

# **Contents**

<b>Sr. No.</b>	<b>Topic</b>	<b>Page No.</b>
	<b>Abstract</b>	<b>i</b>
<b>Chapter-1</b>	<b>Introduction</b>	<b>1</b>
<b>Chapter-2</b>	<b>Diagrams and SQL Tables</b>	<b>5</b>
<b>Chapter-3</b>	<b>Frontend Working and Backend Structure</b>	<b>9</b>
<b>Chapter-4</b>	<b>Junit-Tests</b>	

## **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.

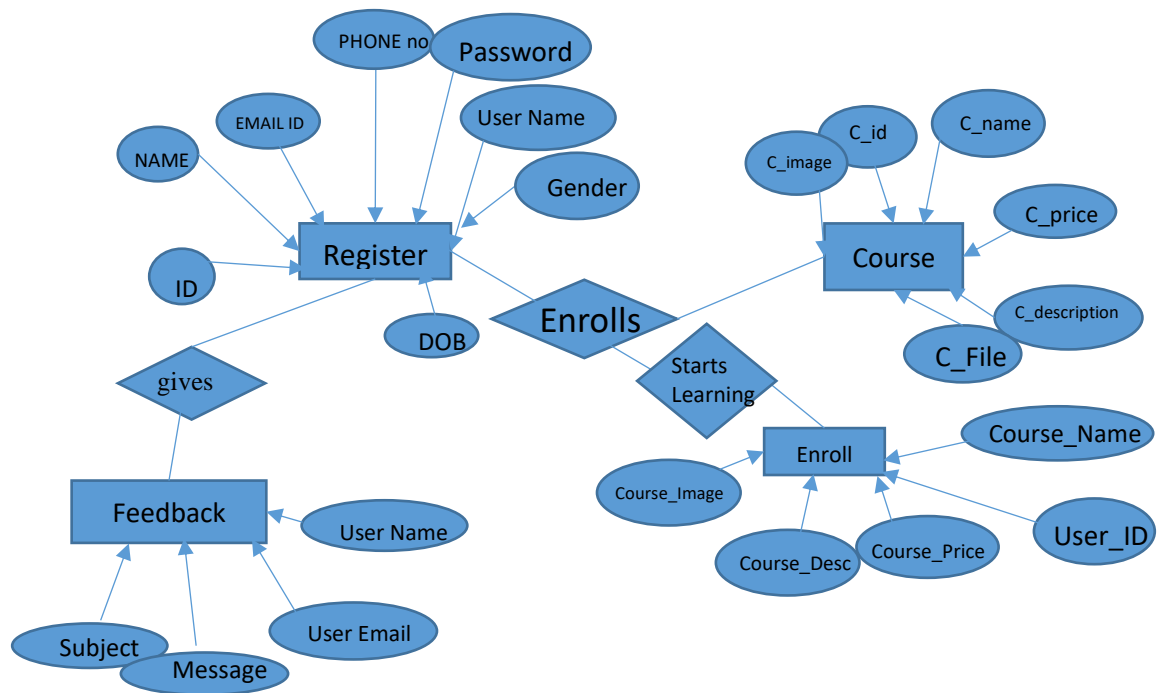
Mostly e-learning is used by the adults who are already working in some organizations, they are learning for a better qualification with out neglecting their current job and also with out disturbing their earning capability. This e-learning is not only popular for the working employees it is also used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

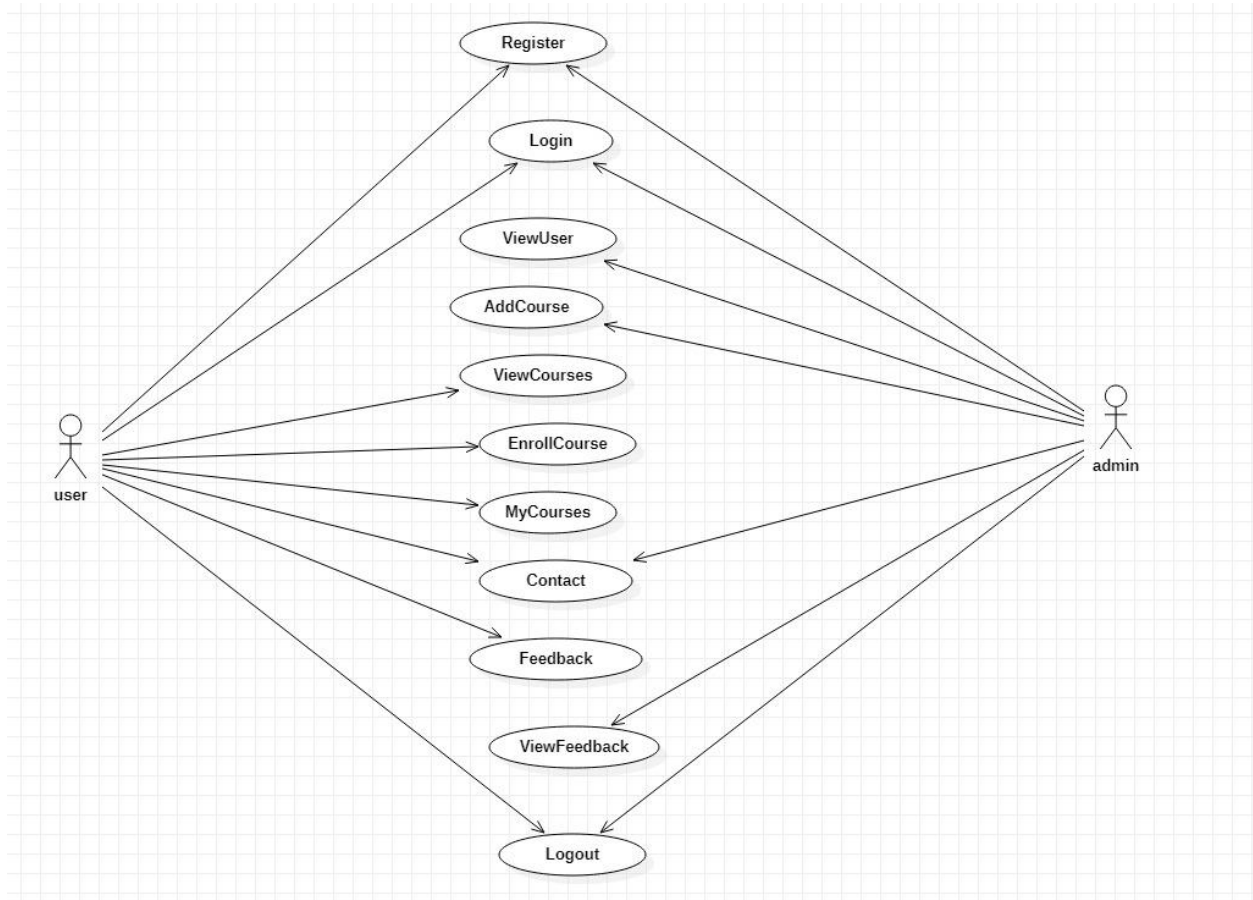
## **1.2 Problem Statement**

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.

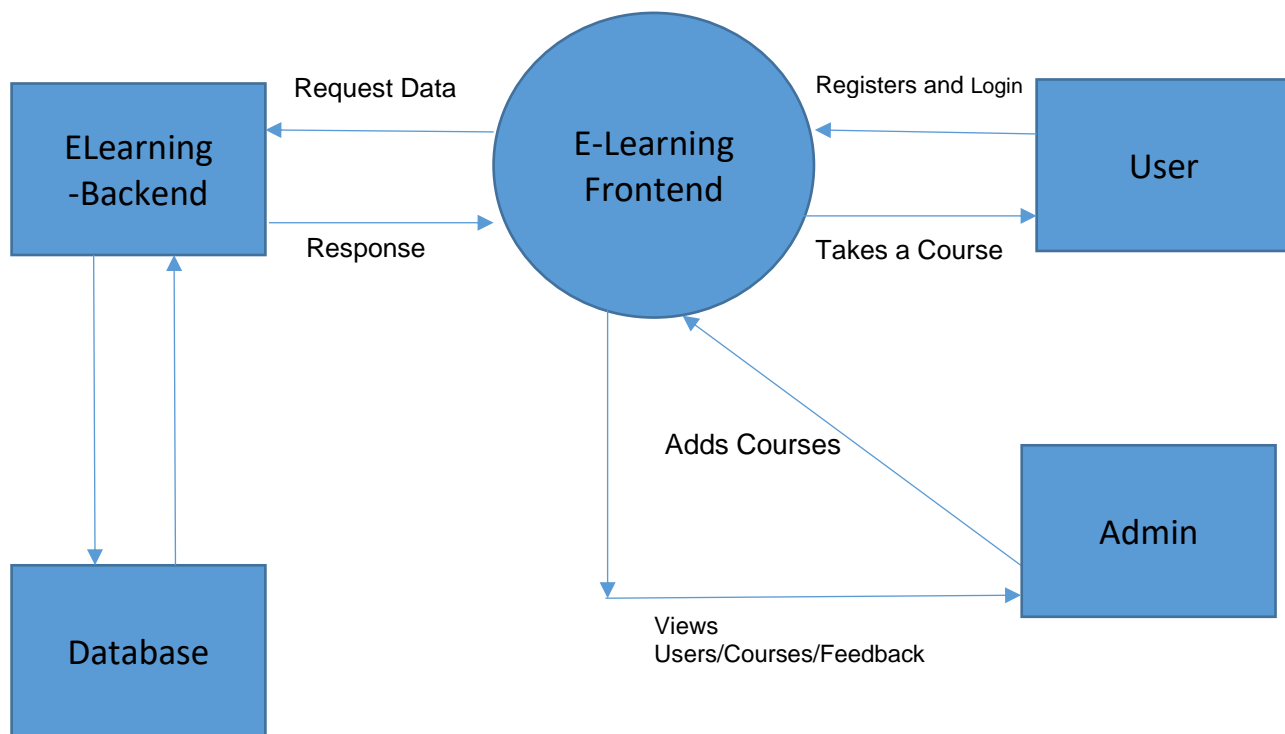
## 2.1 ER Diagram



## 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
REGISTERLEARN	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	govthami@gmail.com	Gowthami	Female	g	12345678	7541254785	govthami
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	lswarya@gmail.com	lswarya	Female	P	12345678	7541254785	lswarya

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

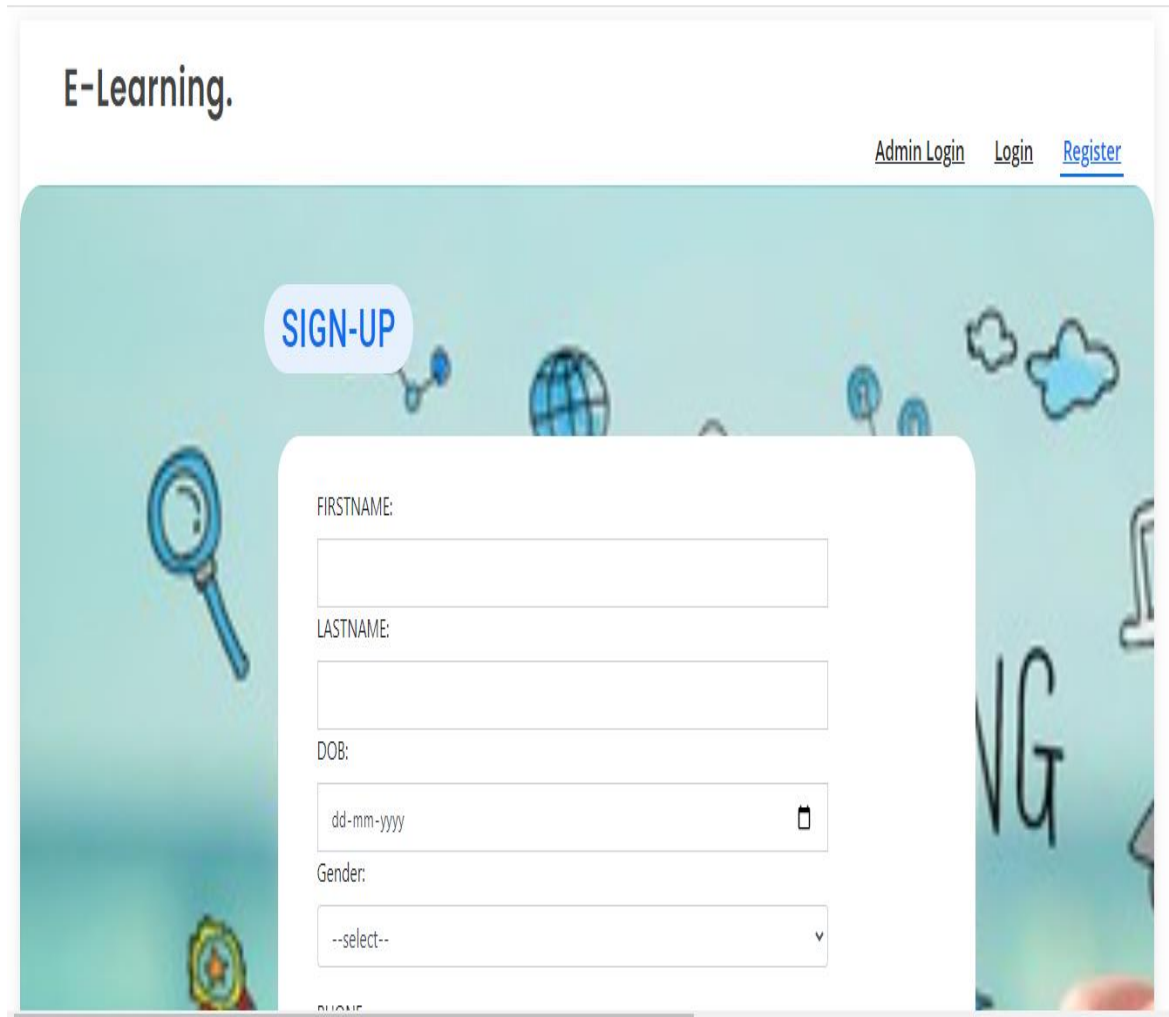
[CSV Export](#)

## 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.

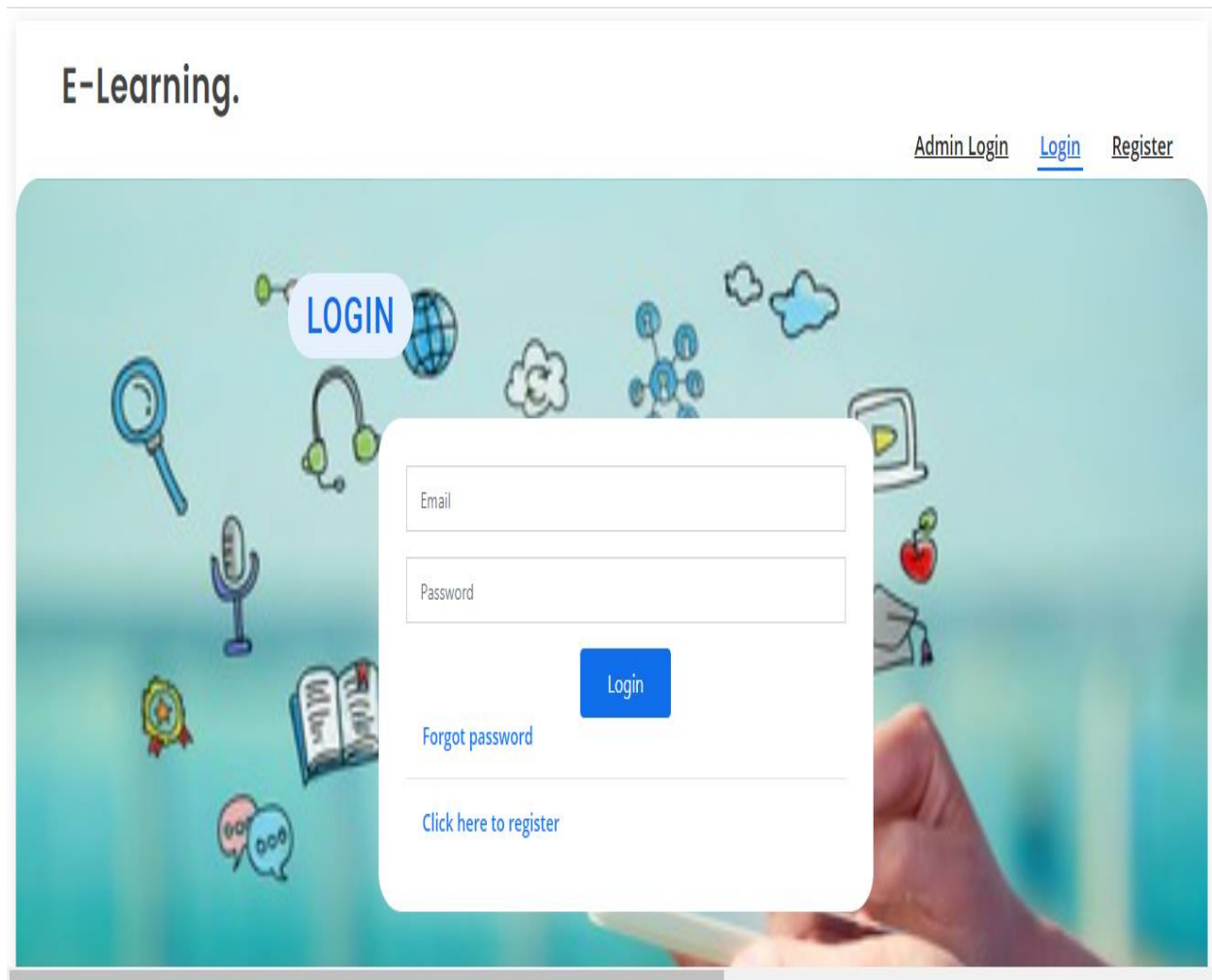
## 2. Sign-Up /Register Page



The screenshot shows the 'E-Learning.' website's sign-up page. At the top right, there are links for 'Admin Login', 'Login', and 'Register'. The 'Register' link is underlined and highlighted in blue. A large, light blue 'SIGN-UP' button is positioned above a white registration form. The form contains fields for 'FIRSTNAME:', 'LASTNAME:', 'DOB:' (with a date format 'dd-mm-yyyy' and a calendar icon), and 'Gender:' (with a dropdown menu showing '--select--'). The background of the page features a light blue gradient with various educational icons like a magnifying glass, a globe, and a laptop.

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 screenshot shows the login interface of an 'E-Learning' system. At the top left, the text 'E-Learning.' is displayed. In the top right corner, there are three links: 'Admin Login', 'Login' (underlined), and 'Register'. The main area features a light blue background with various educational icons like a magnifying glass, headphones, a globe, a microphone, a book, and a speech bubble. A white login form is centered, containing an 'Email' input field, a 'Password' input field, a blue 'Login' button, a 'Forgot password' link, and a 'Click here to register' link. A hand holding a smartphone is visible in the bottom right corner of the background image.

The User will be 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

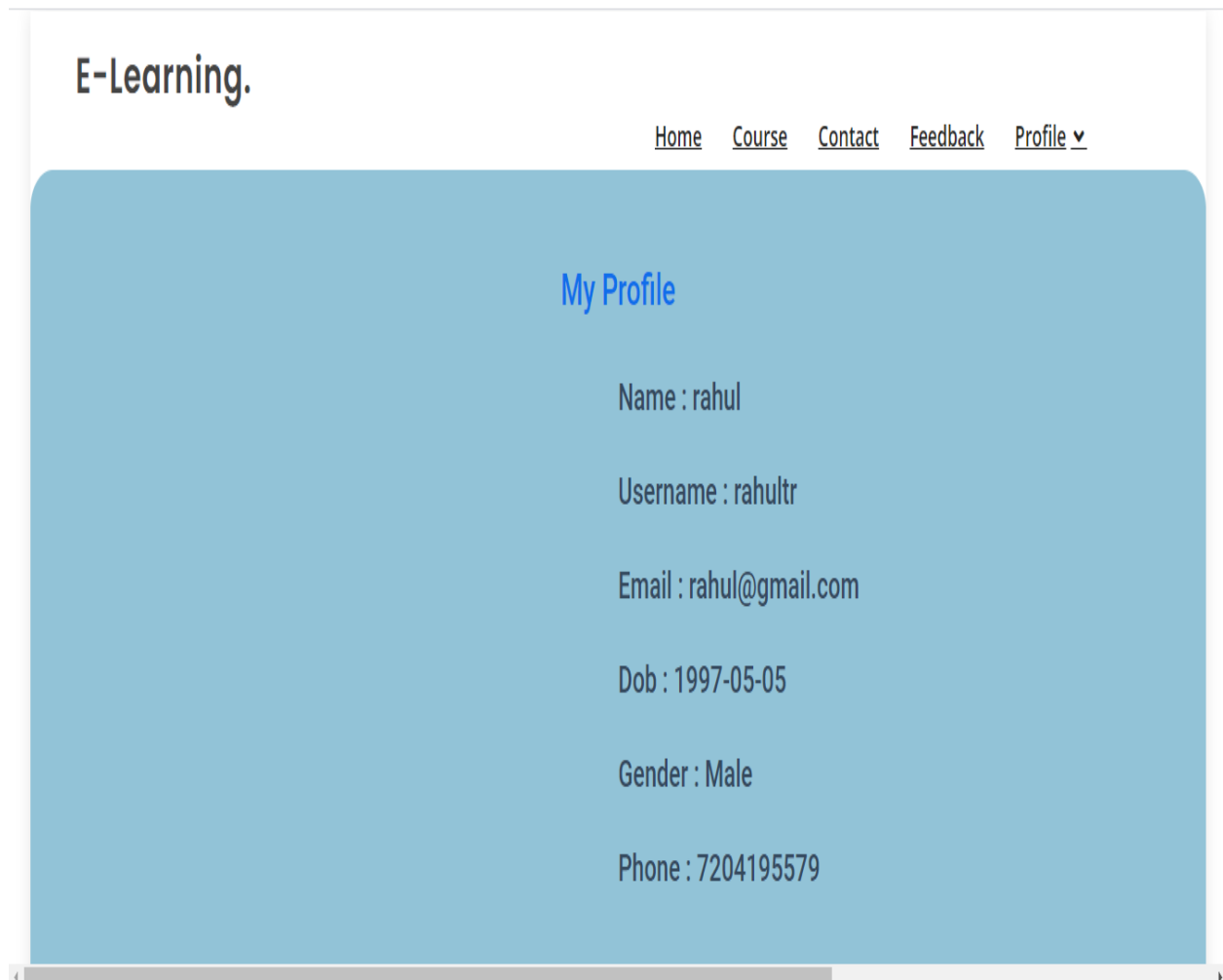


In the Courses Page, the User will be able to view all the courses available for Learning and will be able to Enroll for the courses, Once the user clicks on the Enroll Button, The Course details will be stored with the User ID and User Name in the Database in the Table 'Enroll'.

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



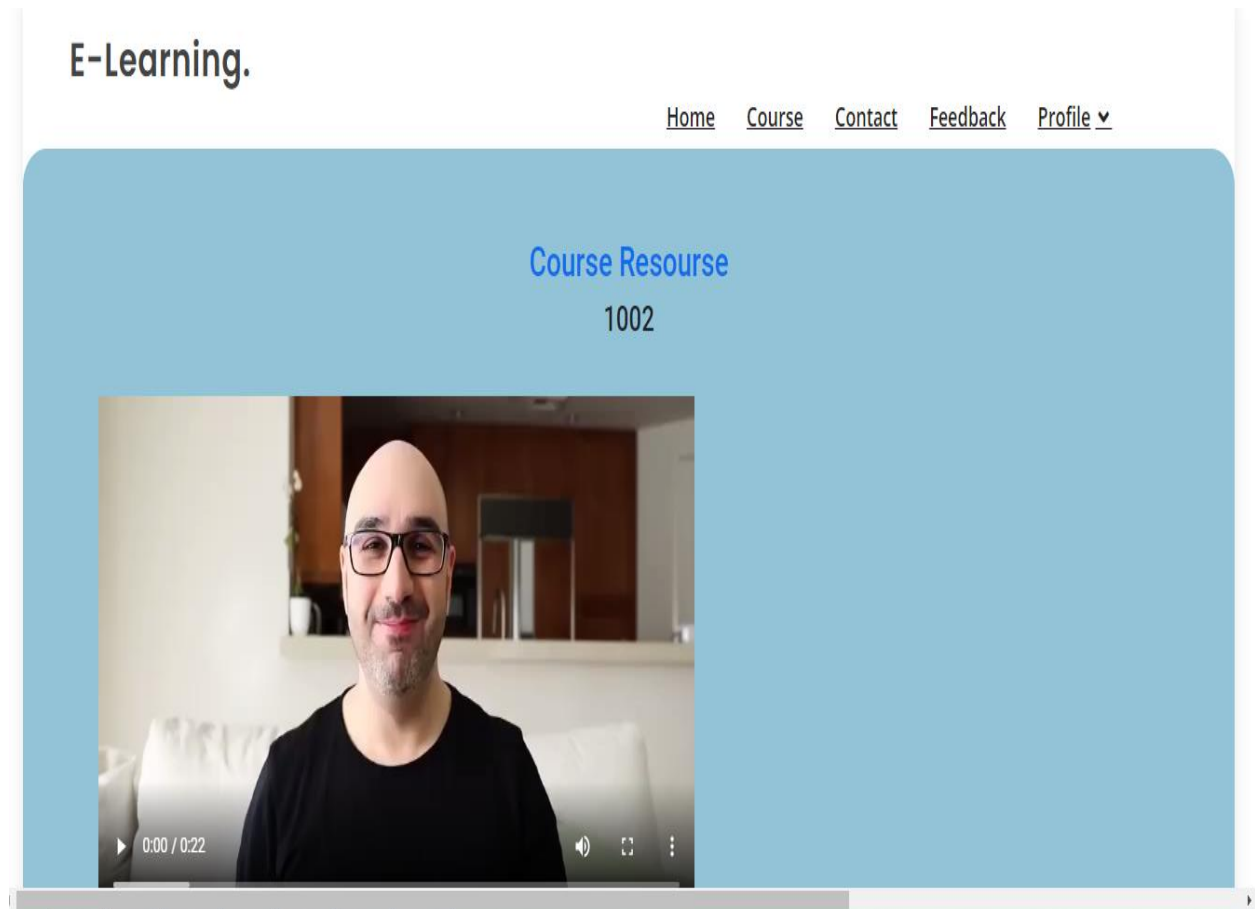
The My Profile Page allows user to view the details he has entered while Registration. This information is retrieved from the **REGISTER** table.

## 6. My Learning Page



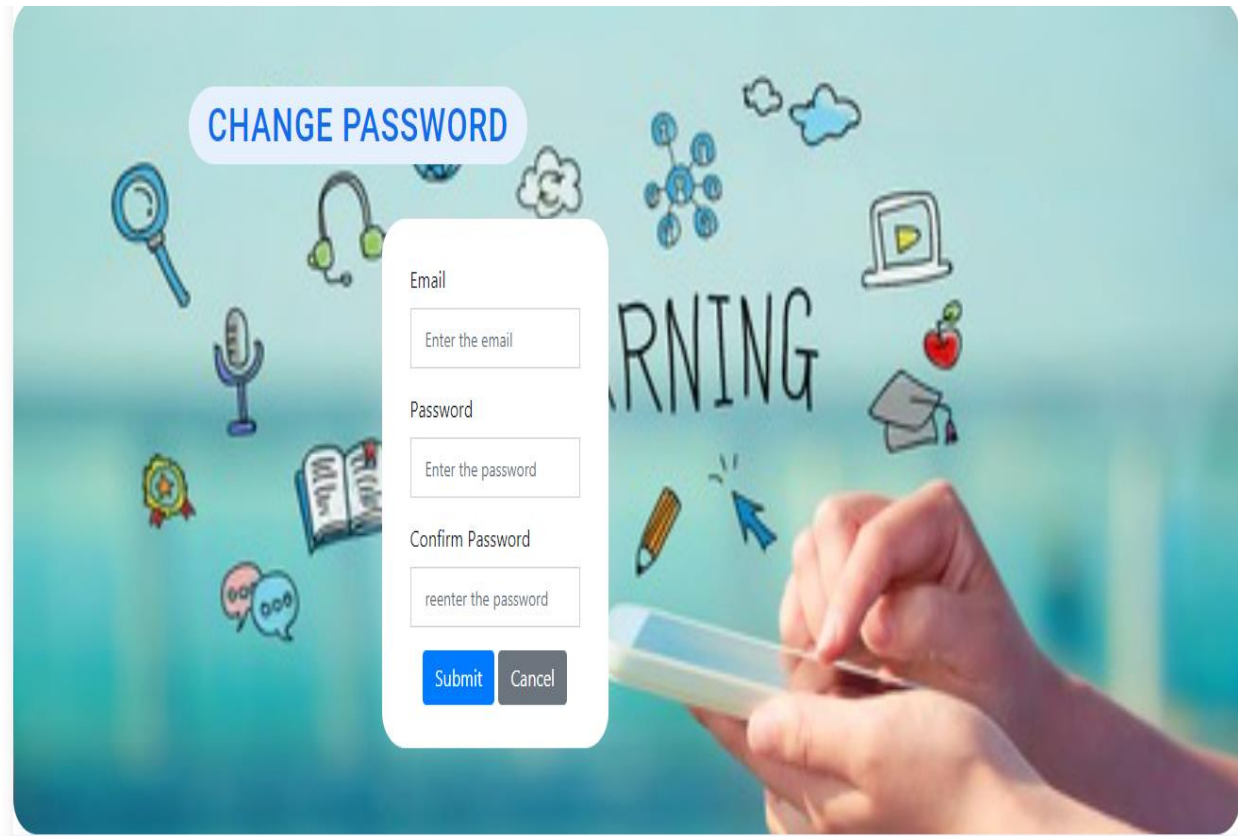
The My Learning Page allows user to view the Courses he has enrolled for this data is retrieved from the **COURSE** database .From here, the user can also view the resources available in the courses.

## 7. Course Resource Page



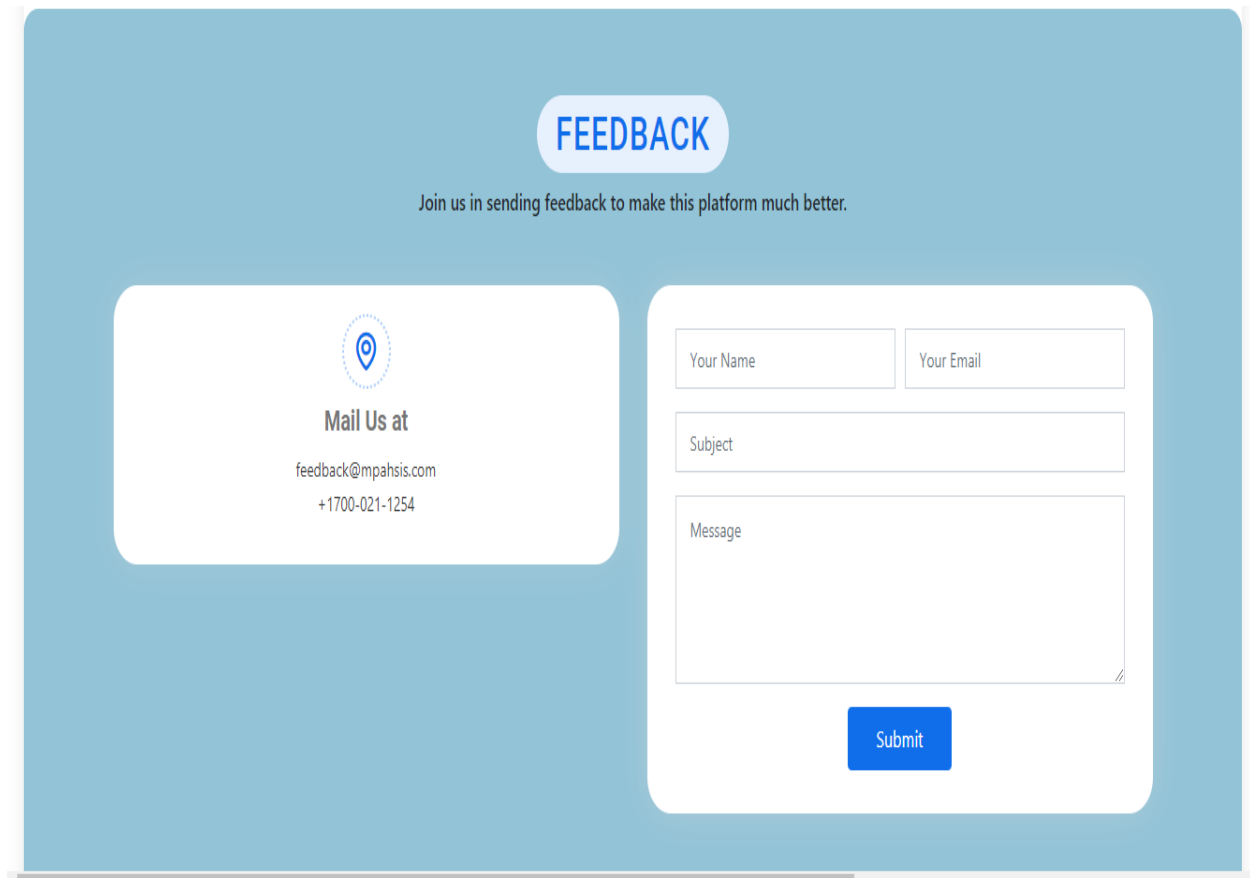
The Course Resource Page allows user to watch the Videos of the Course He/She has enrolled for. User can anytime Navigate to other part of Website if he wants to.

## 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 image shows a web form for providing feedback. It has a light blue background. At the top center is a rounded rectangle with the word 'FEEDBACK' in blue. Below it is a line of text: 'Join us in sending feedback to make this platform much better.' On the left side, there is a white rounded rectangle containing a location pin icon, the text 'Mail Us at', and contact information: 'feedback@mpahsis.com' and '+1700-021-1254'. On the right side, there is a white rounded rectangle containing a form with four input fields: 'Your Name', 'Your Email', 'Subject', and 'Message'. Below the 'Message' field is a blue 'Submit' button.

**FEEDBACK**

Join us in sending feedback to make this platform much better.

  
**Mail Us at**  
feedback@mpahsis.com  
+1700-021-1254

Your Name

Your Email

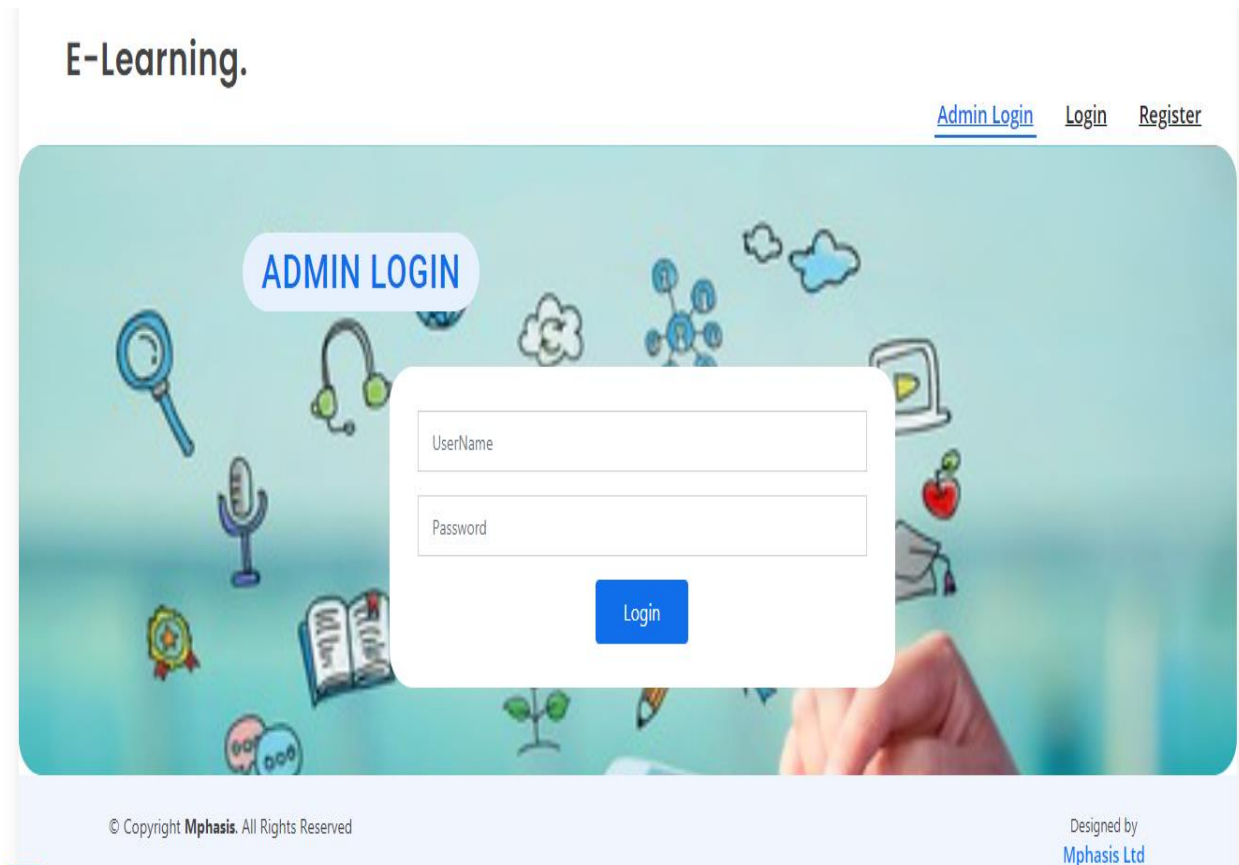
Subject

Message

Submit

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

E-Learning.

[Home](#) [Add Course](#) [View User](#) [View Feedback](#) [LOGOUT](#)

**ADD COURSES**

Course\_ID:  
1002

Course\_Name:  
Angular

Course\_Discription:  
Angular is a platform and framework

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

E-Learning.

[Home](#) [Add Course](#) [View User](#) [View Feedback](#) [LOGOUT](#)

**USER DETAILS**

FirstName	LastName	UserName	Email	DOB	Gender	Phone
rahul	Telkar	rahultr	rahul@gmail.com	1997-05-05	Male	7204195579
Gowthami	g	gowthami	gowthami@gmail.com	1997-02-12	Female	7541254785
Arab Shirisha	g	shirisha	shirisha@gmail.com	1997-02-12	Female	7541254785
Prasanna	P	prasanna	prasanna@gmail.com	1997-02-12	Male	7541254785
Harshitha	P	harshitha	harshitha@gmail.com	1997-02-12	Female	7541254785
Iswarya	P	Iswarya	Iswarya@gmail.com	1997-02-12	Female	7541254785

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

E-Learning.

[Home](#) [Add Course](#) [View User](#) [View Feedback](#) [LOGOUT](#)

FEEDBACK

Name	Email	Subject	Message
shirisha	shirisha@gmail.com	course	About angular course : Good course
rahul	rahul@gmail.com	course	About Java course : Good course

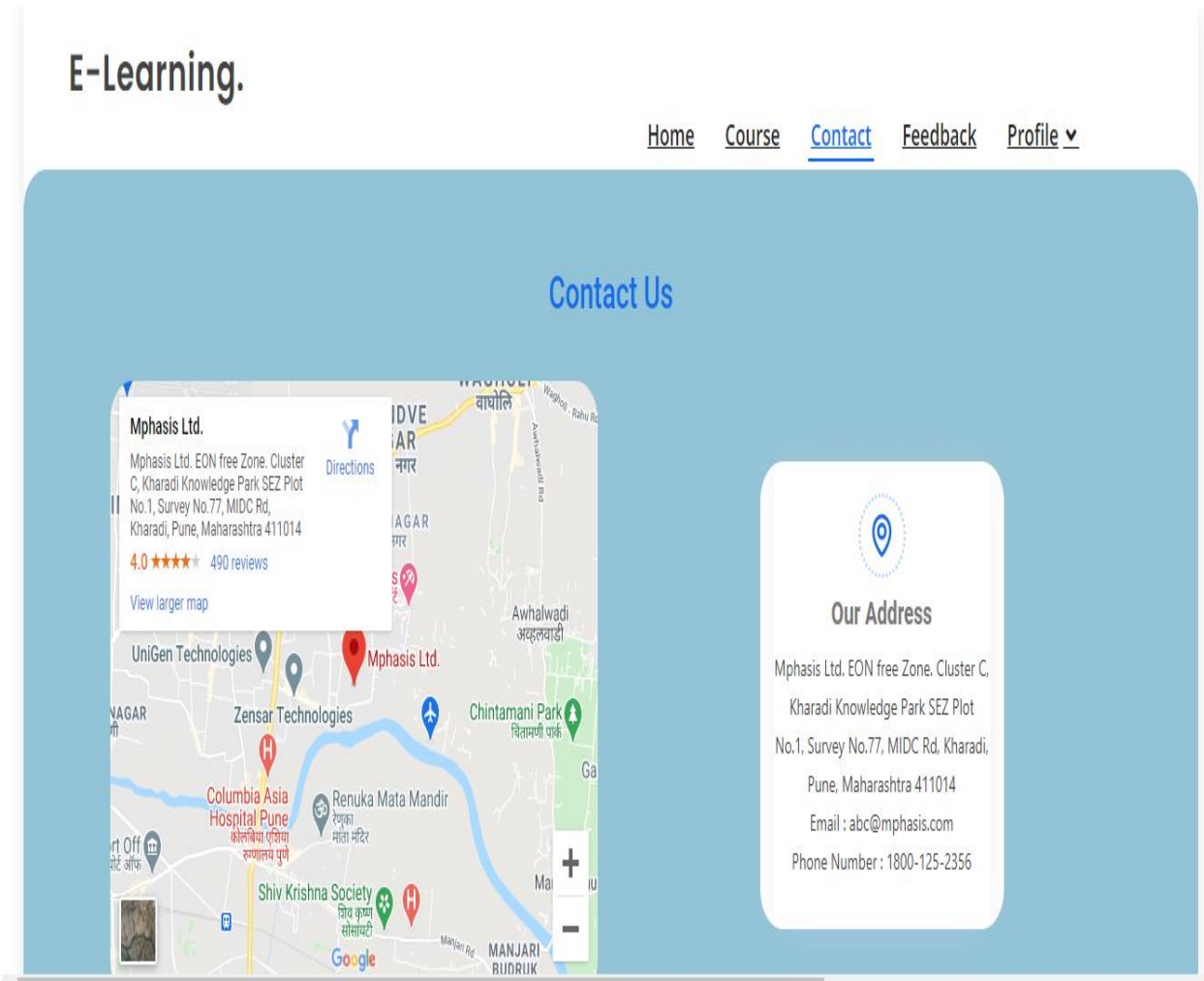
© Copyright Mphasis. All Rights Reserved

Designed by  
Mphasis Ltd

^

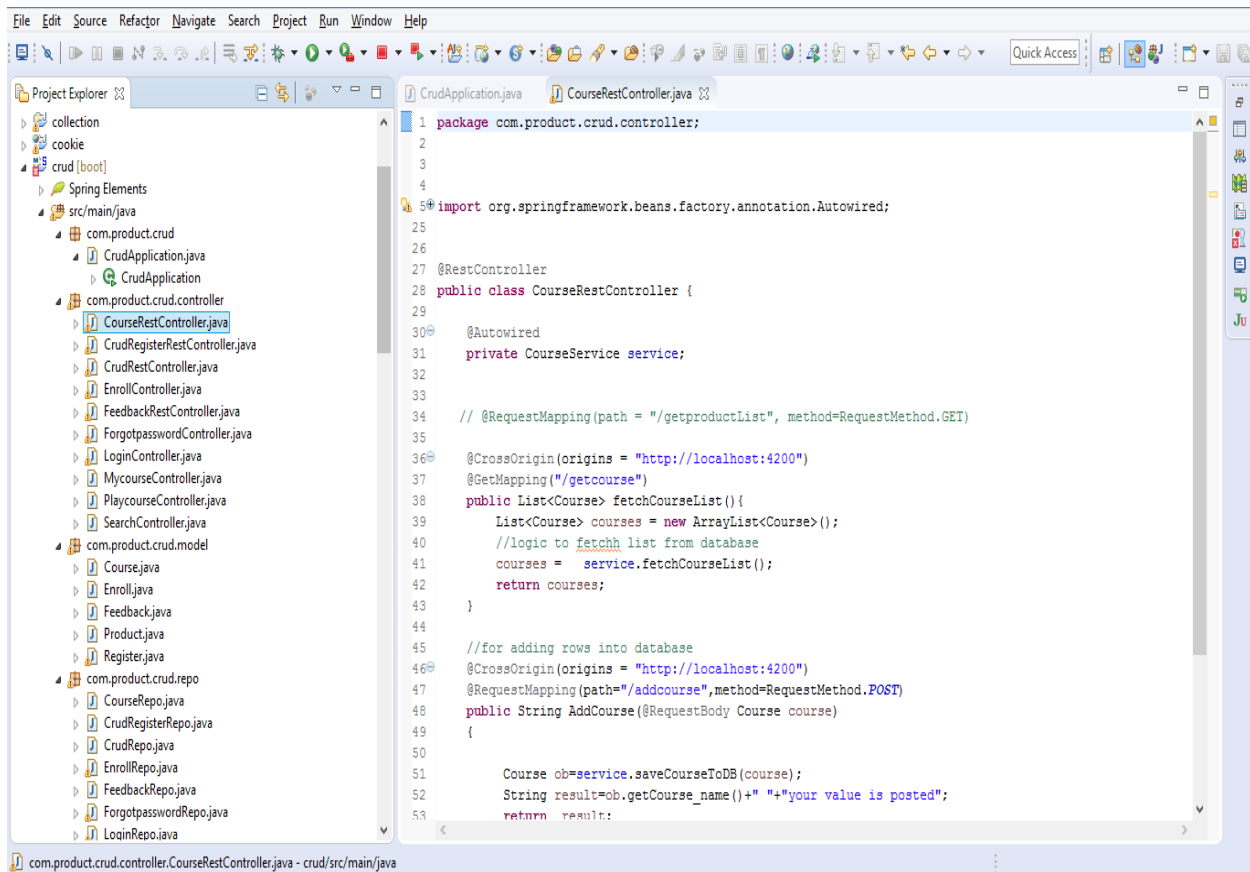
The Admin is able to view all the feedbacks given by the users who have registered in the Feedback Page this data is retrieved from the Database from the table ‘**FEEDBACK**’ and displayed to the Admin.

## 14. Contact us Page



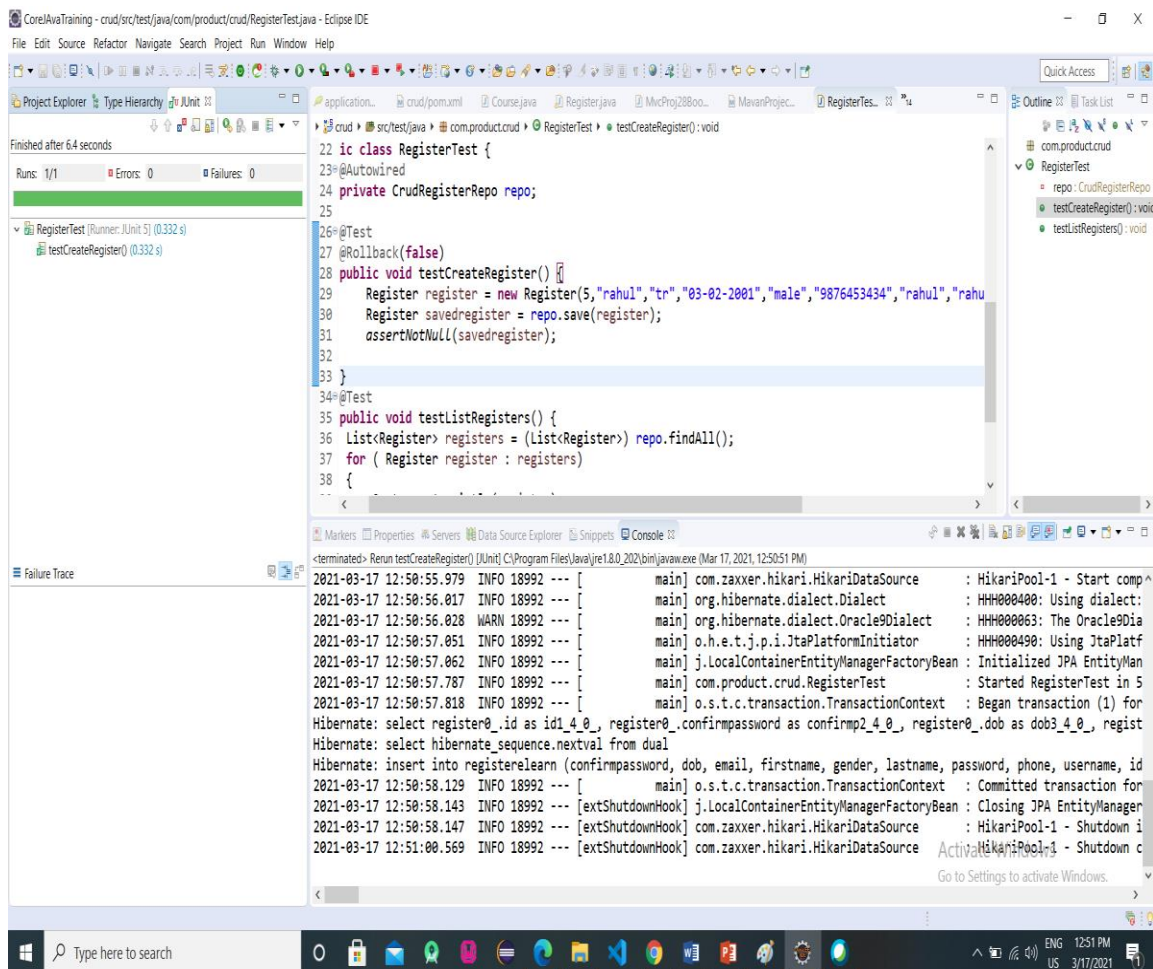
The Contact Us page allows user to locate to Mphasis office and provides the Contact details of the office for any queries and other Customer Support related activities.

## 15. Backend Folder Structure



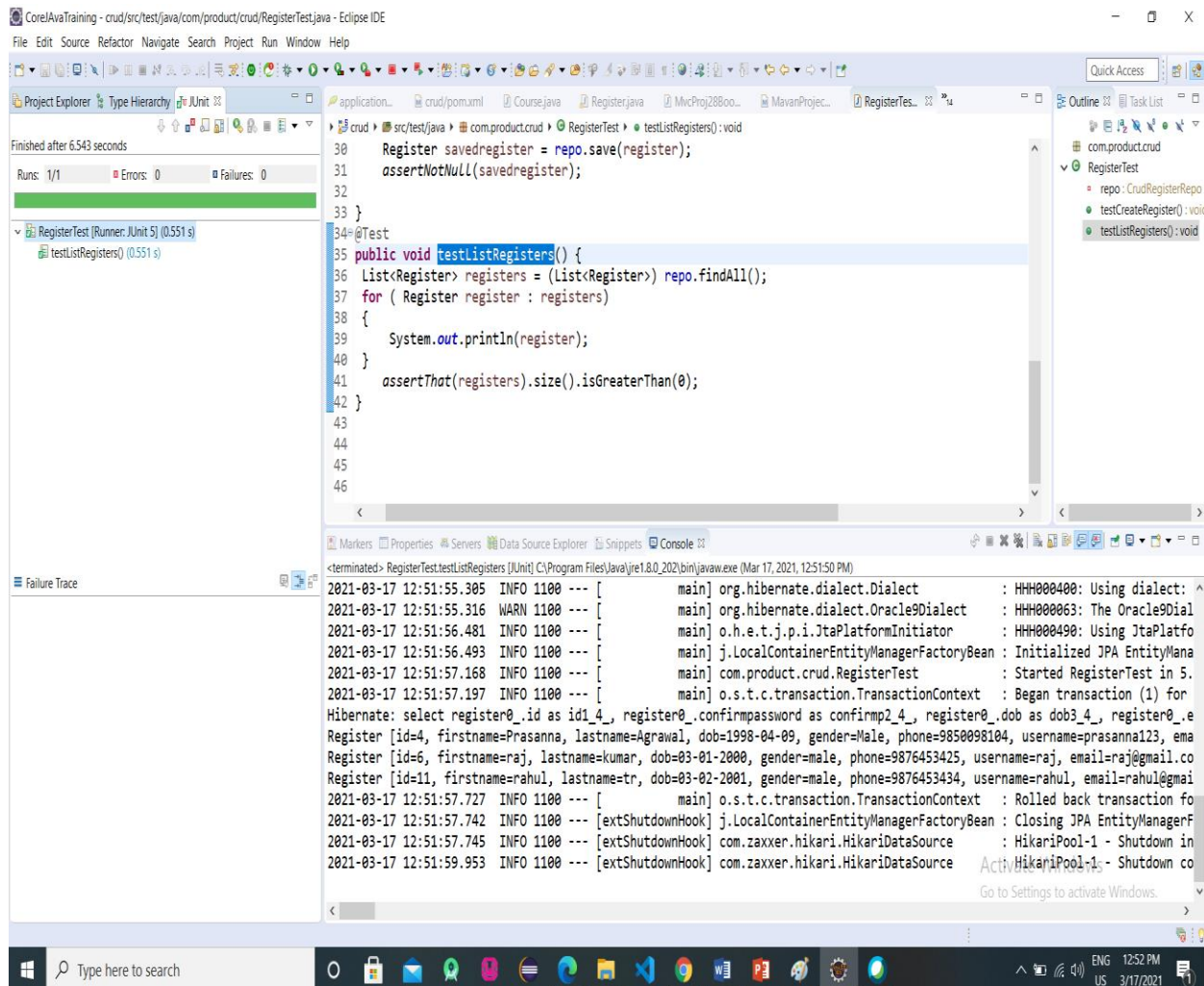
The following is the backend folder Structure of the project we have used spring boot for it and this takes data from the webpages and allows it to store it as rows in database tables.

## 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():



```
CoreJavaTraining - crud/src/test/java/com/product/crud/RegisterTest.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help

Project Explorer | Type Hierarchy | JUnit
Finished after 6.543 seconds
Runs: 1/1 | Errors: 0 | Failures: 0

RegisterTest [Runner: JUnit 5] (0.551 s)
  testListRegisters() (0.551 s)

30 Register savedRegister = repo.save(register);
31 assertNotNull(savedRegister);
32
33 }
34 @Test
35 public void testListRegisters() {
36     List<Register> registers = (List<Register>) repo.findAll();
37     for (Register register : registers)
38     {
39         System.out.println(register);
40     }
41     assertThat(registers).size().isGreaterThan(0);
42 }
43
44
45
46

<terminated> RegisterTest.testListRegisters [JUnit] C:\Program Files\Java\jre1.8.0_202\bin\java.exe (Mar 17, 2021, 12:51:50 PM)
2021-03-17 12:51:55.305 INFO 1100 --- [main] org.hibernate.dialect.Dialect : HH0000400: Using dialect:
2021-03-17 12:51:55.316 WARN 1100 --- [main] org.hibernate.dialect.Oracle9Dialect : HH000063: The Oracle9Dial
2021-03-17 12:51:56.481 INFO 1100 --- [main] o.h.e.t.j.p.i.JtaPlatformInitiator : HH0000490: Using JtaPlatfo
2021-03-17 12:51:56.493 INFO 1100 --- [main] j.LocalContainerEntityManagerFactoryBean : Initialized JPA EntityMana
2021-03-17 12:51:57.168 INFO 1100 --- [main] com.product.crud.RegisterTest : Started RegisterTest in 5.
2021-03-17 12:51:57.197 INFO 1100 --- [main] o.s.t.c.transaction.TransactionContext : Began transaction (1) for
Hibernate: select register0_.id as id1_4_, register0_.confirmpassword as confirmp2_4_, register0_.dob as dob3_4_, register0_.e
Register [id=4, firstname=Prasanna, lastname=Agrawal, dob=1998-04-09, gender=Male, phone=9850098104, username=prasanna123, ema
Register [id=6, firstname=raj, lastname=kumar, dob=03-01-2000, gender=male, phone=9876453425, username=raj, email=raj@gmail.co
Register [id=11, firstname=raahul, lastname=tr, dob=03-02-2001, gender=male, phone=9876453434, username=raahul, email=raahul@mai
2021-03-17 12:51:57.727 INFO 1100 --- [main] o.s.t.c.transaction.TransactionContext : Rolled back transaction fo
2021-03-17 12:51:57.742 INFO 1100 --- [extShutdownHook] j.LocalContainerEntityManagerFactoryBean : Closing JPA EntityManagerF
2021-03-17 12:51:57.745 INFO 1100 --- [extShutdownHook] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Shutdown in
2021-03-17 12:51:59.953 INFO 1100 --- [extShutdownHook] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Shutdown co
Go to Settings to activate Windows.
```

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.