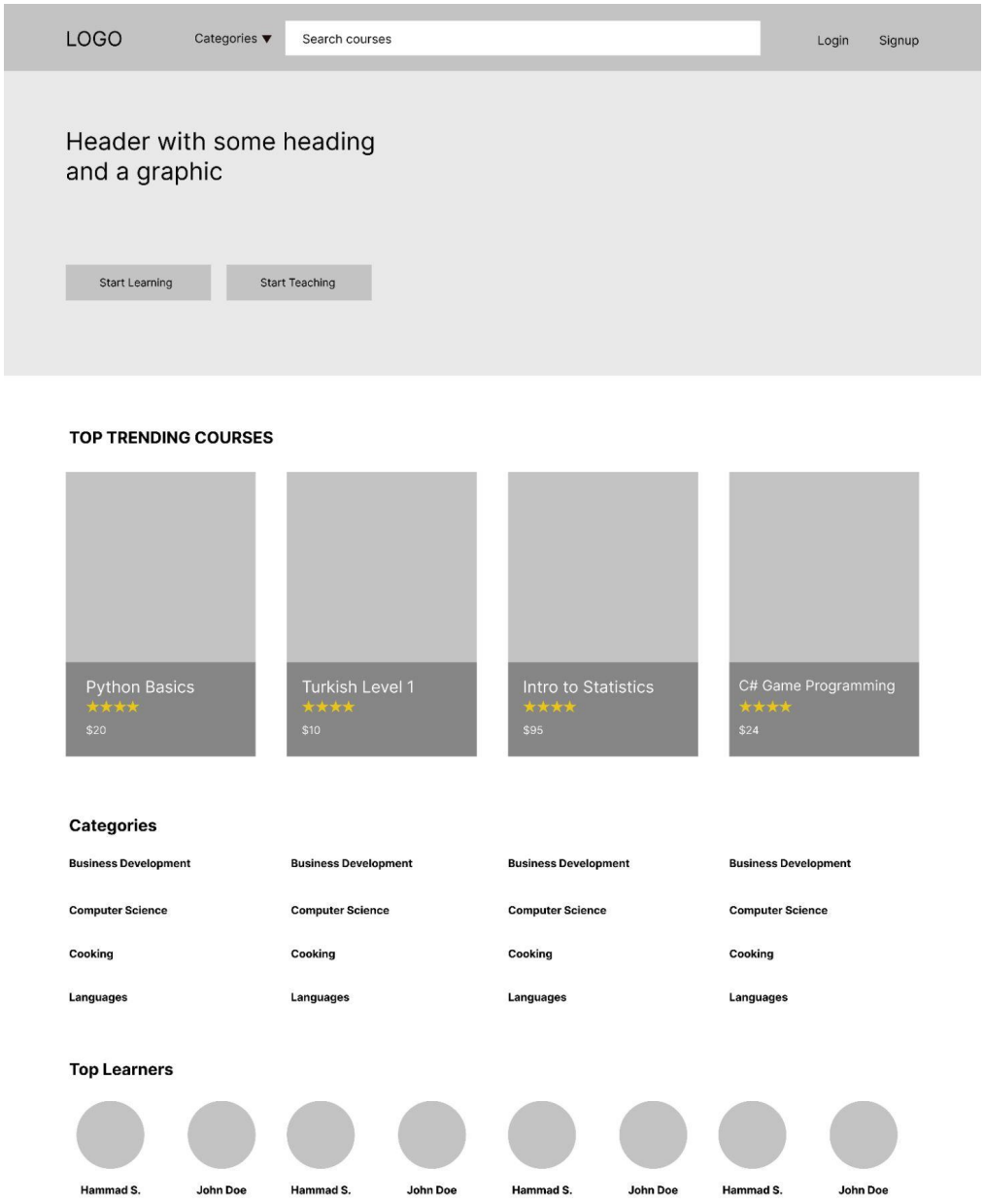
	Learner	be able to see the course's leaderboard	know how well I am doing on the course as compared to others
	Learner	be able to show courses I have completed	show it to others
	Learner	be able to show courses I am enrolled in on my profile	show it to others
	Learner	be able to see the top learners of the week	can compare it with my progress
	Learner	be able to see my own progress	I know where I stand on the course
Forum	Answerer	Answer a question	gain rewards
	Observer	Downvote an answer	Help others realize that the answer is inadequate
	Observer	Upvote an answer	Help others realize that the answer is adequate
	Questioner/Answerer	Comment on any specific question or an answer	For further clarifications
	Questioner/Observer	Pay the Answer XP points	the Answer gets a compensation for their effort
	Answerer	gain more XP points	build the integrity of the answers
	User	be able to access the general forums	can talk about things apart from the course materials
Course Publication	Author	be able to publish a course on a particular topic	gain rewards in terms of paid subscription
	Author	be able to upload videos	so that learners can watch it
	Author	be able to answer questions in the course forum	I can help learners clearing their confusion
	Author	be able to add quizzes	I can assess learners on their learning skills
	Author	be able to add announcements	I can share important updates timely
	Author	archive a course	remove outdated courses
	User	be able to update my email address	login with my new email
	User	be able to change my password	have a secure account
	Learner	be able to search for courses/answers	Enroll or find answers on the topic of my interest

	Learner	be able to receive a certificate of completion	share it with my professional network
Profile	User	be able to share Facebook link on my profile	I can extend my friends outside of the plaform
	User	be able to share Twitter link on my profile	I can extend my followers outside of the plaform
	User	be able to share LinkedIn link on my profile	I can extend my network outside of the plaform

User Interfaces

The user interfaces for the platform can be found on the next page.

Homepage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C# Game Programming
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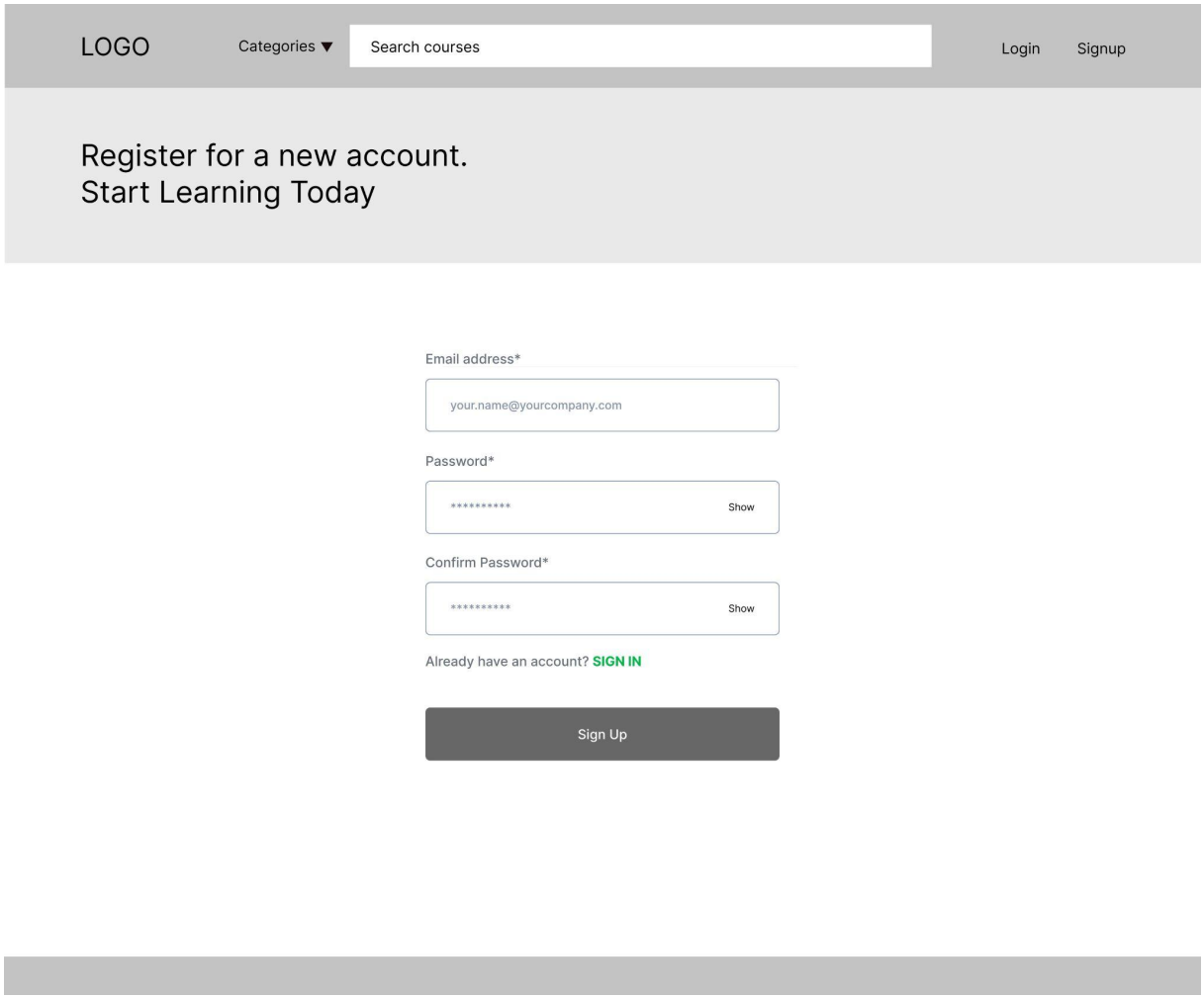
John Doe

Sign Up Page: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Register for a new account.
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Confirm Password*
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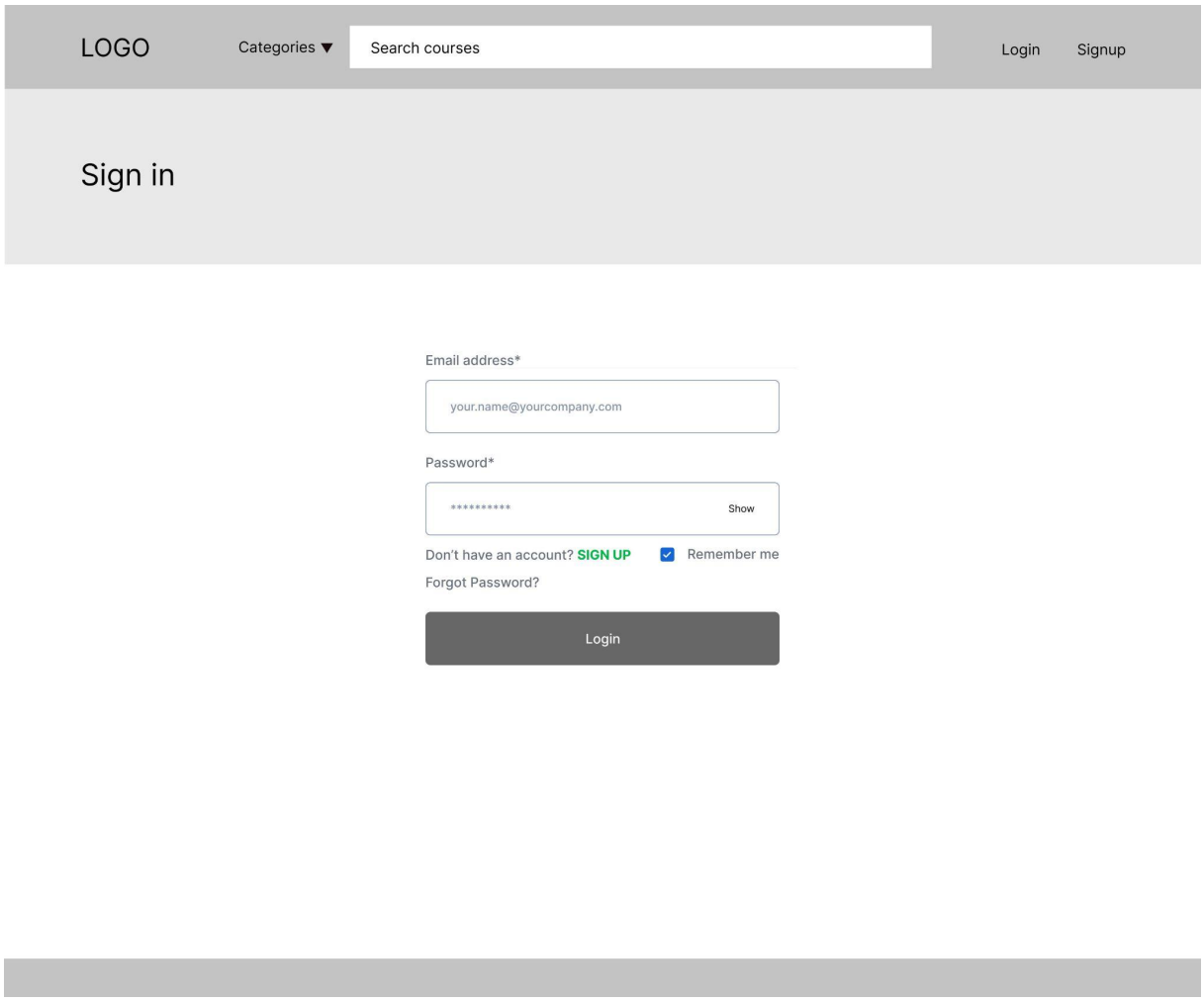
Already have an account? SIGN IN
Sign Up

Login Page: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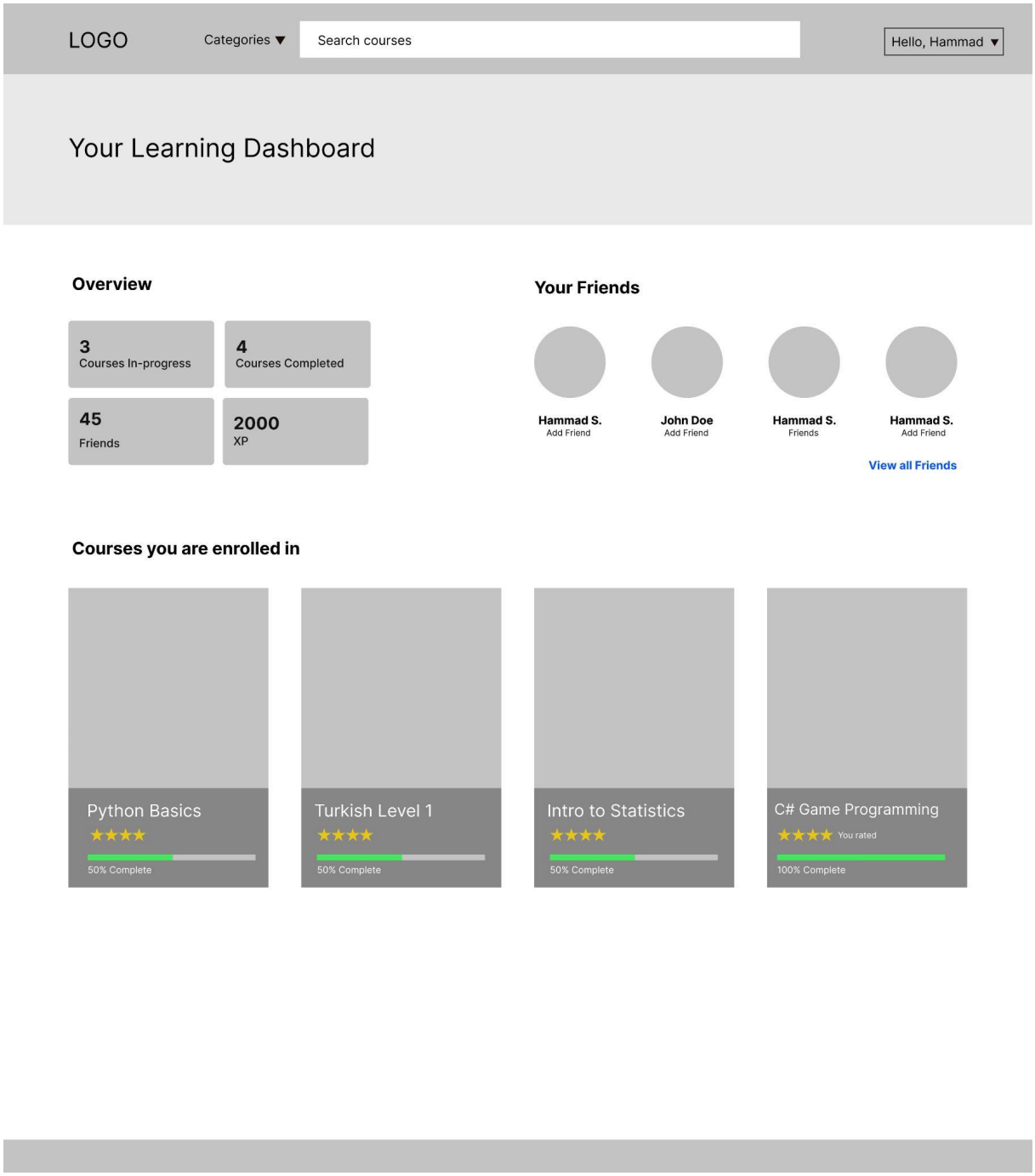
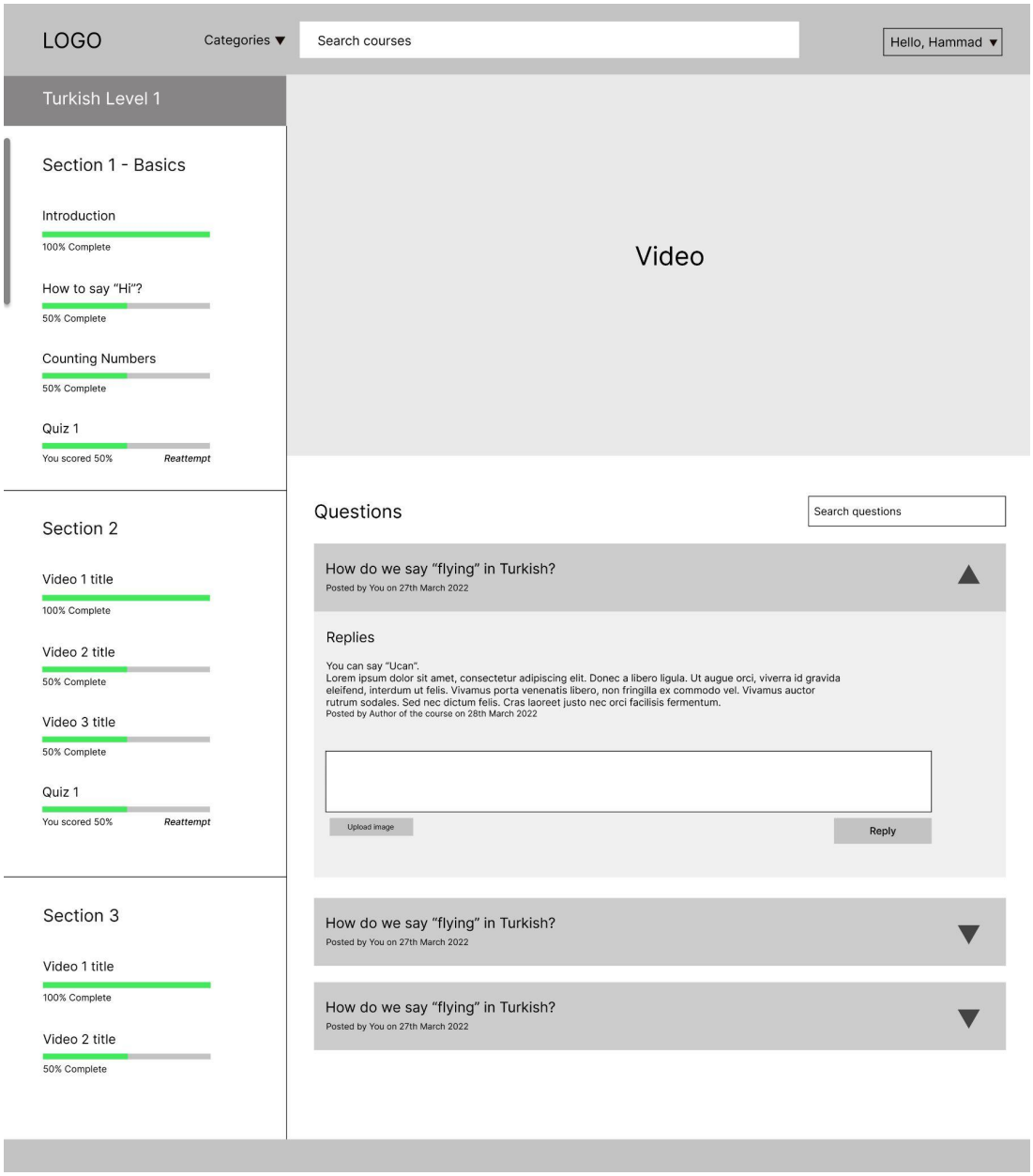
Show
Don't have an account? SIGN UP
Remember me
Forgot Password?
Login

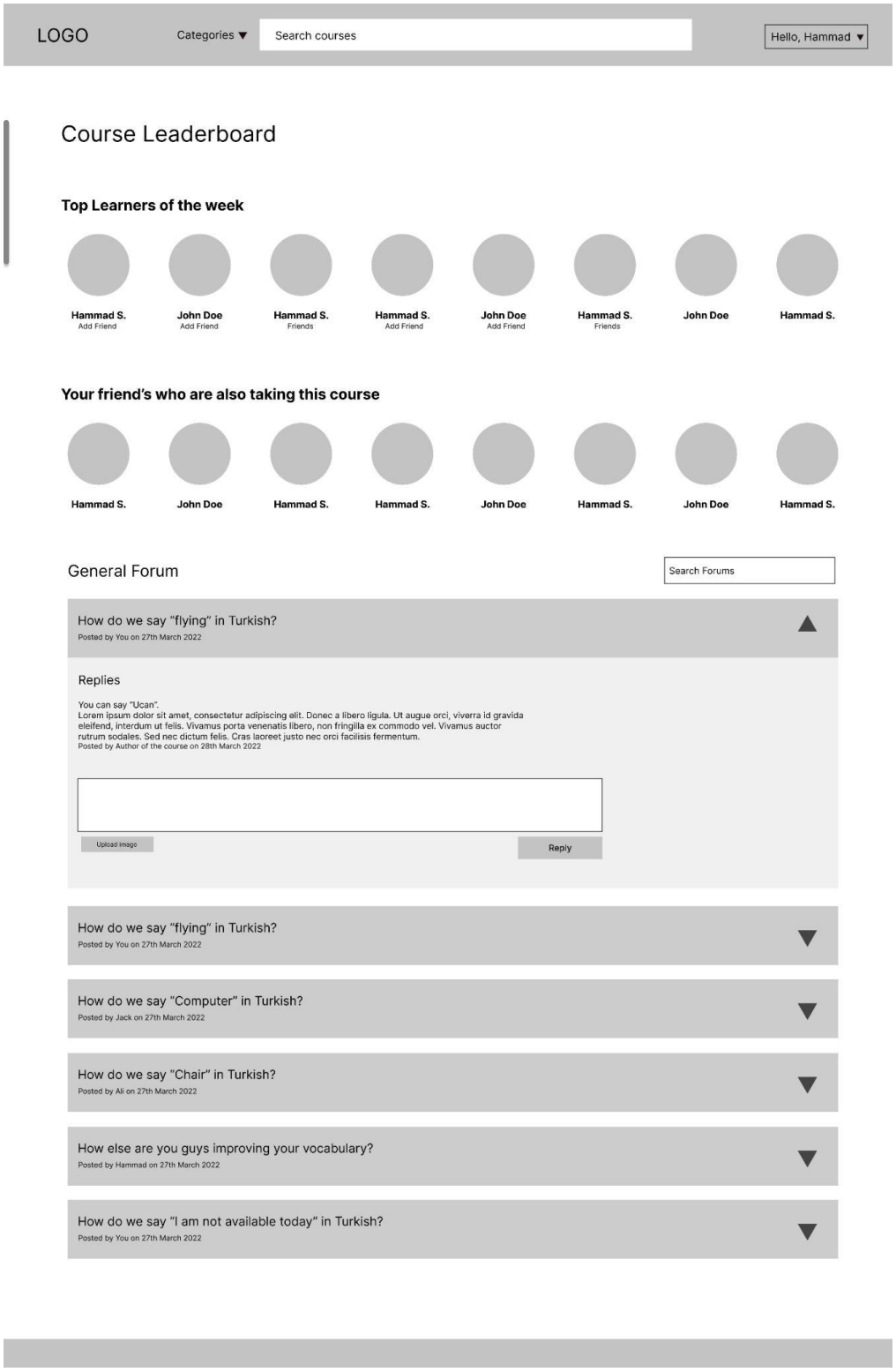
Dashboard Screen: what the user sees right after logging in.



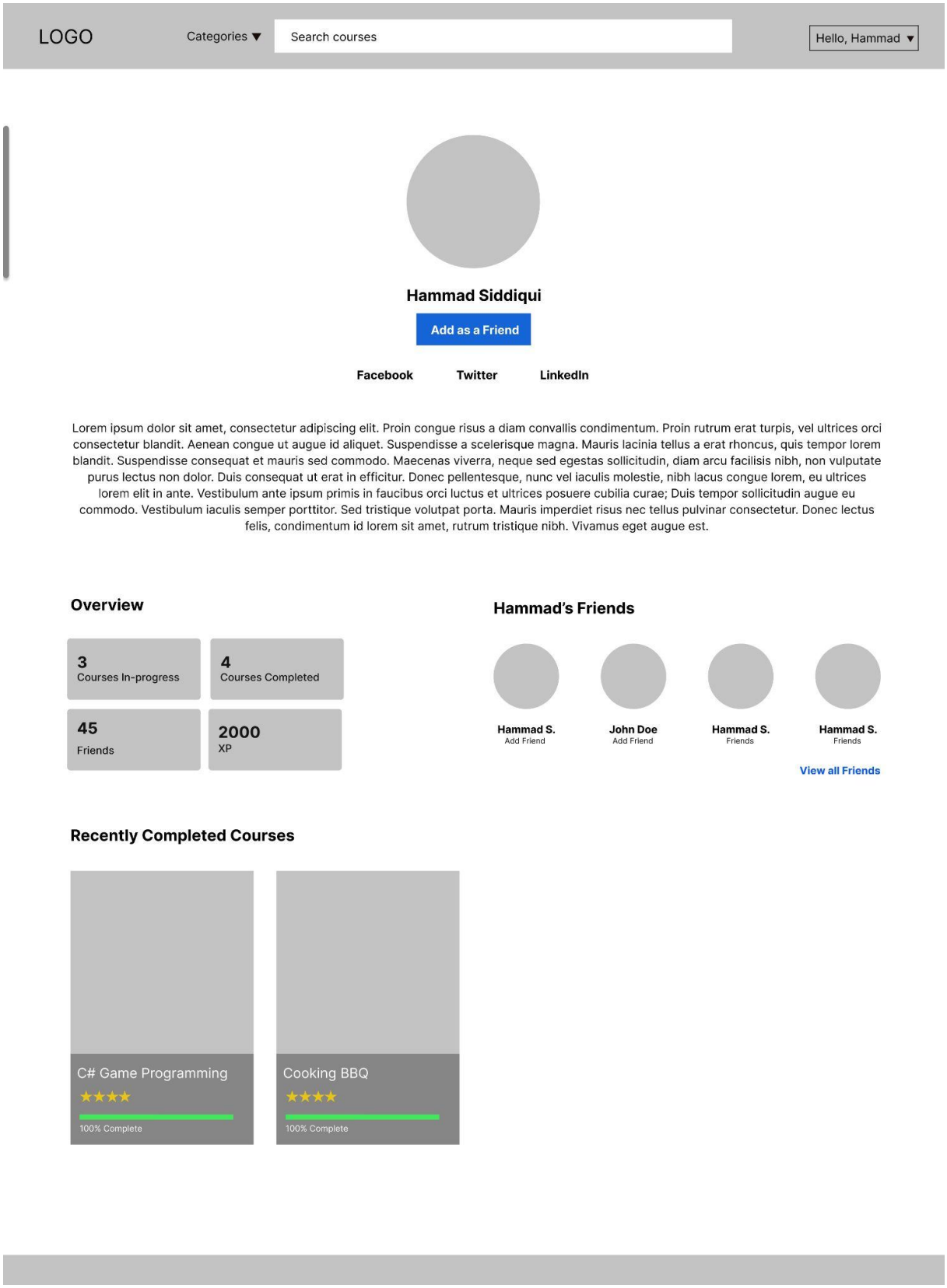
Course Page (when a user clicks on a particular course page):



Course Leaderboard Page (shows who are the top performing learners of a particular course). Also shows the general forum where users can talk about topic/off-topic items.



User Profile: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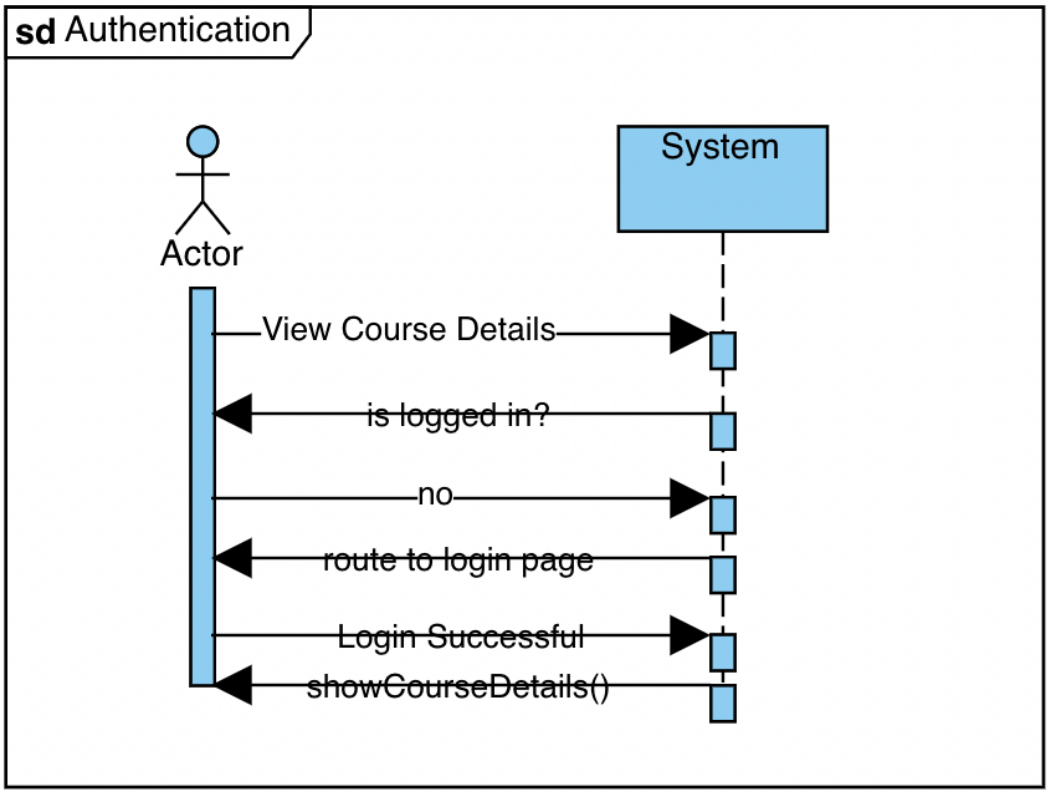
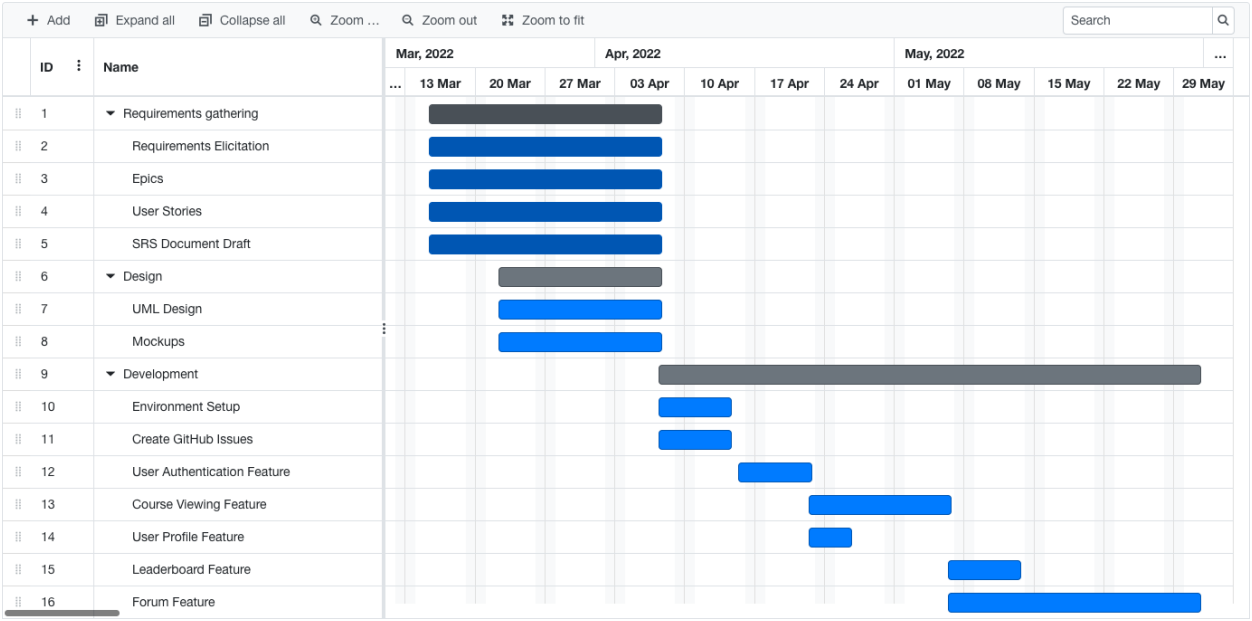
Overview
3
Courses In-progress
4
Courses Completed
45
Friends
2000
XP
Hammad's Friends
Hammad S.
Add Friend
John Doe
Add Friend
Hammad S.
Friends
Hammad S.
Friends
View all Friends
Recently Completed Courses
C# Game Programming
100% Complete
Cooking BBQ
100% Complete

Sequence Diagram for a particular Use-case

The following use case diagram shows what happens when a user tries to view a course content without logging in.



Project Plan



Status of Deployment: URL, dockerized?

- Deployed on AWS and Dockerized using Docker and Docker compose.
- Docker and Docker file URL: https://github.com/HammadSiddiqui/bounswe573-2022/tree/v0.9/colearning

System manual - what are the requirements to run this system and installation

- Docker (Python and PostgreSQL based images)
- Docker Compose
- After installing the dependencies, simply run the following docker-compose command:
    - *cd /home/ec2-user/bounswe573-2022/colearning*
    - *sudo chmod -R a+rwx data/*
    - *docker-compose -f docker-compose.yml up -d --build*

User manual - A description of how to use your system

1. Go to the website
2. Sign Up
3. Login
4. Enroll in any existing Majlis or Create your own new Majlis
5. Post in a Majlis
6. Comment on a post in a majlis

Test results (unit & user)

- Test cases are pending for this application.

Appendix: Record of Changes

Version	Date	Author	Description
1.0	20/04/2022	Hammad Siddiqui	Initial Draft
1.1	30/05/2022	Hammad Siddiqui	Final Draft