CSCE 5430 Section 007 - Software Engineering (Fall 2023 1)

Product Requirements
Project: Educational website
Team: Group 10

Revision History

Date	Version	Description	Author
09/12/2023	1.0	Software requirements	Group 10

Brief Problem Statement

The objective of this project is to construct an educational website that will provide users with a comprehensive educational experience through the use of simple videos, lectures, and textbooks,also provide quizzes at the end of the courses for self-assessment.

We aim to develop our education website considering the following goals:
- Easy-to-use portal for the users with courses
- Providing simple lectures and videos to learn the course
- Updation of courses and lectures from time-to-time.
- Quiz to check understand-ability of the user about courses

We are planning on developing the website with all the goals in mind where admin can update courses and manage user accounts while user can learn the courses in a refined way and can test their knowledge on the understanding the courses through quizzes at the end of the course.

Through our website user can enter the account details to login, edit their profiles when needed   and learn the courses.So,generally our project is to design an educational website to help the users to learn different courses and check their learning level through quizzes.

Stakeholders

University of North Texas -Investor:

This Project is funded by University of North Texas.So the project has to be approved by the investor in order to be funded. The investors are included into the every step of the project life cycle and has to be aware of the features that are further included or removed from the project.So presentations of the project with the investor, after development of every step is crucial.The investors are responsible for providing guidance and feedback after the presentation of the project.

Prof. Wajdi Alijedaani - Product owner:

Prof. Wajdi Alijedaani who teaches software Engineering course is the owner of this product.He defined features and vision of the product that the software development team has to develop.
The following are the roles and responsibilities of the product owner:
- Defining features and objectives of the product.
- State the requirements and goals of the product.
- Work together with the development team.
- Include the stories of the end users of the product.
- Review the progress of the product development.
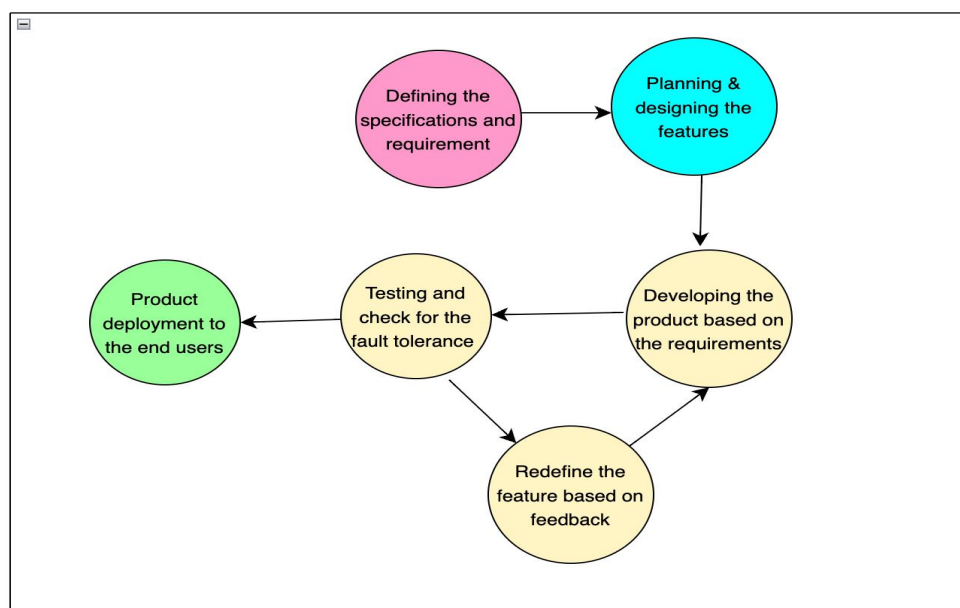- Evaluate the project and redefine the features.

User/Visitor:

Visitor and user are the final users of the website and are needed to be given access to the courses and profile of the website.After development of the product it will be tested by many of our classmates in order to obtain feedback on the product.Features are added or deleted and minor adjustments will be performed on the product as per the feedback given by those classmates.

Software Engineering Team:

Some of the responsibilities of this team are:

- Defining the project specifications and requirements.
- Plan for the project inorder to meet the user requirements.
- Then Design the features and divide the tasks among the team and implement them.
- Always observe the progress of the project
- Test the system and maintain the integrity.
- Checks for the error and resolves them in mean time.

Fig 1 Project life cycle

Users:

The end users of this system:
- Must have knowledge about website usage and navigation.
- Must be familiar with internet connection and usage.
- Must have a required web browser.
- Must be registered to the website to have access for the website.

System Requirements

Our Educational website is a web-based application which has the following requirements:
- Project uses javascript-Html-Css-php as the programming languages.
- This project uses Mysql database as back-end database.
- Project shall require Visual Studio code to compose and run the code.

Feature requirements

1. Functional Requirements

No.	User Story Name	Description	Release
1	Registration	Website allows a visitor to register by entering the details like First Name, Last Name,Email,Date of birth.Set a user-id and Password for the user profile. After registration,it adds the visitor to the user database.	**R1**
2	Login	User can login to the website by providing his/her user-id and password.	**R1**
3	Edit profile	User can edit their profile when they have to make any changes to their personal information(First Name,Last Name,Email,Date of Birth) and also can change their password but can not change the user-id.	**R2**
4	View course list	User can view the course list on their courses page and enroll in a course to continue the course modules to learn.	**R1**
5	Manage courses	Admin have accessibility to manage courses where they	

		can perform the following operations: ● update course modules ● add new courses ● delete courses	**R2**
6	Manage users	Admin manages the user accounts on the database and can perform can oerform the following operations: ● Permission assignment to the users. ● Delete user account in case of long-term inactivity or password mismatch after certain number of trials. ● Keep track of the user activity.	**R2**
7	Course modules	The system shall allow user to enroll for the course and get access to course description,course_content modules and quiz.	**R1**
8	Quiz	After completion of the course,user can perform the quiz for particular course for self assessment which shows "pass" or "retry" message after submission of the quiz.	**R2**
9	View Result	User can view result of his/her quiz for all the courses he/she has taken along with score and message	**R2**
10	Signout	After using the website,he/she shall signout of the wesite.	**R1**

2. Non-Functional:

2.1 Usability

2.1.1 User interface

● System provides simple user interface

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- Easy to understand and interact
- System provides icons for each feature and meet user expectations.

2.1.2 User accessibility

- The content of the course modules is in the form of videos which is easy for disabled people to access.
- Website provides a screen reader to read the text in the quizzes of the courses.

2.2 Reliability & Availability

- The system provides content at any time and anywhere by the user.
- The system has a database storage for managing the users and the course content.
- The features of the system works 90% of the time without any failures.
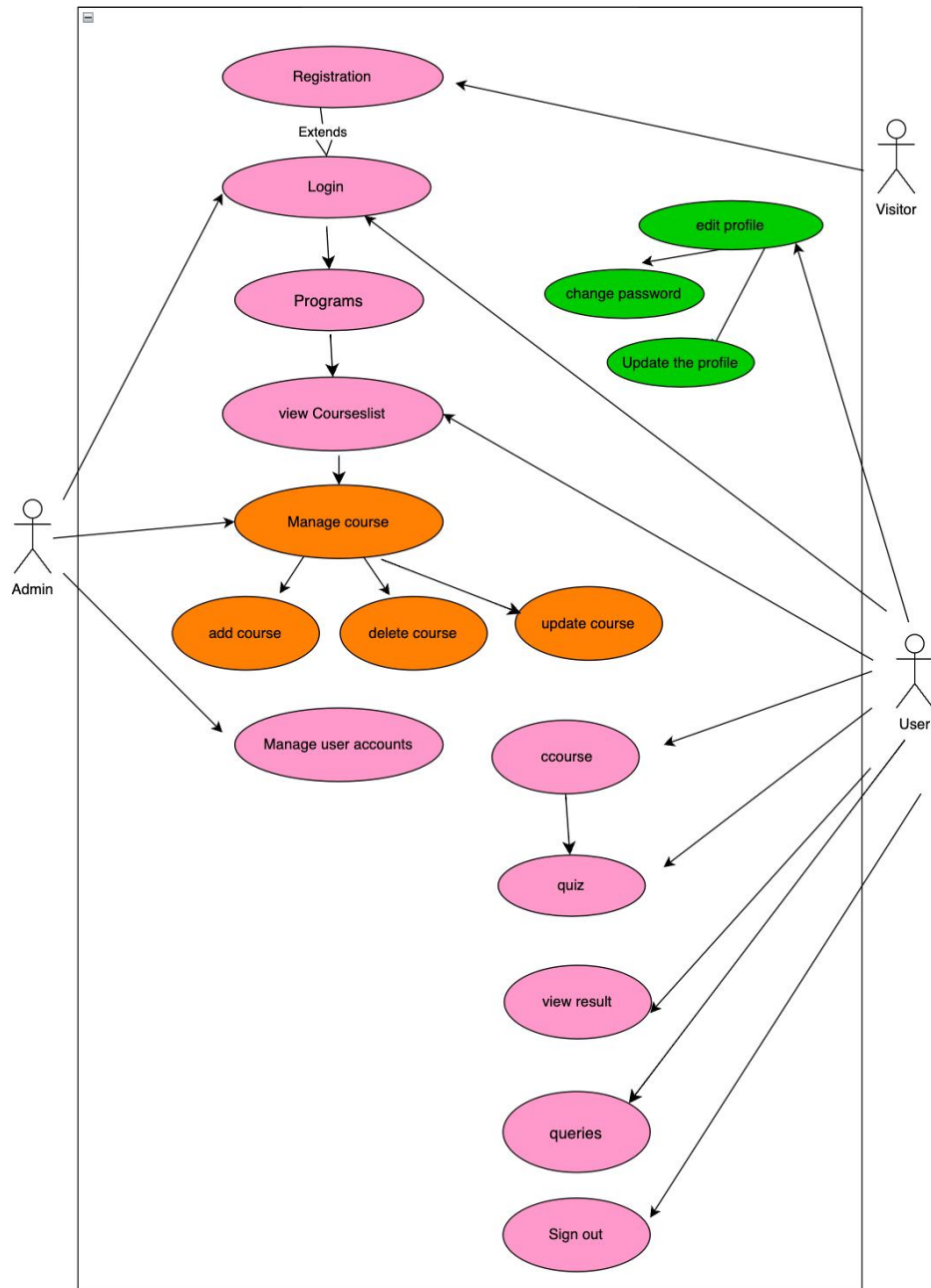
2.3 Performance

- The system takes less time to respond to the user actions.
- The system provides good performance with least error rate and mainly depends on the users individual system.

2.4 Security

- The system requires registration in order to create a profile in the website.
- The system requires user-id and password to login the website.
- The profiles of users are stored in a secured database which can not be accessed by unauthorized access.
- The system can not allow one user to access the profile of another user.
- The system allows only admin to update the course content and mange user profiles.

Use case diagram

Fig 2 Use Case Diagram

Use case description

Use Case Number	UC-01
Use Case Name	**Registration**
Overview	The user should provide some personel details beyond regisitration.
Actor(s)	Admin,Visitor
Pre-condition(s)	- The website has been accessed and running in the visitors browser. - Visitors can get the access to the portal through the link. - Visitor must be familiar of navigation and registration form.

Scenario Flow	**Main(success) Flow:**
	1. Visitor navigate to the 'Registration' option and selects it.
	2. Upon selection ,system requests for personal information..
	3. Then visitor need to enter the personal information.
	    a. First Name
	    b. Last Name
	    c. Mail-Id
	    d. Date of birth
	    e. User_id
	    f. Password
	4. The system verifies the required information.
	    After that, the system will save the new account into the database , display a confirmation to the user, then complete the registration.

Alternate Flows	The visitor can cancel the registration by clicking on the cancel option which is on the registration page amd after the cancelling the registration ,the system automatically navigate to the home page.
Post Condition	The system will store the registered information and checks for the registration rules when the user clicks the save option upon registration.

Use Case Number	UC-02
Use Case Name	**Login**
Overview	The user must enter the user_id and password for login to the portal.
Actor(s)	User
Pre-condition(s)	The user must be registered to the portal for login. The user has been navigate through the login option.

Scenario Flow	**Main(success) Flow:**
	1. The user enters his credentials and clicks on **submit**
	    • User_id
	    • Password
	2. The system will check and verify the user details.
	3. if the verification results are inaccurate, the system will display the error message and asks for re-enter the information correctly.
	4. If the results are accurate the it allows the user to the home page..

Alternate Flows	Not applicable.
Post Condition	The user will get access to the home page.

Use Case Number	UC-03
Use Case Name	**Programes**
Overview	The system will display information about the portal and the programes that the website is offfering.
Actor(s)	User
Pre-condition(s)	The user must be registered to the portal for login. 11 The user has been navigate through the Programes option.

Scenario Flow	**Main(success) Flow:**
	1. User must login to the portal by entering the user_id and password.
	2. If the credentials are accurate it leads to the home page.
	3. Then user must navigate through the 'Programs' option on the navigation bar.
	4. Then the system will display the information regarding the protal and list of programes that it offers.
Alternate Flows	Not applicable.
Post Condition	The user will get access to the Programes page.

Use Case Number	UC-04
Use Case Name	**Edit Profile**
Overview	The user will have the chance to edit their profile data.
	• Edit the name
	First Name and Last Name .
	• Edit the mail_id.
	• Edit the date of birth.
	• Change password
	Note : User is not allowed to change the user_id.
Actor(s)	user
Pre-condition(s)	The user must be registered to the portal before,for editing the profile.
Scenario Flow	**Main (success) Flow:**
	1. The user must select the edit profile option on the home page when user login into his/her account.
	2. Then user need to click on the 'Edit' option.
	3. After clicking the edit option ,system allows the user to edit their personel information(First Name,Last name,mail-id,date of birth,password).
	4. Then,user need to click the 'save' option to save the new information.

Alternate Flow	If the user doesn't want to change the option then user need to click on the home page option to again naviagte to the home page.
Post Condition(s)	After login to the system,the system displays multiple courses on the main page.

Use Case Number	UC-05
Use Case Name	**View Courselist**
Overview	- The system displays a list of courses to the user. - The system also displays the 'view result ' option ,'and 'myprofile'and 'Sign-out' options on navigation bar which allows the user to see their result in particular courses ,edit their personel information and allows the user to sign out from the portal.
Actor(s)	Admin,user
Pre-condition(s)	The user must login to the portal to get access to the view courselist(main page) and the courses have to added by the admin to the courselist.
Scenario Flow	**Main (success) Flow:** After the user login to the portal with the accurate credentials: 1. The sytem will allow the user to view the courselist after they login to the portal. 2. In the view courselist(main page) ,the user will able to see multiple courses and each course with an enroll option. 3. User can view the course content by clicking on the enroll option on course. 4. User can edit their personal information on clicking the 'Myprofile' option. 5. There is a 'view result' option on this page where user can will be able to see their result of quizes in which they attempted. 6. And a 'Sign-out' option where user can sign-out from the portal by clicking the option.
Alternate Flows	Not-Applicable(just user can sign out from the portal by clicking on sign out option)

Post Condition	After login to the system ,the system displays multiple course on the main page.

Use Case Number	UC-06
Use Case Name	**Manage courses**
Overview	• Admin will add, delete and update the course and course content. • Based on the requirements ,admin will select the add option if he/she wants to add a course,select the delete option if he/she wants to delete a course and select the update if he/she wants to update the course.
Actor(s)	Admin
Pre-condition(s)	The admin must log in with admin-credentials to the portal.

Scenario Flow	• **Add a new course:**
	
	 1. The admin select the 'manage course' option.
	
	 2. And then ,the user shall select the on the "Add course" option.
	
	 3. The system will display a form to create a new course.
	
	 4. Then the admin must the required information and content for the course .The form contains the following fields.
	    1. Course name
	    2. Course description
	    3. content
	    4. quiz
	  After entering these details, when admin click on the save option the course will be added toi the course list.
	
	 • **Delete the course :**
	
	 1. The admin must select the 'delete course' option.
	
	 2. And then select the course from the courselist to delete.
	
	 3. After selecting the course,clicking in the delete option allows the user to delete the particular course.
	
	 4. If the user admin does not want to delete the course he/she can cancel the option by just clicking in the 'cancel' option and then return to the main page.

	● **Update the course** 1. The admin must select the 'update course' option. 2. And then select the course from the courselist to update. 3. After selecting the course,update the course content within the course. 4. And then if the admin click on the save option and the updates will be shown in the course in the courselist. 5. If the user admin does not want to update the course he/she can cancel the option by just clicking in the 'cancel' option and then return to the main page.
Alternate Flows	If the admin does not want to add/delete/update the course ,then he/she can just cancel by clicking the 'cancel'option on respective forms and can return to the main page.
Post Condition	● **Add course** The course shall be created and available to users. ● **Delete course** The course will be deleted from the courselist. ● **Update course** The course will be updated and updates are visible in the course in the courselist.

Use Case Number	UC-07
Use Csase Name	**Manage user accounts**
Overview	The admin has he authority to manage user accounts: ● Assign level of permissions to the user ● Delete user accounts in case of long-term inactivity or in case of password mismatch after certain number of trials. ● Keep a track of the sign-in/ sign-out timings of the user.
Actor(s)	Admin
Pre-condition(s)	The person needs to have admin role for users account management.

Scenario Flow	**Main(Success) flow:**
	● **Permission Assignment**
	    1. The admin(user) clicks on the profile icon.
	    2. Go to the course content.
	    3. Select the content that can be visible to the users of the account.
	    4. Click on save button.
	● **Delete user account**
	    1. The admin(user) clicks on profile icon.
	    2. Go to users list.
	    3. Select on the user that needs to be eliminated from database.
	    4. Click on delete button to delete the selected user account.
	● **User activity tracking**
	    1. The admin(user) clicks on the profile icon.
	    2. Go to users list.
	    3. Click on the users list and view the login and logout time of the users.

Alternate Flows	Not applicable

Post conditions	● **Create course**
	   The course must be created and visible to the user.
	● **Update course**
	   The content of the course must be updated and updates must be visible to the user.

Use Case Number	UC-08
Use case Name	**Course**
Overview	● The course content is visible to all the users of the system. ● Admin can view and update all the course content. ● User can only view and interact with the course content.
Actor(s)	User
Pre-condition(s)	The course must be already created by the admin and added to the website. The user must be registered to the website to access the course.

Scenario Flow	**Main(Success) Flow:**
	    1. User shall provide user-id and password to login to the system.
	    2. If the credentials match enter to the courses list page or system ask to re-enter the credentials.
	    3. On entering the courses list,user shall click on the enroll button to enroll into the required course.
	    4. The course page leads course name with a brief description of the course and the following:
	● Videos
	        Click on videos which shows videos of the contents.
	● Textbooks
	        Click on the textbooks which shows the textbooks related to the course.
	● Quiz
	        On completion of the course click on quiz which leads to quiz on the course content for self-assessment.

Alternate Flows	The user can navigate back to courses list by clicking on the Home button.
Post conditions	The user can get access to the course they enrolled.

Use Case Number	UC-09
Use case Name	**Quiz**
Overview	The user have access to the quiz for the courses he/she has enrolled.
Actor(s)	user
Pre-condition(s)	● The user must be registered into the website. ● The user must be enrolled in the course.
Scenario Flow	**Main(Success) Flow:** 1. Click on login button and enter the credentials which leads to list of courses page. 2. Up on reaching the courses list page ,select a course and click on enroll button. 3. On the course page,click on quiz button to take the quiz. 4. After completion of quiz,click on submit button to submit the quiz. 5. The system checks the score and if it meets the minimum score,then it display successful or else it displays "Take the course again" message.
Alternate Flows	Not applicable
Post conditions	The user gets access to the quiz he/she enrolled.

Use Case Number	UC-10
Use Case Name	**View Result**
Overview	User will be able to see the score for quizzes for the courses they enrolled with a pass or retry message.
Actor(s)	User
Pre-condition(s)	● User must be login to the website. ● User must be enrolled to the course.
Scenario Flow	**Main(Success) Flow:** 1. Click on login button of the Home page. 2. System requires credential.Enter user-id and Password. 3. Upon entering credentials,it leads to courses list page. 4. Click on the view results button on the courses list page. 5. It shows the results for courses he/she has finished along with scores and pass or retry message.
Alternate Flow	Not applicable

Post-condition(s)	The user will be able to view the courses he he/she has finished with scores.

Use Case Number	UC-11
Use case Name	**Query**
Overview	User will be able ask queries regarding website functioning using the query
Actor(s)	User
Pre-condition(s)	User must have signed in to the website in order to sign out.
Scenario Flow	**Main (success) Flow:** 1. User shall sign in to the website by providing user-id and password. 2. It leads to the home page. 3. Click on the "Query button" on the navigation bar. 4. After writing the query click on submit button.
Alternate Flow	Click on cancel button to cancel the query submission.
Post-Condition(s)	Query leads to the message box where the user can write their question regarding the website functioning and provides a submit or cancel button.

Use Case Number	UC-12
Use case Name	**Signout**
Overview	Admin and User will be able to log out of the website once he finishes his activity.
Actor(s)	User,Admin
Pre-condition(s)	User must have signed in to the website in order to sign out.
Scenario Flow	**Main (success) Flow:** 1. Click on login button of the Home page. 2. System requires credential.Enter user-id and Password. 3. Upon entering credentials,it leads to courses list page. 4. Click on the sign out button on the Navigation bar of the Courses list page to logout of the system.
Alternate Flow	Not applicable

Post-Condition(s)	Signout from website leads to the home page page of the website which has Register and Login buttons.

- ## Individual Contributions:

Student ID	Team member	Contribution
11648909	Prathyusha Jampala	**Role:**Team coordinator Responsible for collecting course content and creating courses list and course pages along with designing of quiz.
11662604	Prathima Chowdary Sudalagunta	**Role:**Team Leader Responsible for database connections and developing manage course and manage user accounts pages of the website.
11644490	Siva Manikanta Lakumarapu	**Role:** Communications coordinator Responsible for creating Registration and login pages along with basic help in creating website home page.
11642687	Manasa Karumanchi	**Role:**Team collaborator Responsible for creating edit profile module and view course list pages along with fundamental design help.
11646710	Priyanka Chirumamilla	**Role:**Data analyst/ Feedback collector Responsible for evaluation and result of quiz pages and designing signout ages along with basic help in identifying the features to be modified or updated.