Contents

Abstract

E-learning fulfils the thirst of knowledge and offers online content that can be delivered for the learner at anywhere, anytime and any age through a wide range of e-learning solution while compared with traditional learning system. It also provides the rapid access to specific knowledge and information. With the rapid growth of voluminous information sources and the time constraint the learning methodology has changed. Learners obtain knowledge through e-Learning systems rather than manually teaching and learning. In this research paper proposes the e-learning management system with web services oriented frame work and SOA. This system supports the cross browser and fully integrated with different databases. This system focused around the several features namely Content Management, Content Protection, Learning Management, Delivery Management, Evaluation management, Access Control, etc., and mainly focused on integrated platform needed for e-learning and managements.

1.1 INTRODUCTION TO PROJECT

E-learning has become popular these days and number of lecturers and students are attracted towards the online learning methods. E-learning has started its evaluation from distance education methods, where the education is not done at a class room level . Distance learning has become successful due to many advantages like its flexibility, ease of use and learning from a remote location as well. Even the business aspects has raised a lot in E-learning and lot of returns are achieved based on E-learning business and it is around US$90 billion at the beginning of 2000.

Mostly e-learning is used by the adults who are already working in some organizations, they are learning for a better qualification with out neglecting their current job and also with out disturbing their earning capability. This e-learning is not only popular for the working employees it is also used by the students and some job searchers also.

In the younger generation e-learning had become a daily requirement as the technology and internet is spread throughout the world . The fact is that e-learning or online learning is generally used by the teenagers. Even though it is popular and most used, e-learning has few limitations. One of such limitations is learners who don't have computer proficiency will use e-learning for attaining good knowledge as the e-learning mainly focuses on the computer technologies, but the learners who don't have good computer skills will feel this as a barrier for them. The other limitation is, in e-learning the physical interaction among the learners will be limited .
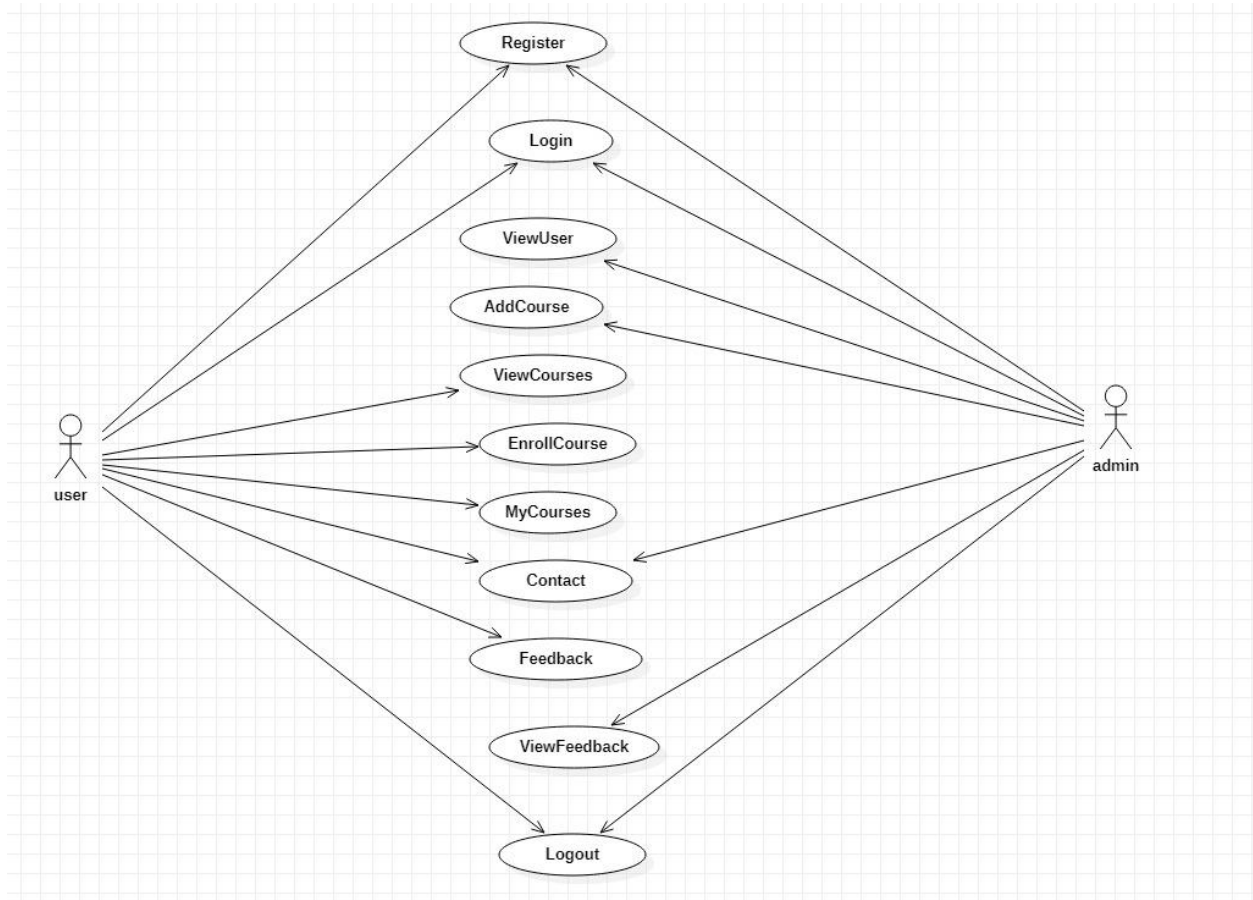
1.2 Problem Statement

Developing a E-Learning Platform using Angular , Spring and Oracle Database where individuals such as Students and Working Professionals can Register and Enroll themselves for various courses and Up-skill themselves on different Frameworks and Programming Languages.
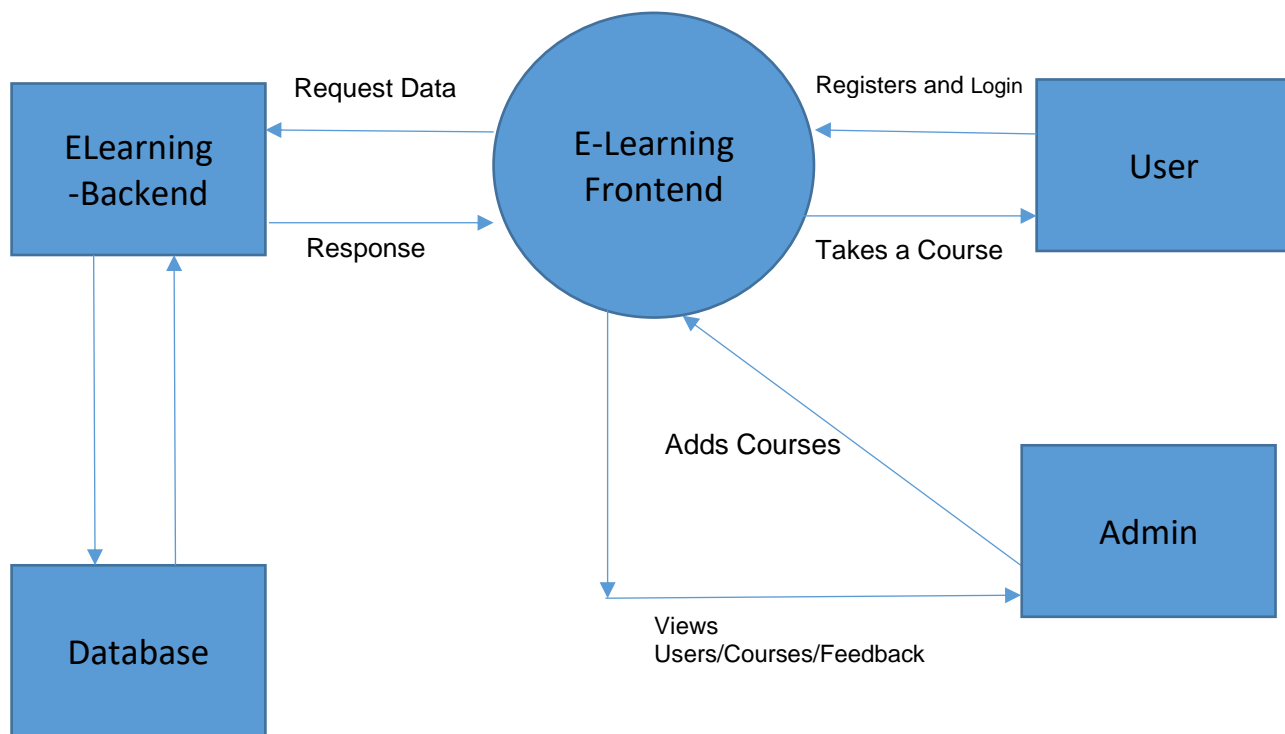
2.1 ER Diagram
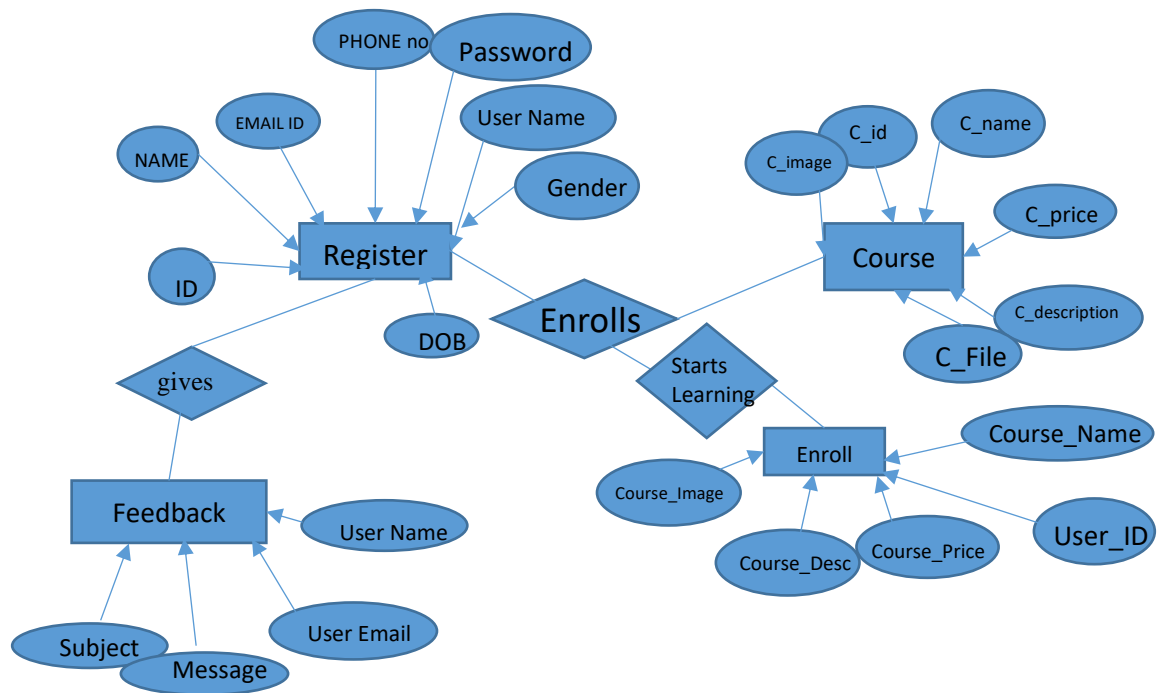
2.2 UML Diagram

2.3 DFD Level 0 Diagram

2.4 Database Tables

CREATING E-LEARNING SCHEMA

Step 1: Connect to database

```
conn system/password
```

Step 2: Create tablespace

```
CREATE TABLESPACE tbs_register DATAFILE 'tbs_register.dat'
SIZE 1M AUTOEXTEND ON;
```

Step 3: Create a new user in Oracle

```
CREATE USER elearning IDENTIFIED BY learning123 DEFAULT
TABLESPACE tbs_register QUOTA unlimited on tbs_register;
```

Step 4: Grant permissions

```
GRANT create session TO register;

GRANT create table TO register;

GRANT create sequence TO register;
```

Step 5: Create Tables

1. **Register Table for User Registration :**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
REGISTERELEARN	ID	Number	-	10	0	1	-	-	-
	CONFIRMPASSWORD	Varchar2	1020	-	-	-	✓	-	-
	DOB	Varchar2	1020	-	-	-	✓	-	-
	EMAIL	Varchar2	1020	-	-	-	✓	-	-
	FIRSTNAME	Varchar2	1020	-	-	-	✓	-	-
	GENDER	Varchar2	1020	-	-	-	✓	-	-
	LASTNAME	Varchar2	1020	-	-	-	✓	-	-
	PASSWORD	Varchar2	1020	-	-	-	✓	-	-
	PHONE	Varchar2	1020	-	-	-	✓	-	-
	USERNAME	Varchar2	1020	-	-	-	✓	-	-

```
create table register (id number primary key, firstname
varchar2(100), lastname varchar2(100) DOB varchar2(100),
gender, phone number, email varchar2(100), username
varcha2(100), password varchar2(100), confirmpassword
varchar2(100));
```

2. **Course Table for Courses:**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
COURSE	ID	Number	-	10	0	1	-	-	-
	CFILE	Varchar2	1020	-	-	-	✓	-	-
	COURSE_DES	Varchar2	1020	-	-	-	✓	-	-
	COURSE_FEES	Number	-	10	0	-	-	-	-
	COURSE_NAME	Varchar2	1020	-	-	-	✓	-	-
	IMAGE	Varchar2	1020	-	-	-	✓	-	-
									1 - 6

Create table course(Id number primary key, cfile varchar2(100) ,course_des
varchar2(100), course_fees number, course_name varchar2(100), image varchar2(100))

3. Feedback Table for Feedback from Users:

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
FEEDBACK	ID	Number	-	10	0	1	-	-	-
	MESSAGE	Varchar2	1020	-	-	-	✓	-	-
	SUBJECT	Varchar2	1020	-	-	-	✓	-	-
	USER_EMAIL	Varchar2	1020	-	-	-	✓	-	-
	USER_NAME	Varchar2	1020	-	-	-	✓	-	-
									1 - 5

Create table Feedback (id number primary key, messege varchar2(100), subject varchar2(100), user_email varchar2(100), user_name varchar2(100))

4. Enroll Table for User Enrolled Courses :

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
ENROLL	ID	Varchar2	1020			1			
	CFILE	Varchar2	1020	-	-	-	✓	-	-
	COURSE_DES	Varchar2	1020	-	-	-	✓	-	-
	COURSE_FEES	Varchar2	1020	-	-	-	✓	-	-
	COURSE_NAME	Varchar2	1020	-	-	-	✓	-	-
	IMAGE	Varchar2	1020	-	-	-	✓	-	-
	USERNAME	Varchar2	1020	-	-	-	✓	-	-
									1 - 7

Create table enroll(id number primary key, cfile varchar2(100), course_des varchar2(100), course_fees varchar2(100), course_name varchar2(100), image varchar2(100), username varchar2(100))

1. Example of Entered Rows in Register Table

ID	CONFIRMPASSWORD	DOB	EMAIL	FIRSTNAME	GENDER	LASTNAME	PASSWORD	PHONE	USERNAME
1	123456789	1997-05-05	rahul@gmail.com	rahul	Male	Telkar	123456789	7204195579	rahultr
3	12345678	1997-02-12	gowthami@gmail.com	Gowthami	Female	g	12345678	7541254785	gowthami
4	12345678	1997-02-12	shirisha@gmail.com	Arab Shirisha	Female	g	12345678	7541254785	shirisha
5	12345678	1997-02-12	prasanna@gmail.com	Prasanna	Male	P	12345678	7541254785	prasanna
6	12345678	1997-02-12	harshitha@gmail.com	Harshitha	Female	P	12345678	7541254785	harshitha
7	12345678	1997-02-12	Iswarya@gmail.com	Iswarya	Female	P	12345678	7541254785	Iswarya

6 rows returned in 0.02 seconds   CSV Export

2. Example of Rows in Courses Table

ID	CFILE	COURSE_DES	COURSE_FEES	COURSE_NAME	IMAGE
1002	python	Python is a high-level programming language	299	Python	python
1001	java	Java is a high-level programming language	299	JAVA	java
1004	c	C programming concepts	299	C programming	c
1003	angular	Angular is a platform and framework	100	Angular	angular

4 rows returned in 0.06 seconds   CSV Export

3. Example of Rows in Feedback Table

ID	MESSAGE	SUBJECT	USER_EMAIL	USER_NAME
8	About angular course : Good course	course	shirisha@gmail.com	shirisha
9	About Java course : Good course	course	rahul@gmail.com	rahul

2 rows returned in 0.22 seconds   CSV Export

4. Example of Row in Enroll Table

ID	CFILE	COURSE_DES	COURSE_FEES	COURSE_NAME	IMAGE	USERNAME
1002	python	Python is a high-level programming language	299	Python	python	rahultr

1 rows returned in 0.07 seconds   CSV Export
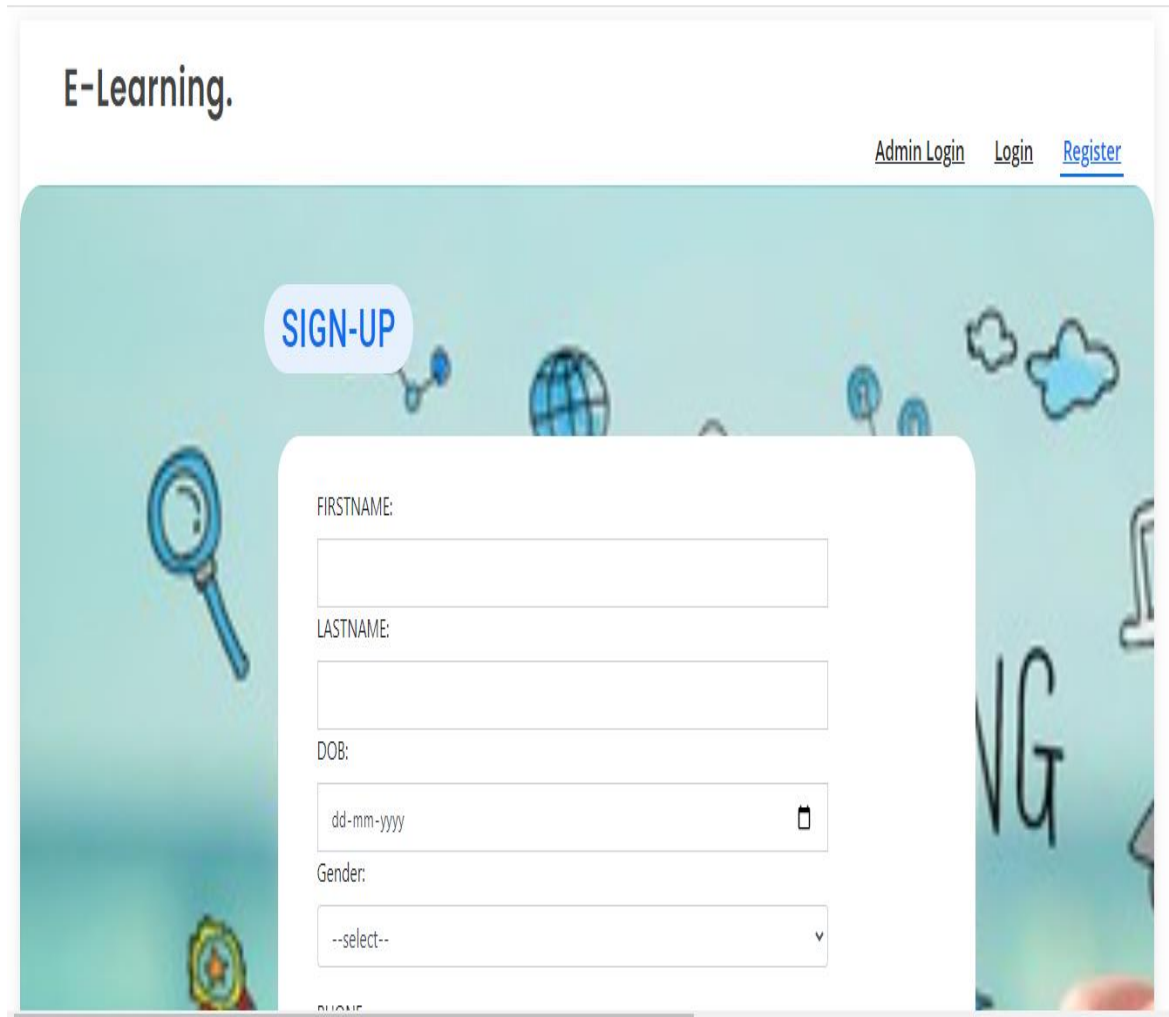
1. Home Page

The following is the Home Page for the ELearning Project here the user can navigate to different part of the website. He/She can also view the Courses Available, Contact us Page and other Parts of the Website.
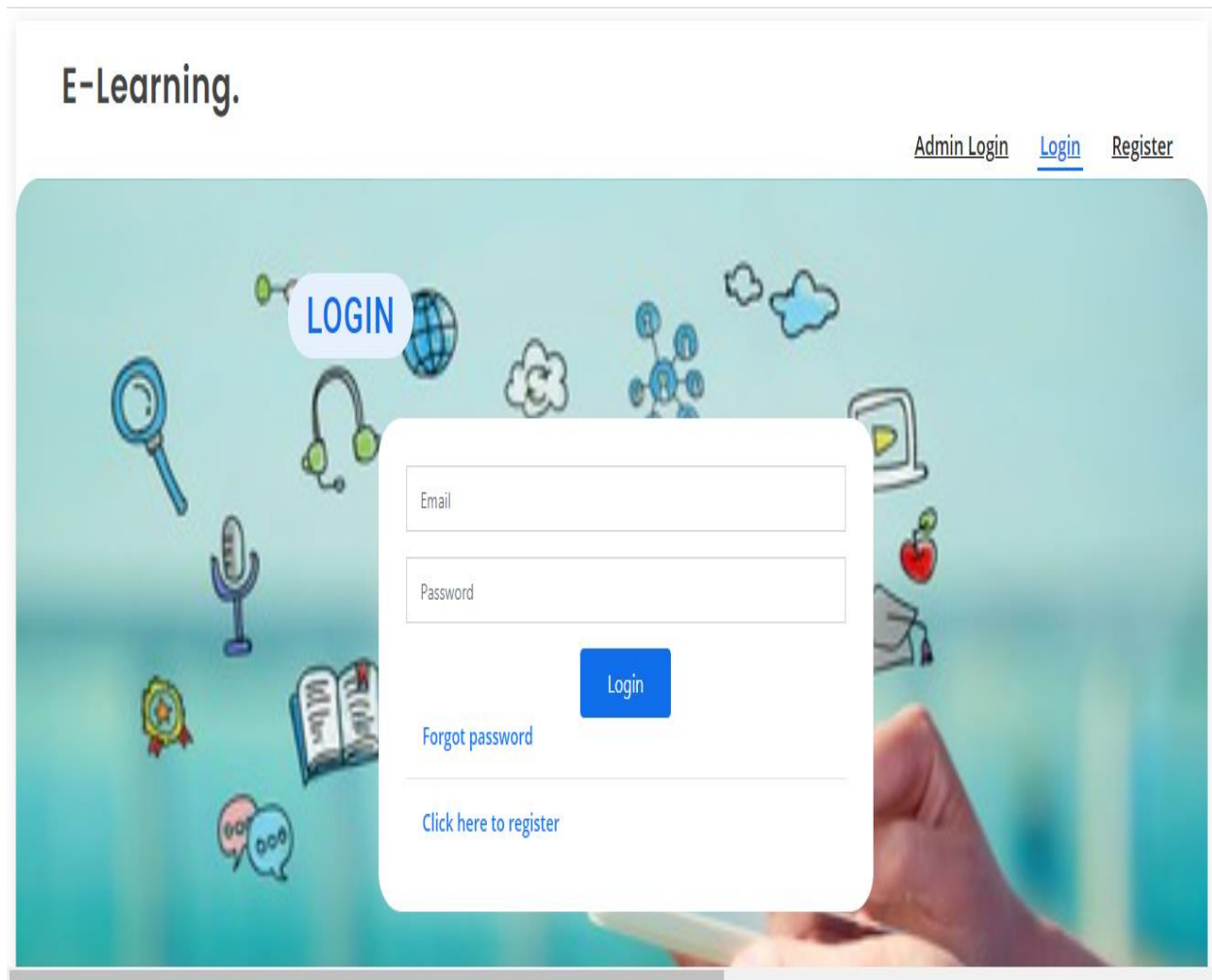
2. Sign-Up /Register Page

The Sign-Up Page enables the user to Register on the website. The user has to fill-up all the details such as Name, DOB, Gender, Email-Id, Phone number, Password after the user registers, the details will be stored in the REGISTER table in the database through the Backend of Spring Boot. After this the user can use his set Email-id and password to Login and Enroll for Courses.

3. Login Page

The User will able to Login in the Login Page through the Email –id and Password set while Registration. The Project will check credentials from the REGISTRATION Table in the Database and will be able to view Courses Available and Enroll for Courses.

4. Courses Page

In the Courses Page, the User will be able to view all the courses available for Learning and will be able to Enroll for the courses, Once the user clicks on the Enroll Button, The Course details will be stored with the User ID and User Name in the Database in the Table 'Enroll'.

The User will also be able to view the courses he has Enrolled for in the MyCourses part after he Logs in some other time.

5. My Profile Page

E-Learning.

My Profile

Name : rahul

Username : rahultr

Email : rahul@gmail.com

Dob : 1997-05-05

Gender : Male

Phone : 7204195579
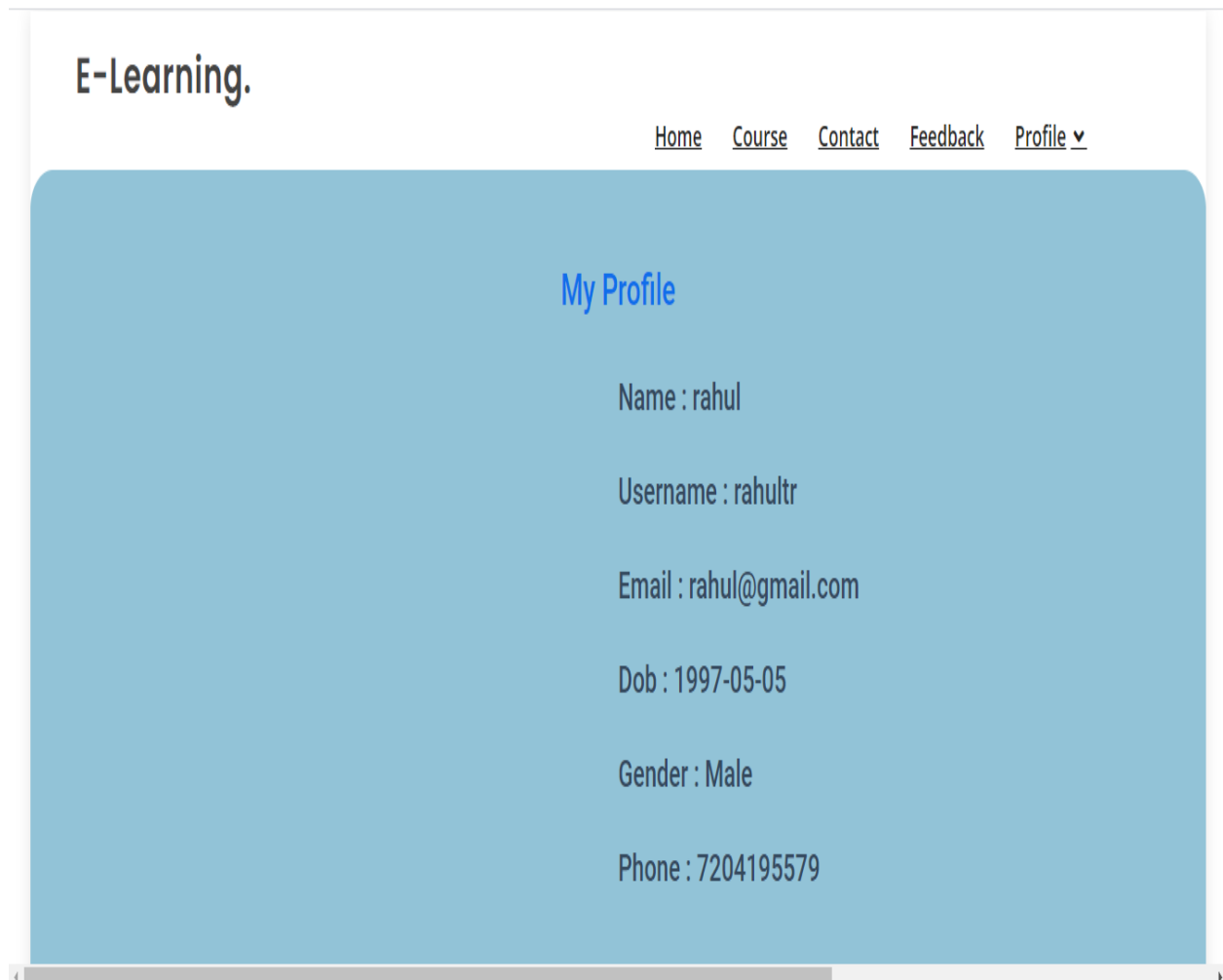
The My Profile Page allows user to view the details he has entered while Registration. This information is retrieved from the REGISTER table.

6. My Learning Page

The My Learning Page allows user to view the Courses he has enrolled for this data is retrieved from the COURSE database .From here, the user can also view the resources available in the courses.

7. Course Resource Page
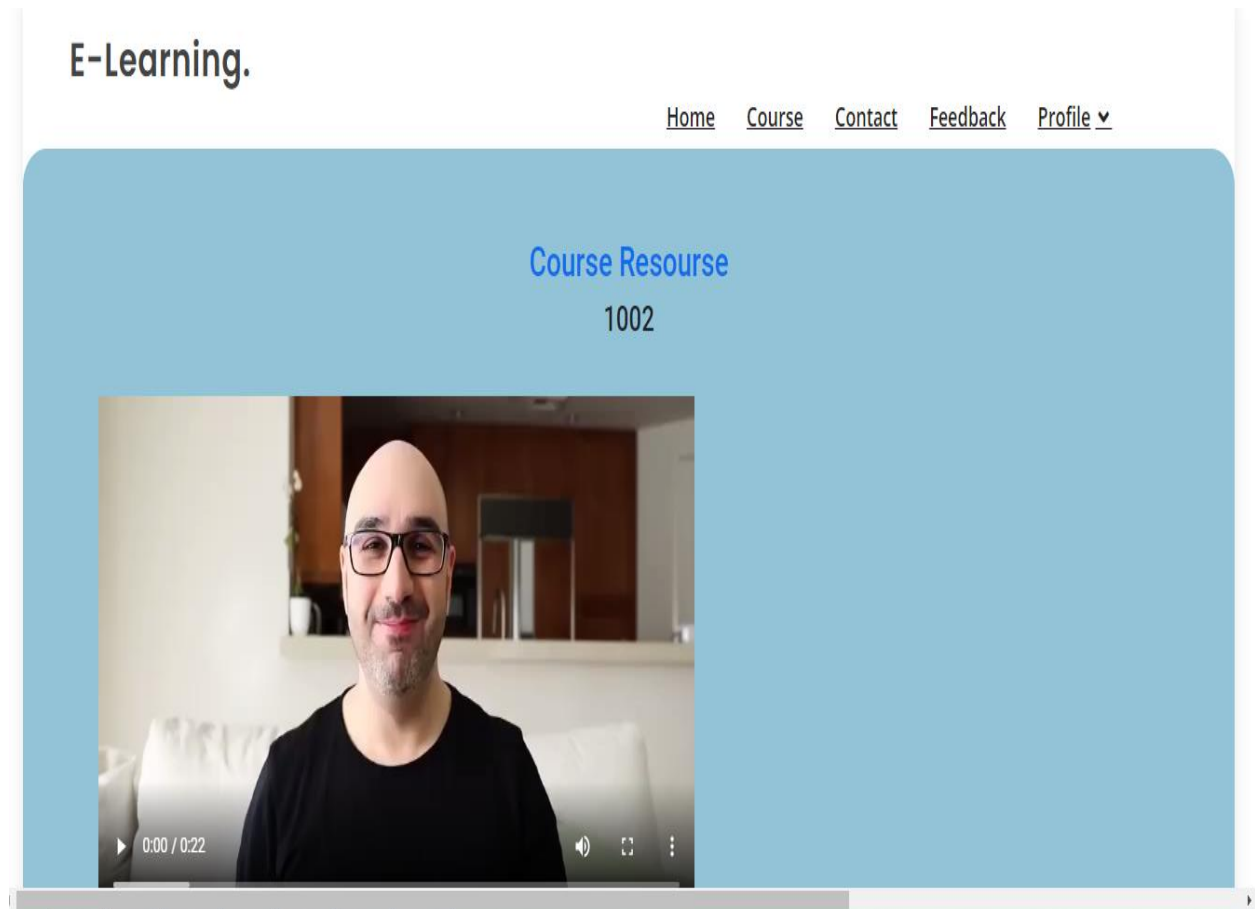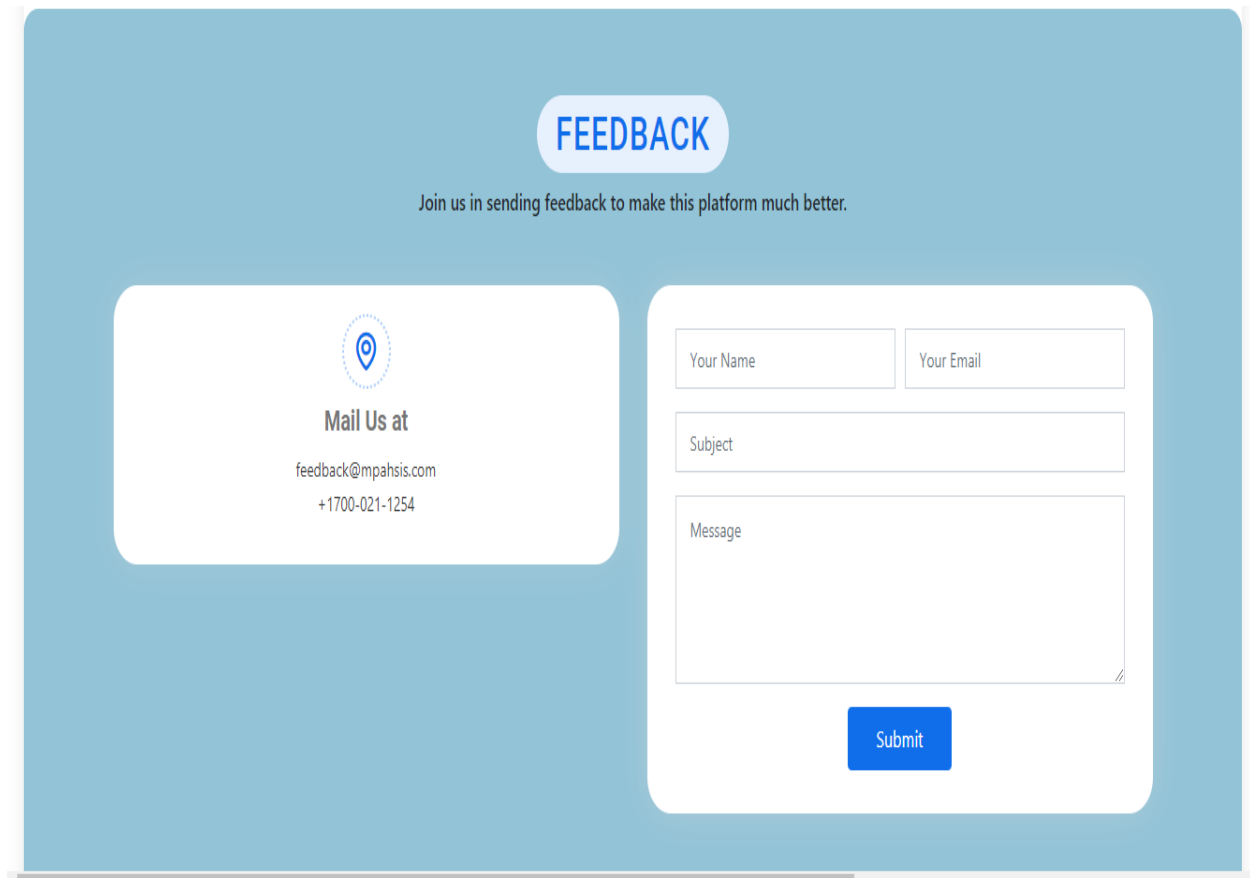
The Course Resource Page allows user to watch the Videos of the Course He/She has enrolled for. User can anytime Navigate to other part of Website if he wants to.

8. Forgot Password Page
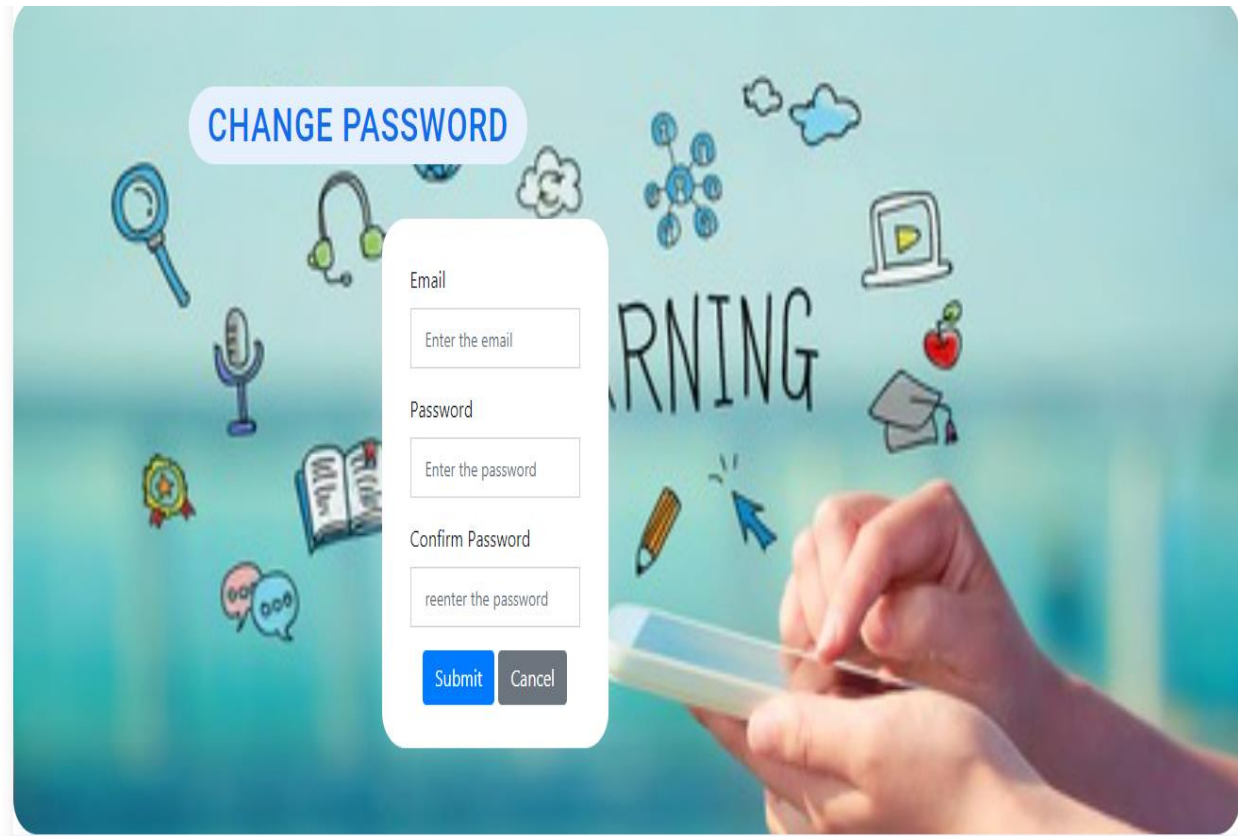
The User can click on the Forgot Password link on the Login Page in case he forgets the password after that the user will be redirected to forgot password page here the user has to enter his Email Id and enter the new password the Password will be updated in the REGISTER table in the database.

9. Feedback Page

The Feedback Page allows user to give a feedback about his Experience on the Website .The user has to enter his name, email, Subject and the Message. After the user clicks on the Submit button the Details submitted by the User will be stored in the FEEDBACK Table in the Database.

10.   Admin Login Page
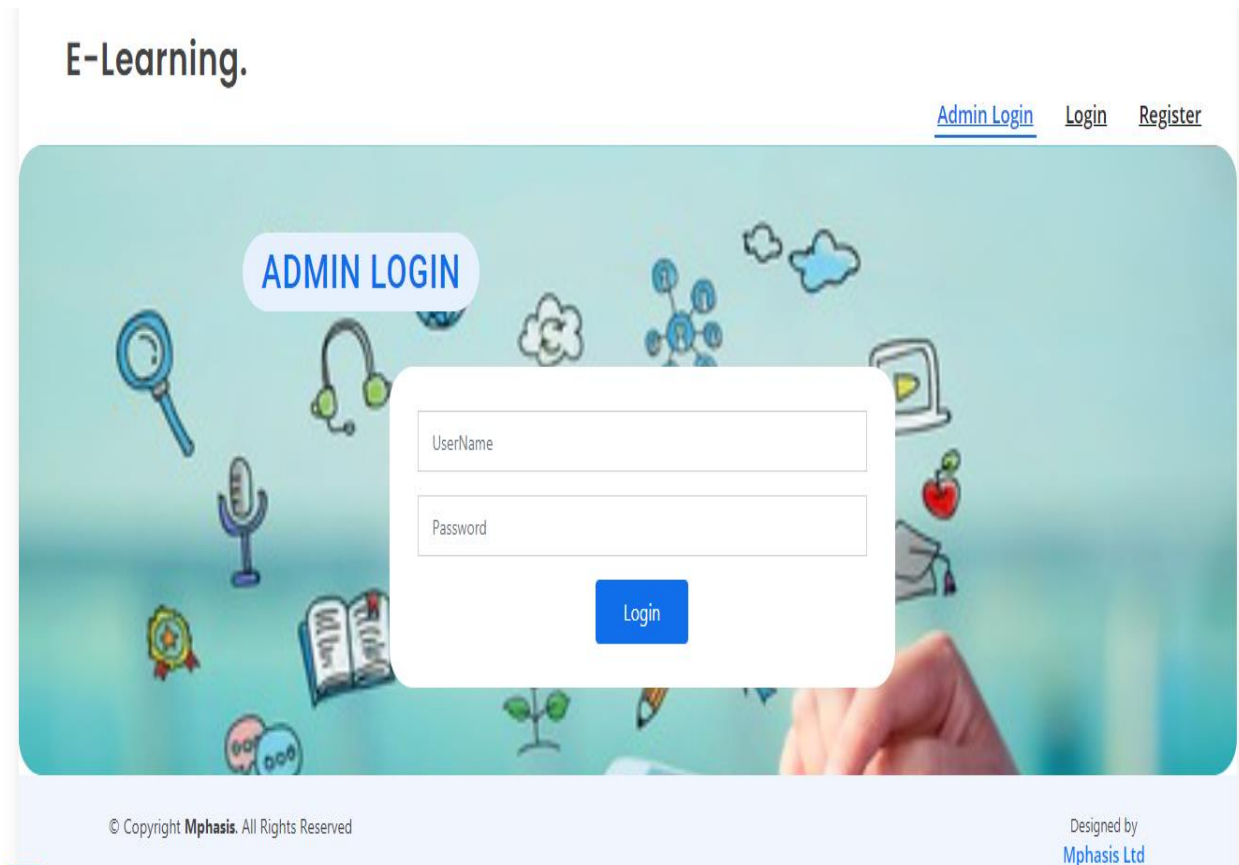
The Admin Login page is for admin to login to the website and check different
Data such as Courses, Users and Feedback after the Admin Logs in successfully,
He is able to Add course, view number of Users and Feedbacks.

11.   Add Courses for Admin Page

The Add Course Page allows Admin to add Courses to the Website. The Admin is has to enter a valid course id, course name, course Description, course price, course thumbnail link and the course resource link. After the admin fills in all the details all the details will stored in the COURSE table in the database.

## 12.	User Details Page

The Admin is able to view all the users who have registered in the User Details Page this data is retrieved from the Database from the table REGISTER and displayed to the Admin.

13.   Submitted Feedbacks Page

The Admin is able to view all the feedbacks given by the users who have registered in the Feedback Page this data is retrieved from the Database from the table 'FEEDBACK' and displayed to the Admin.

14.   Contact us Page
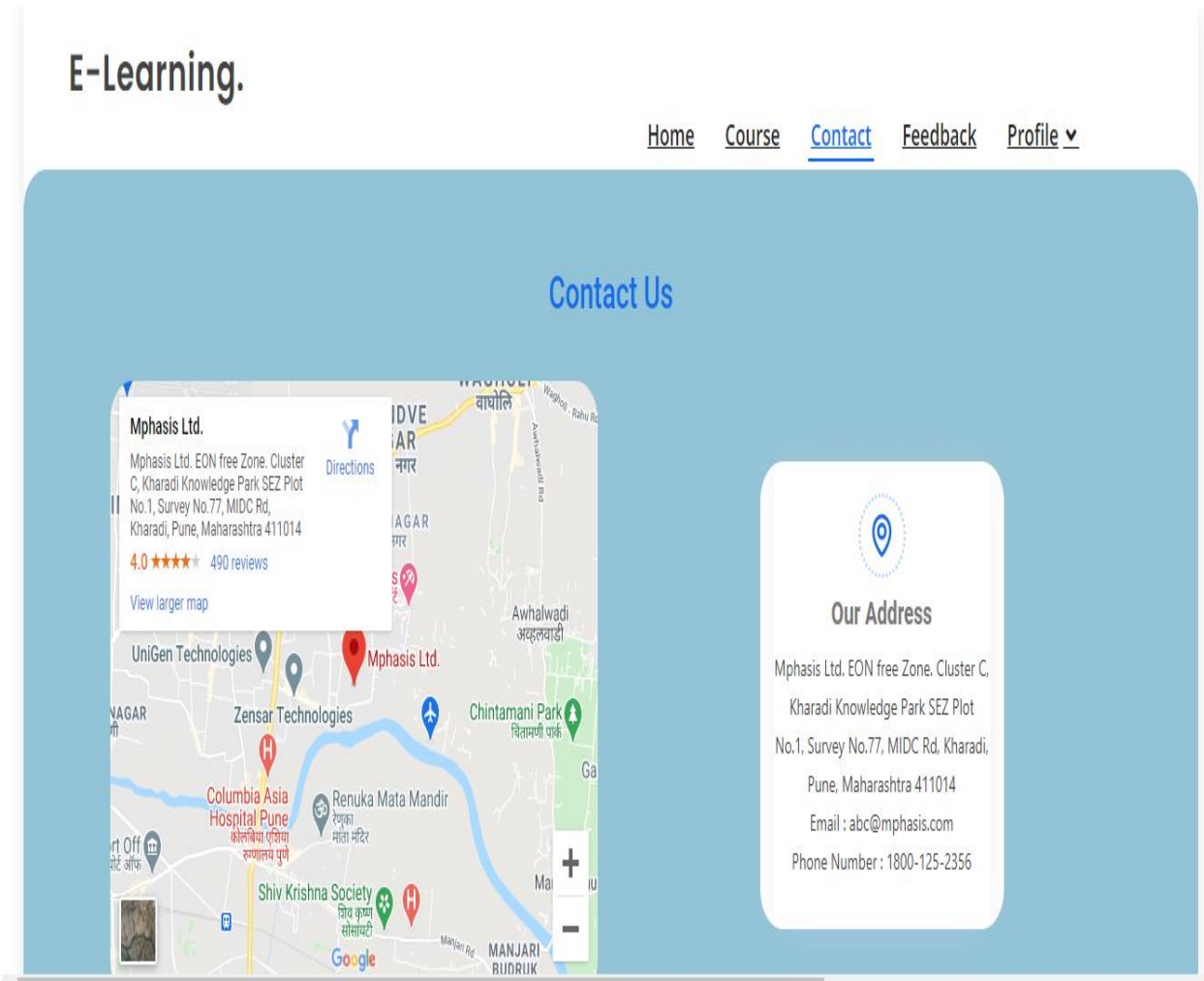
The Contact Us page allows user to locate to Mphasis office and provides the Contact details of the office for any queries and other Customer Support related activities.

15.   Backend Folder Structure
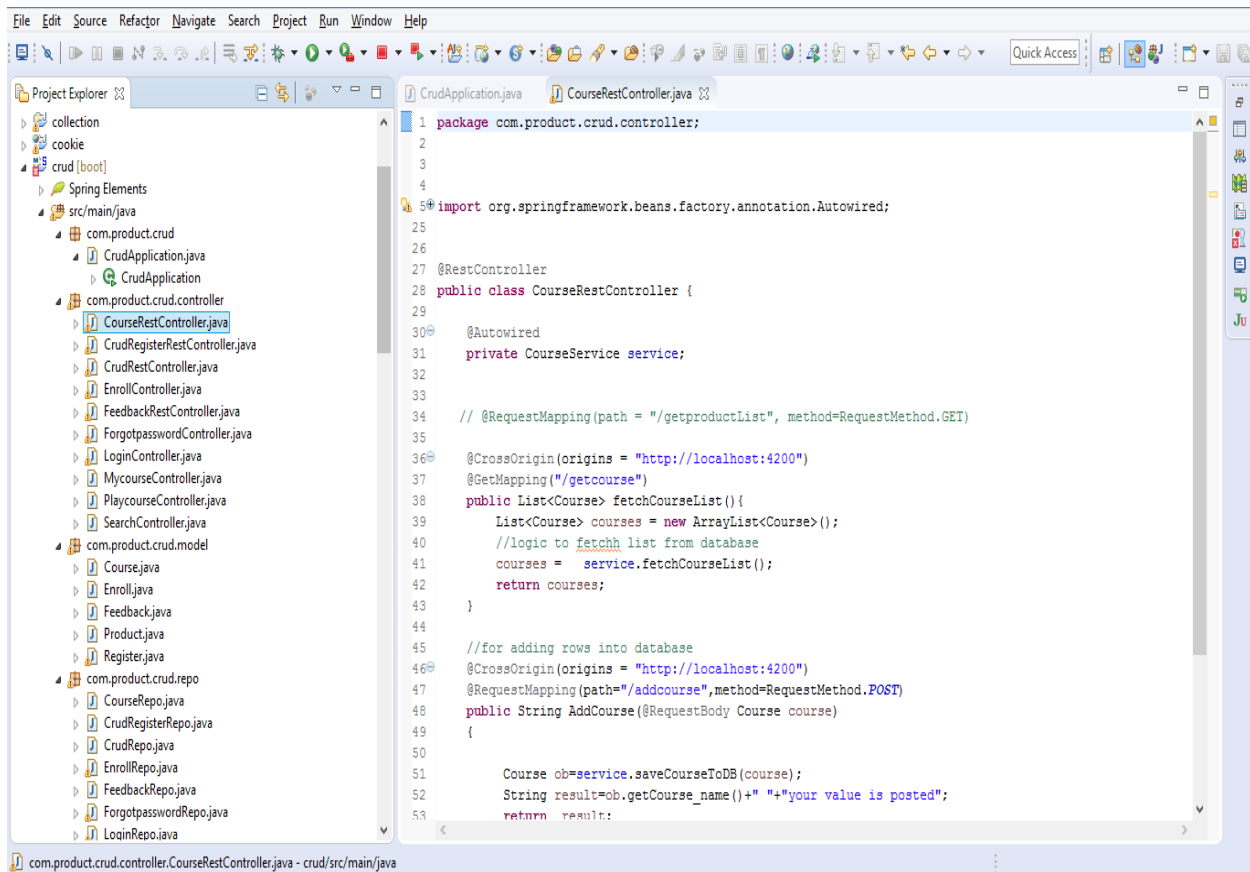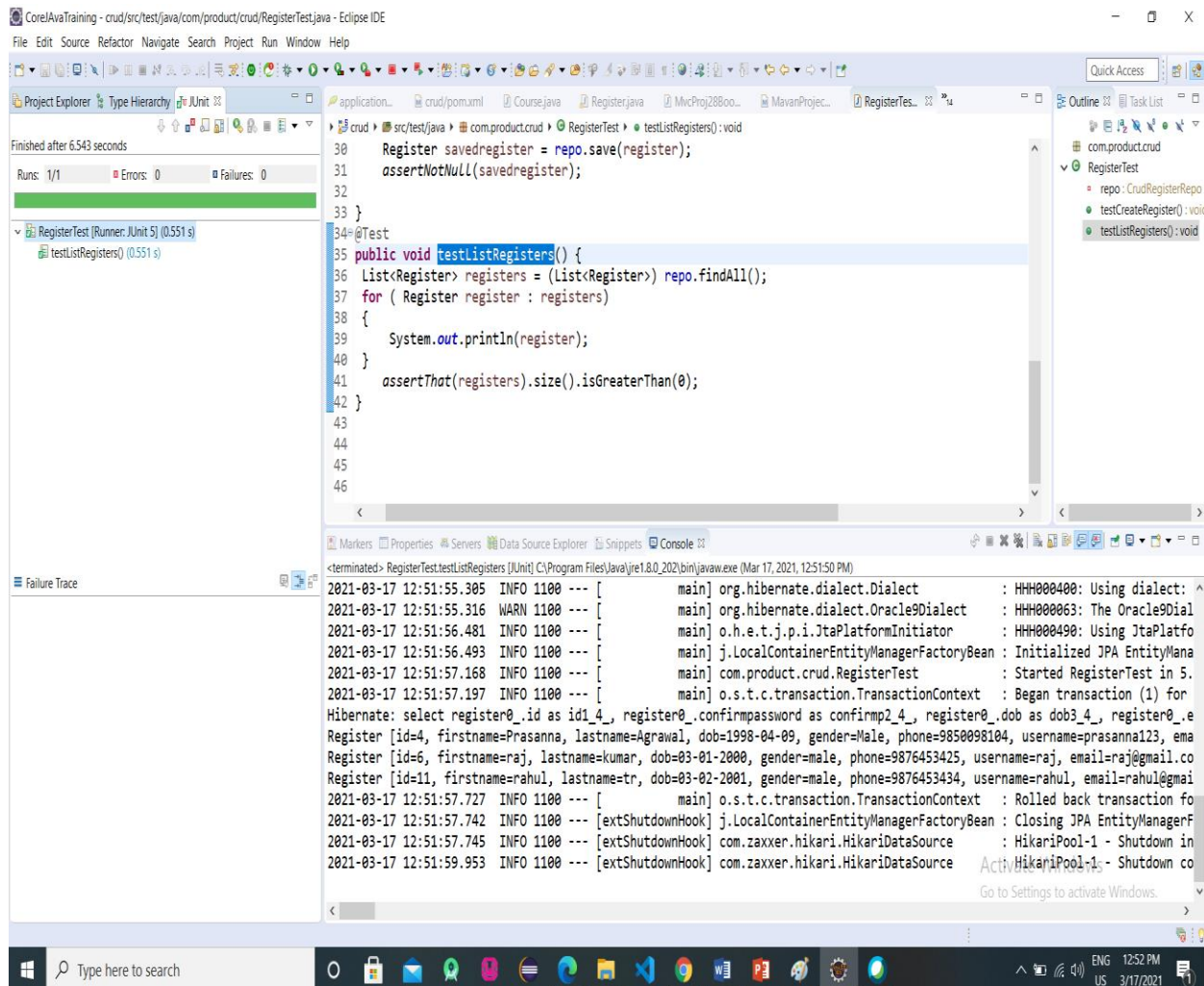
The following is the backend folder Structure of the project we have used spring boot for it and this takes data from the webpages and allows it to store it as rows in database tables.

1. JUnit Test for TestCreateRegister():
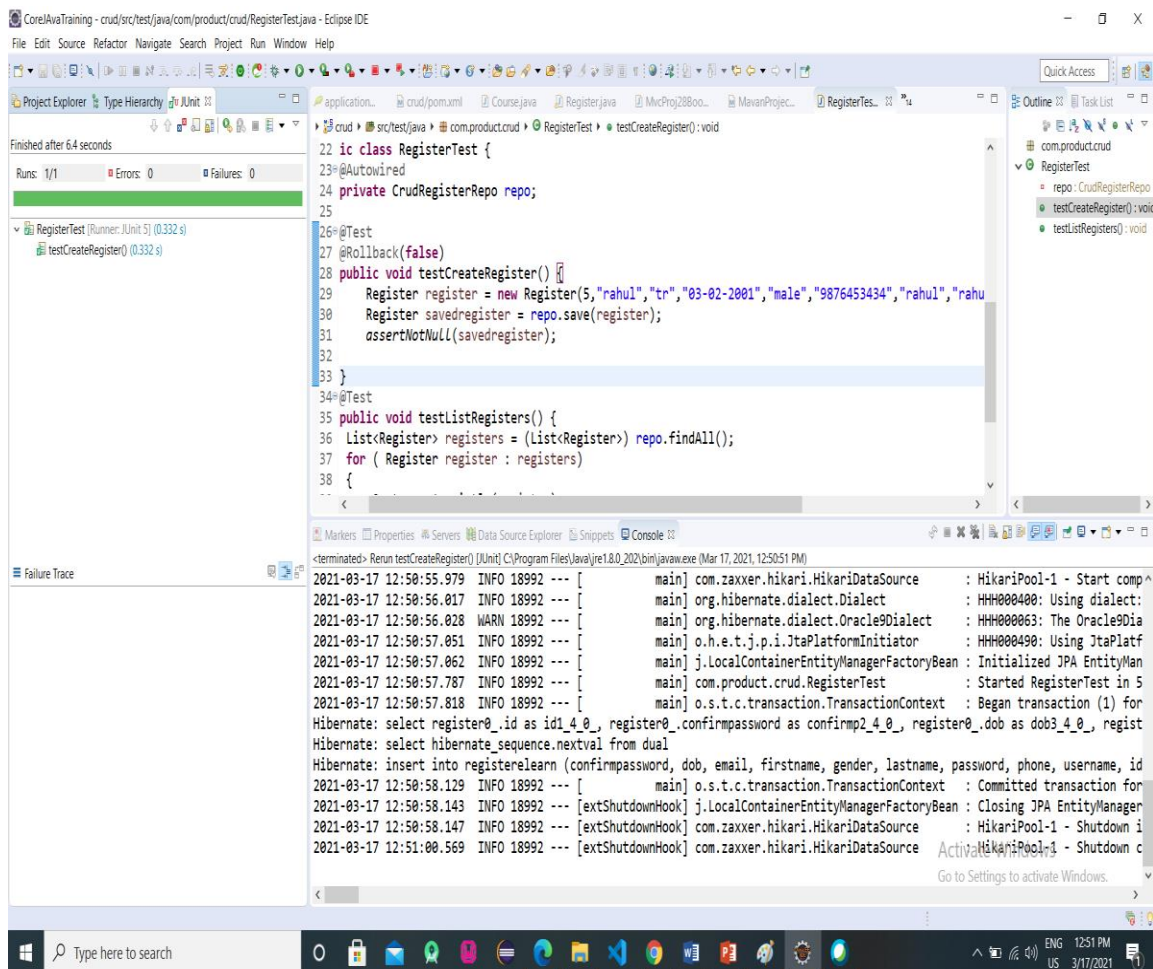
This is the JUnit Test for Create Query it checks whether the Program is writing the query and all the data is being entered into the database we have used oracle as the database and testing the controller through this program.

2. JUnit Test for TestListRegister():

This is the JUnit Test for Listing the Row in the database checks whether the Program is retrieving the data is from the database we have used oracle as the database and testing the controller through this program

Conclusion

It is concluded that the application works well and satisfy the both registered and unregistered. The application is tested very well and errors are properly removed. The site is simultaneously accessed from more than one system.

The site works according to the restrictions provided in their respective browsers. The speed of the transactions become more enough now. In this site the user can choose appropriate courses to learn.