

E-Learning Platform

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for the partial fulfillment of the requirements to award the degree of
Bachelor of Technology In
Computer Science and Engineering
School of Engineering and Sciences

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Certificate

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This is to certify that the work present in this Project entitled “E-Learning Platform” has been carried out by **Deepthi Kolli, Sumana Priya Kavuri, Devi Chinmayi Vulchi** under my supervision. The work is genuine, original, and suitable for submission to the SRM University – AP for the award of Bachelor of Technology in **School of Engineering and Sciences.**

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ABSTRACT

The major goal of this E-learning project is to assist learners in developing their knowledge, abilities, and mindset, so they can think creatively and achieve amazing things. This platform is open to everyone and one can make best use of it.

Our e-learning platform will contain lecture videos and lecture notes with real-world examples to make it simple to understand subjects. Inorder to maintain authentication, each user will be given an unique id. Users can login into the system with that unique id and the password which is set during the registration.

This E-Learning project includes user registration, limitless access to course content, the ability to ask questions in a forum, the ability to take quizzes, and the opportunity to gain certification. We have mainly focused on the modules like "Tutor" and "User". The administrator keeps a record of all the data regarding the learners, tutors, and their login information. This platform provides different types of courses with different durations. Additionally, one can use the discussion forum located beneath the course to get their doubts clarified. Users can access study content at any time very easily. The course description helps the users to select any of the courses based on their preferences.

This platform provides certificates for every course because motivation is an essential part of progress. Learners must attempt the test and achieve a score greater than the minimum in order to pass and receive a certificate for a particular course. Following the completion of the tests, solutions to the quizzes are also made available so that students can review their mistakes.

PROBLEM STATEMENT

Quality education is one of the basic human rights. Quality and inclusive education are crucial for a country's development. Nowadays free and quality education is not available for everybody.

The E-learning platform will help us to overcome the above problem by providing quality education that is accessible to everybody. First, the learner should register for the e-learning platform by giving basic details. Then the learner can log in into the system by providing a user ID and password. Once the login was successful the learner can enroll in any number of courses. Each course is being offered in three levels i.e., Beginner, intermediate, and expert levels. Each course offered in this platform is self-placed, so the learner can watch the lecture videos at his own pace.

Learners can attempt the quiz at any time to check their knowledge in that course. If the score obtained in the quiz is greater than or equal to the cutoff (75%), then the learner will get the e-certificate. For clarification of doubts, the query form is being provided for every course. Enrolled learners can post their queries related to the course in the respective query form. The queries will be answered by the tutor.

PROCESS MODEL

Our project follows the Evolutionary Model because it follows both iterative and incremental models . As we are taking feedback after every step it is iterative. And it is incremental because we are building our project in parts. Initially software requirements are reasonably well defined. There may be other requirements of the user which will be known later. So, those requirements can be implemented and delivered in the following next increments.

CHAPTER 1

INTRODUCTION

1.1 PURPOSE

1.2 SCOPE

1.3 REFERENCES

1.4 OVERVIEW

1.1 Purpose

This platform will help the users to improve their skills by learning content and attempting quizzes. It enables administrators to add new courses and remove existing courses. This platform also provides certificates for those users who have successfully completed the course.

1.2 Scope

The nation's overall educational system is being rapidly developed by smart technologies. Therefore, this platform offers electronic documents and relevant video content that students can access. Also, this helps working professionals achieve a better balance between their obligations to their jobs and their studies.

1.3 References

1. Akhter, Shamim, Muhammad Kashan Javed, Syed Qasim Shah, and A. Javaid. "Highlighting the advantages and disadvantages of E-learning." *Psychology and Education* 58, no. 5 (2021): 1607-1614.

2. Ouadoud Mohammed, Nouha Rida, Tarik Chafiq,"Overview of E-Learning Platforms for Teaching and Learning" International Journal of Recent Contributions from Engineering Science & IT (iJES) 9(1):21,DOI:10.3991/ijes.v9i1.21111

1.4 Overview

“A good education is the foundation for a better future”. And as education is non profitable, the courses, lectures that are available in this platform are free of cost.

Our project includes 3 modules- User, Administrator,Tutor

The user module can be accessed by anybody irrespective of their profession and age.

In order to start the journey on this platform the user should register by giving his/her required basic details. This platform provides many courses belonging to various domains and users can opt any number of courses based on his/her preference or interest. Learners can also clear their doubts using the discussion forum and can attempt the quiz in the registered course.

The administrator module can be accessed by admin. The admin can have accessibility to control all the activities on this platform.

Advantages

- Everyone wants to be the best in this cutthroat competitive era. As this platform provides experts and the best teachers for tutoring, we ensure 100% success for the users.
- One can solve one's doubts instantly by taking the help of tutors.
- It is flexible and convenient to use for everyone, irrespective of one's age and educational background.
- Users can enroll in the courses in which they are interested.
- It saves money, as this platform is available for free.
- This platform allows users to control their pace of learning.
- Learners can go through the lecture videos and contents an unlimited number of times
- It provides modularity, since employees can study only course sections that are relevant to their needs.

Disadvantages

- Due to lack of good internet connection, users may face buffering.
- The lack of face-to-face interaction and feedback between the user and the instructor.
- Users should have good time management skills to fully engage in the lectures themselves.
- Excessive screen time from online learning causes health issues such as headaches and mental stress.

CHAPTER 2

SOFTWARE REQUIREMENT SPECIFICATION

2.1 Product Perspective

- 2.1.1 System Interfaces
- 2.1.2 System Specifications
 - 2.1.2.1 H/W Requirement
 - 2.1.2.2 S/W Requirement
- 2.1.3 Communication Interfaces

2.2 Product functions

2.3 Data Flow Diagram (DFD)

- 2.3.1 Context Level Diagram
- 2.3.2 DFD Level – 1
- 2.3.3 DFD Level – 2

2.4 Use Case Analysis

2.5 Use Case Description

2.6 Sequence Diagrams

2.7 User characteristics

2.8 Constraints

2.9 Assumptions and dependencies

2.1 Product Perspective

2.1.1 System Interfaces

❖ User Interfaces

- This section provides a detailed description of all inputs into and outputs from the system. It also gives a description of the hardware, software and communication interfaces and provides basic prototypes of the user interface.
- The protocol used shall be HTTP.
- The Port number used will be 80.
- There shall be a logical address of the system in IPv4 format.

❖ Hardware Interfaces

- Laptop/Desktop PC- Purpose of this is to access learning and video contents. To perform such action it needs a very efficient computer otherwise due to that reason learners have to wait for a long time.
- Wi-Fi router - Wi-Fi router is used for good access of internet

❖ Software Interfaces

- PHP , JavaScript, Html, CSS
- Mysql server - Database connectivity and management
- PHPUnit Test
- OS Windows 7/8/8.1- Very user friendly and common OS

2.1.2 System Specifications

2.1.2.1 H/W Requirement

- Core i5 processor
- 2GB Ram.
- 20GB of hard disk space in terminal machines
- 1TB hard disk space in Server Machine

2.1.2.2 S/W Requirement

- Windows 10 or above operating system
- PHP
- Mysql server

2.1.3 Communication Interfaces

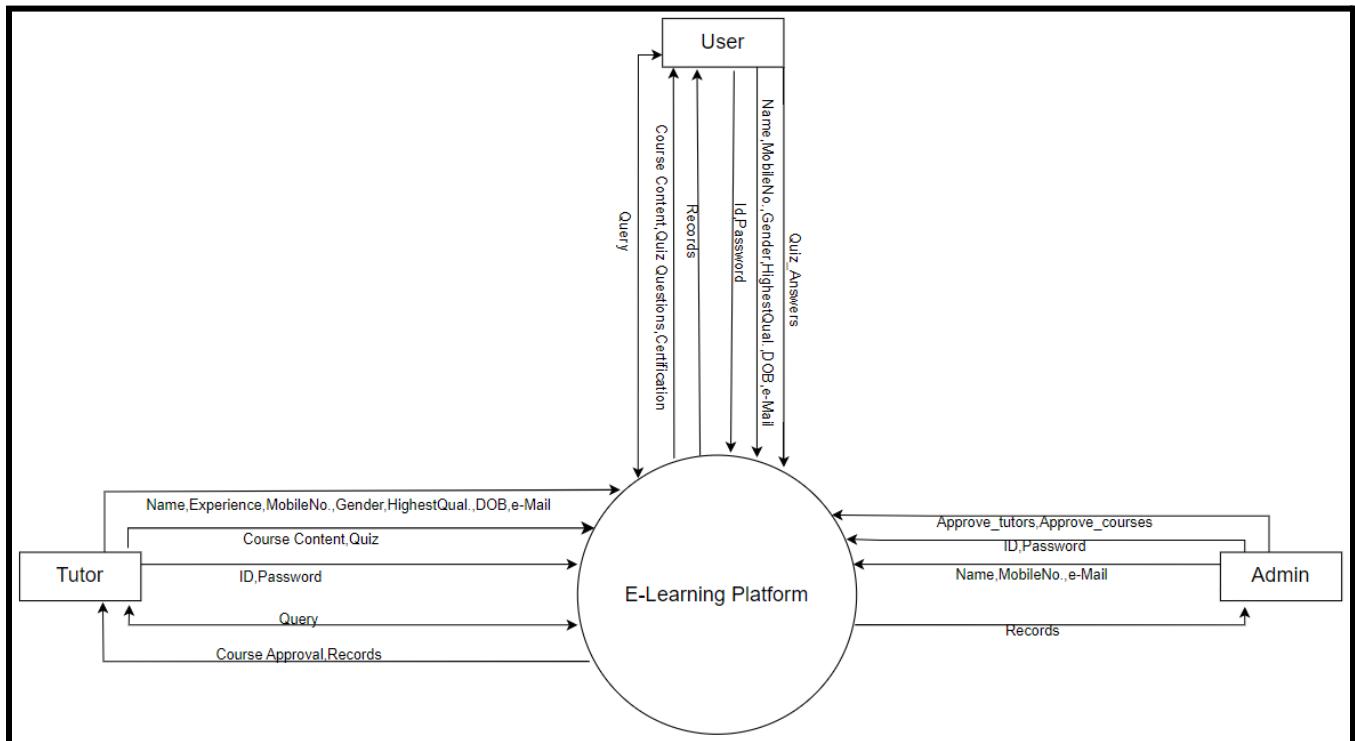
- NIC (Network Interface Card) – It is a computer hardware component that allows a computer to connect to a network. NICs may be used for both wired and wireless connections.
- TCP/IP protocol- Internet service provider to access and share information over the Internet
- Easy to set up and easy to use. Low cost and high data transmission rate.

2.2 Product Functions

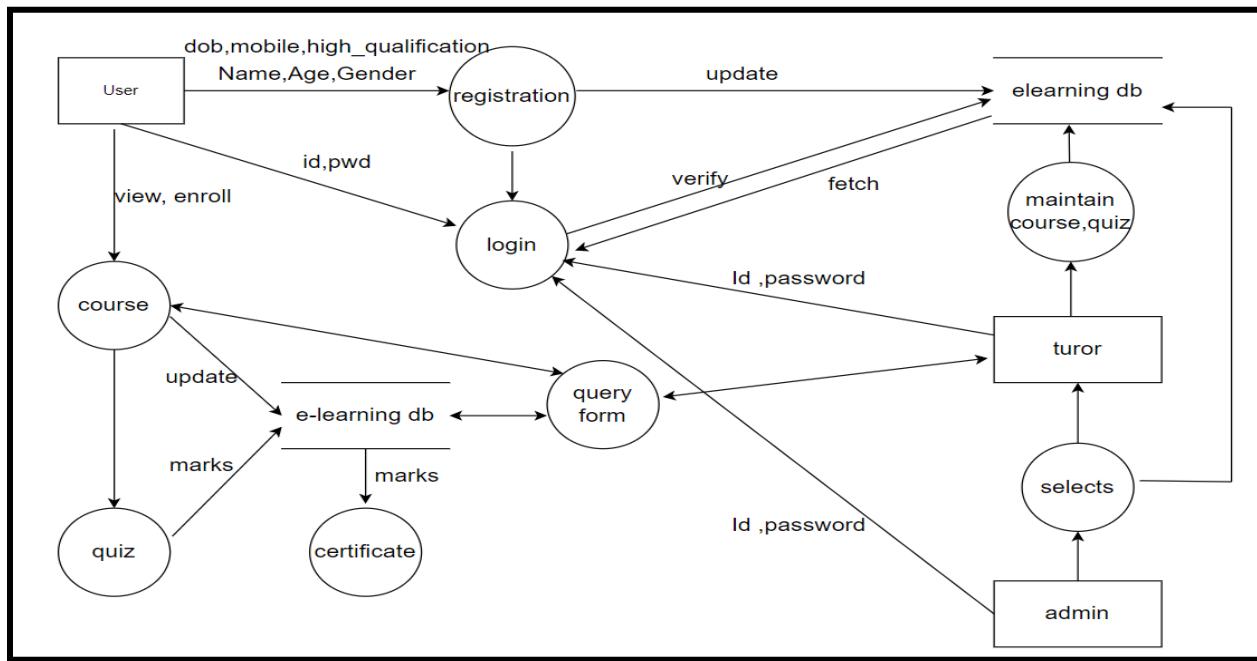
- Access to registered users only.
- Registration of new learners.
- Registered users can access only the enrolled course content.
- Users can even select the level of course like beginner, intermediate and advanced.
- Users can attempt certification tests for enrolled courses.
- Provision of certificate if marks secured are above the cut-off marks.
- Discussion form for users to clear their queries.
- Admin can add new tutors in the system database.
- Tutors can add new courses, delete existing courses but it should be approved by the admin.

2.3 Data Flow Diagram (DFD)

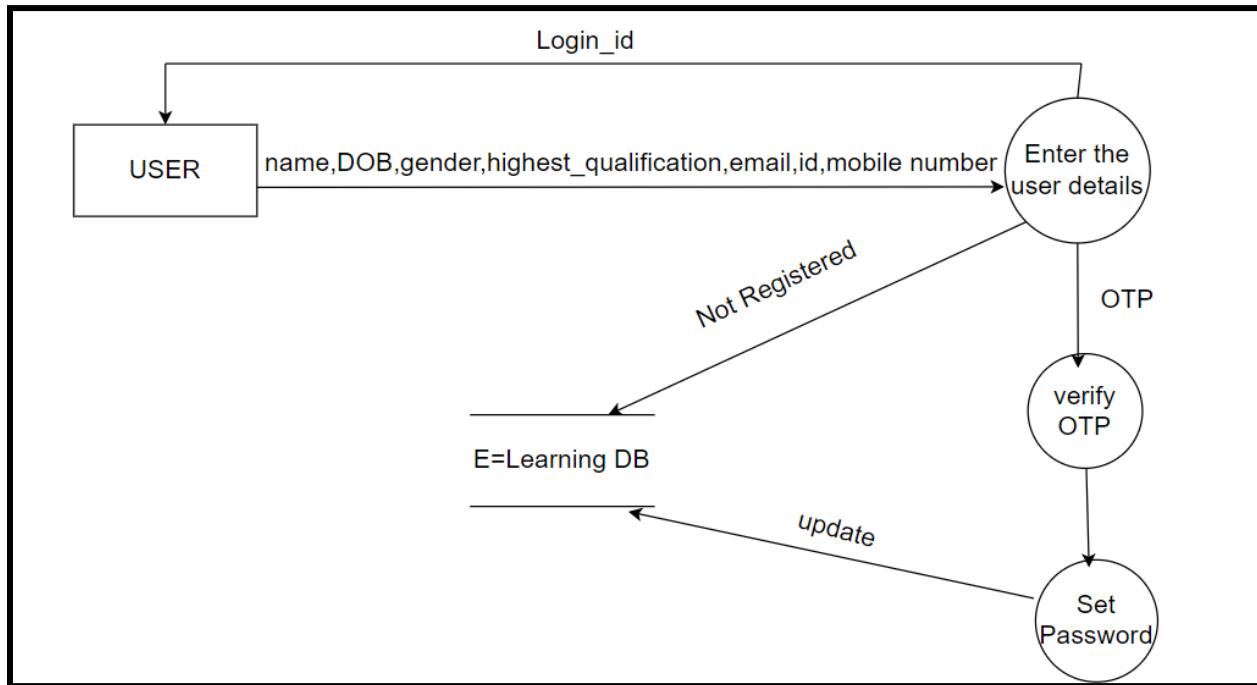
2.3.1. Context Level Diagram /DFD Level-0



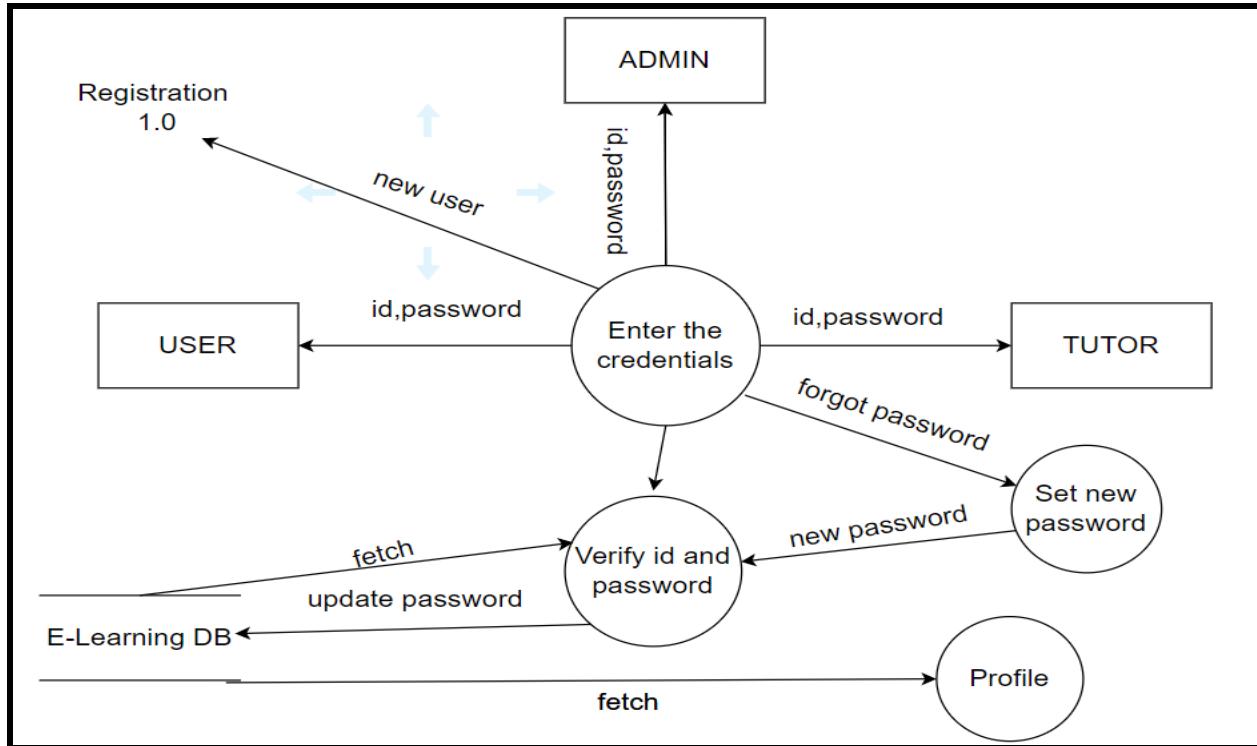
2.3.2 DFD Level-1



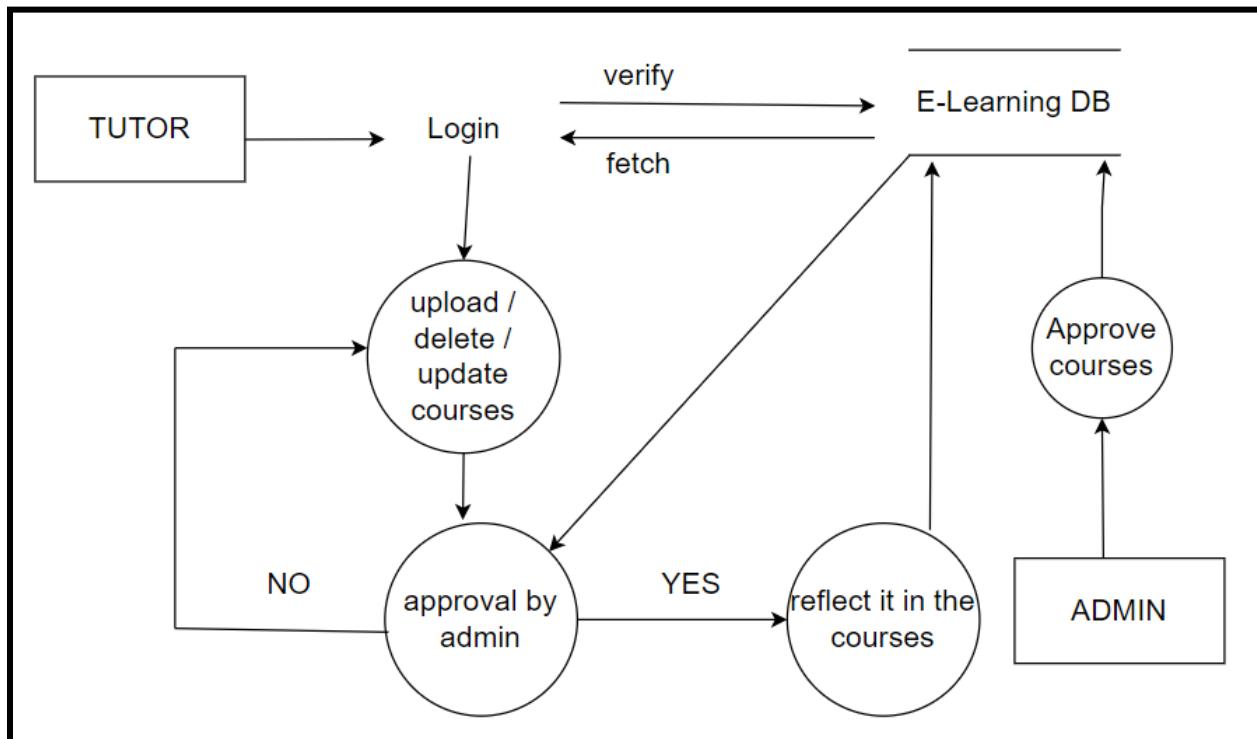
2.3.3 DFD Level-2



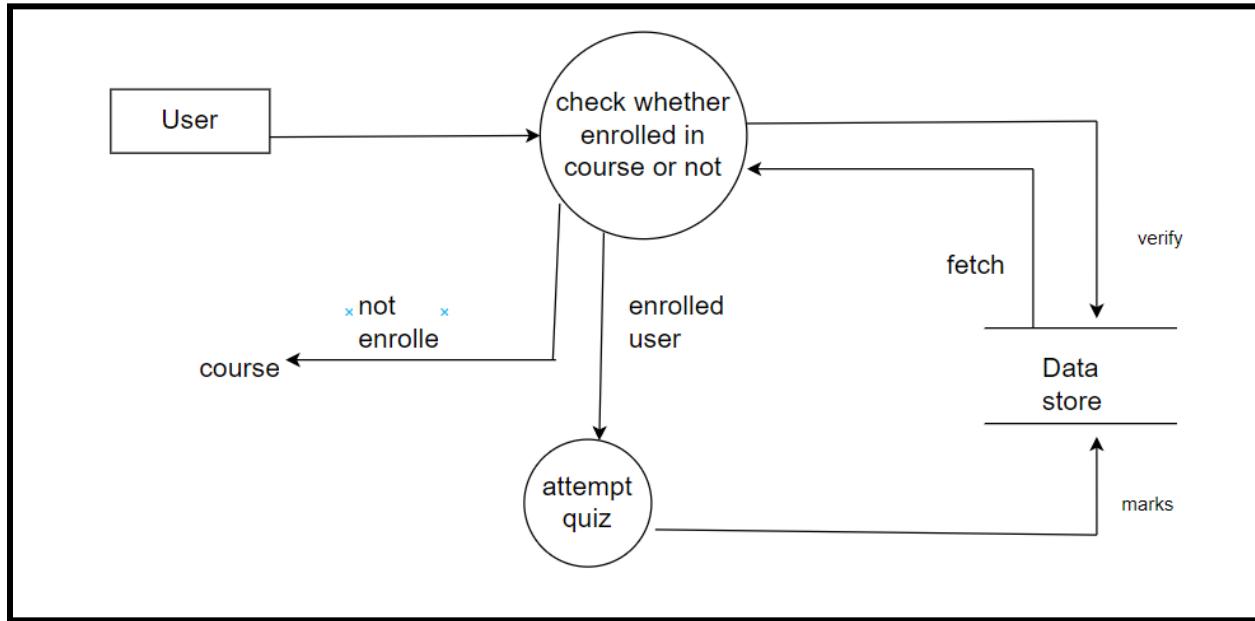
1.0 Registration



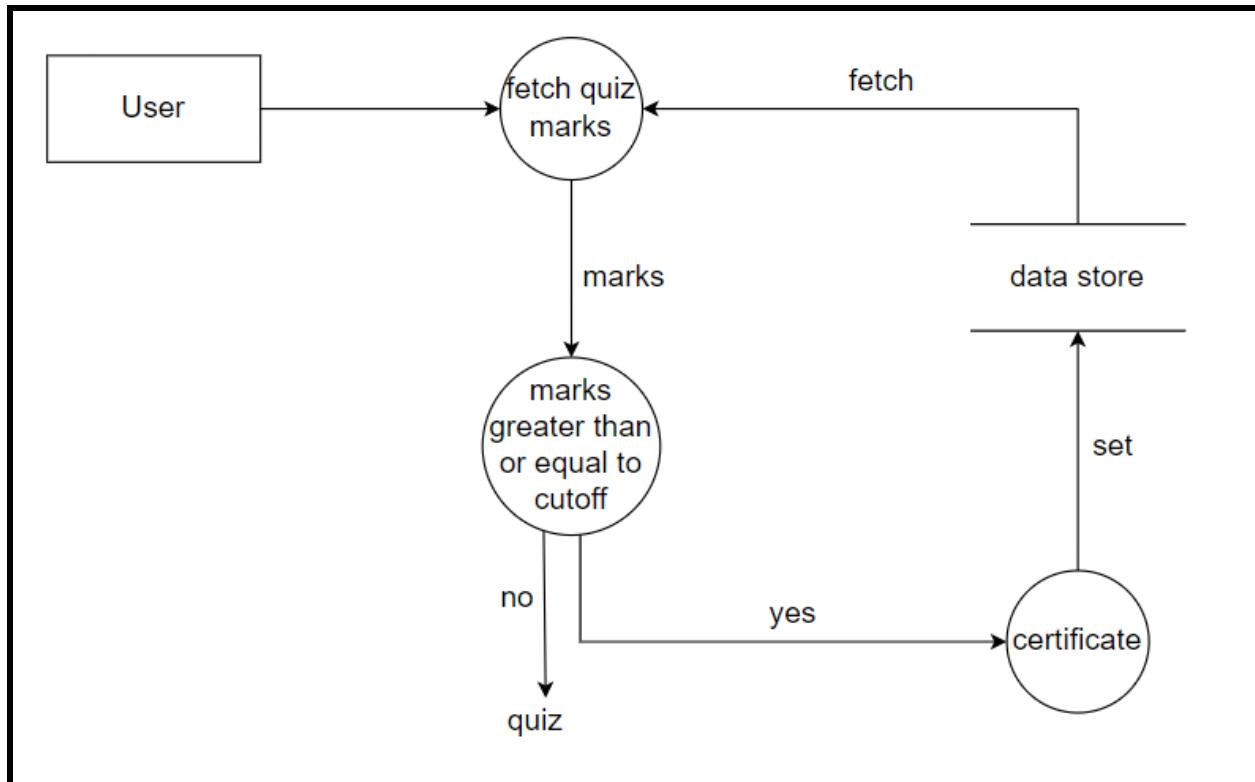
2.0 Login



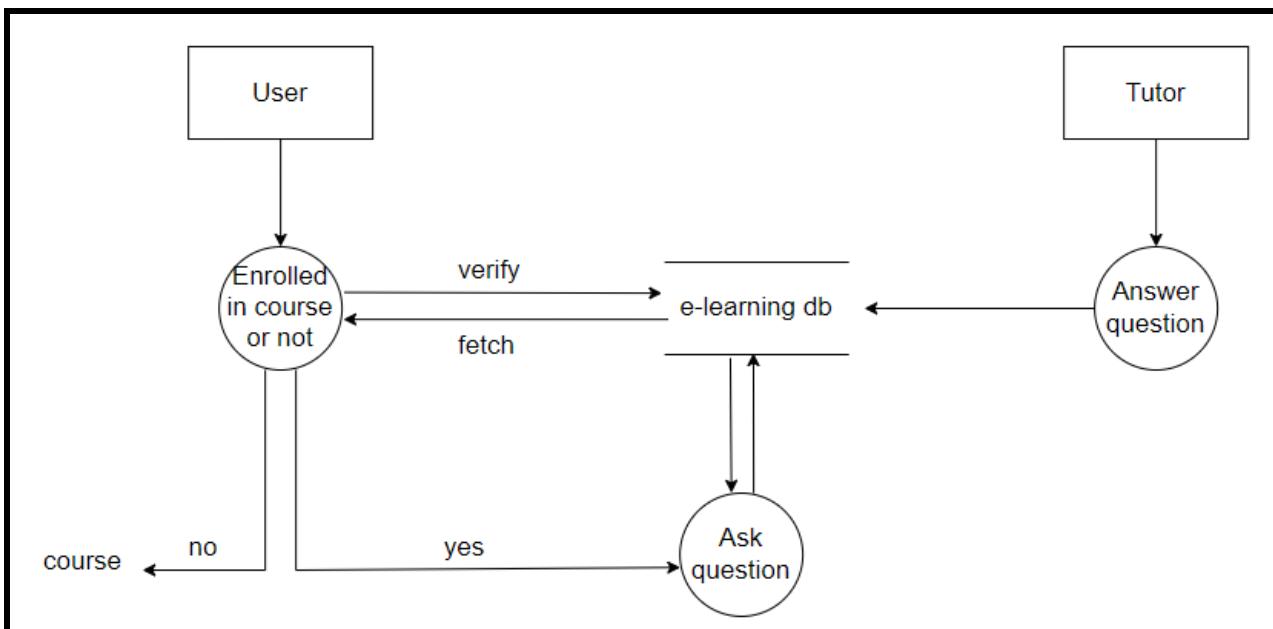
3.0 Maintain Course



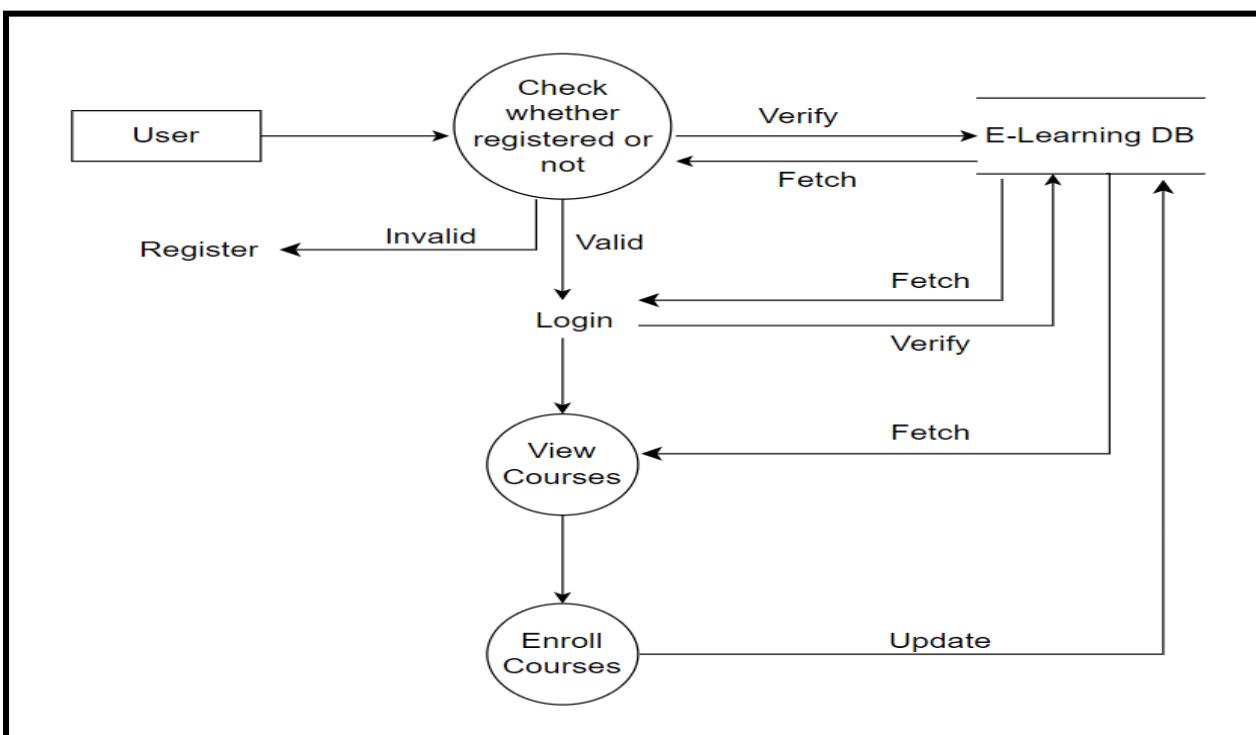
4.0 Quiz



5.0 Certificate



6.0 Query Form



7.0 Course

2.4 Use Case Analysis

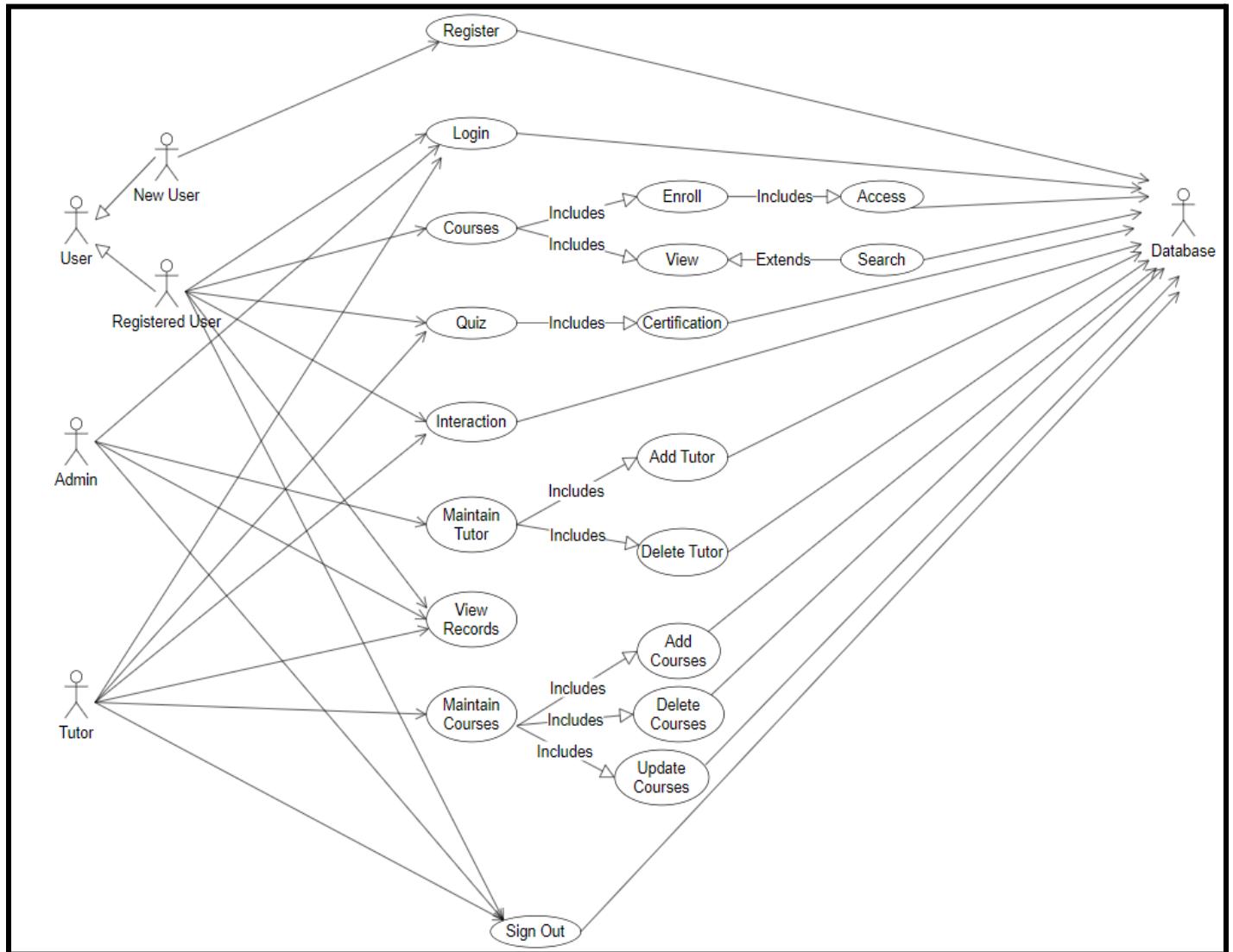
2.4.1 Identified use cases

- Register
- Login
- Courses
 - Enroll
 - Access
 - View
 - Search
- Quiz
- Interaction
- Maintain Tutors
 - Add Courses
 - Delete Courses
- View Records
- Maintain Courses
 - Add Courses
 - Delete Courses
 - Update Courses
- Sign Out

2.4.2 Identified Actors

- User
- Tutor
- Administrator
- Database

2.4.3 Use Case Diagram



2.5 Use Case Description

1. REGISTER

Brief description

This use case describes how to register to the platform

Flow of events

Basic flow

- The actor should register to the course by filling the required and necessary information

Alternative Flow

- If the actor is unsuccessful to the registration he or she is redirected again to registration page

PreCondition

- Should enter strong password (consisting of 8 characters which must include at least one uppercase letter, one lowercase letter and one special character)
- Should fill all the mandatory information

Post Condition

- None

2. LOGIN

Brief description

This use case describes how the user logs to the system.

Flow of events

Basic Flow

- The system requests the actor to enter the name and the password.
- The actor enters the name and the password.
- The system validates the entered name and the password and logs the actor into the system.

Alternative Flow

- If in the basic flow the actor enters the invalid name or password they display an error message.

- The actor can choose either to return to the beginning of the basic flow or cancel the login at which point use ends.

PreCondition

- Actors need to register.

PostCondition

- The use case was successful and the actor is now logged into the system. If not, the system state is unchanged.

3. COURSES

Brief description

This use case describes how to enroll in the preferred courses by viewing the course/searching the course.

Flow of events

Basic Flow

- The user will search/view the courses.
- Enrolled in desired courses so that actors can access the course contents.

Alternative Flow

- In case the actor tries to enroll the courses without login to the platform, the actor redirects to the login page.

PreCondition

- Actors can access the courses content only if he enrolled in those courses.

PostCondition

- Actors can't download or share the course content.

4. QUIZ

Brief description

This use case enables the actors to attempt the quiz.

Flow of events

Basic Flow

- Can attempt the quiz and get certified if and only if the actor gets scored above the cut-off.

Alternative Flow

- In case the user tries to attempt the quiz without login to the platform, the user redirects to the login page.

PreCondition

- The user should complete a full enrolled course to attempt the quiz.

PostCondition

- The user gets certified only when he scores above the cut-off.

5. MAINTAIN TUTORS

Brief description

This use case describes the details of the tutors.

Flow of events

Basic Flow

- Admin can add the tutors by entering the required details into the database .
- Admin can also delete tutors.

Alternative Flow

- None

PreCondition

- Tutors are selected based on their working experience.

PostCondition

- None

6. VIEW REPORTS

Brief description

This use case view the reports irrespective of the roles

- **User** - Can view their progress of the course and quiz scores.
- **Admin**- Can view the total number of learners accessing the contents, all the tutors details.

Flow of events

Basic Flow

- Can view the reports by login into the platform.

Alternative Flow

- In case the actor tries to access the reports without login to the platform, the actor redirects to the login page.

Pre condition

- User should enroll to at least one course

Post Condition

- None

7. MAINTAIN COURSES

Brief description

This use case describes the details of the courses.

Flow of events

Basic Flow

- Tutors can add new courses, delete and update the existing course.

Alternative Flow

- None

PreCondition

- The admin should approve the course that is added by the tutor .
- The “set_course” is set to “0” in the database until the admin approves the respective course.

PostCondition

- Once the admin approves the course the “set_course” should be set to “1”

8. SIGN OUT

Brief Description

This use case describes to log out of the platform

Flow of events

Basic Flow

- The actor can sign out of the platform

Alternative flow

- If in the basic flow the actor can't sign out, it will display an error message.

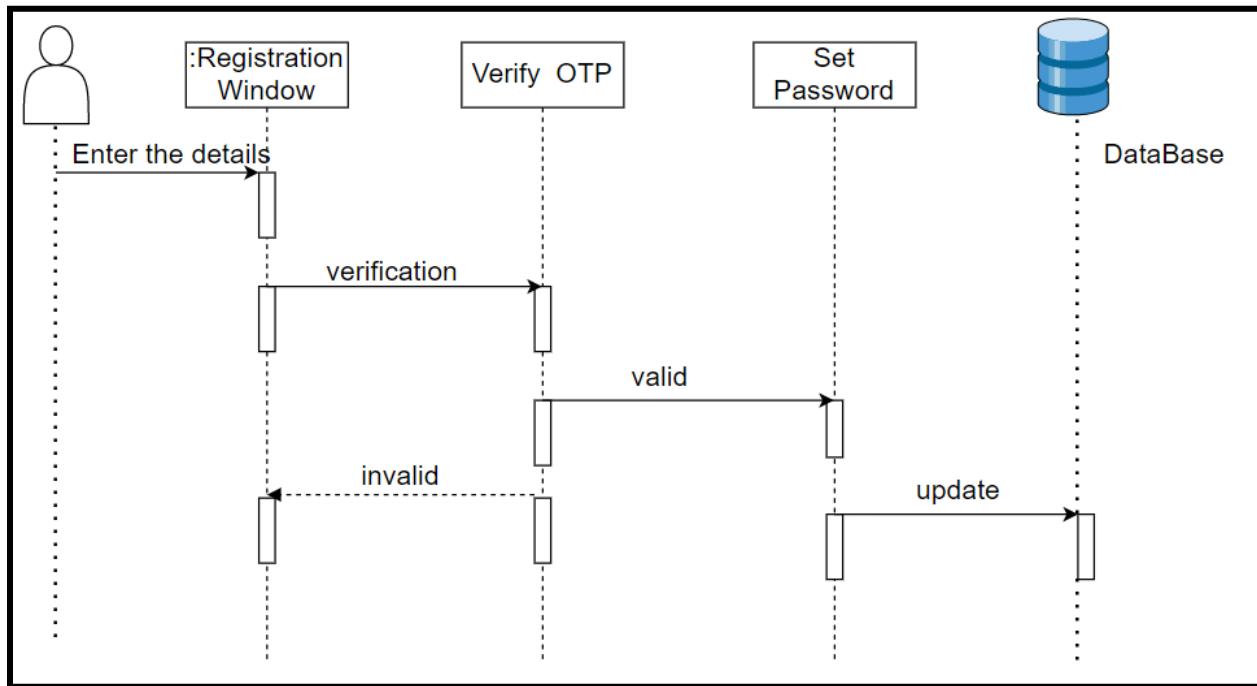
Precondition

- Should login to the platform

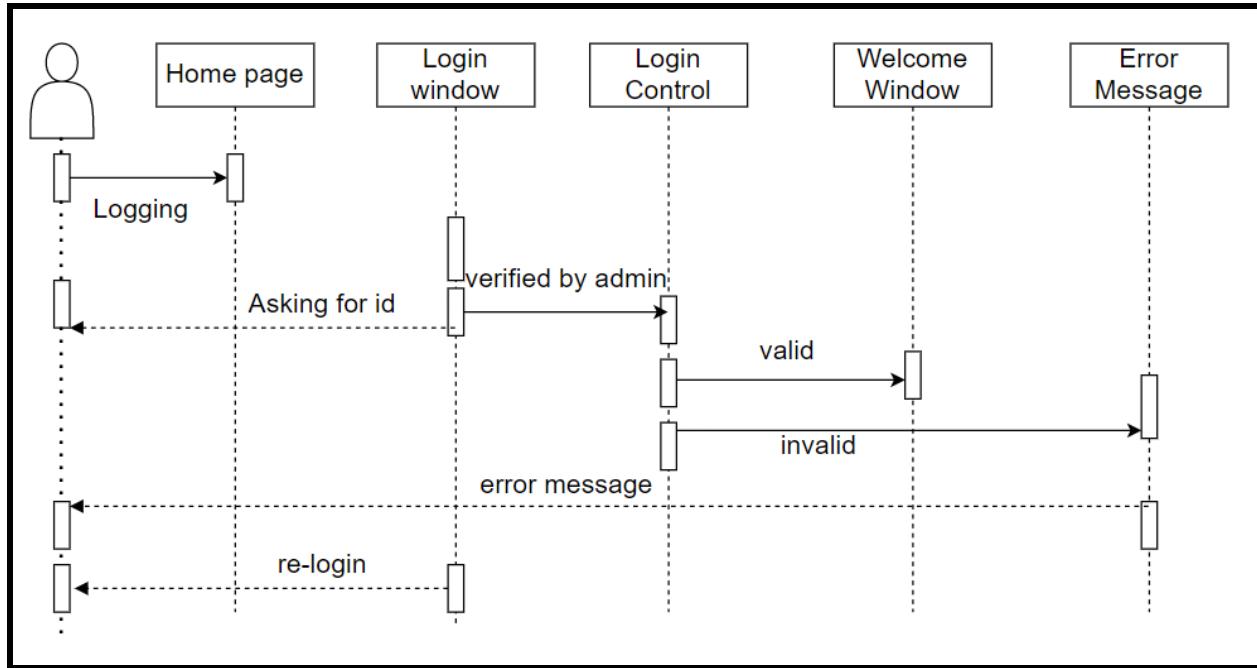
Post Condition

- None

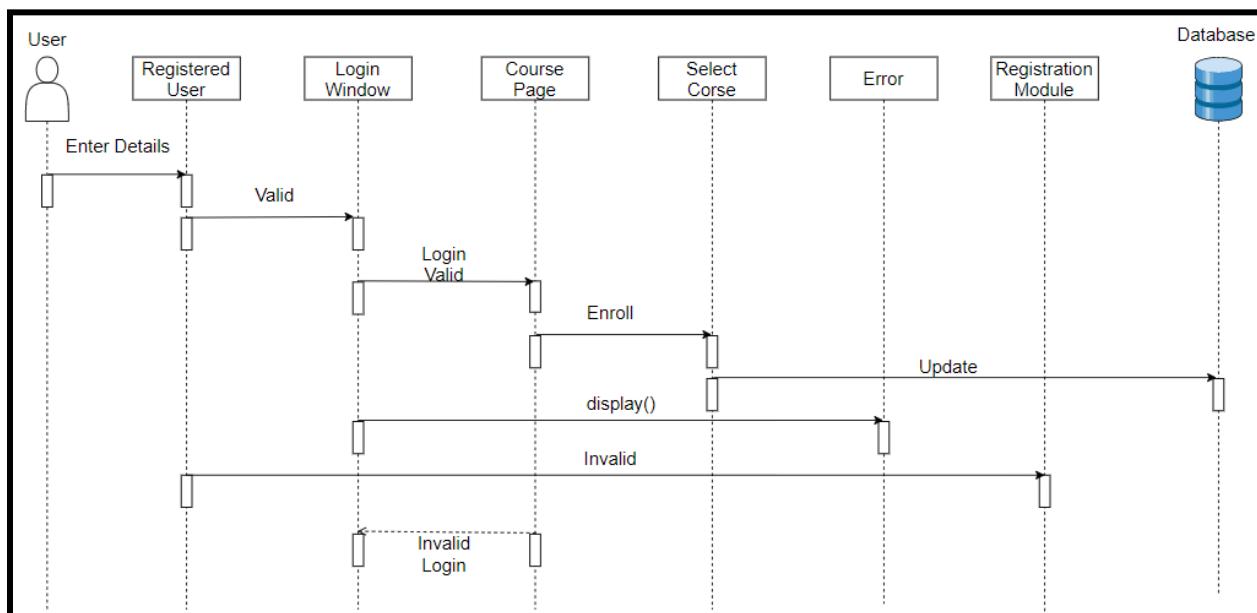
2.6 Sequence Diagrams



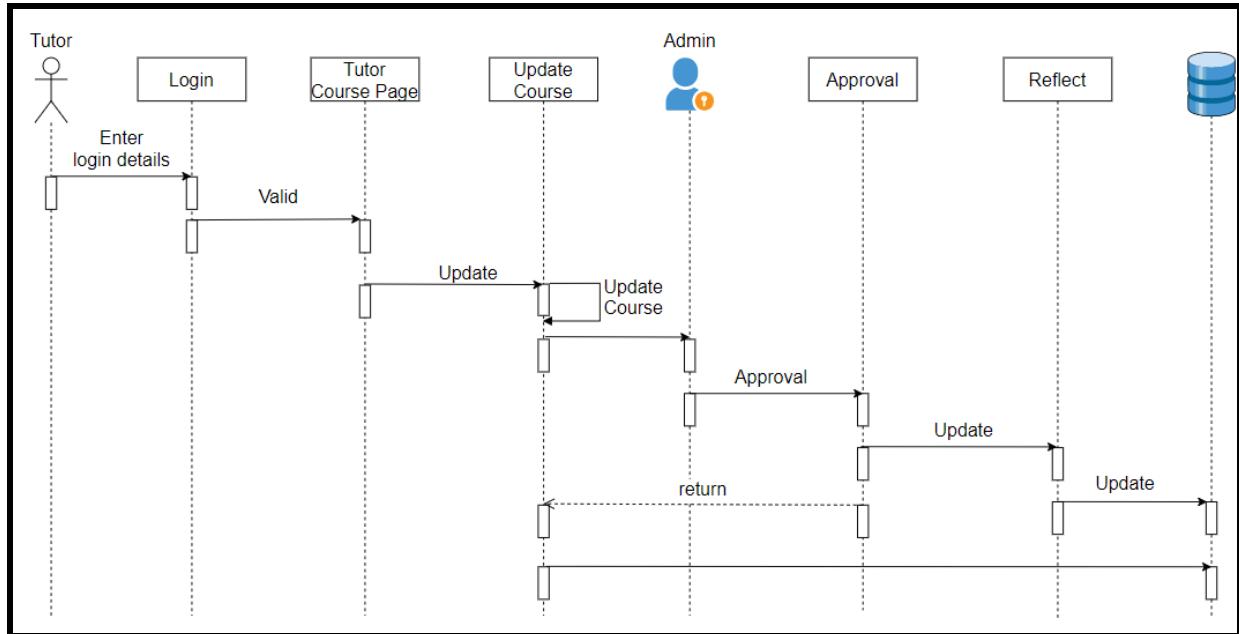
REGISTRATION



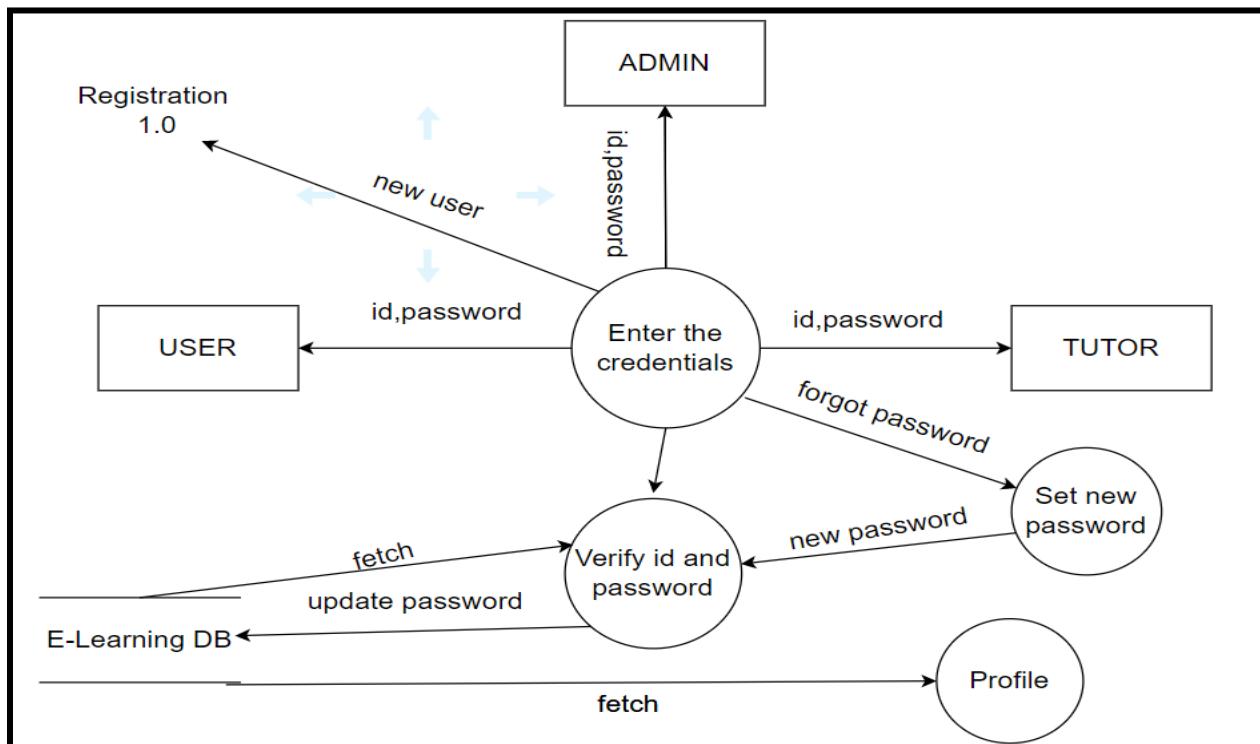
LOGIN



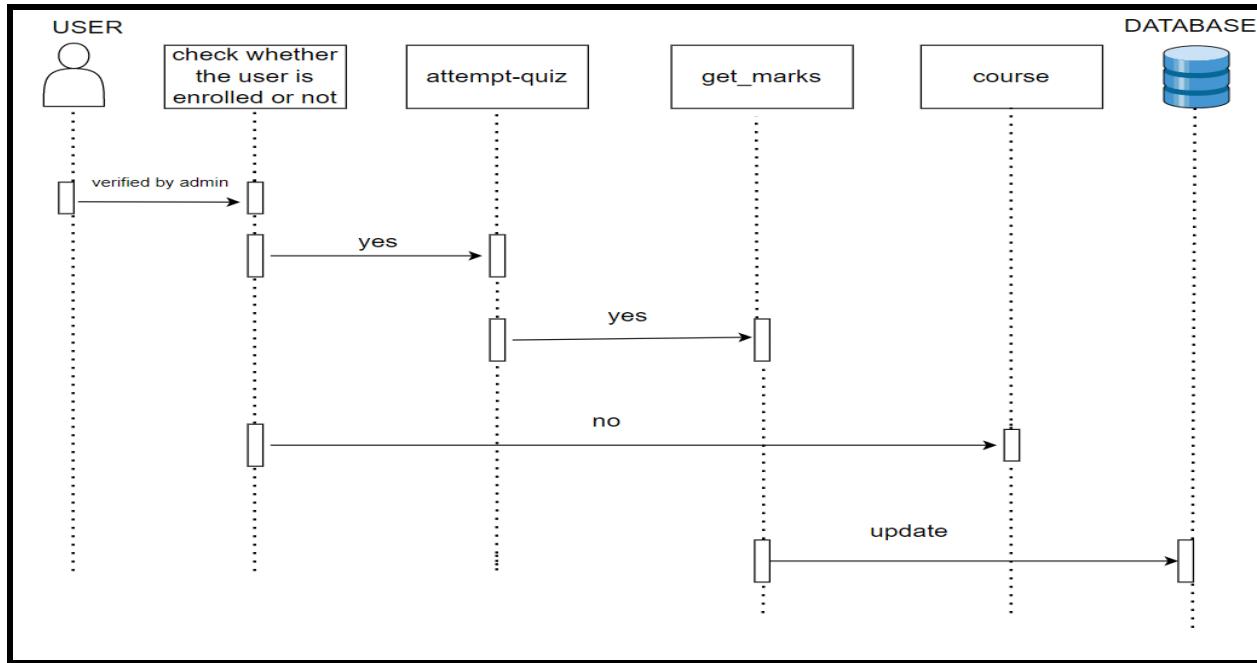
COURSE



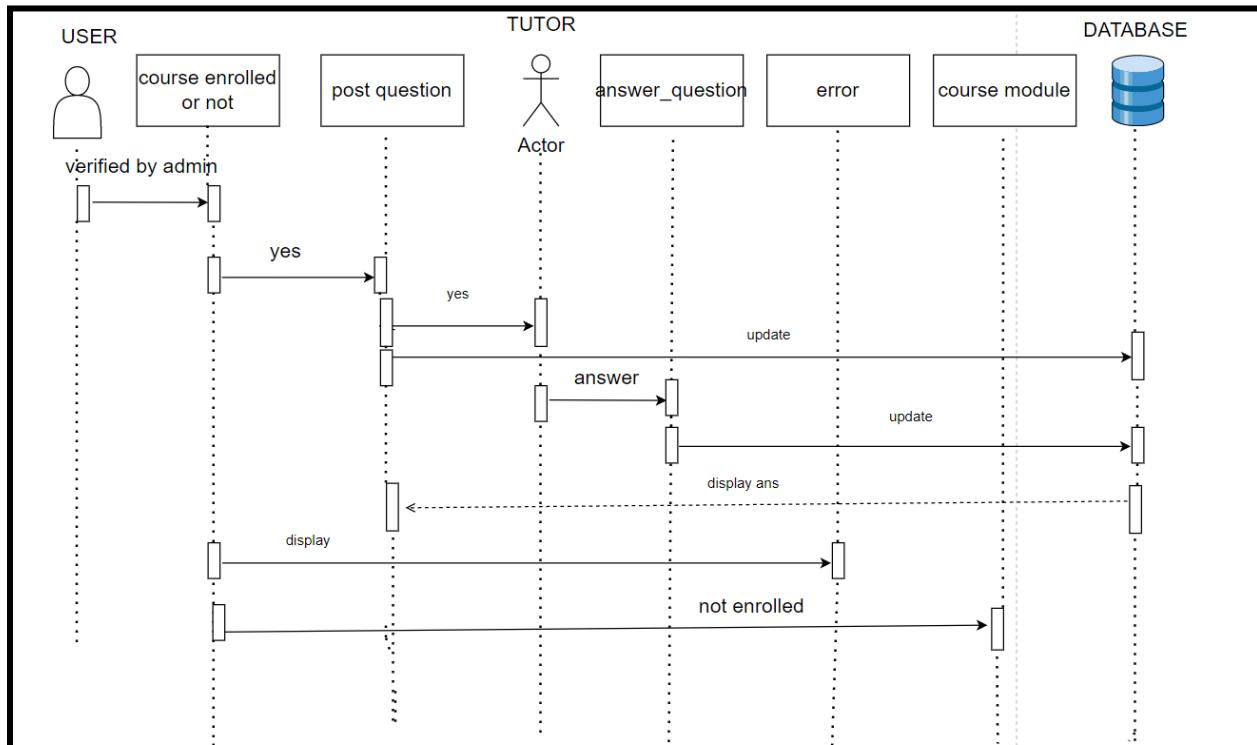
MAINTAIN COURSE



CERTIFICATE



QUIZ



QUERY FORM

2.7 User Characteristics

ADMIN-

- Admin has complete access to the system, which enables him to control all system-related activities.
- He is the highest privileged user who can access to the system

Key functions

- Access the tutors and learners record.
- Add new tutors in the system database.
- View Records like (Total number of learners accessing the contents, adding and deleting the tutors).

USER-

- Users can choose their preferred course from the options provided .
- They can attempt quizzes and get certificates after completion of course.

Key Functions

- Register on the platform
- Select courses
- Attempt quizzes
- Get certificates

2.8 Constraints

- System is wirelessly networked with encryption.
- System is only accessible within the e-learning platform only.
- Database is password protected.
- Should use less RAM and processing power.
- Each user should have an individual ID and password.
- Only administrators can access the whole system.

2.9 Assumptions and dependencies

- Each user must have a valid user id and password.
- Server must be running for the system to function.
- Users must log in to the system to access any record.
- Only the Administrator can add or delete tutors.
- Each question in the quiz contains only four options and each question carries only one mark.
- Certificate is provided to the students whose score is greater than or equal to 75%.

CHAPTER 3

SPECIFIC REQUIREMENTS

3.1 Performance requirements

3.2 Safety requirements

3.3 Security constraints

3.4 Software system attributes

3.4.1 Usability

3.4.2 Availability

3.4.3 Correctness

3.4.4 Maintainability

3.4.5 Accessibility

3.5 Functional Requirements

3.1 PERFORMANCE REQUIREMENTS

- o **Response time-** The system will give responses within 1 second after checking the course information and other information.
- o **User interface-** User interface screen will respond within 5 seconds.

3.2 SAFETY REQUIREMENTS

If there is extensive damage to a wide portion of the database due to catastrophic failure, such as a disk crash, the recovery method restores a past copy of the database that was backed up to archival storage and reconstructs a more current state by reapplying or redoing the operations of committed transactions from the backed up log, up to the time of failure.

3.3 SECURITY REQUIREMENTS

1. Want take the responsibility of failures due to hardware malfunctioning.
2. Warranty period of maintaining the software would be one year.
3. If any error occurs due to a user's improper use. Warranty will not be allocated.

3.4 SOFTWARE SYSTEM ATTRIBUTES

3.4.1 Usability: Software can be used again and again without distortion.

3.4.2 Availability: The system shall be available all the time.

3.4.3 Correctness: Bug free software which fulfills the correct need/requirements of the client.

3.4.4 Maintainability: The ability to maintain, modify information and update and fix problems of the system.

3.4.5 Accessibility: Administrator and many other users can access the system but the access level is controlled for each user according to their work scope

3.5 FUNCTIONAL REQUIREMENTS

S.N O	MODULE NAME	APPLICABLE ROLES	DESCRIPTION
1	REGISTRATION	USER	USER: Can Register by filling all the required details, after this the system will verify the details and check if already registered or not.
2	LOGIN	USER ADMIN TUTOR	USER: Can login using unique Id and Password. TUTOR: Can login using unique Id and Password. ADMIN: Can login using unique Id and Password.
3	COURSE	USER	USER: Can view the course page and then enroll to the course of his prior.
4	MAINTAIN COURSE	TUTOR ADMIN	TUTOR: Can upload / delete / update the course content. ADMIN: Verify the uploaded content and approve it in the database.
5	QUERY FORM	USER TUTOR	USER: Can ask questions in the query form whenever required.

			TUTOR: Answers to the questions asked by the users.
6	QUIZ	USER	USER: Attempts the quiz of the enrolled course.
7	CERTIFICATE	USER	USER: Receives the certificate once the user scores more than cut-off.

CHAPTER 4

DESIGN

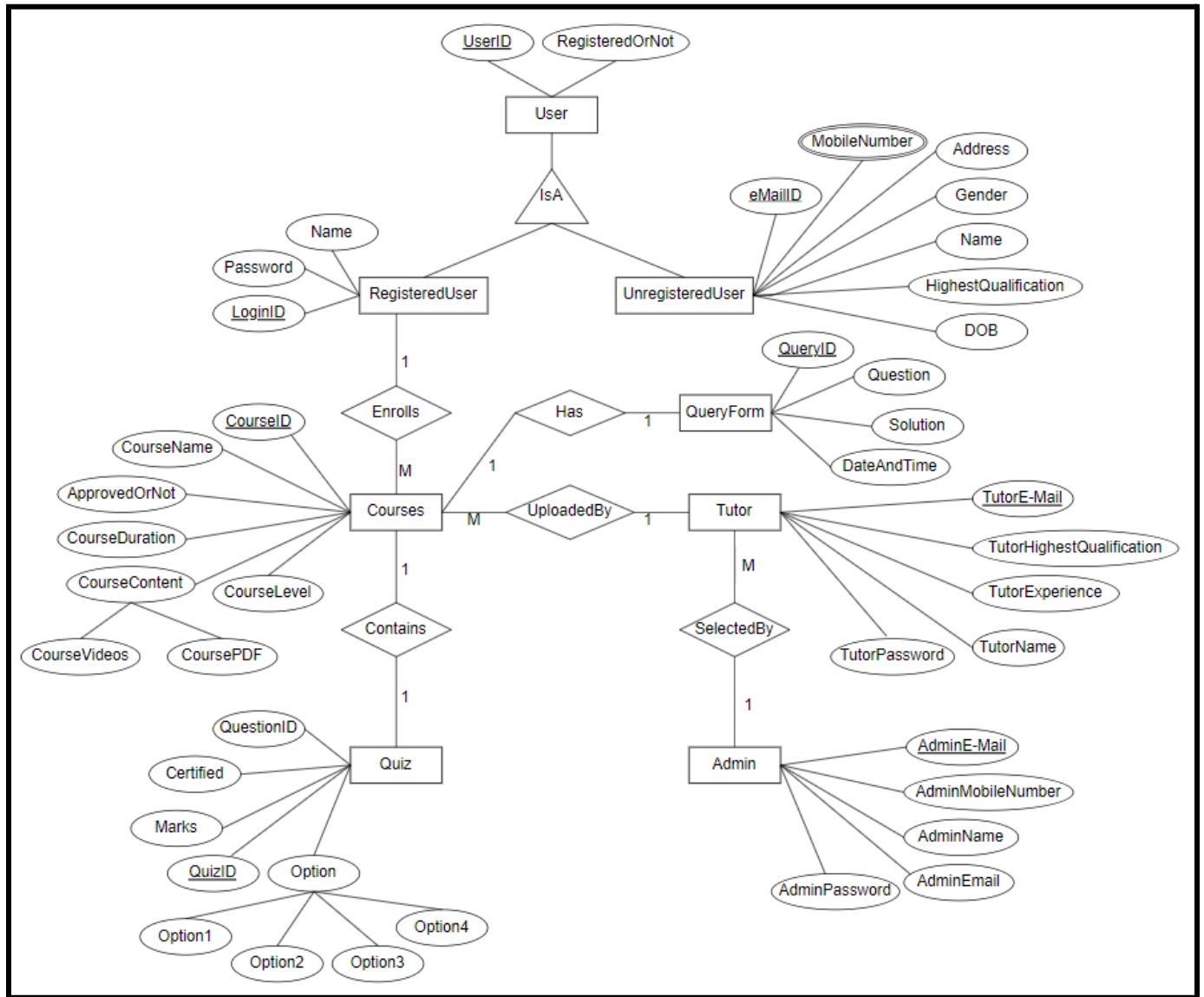
4.1 E-R Diagram

4.1.1 Normalization

4.3 Data Design

4.4 Collaboration Diagram

4.1 E-R Diagram



4.1.1 TABLES AFTER NORMALISATION:

TABLE-1: User_unregistered

email-id (PK)	name	dob	gender	address	Highest_qualification
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TABLE-2: User_unregistered_mobile

signin_id(FK)	Mobile number
---------------	---------------

TABLE-3: User_registered

login_id(PK)	name	password
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TABLE- 4: Admin

admin_id(PK)	admin_name	password	email_ID
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TABLE-5: Admin_mobile

admin_id(FK)	Mobile number
--------------	---------------

TABLE-6: Courses

c_id(PK)	c_name	c_duration	level	videos	pdf	login_id(FK)	T_id(FK)
----------	--------	------------	-------	--------	-----	--------------	----------

TABLE-7: Tutor

T_id(PK)	T_name	qualification	email	admin_id(FK)	password
----------	--------	---------------	-------	--------------	----------

TABLE-8: Tutor_mobile

T_id(FK)	Mobile number
----------	---------------

TABLE-9: Query form

query_id(PK)	question	solution	date&time	c_id(FK)
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TABLE-10: Quiz

quiz_id(PK)	marks	certified	questions	op1	op2	op3	op4	c_id(FK)
-------------	-------	-----------	-----------	-----	-----	-----	-----	----------

4.3 DataBase Design

Table-1: UNREGISTERED USER

S.No	COLUMN NAME	DATA TYPE	CONSTRAINTS	DESCRIPTION
1	email_id	varchar(50)	Primary key	Unique id
2	name	varchar(50)	-	Contains the name of the user.
3	age	integer	-	Contains Age of the user.
4	gender	varchar(50)	-	Contains gender.
5	address	varchar(100)	-	Contains address
6	highest_qualification	varchar(50)	-	Contains highest qualification i.e (10th,12th,degree, e.t.c)
7	Mobile number	Biginteger	-	Contains mobile number

Table-2: QUERY FORM

S.No	COLUMN NAME	DATA TYPE	CONSTRAINTS	DESCRIPTION
1	query_id	varchar(50)	Primary key	Unique key
2	question	text	-	Contains question(doubt) of the user
3	solution	text	-	Contains solution
4	Date and time	timestamp	-	Contains date & time

Table-3: REGISTERED USER

S.No	COLUMN NAME	DATA TYPE	CONSTRAINTS	DESCRIPTION
1	login_id	varchar(50)	Primary key	Unique key
2	name	varchar(50)	-	Contains name
3	password	varchar(50)	unique	Contains password

Table-4: TUTOR

S.NO	COLUMN NAME	DATA TYPE	CONSTRAINTS	DESCRIPTION
1	Tutor_id	varchar(50)	Primary key	Unique key
2	Tutir_name	varchar(50)	-	
3	Tutor_email	varchar(50)	-	
4	Tutor_mobile	varchar(50)	Multivalued	Contains mobile number
5	password	varchar(50)	unique	Contains password
6	Highest_Qualification	varchar(50)	-	Contains Qualification

Table-5: ADMIN

S.NO	COLUMN NAME	DATA TYPE	CONSTRAINTS	DESCRIPTION
1	admin_id	varchar(50)	Primary key	Unique key
2	admin_name	varchar(50)	-	Contains name
3	admin_email	varchar(50)	-	Contains email
4	admin_pwd	varchar(50)	unique	Contains password
5	admin_mobile	varchar(50)	Multivalued	Contains mobile number

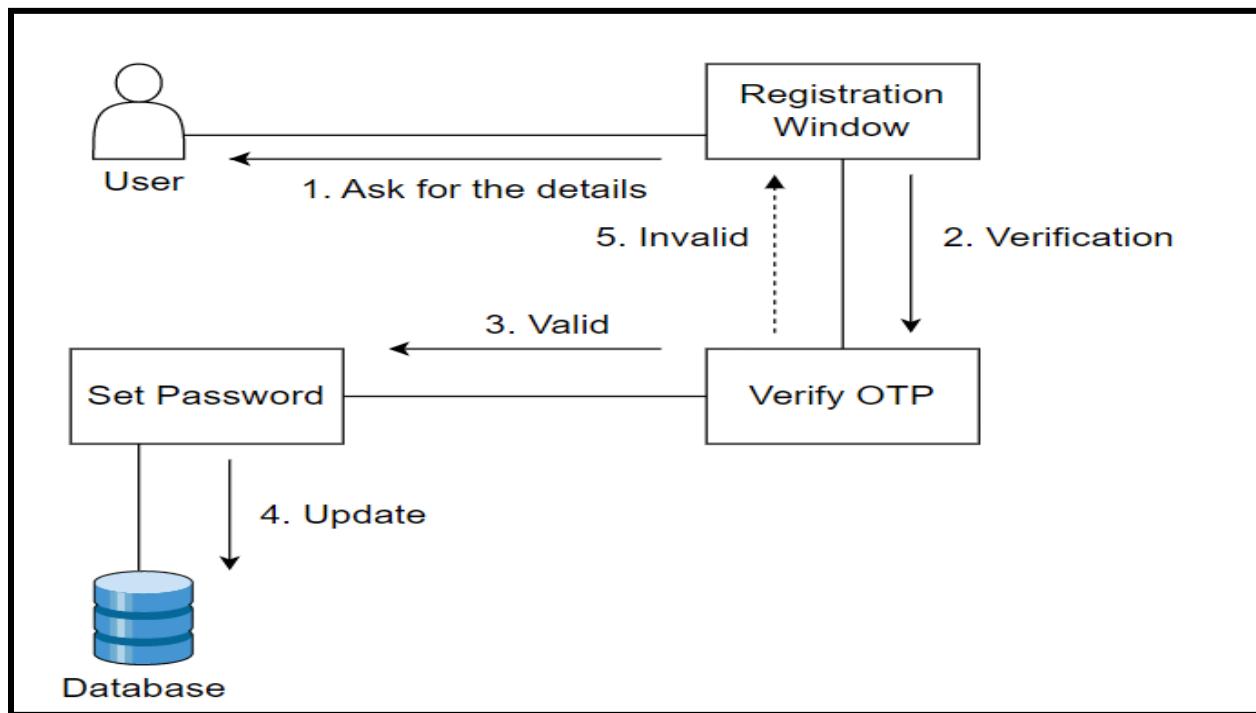
Table-6: COURSES

S.NO	COLUMN NAME	DATA TYPE	CONSTRAINTS	DESCRIPTION
1	c_id	varchar(50)	Primary_key	Unique key
2	c_name	varchar(50)	-	Contains course name
3	c_duration	varchar(50)	-	Contains duration of the course
4	level	varchar(50)	-	Contains the level of course user is opting
5	videos	longblob	-	Contains videos related to that course
6	pdfs	longblob	-	Contains pdf related to that course

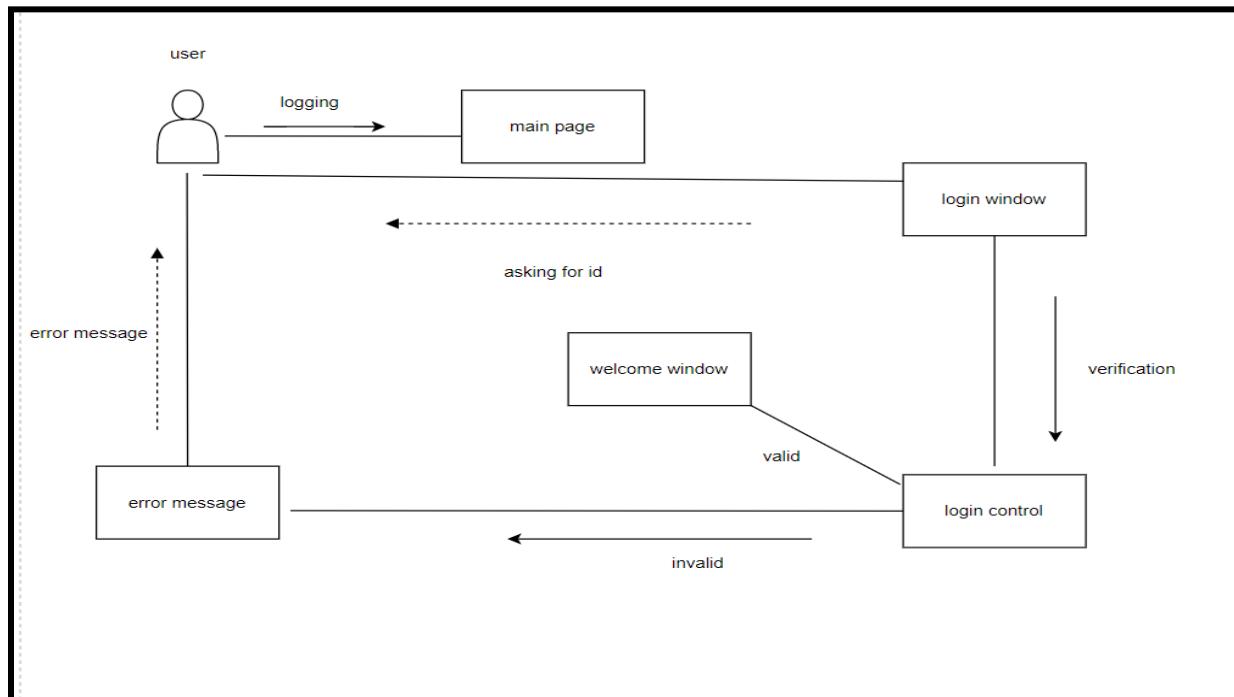
Table-7: QUIZ

S.NO	COLUMN NAME	DATA TYPE	CONSTRAINTS	DESCRIPTION
1	quiz_id	varchar(50)	Primary key	Unique key
2	marks	int	-	Contains marks scored by the user
3	questions	text	-	Contains questions in the quiz
4	certificated	int	-	Contains '1' if he qualifies the quiz else '0'
5	op1	varchar(50)	-	Contains first option
6	op2	varchar(50)	-	Contains second option
7	op3	varchar(50)	-	Contains third option
8	op4	varchar(50)	-	Contains fourth option

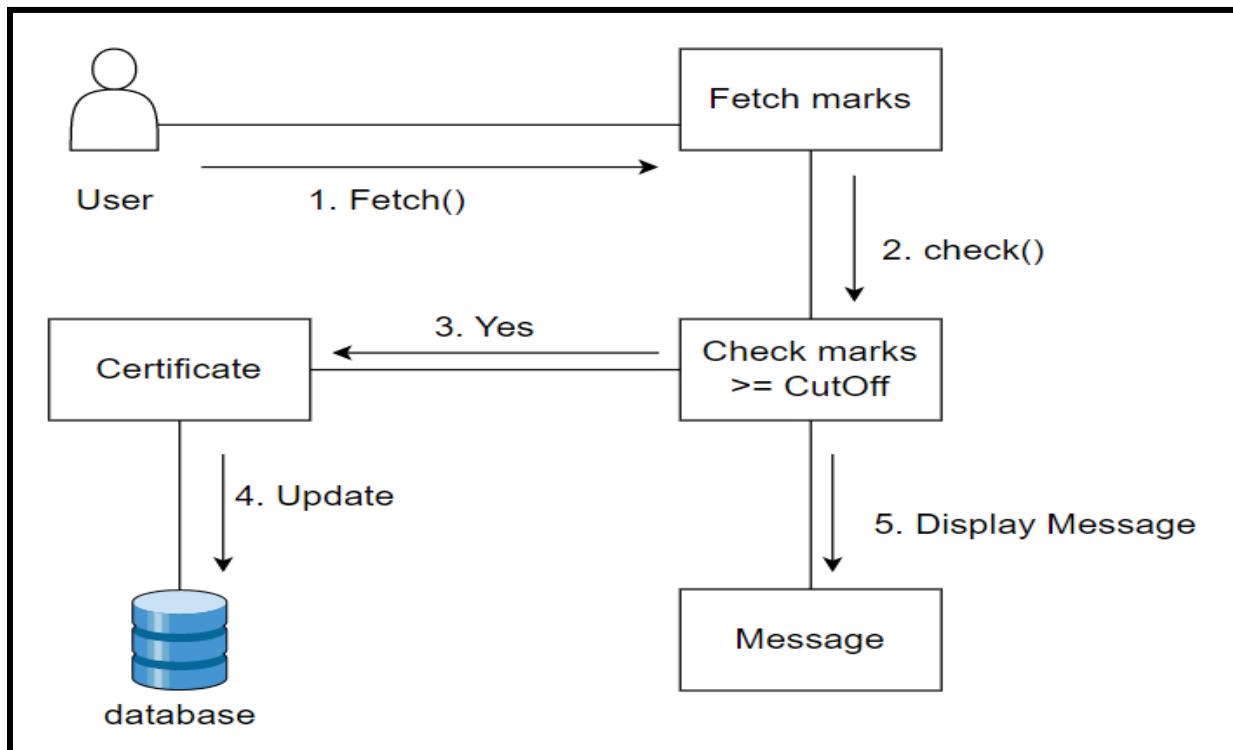
4.4 COLLABORATION DIAGRAM



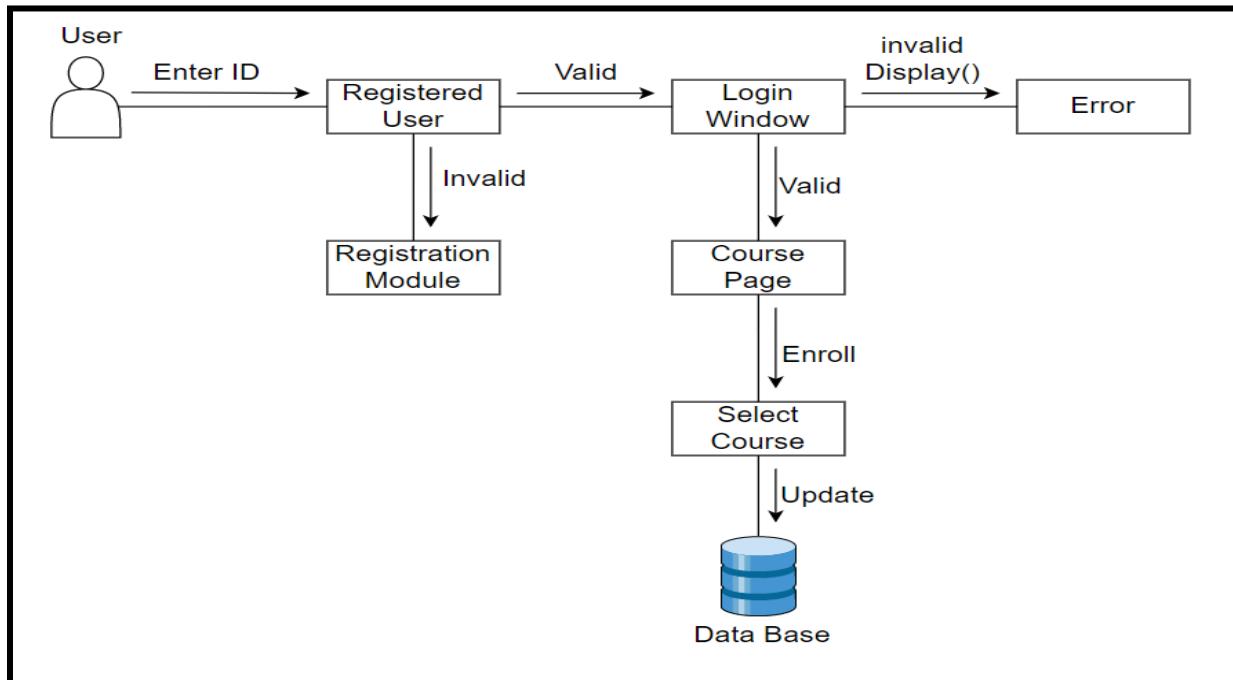
REGISTRATION



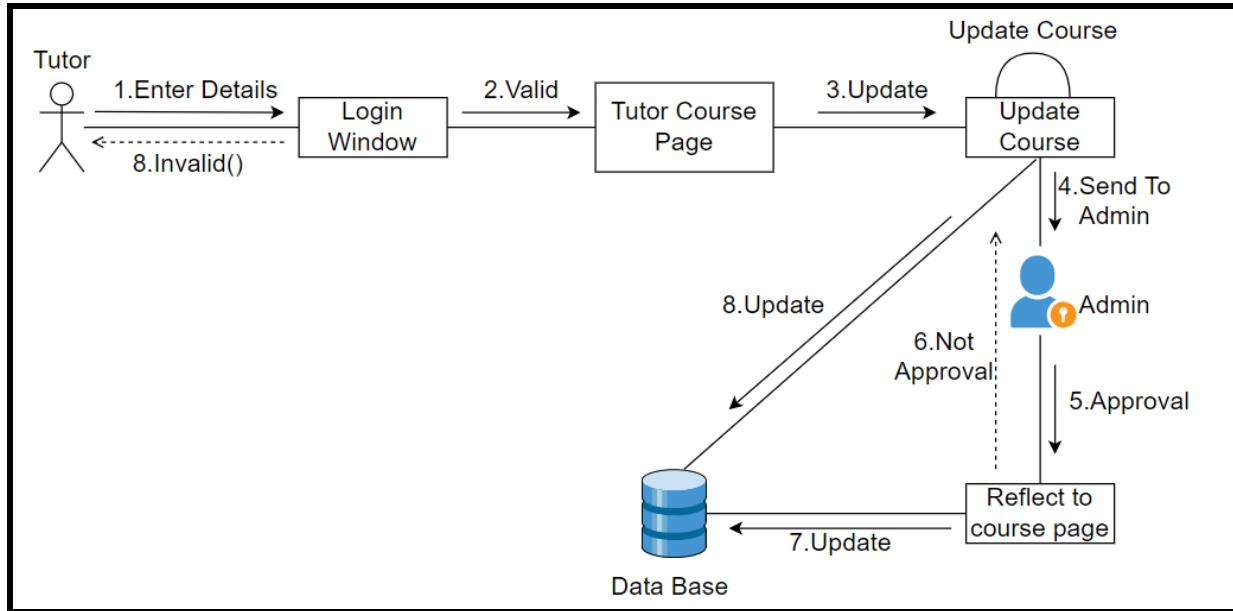
LOGIN



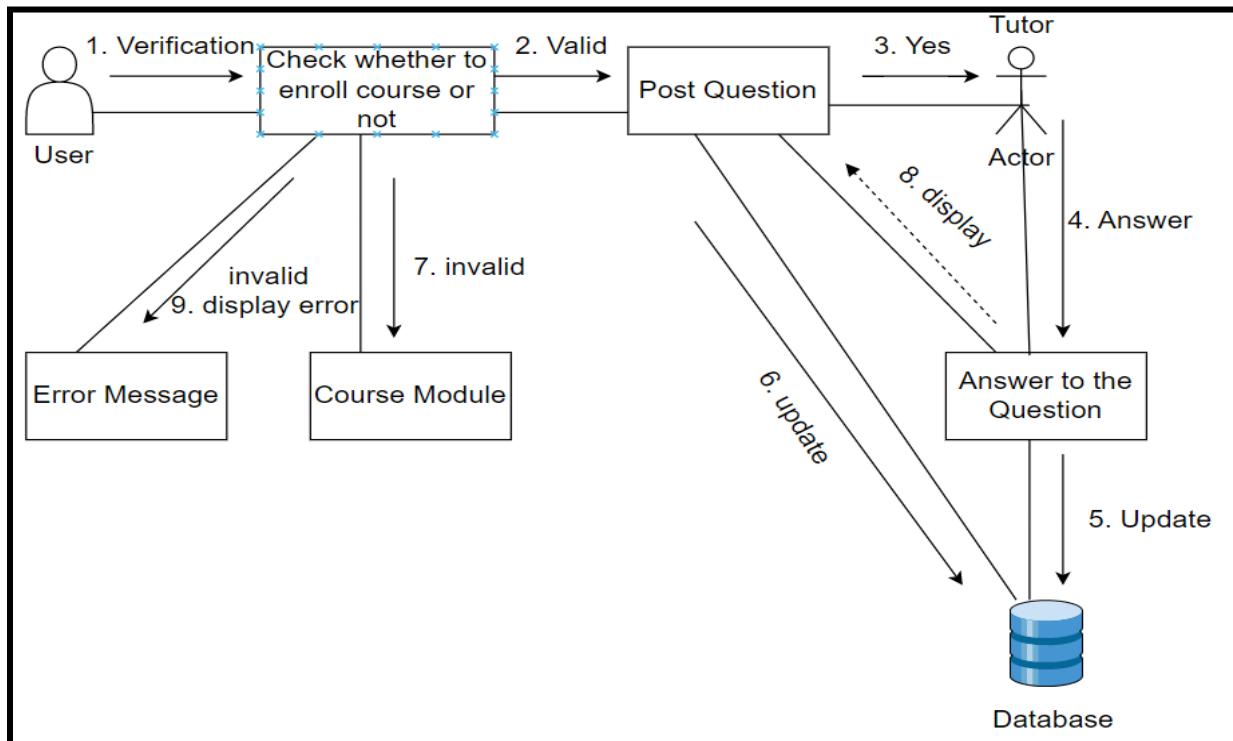
CERTIFICATE



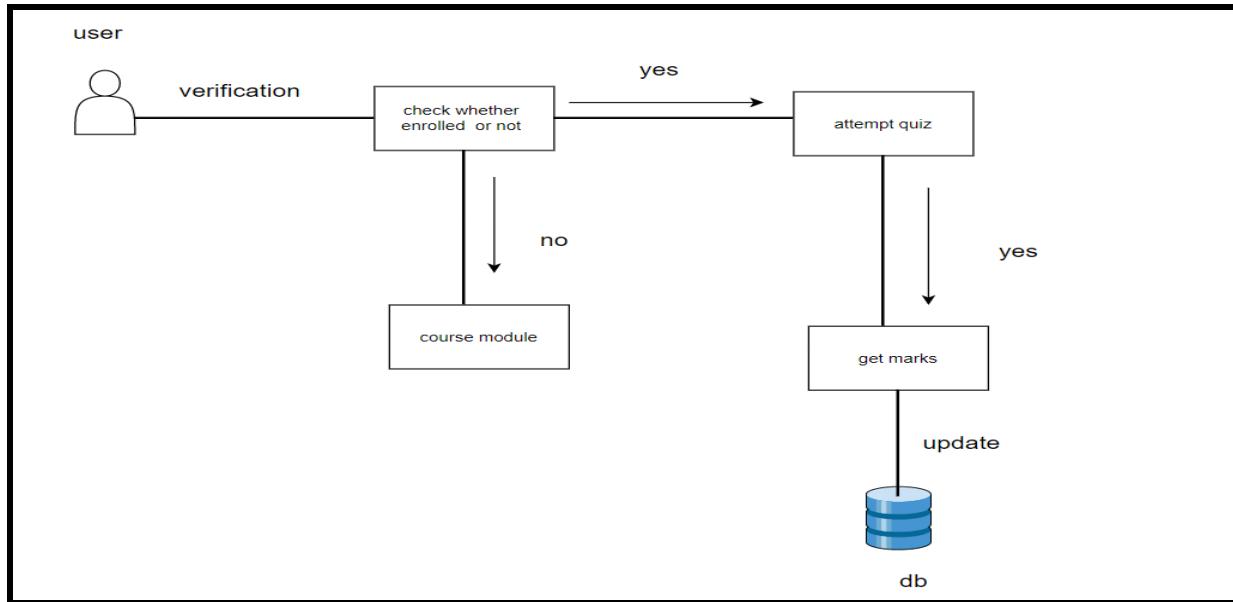
COURSE



MAINTAIN COURSE



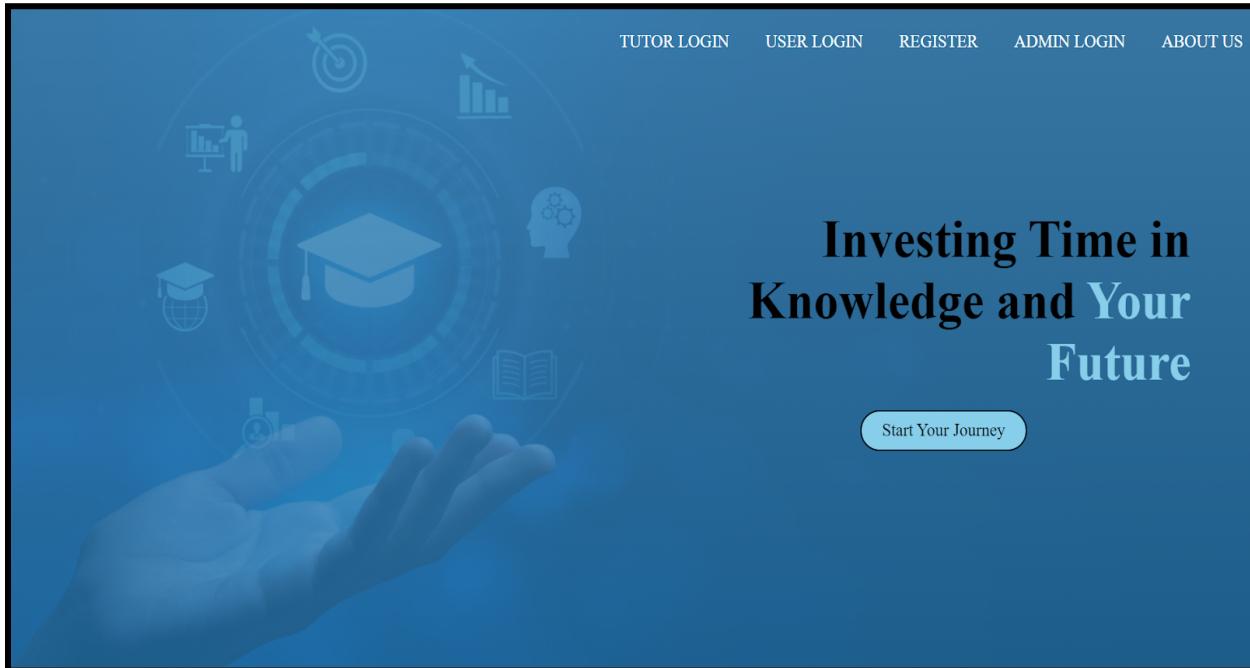
QUERY FORM



QUIZ

CHAPTER 5

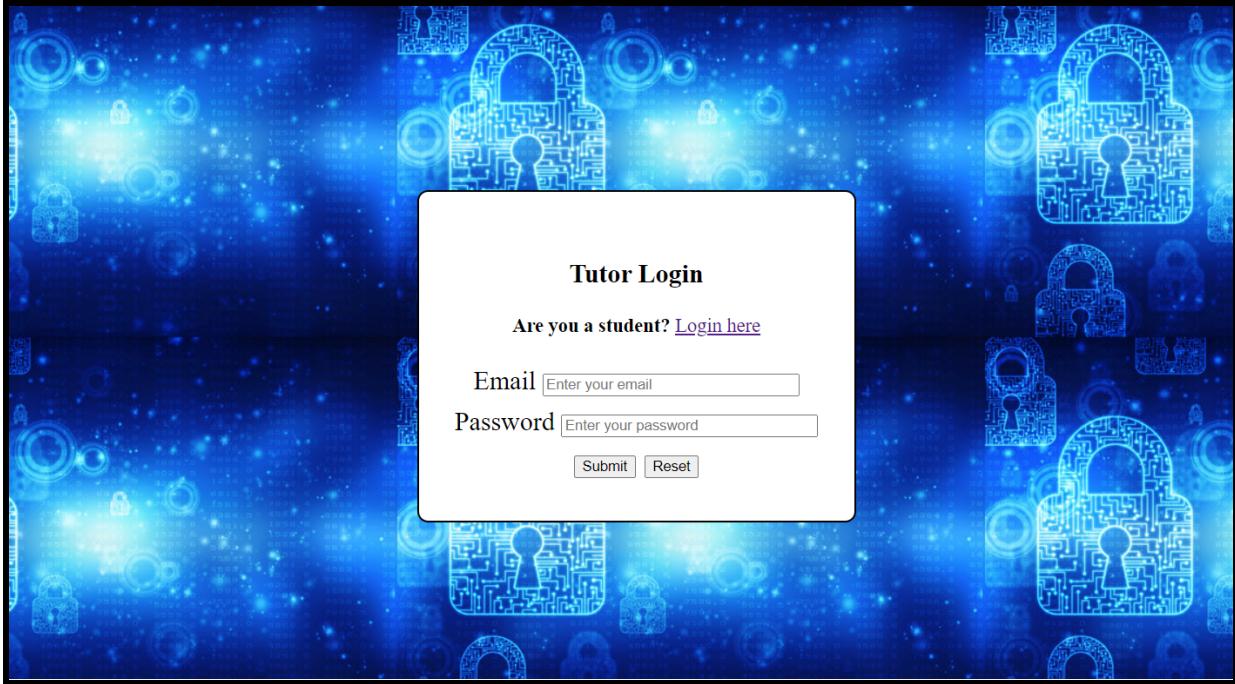
SAMPLE SCREENSHOTS



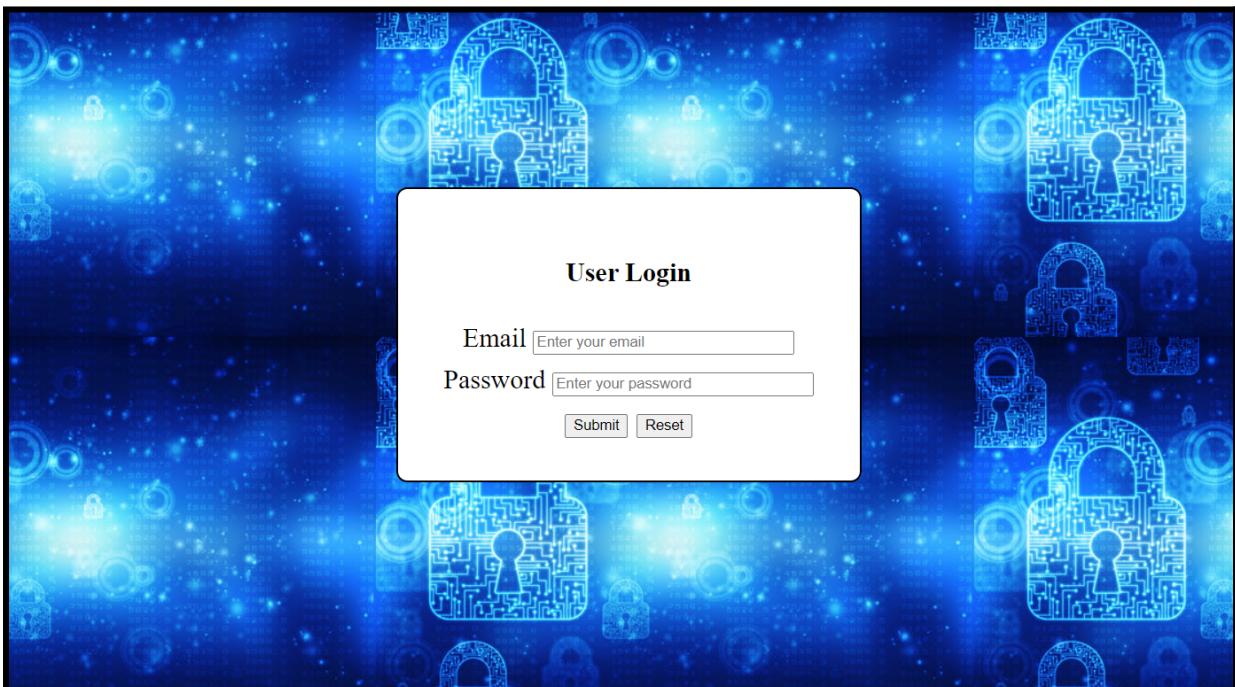
Home Page

A screenshot of the user registration form. The form is contained within a white rectangular box with rounded corners. It includes fields for Name (with placeholder "Enter your name"), Email (with placeholder "Enter your email"), Date of Birth (with placeholder "mm/dd/yyyy" and a calendar icon), Highest Qualification (a dropdown menu currently showing "ssc"), Gender (a dropdown menu currently showing "Male"), Address (with placeholder "Enter your address"), Mobile Number (with placeholder "Enter your mobile"), and Password (with placeholder "Enter your password"). At the bottom of the form are two buttons: "Submit" and "Reset".

User Registration



Tutor Login



User Login

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Course Home Page

WELCOME TO SOFTWARE ENGINEERING COURSE!!!

WEEK-1 WEEK-2 WEEK-3 WEEK-4

LECTURE NOTES:

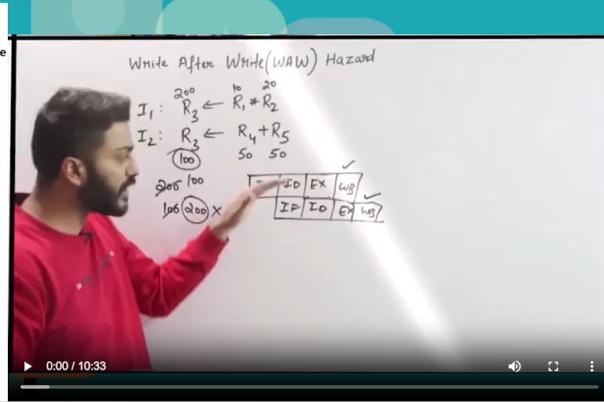
Software is more than just a program code. A program is an executable code, which serves some computational purpose. Software is considered to be collection of executable programming code, associated libraries and documentations. Software, when made for a specific requirement is called **software product**.

Engineering on the other hand, is all about developing products, using well-defined, scientific principles and methods.

Software engineering is an engineering branch associated with development of software product using well-defined scientific principles, methods and procedures. The outcome of software engineering is an efficient and reliable software product.

Characteristics of good software:
A software product can be judged by what it offers and how well it can be used. This software must satisfy on the following grounds:

- Operational
- Transitional
- Maintenance



Software Engineering Course Week -1 Page



LECTURE NOTES:

Verification is the process of checking that a software achieves its goal without any bugs. It is the process to ensure whether the product that is developed is right or not. It verifies whether the developed product fulfills the requirements that we have. Verification is static testing. Verification means Are we building the product right? Validation is the process of checking whether the software product is up to the mark or in other words product has high level requirements. It is the process of checking the validation of product i.e. it checks what we are developing is the right product. It is validation of actual and expected product. Validation is the dynamic testing. Validation means Are we building the right product?

Verification

- 1) Are you building it Right ?
- 2) Checks the system against its specification.
- 3) Done by Tester.
- 4) Concerned with the Conformance of system to its specification.
- 5) Involved System Testing.
- 6) only static.

Validation

- 1) Have you build the Right thing ?
- 2) Checks the final Product against Specification.
- 3) Aim is to make final product error free.
- 4) Involved System Testing.
- 5) only Dynamic.

Attempt Quiz!

Software Engineering Course Week -4 Page

3 of 10 Question



What is a Functional Requirement?

None

specifies the tasks the program should not complete

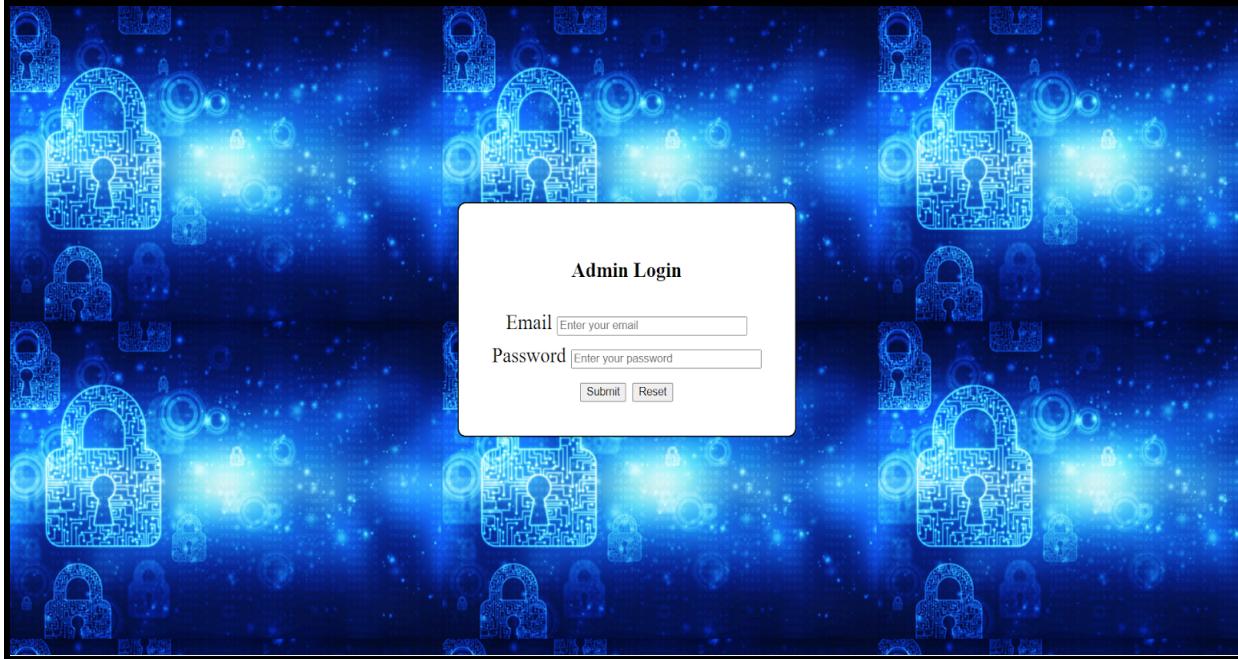
specifies the tasks the program must complete

specifies the tasks the program must not work

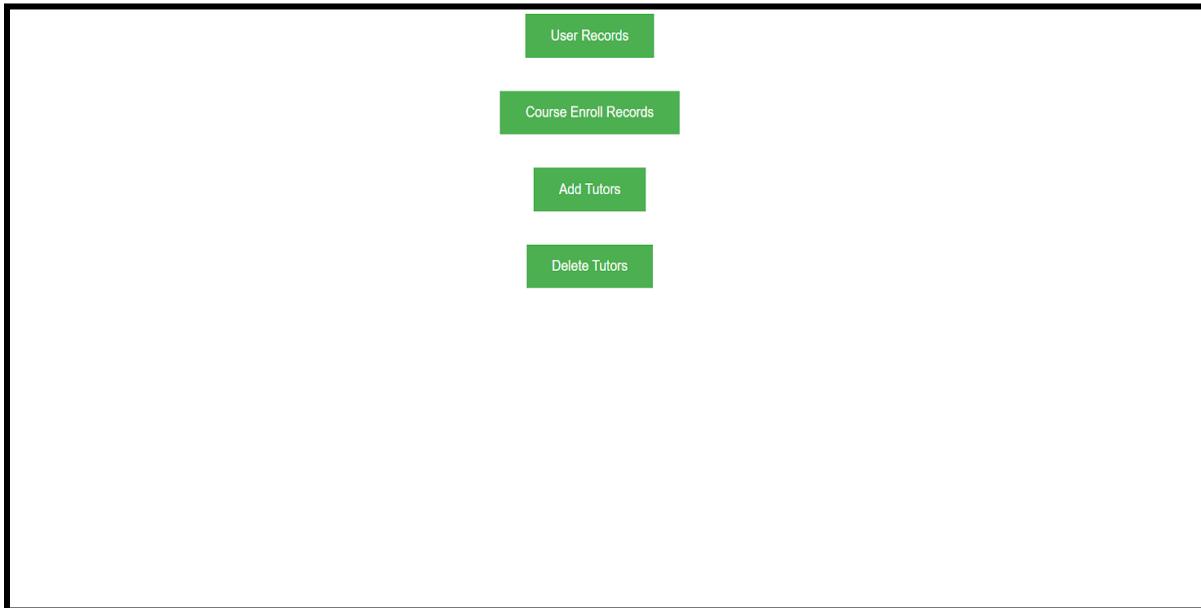
Next

Quiz

ADMIN:



Admin Login Page



Admin Task

Registered Users

Name	Email	Mobile Number	Qualification
deepthi	deepthi@gmail.com	8919217663	MBA
devi	devichinmayi_vulchi@srmmap.edu.in	9876543679	B.Com.
tejaswini	tejaswini@gmail.com	9874563210	B.Sc.

Registered Users**Enrolled Learners Information**

Name	Email	Course Name
Devi Chimmayi Vulchi	devichinmayi_vulchi@srmmap.edu.in	Software Engineering
Sumana Priya Kavuri	suma@gmail.com	Software Engineering
juhitha naga	juhitha_naga@gmail.com	Software Engineering

View Records of Enrolled Users

ADD Tutor

Username:	<input type="text"/>
Email:	<input type="text"/>
Password:	<input type="text"/>
Experience:	<input type="text"/>
Qualification:	<input type="text"/>

ADD Tutor

Add tutors

Delete Tutor

Email:

Delete Tutor

Delete Tutors

Testing for Login:-

```
vulchi1234@vulchi MINGW64 /c/xampp/htdocs/elearning
$ ./vendor/bin/phpunit
PHPUnit 10.1.3 by Sebastian Bergmann and contributors.

Runtime:      PHP 8.2.4
Configuration: C:\xampp\htdocs\elearning\phpunit.xml

...
Time: 00:00.013, Memory: 6.00 MB

OK (3 tests, 3 assertions)
```

CHAPTER 6

CONCLUDING REMARKS

In conclusion, the e-learning project has proven to be a valuable and effective educational solution that has transformed the way knowledge is acquired and shared. Several significant advantages and results like regardless of their location or available time, a wide spectrum of people can access the e-learning website's learning opportunities. Users have 24/7 access to educational resources and information. The users have the flexibility to customize their educational journey to fit their own schedules and paces. The online learning platform provides a flexible learning environment that gives users the freedom to decide when and how they interact with the content. This leads to better learning outcomes.

This project was effective in producing a personalized, adaptable, and accessible online learning environment. It has given the tools to the users so they can learn new things, advance their abilities, and take part in group learning activities. By utilizing technology and removing learning barriers, the project has helped to promote education and create a culture of lifelong learning and skill development.