

# **Programming Learning Platform**

## **for**

## **School Students**

**CSE 326 : Information System Design**

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# **Chapter 1**

## **Motivation**

The world is rapidly evolving, and technology is advancing at an unprecedented rate. In today's digital age, programming has become an essential skill, and there is a growing interest in learning it. With this increasing interest, there is a need for a better avenue to spend time and achieve noteworthy skills simultaneously. However, despite the abundance of programming learning resources available, there is still a scarcity of properly structured curriculums that can guide students effectively. This project aims to fill this gap by providing a proper framework that includes a well-structured curriculum and proper planning to evaluate students' learnings. In addition, we believe that education should be accessible to all, and hence, the course contents will be free of cost as students are our target audience. We also strive for accessibility and welcome prompt feedback from students upon course completion to improve the platform continually. We believe that by providing a comprehensive and accessible programming learning platform, we can help students develop a valuable skill set that will benefit them in the future.

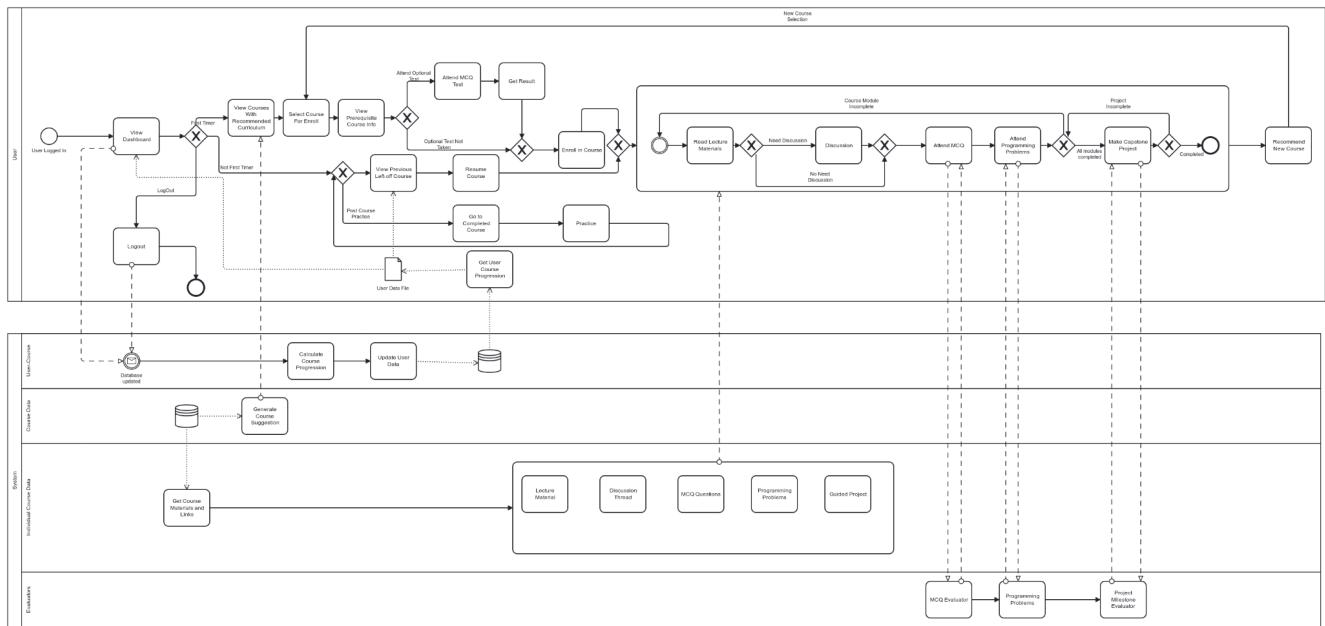
# **Chapter 2**

## **Introduction**

The purpose of this project is to present an online programming language learning platform designed to provide a well-structured curriculum for school students. This platform offers a guided path for learning various programming languages, as well as a personalised learning path that is continually updated to ensure students can progress and improve their programming skills. With the rise of technology and the increasing importance of programming in today's world, this platform aims to provide a comprehensive and accessible way for students to learn and master programming languages.

# Chapter 3

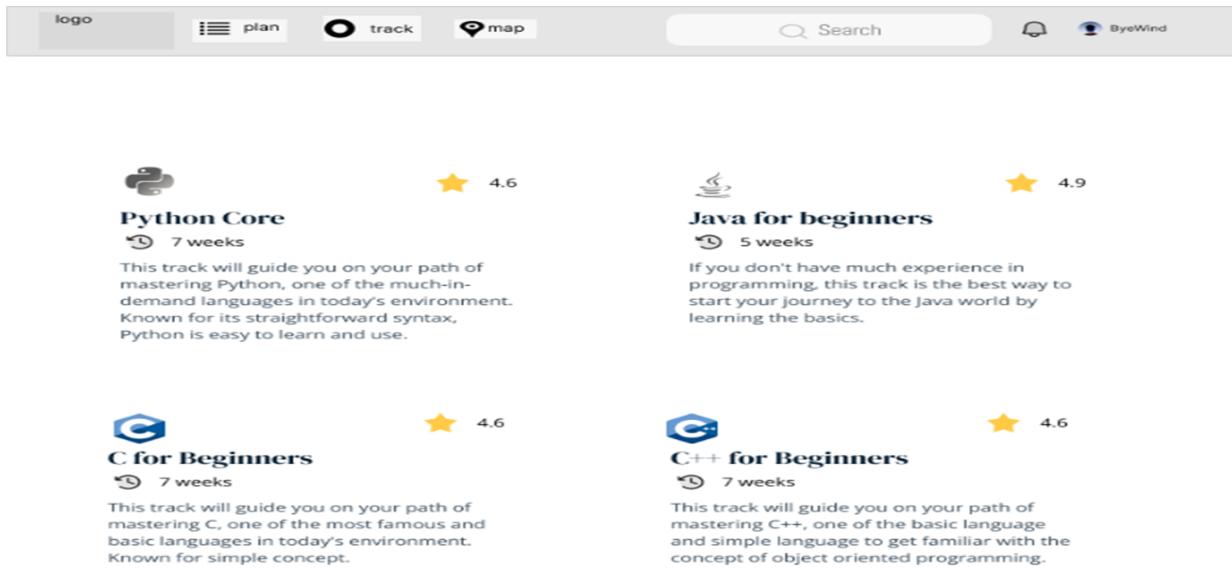
## Requirement Analysis using BPMN Diagram



# Chapter 4

## Mock UI

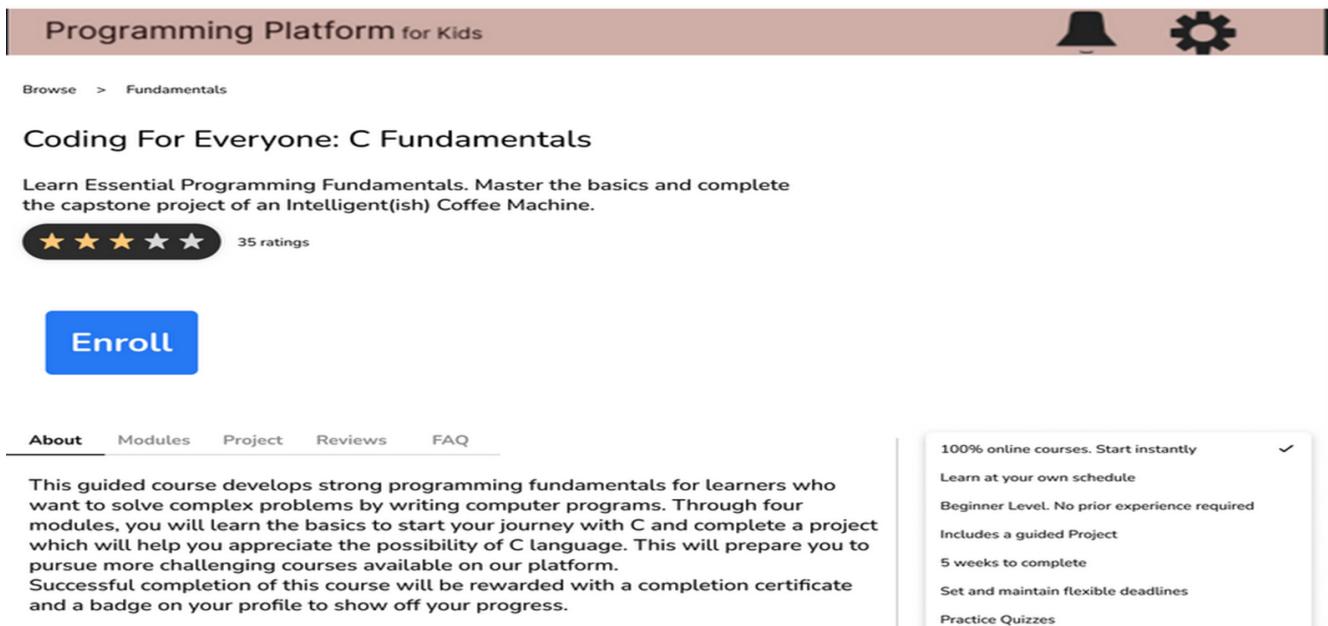
### 1. Course List Page:



The course list page displays four programming tracks:

- Python Core**: 4.6 stars, 7 weeks. Description: This track will guide you on your path of mastering Python, one of the much-in-demand languages in today's environment. Known for its straightforward syntax, Python is easy to learn and use.
- Java for beginners**: 4.9 stars, 5 weeks. Description: If you don't have much experience in programming, this track is the best way to start your journey to the Java world by learning the basics.
- C for Beginners**: 4.6 stars, 7 weeks. Description: This track will guide you on your path of mastering C, one of the most famous and basic languages in today's environment. Known for simple concept.
- C++ for Beginners**: 4.6 stars, 7 weeks. Description: This track will guide you on your path of mastering C++, one of the basic language and simple language to get familiar with the concept of object oriented programming.

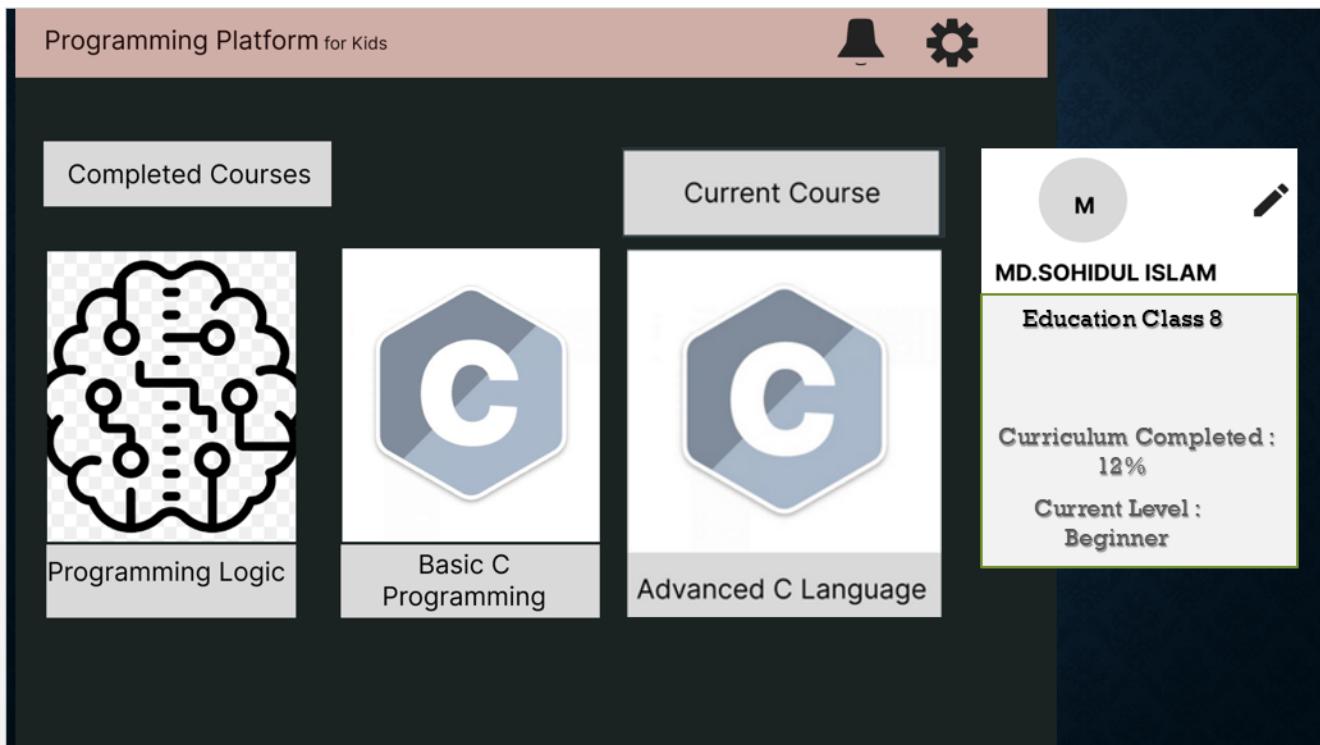
### 2. Course Details Page:



The course details page for "Coding For Everyone: C Fundamentals" includes:

- Programming Platform for Kids** banner at the top.
- Breadcrumbs: Browse > Fundamentals.
- Coding For Everyone: C Fundamentals** title.
- Description: Learn Essential Programming Fundamentals. Master the basics and complete the capstone project of an Intelligent(ish) Coffee Machine.
- Rating: ★★★★☆ 35 ratings.
- Enroll** button.
- About**, **Modules**, **Project**, **Reviews**, **FAQ** navigation links.
- Course description: This guided course develops strong programming fundamentals for learners who want to solve complex problems by writing computer programs. Through four modules, you will learn the basics to start your journey with C and complete a project which will help you appreciate the possibility of C language. This will prepare you to pursue more challenging courses available on our platform. Successful completion of this course will be rewarded with a completion certificate and a badge on your profile to show off your progress.
- Right sidebar:
  - 100% online courses. Start instantly
  - Learn at your own schedule
  - Beginner Level. No prior experience required
  - Includes a guided Project
  - 5 weeks to complete
  - Set and maintain flexible deadlines
  - Practice Quizzes

### 3.User Profile Page:



### 4.Weekly Modules Page:

The screenshot shows a weekly module page for 'Advanced C Programming'. It lists four weeks: Week 1 (5/5 Tasks Completed, green checkmark), Week 2 (1/5 Tasks Completed, green 'Continue' button), Week 3 (0/5 Tasks Completed, empty box), and Week 4 (0/5 Tasks Completed, empty box).

Week	Tasks Completed	Status
Week 1	5/5 Tasks Completed	Green Checkmark
Week 2	1/5 Tasks Completed	Green Continue Button
Week 3	0/5 Tasks Completed	Empty Box
Week 4	0/5 Tasks Completed	Empty Box

## 5. Reading Materials:

Programming Platform for Kids



### C Programming

#### Theory

2 minutes reading

[Verify to skip](#) Start practicing

You are practicing a new topic!

Each topic introduces one new concept with a short article. Read it, then apply what you've learned by solving a few problems. Practice makes perfect!

How for loop works?

- The initialization statement is executed only once.
- Then, the test expression is evaluated. If the test expression is evaluated to false, the for loop is terminated.
- However, if the test expression is evaluated to true, statements inside the body of the for loop are executed, and the update expression is updated.
- Again the test expression is evaluated.

This process goes on until the test expression is false. When the test expression is false, the loop terminates.

Table of contents:

1. Introduction
2. Variables
3. Conditional statements
4. For loop

Discussion

[Next section](#)

3 sections left

[Expand all](#)

## 6. MCQ Test:

### MCQ Test

What is the output of the following C code?

```
int main() {
    int a = 5;
    int b = 10;
    printf("%d", a + b);
}
```

a) 10

b) 15

c) 20

d) 25

[Submit](#)

## 7.Programming Problem:

What is the result of this code?

```
1 val x = 11
2
3 if (x * 2 + 1 < 23 && x % 2 == 1) {
4     print("1")
5     print(if (x == 11) "2" else "3")
6 } else if (x != 0) {
7     print("4")
8 }
9 print("5")
```

 See hint

↓ Select one option from the list

- 135
- 4
- 125
- 45
- 1245

## 8.Project:

Programming Platform for Kids



### Project

Your Progress on Intelligent Coffee Machine

#### Stage 1/5: Making Coffee

Write a program that puts some basic information on the screen.Let the machine describe what it takes to make a cup of coffee.

Completed

#### Stage 2/5: Ingredient Calculator

Program the machine to calculate the amount of the ingredients it needs depending on how many people want some coffee.

Continue

#### Stage 3/5: Estimate the number of servings

Working with the conditions,program the machine to estimate how many creamy coffees it can make based on the amount of the ingredients we enter.

#### Stage 4/5:Buy,fill,take

Teach your virtual coffee machine to perform three basic actions:Collect the money,Renew the Supplies and Serve the coffee.

#### Stage 5/5:Keep track of the supplies

Program the machine to display on the screen the amount of supplies left.Set the main loop:now the menu keeps updating until you enter "Exit"

Wrap up your Project

# Work on project. Stage 1/6: Making coffee

Project: [Coffee Machine](#)

## Making coffee

Easy ① 2 minutes ② 6676 users solved this stage. Latest completion was about 1 hour ago.

### §1. Description

Let's start with a program that makes you a coffee – virtual coffee, of course. In this project, you will implement functionality that simulates a real coffee machine. It can run out of ingredients, such as milk or coffee beans, it can offer you various types of coffee, and, finally, it will take money for the prepared drink.

### §2. Objective

The first version of the program just makes you a coffee. It should print to the standard output what it is doing as it makes the drink.

### §3. Example

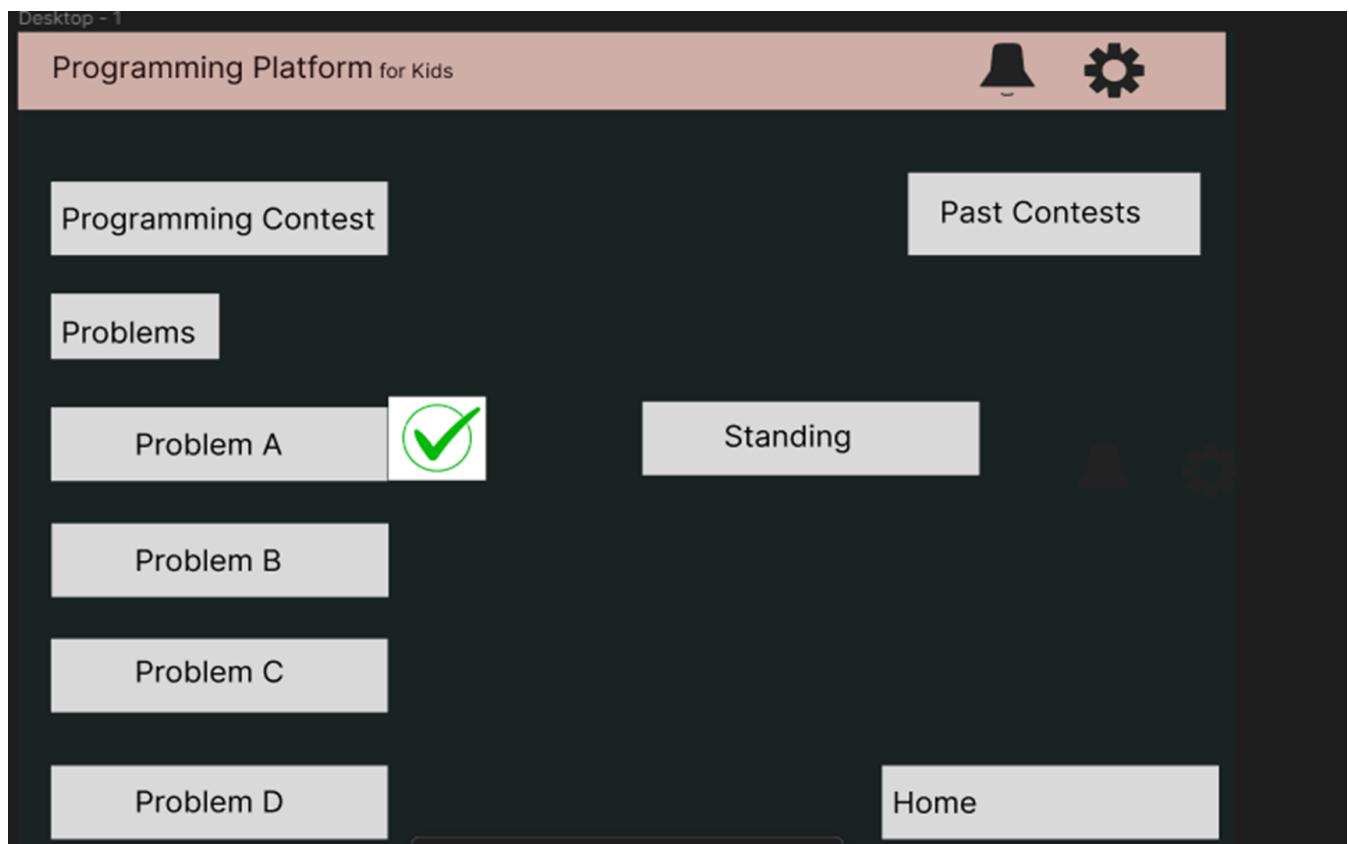
Take a look at the sample output below and print all the following lines.

Output:

```
Starting to make a coffee
Grinding coffee beans
Boiling water
Mixing boiled water with crushed coffee beans
Pouring coffee into the cup
Pouring some milk into the cup
Coffee is ready!
```

 See hint

## 9. Programming Contest:



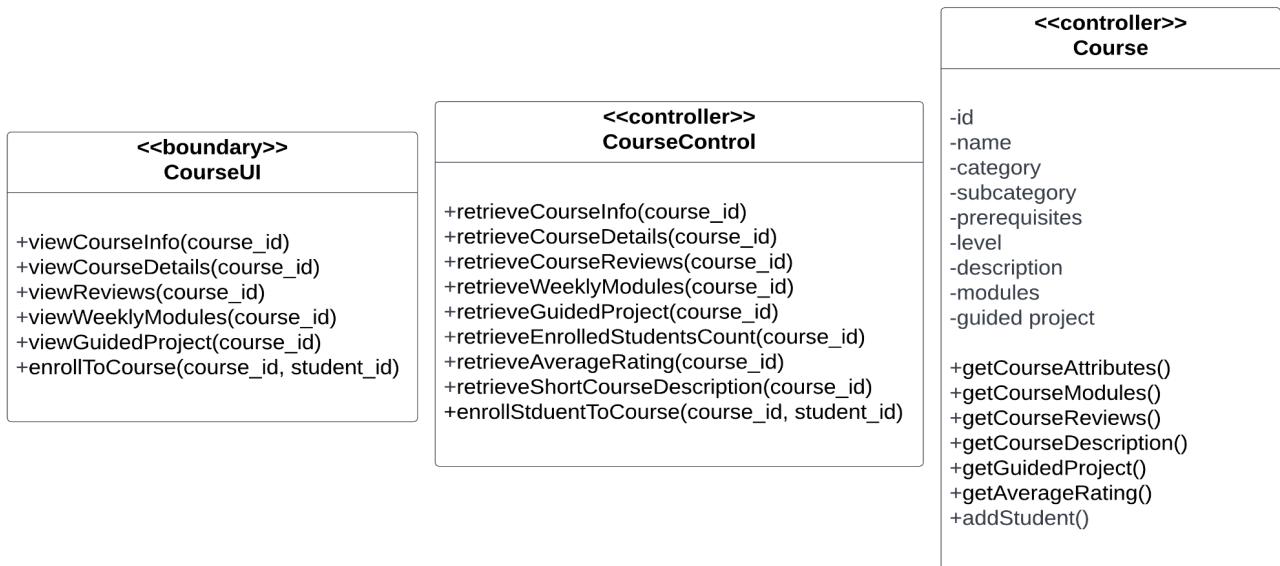
# Chapter 5

## Class Diagram

### 1.Course List:



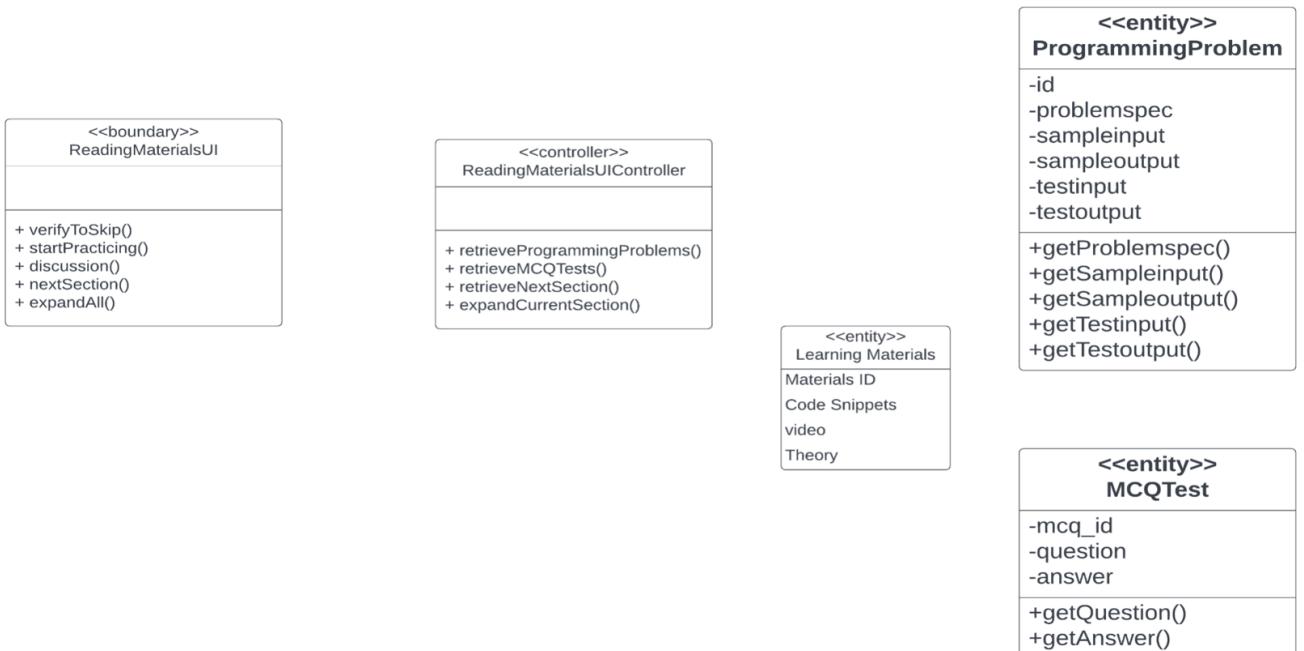
### 2.Course Details:



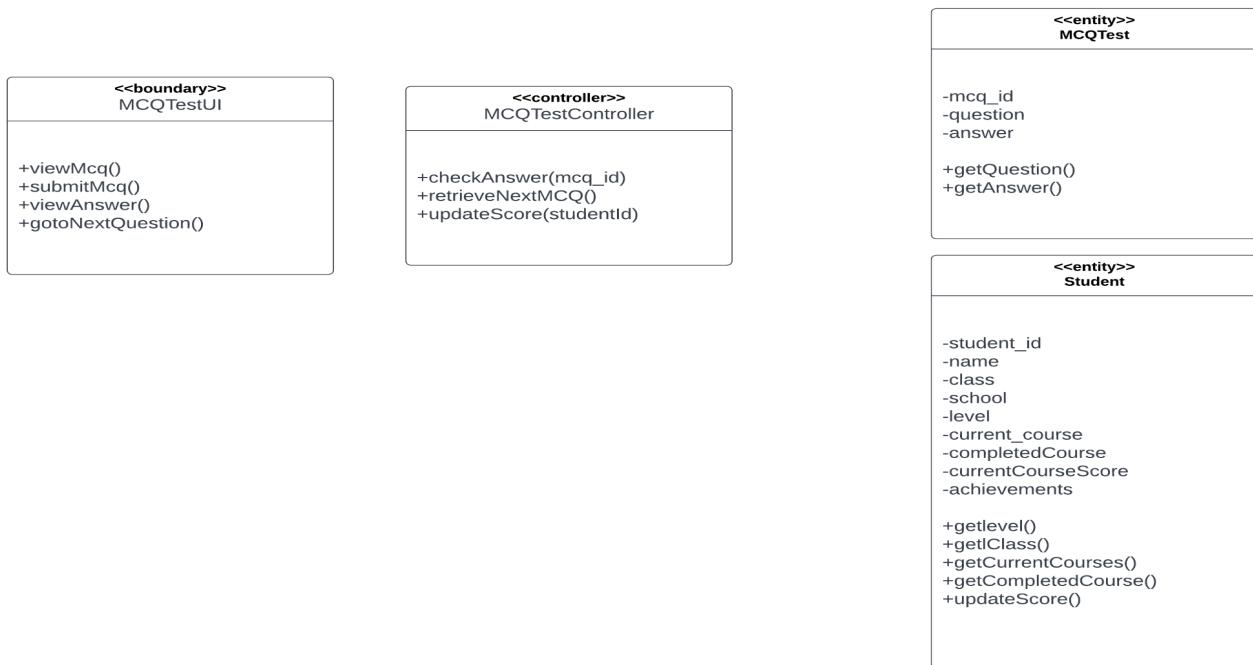
### 3.User DashBoard:



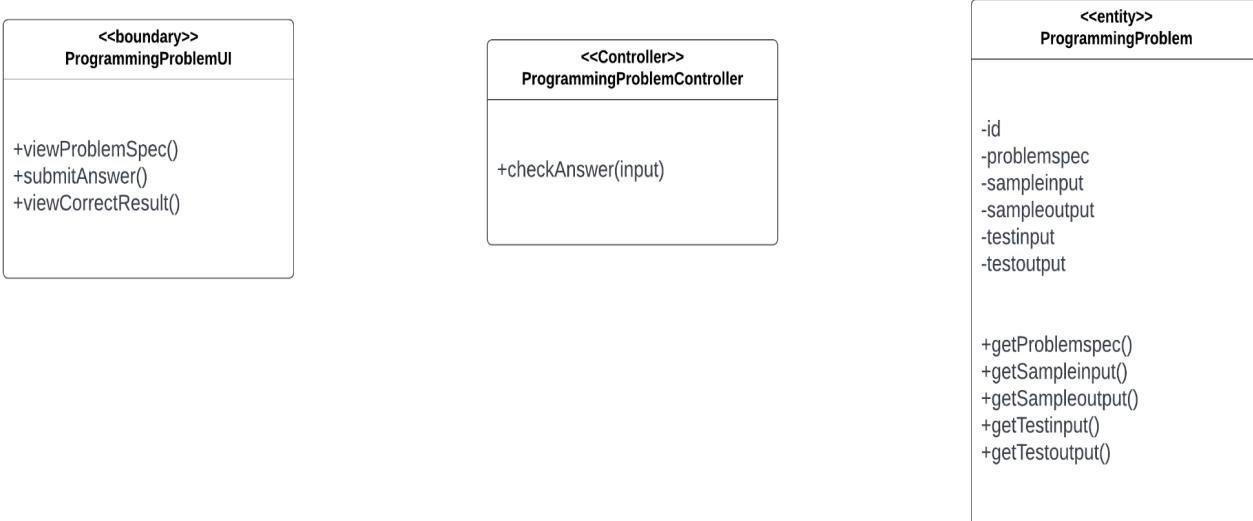
### 4.Reading Materials:



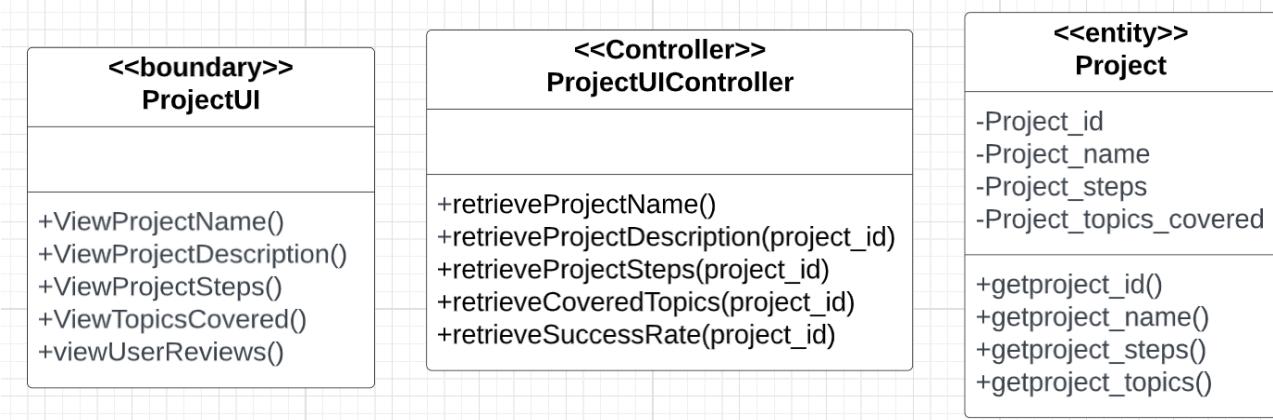
## 5.MCQ Test:



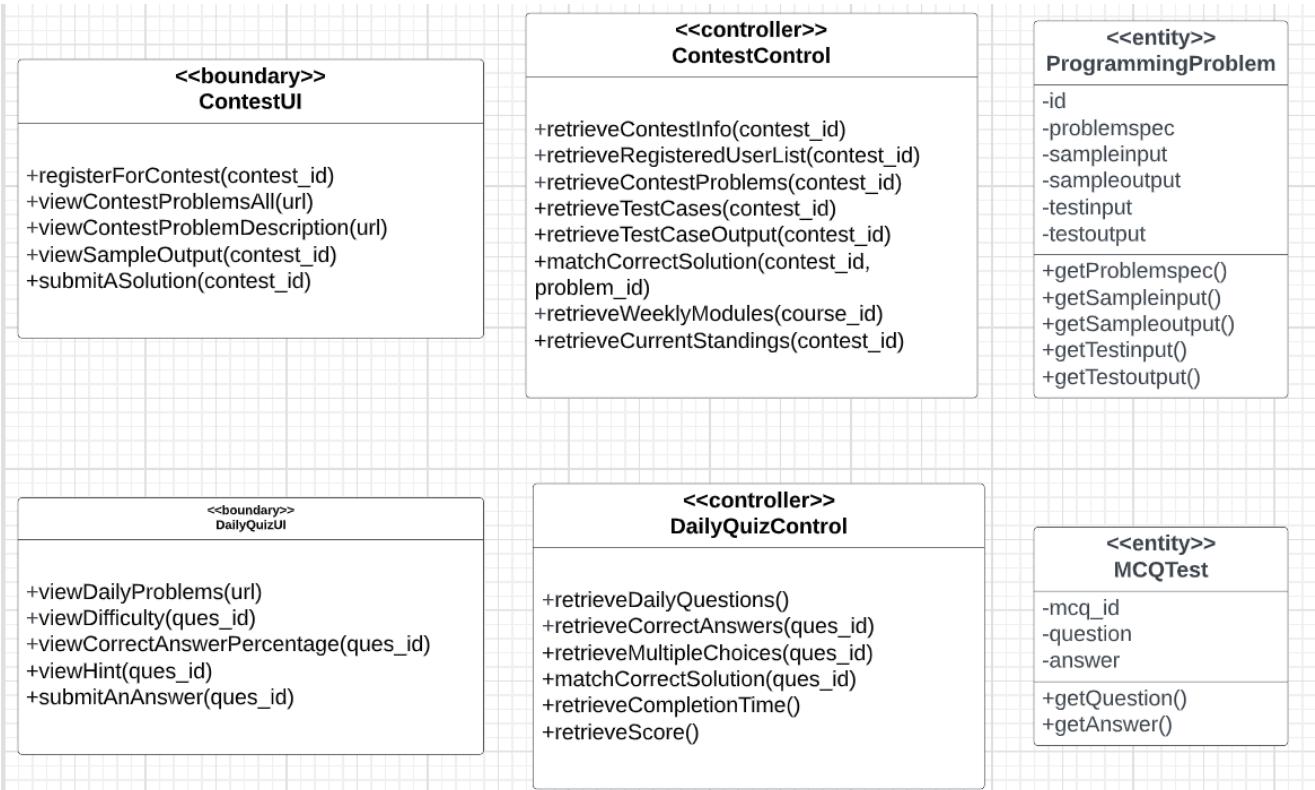
## 6.Programming Test:



## 7.Project:

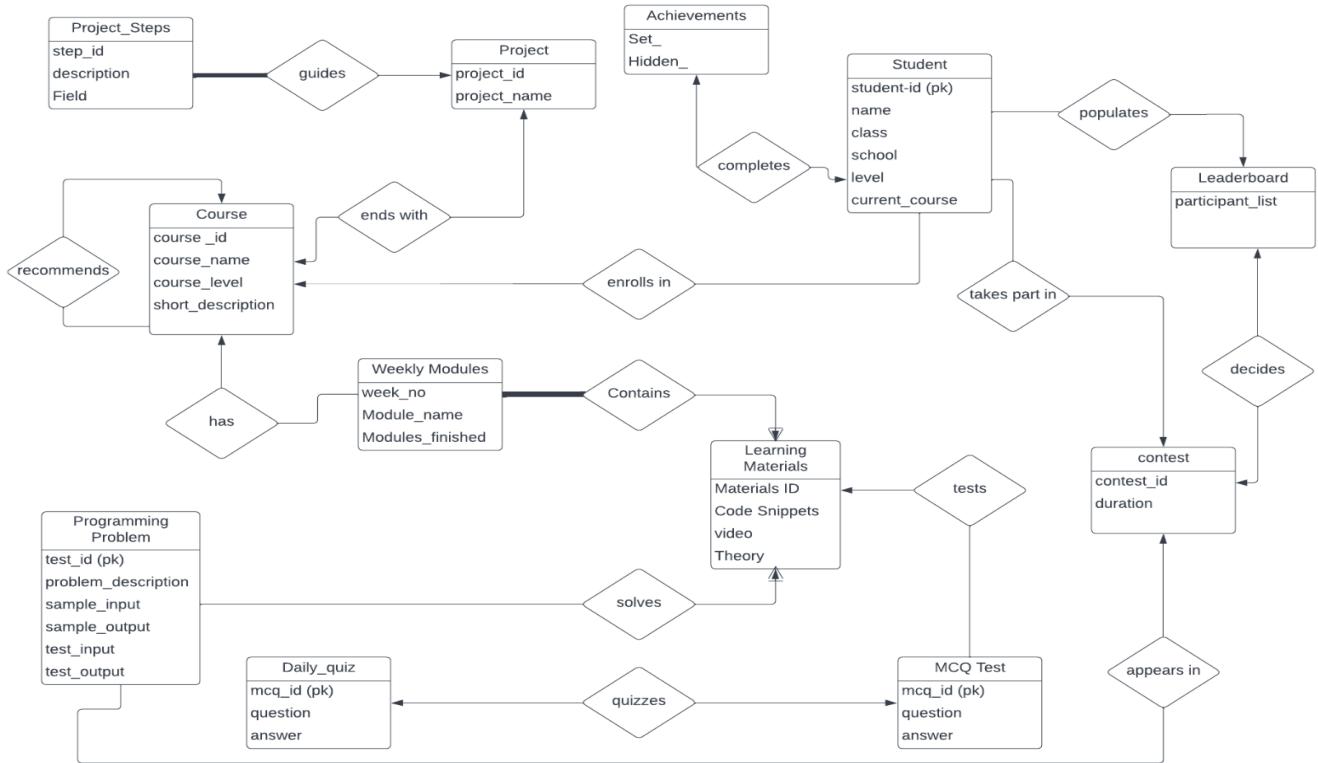


## 8.Contest and Daily Quiz:



# Chapter 6

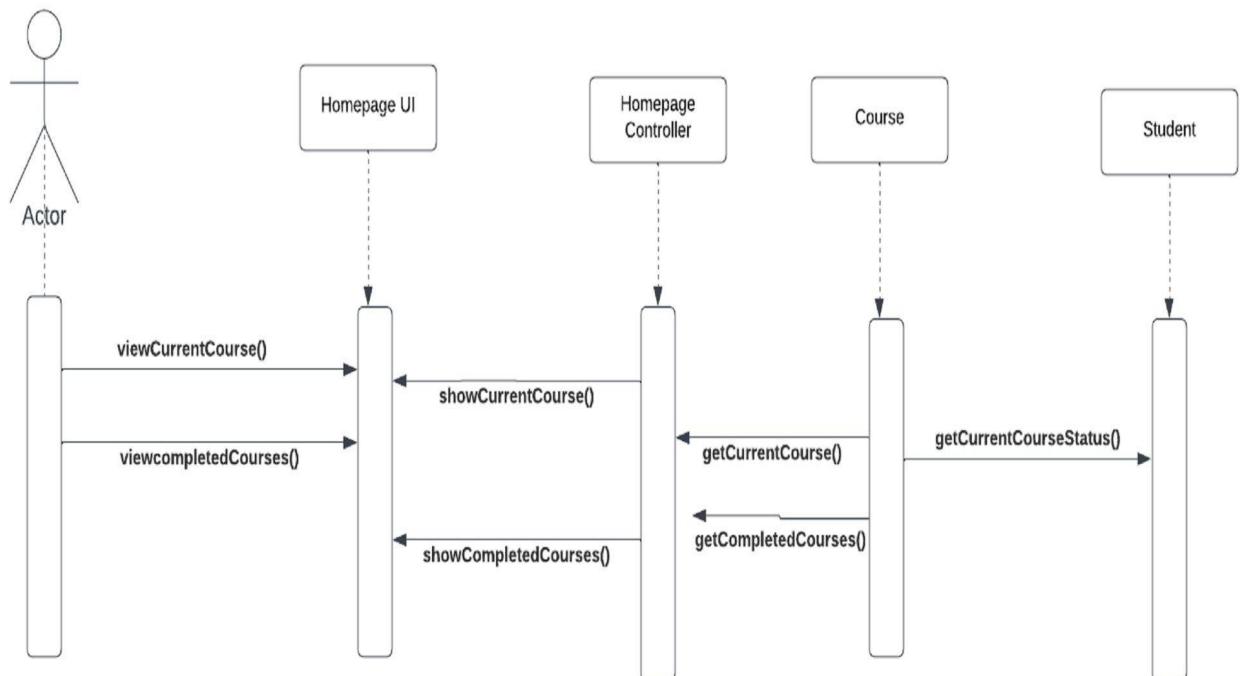
## ER Diagram



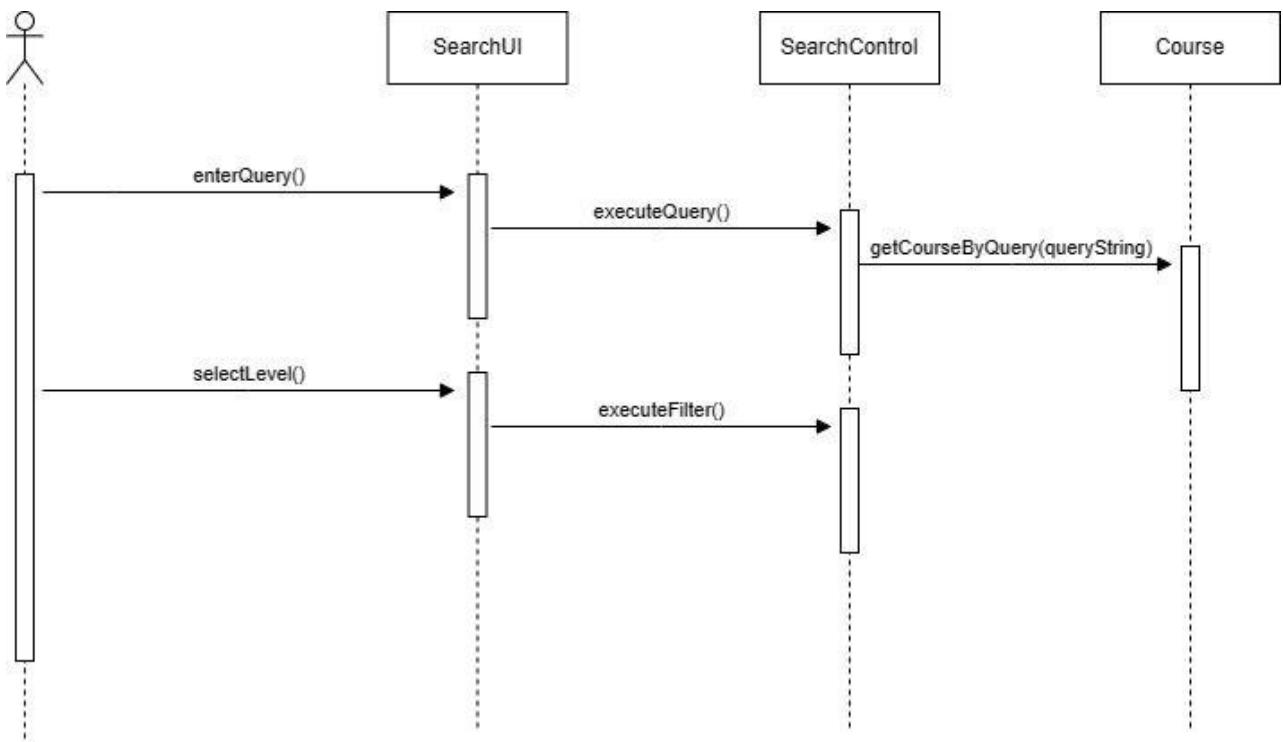
# Chapter 7

## Sequence Diagram

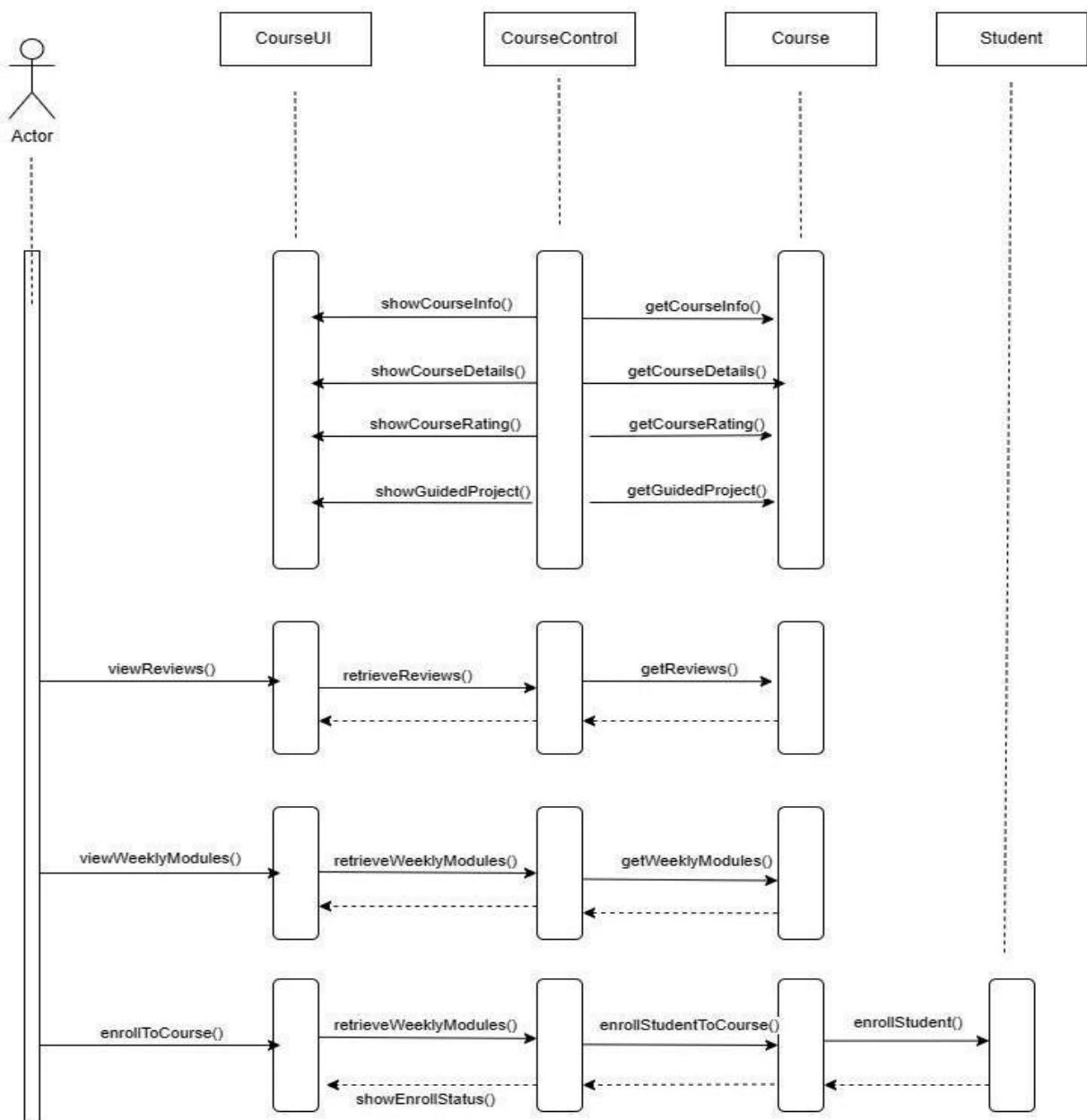
### 1. User DashBoard (HomePage):



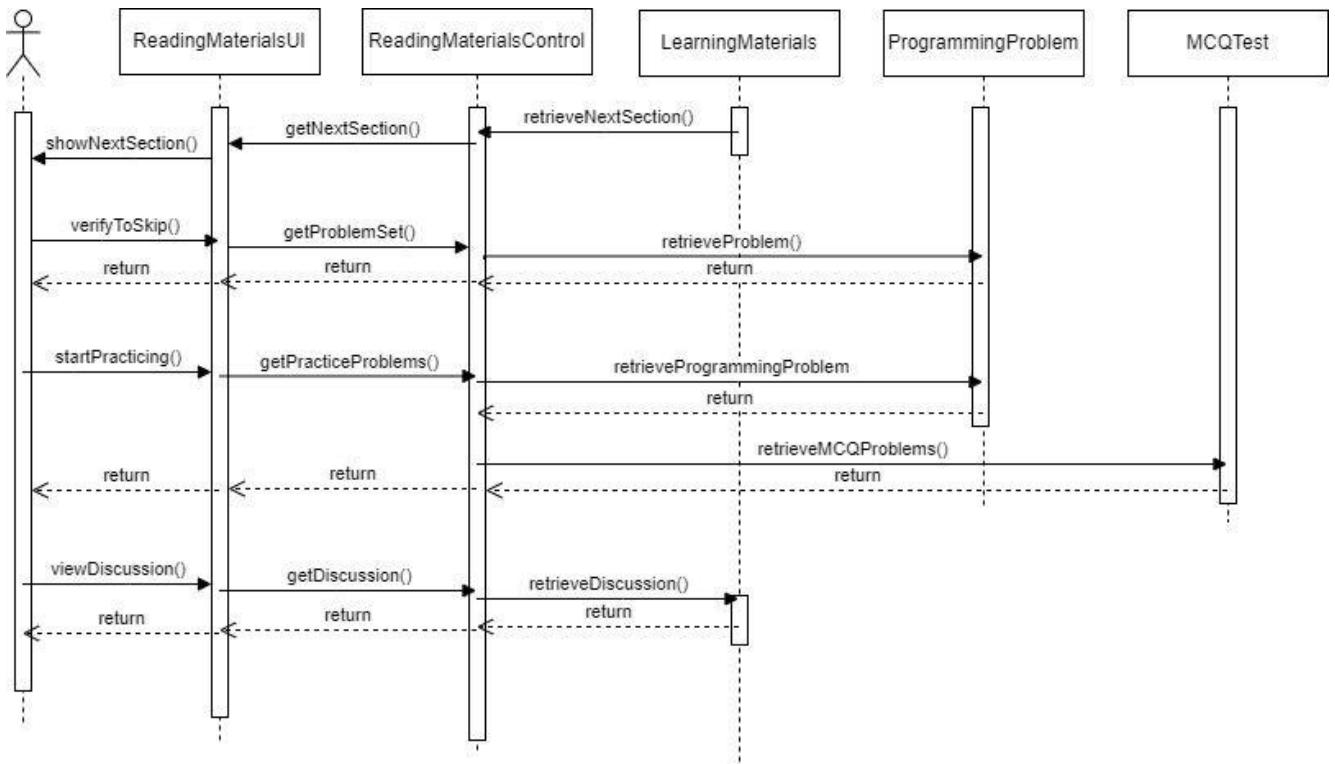
### 2. Course Searching:



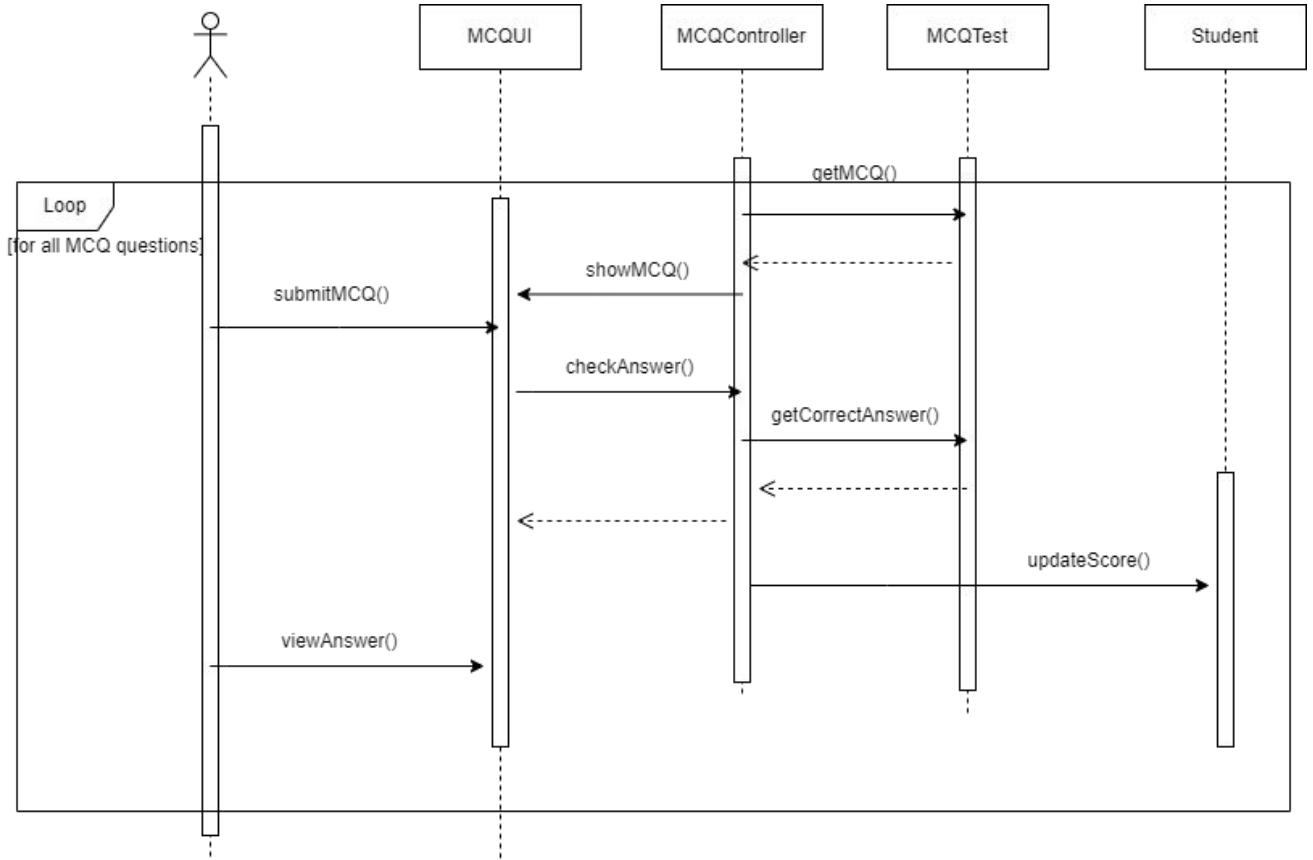
### 3.Course Details Page:



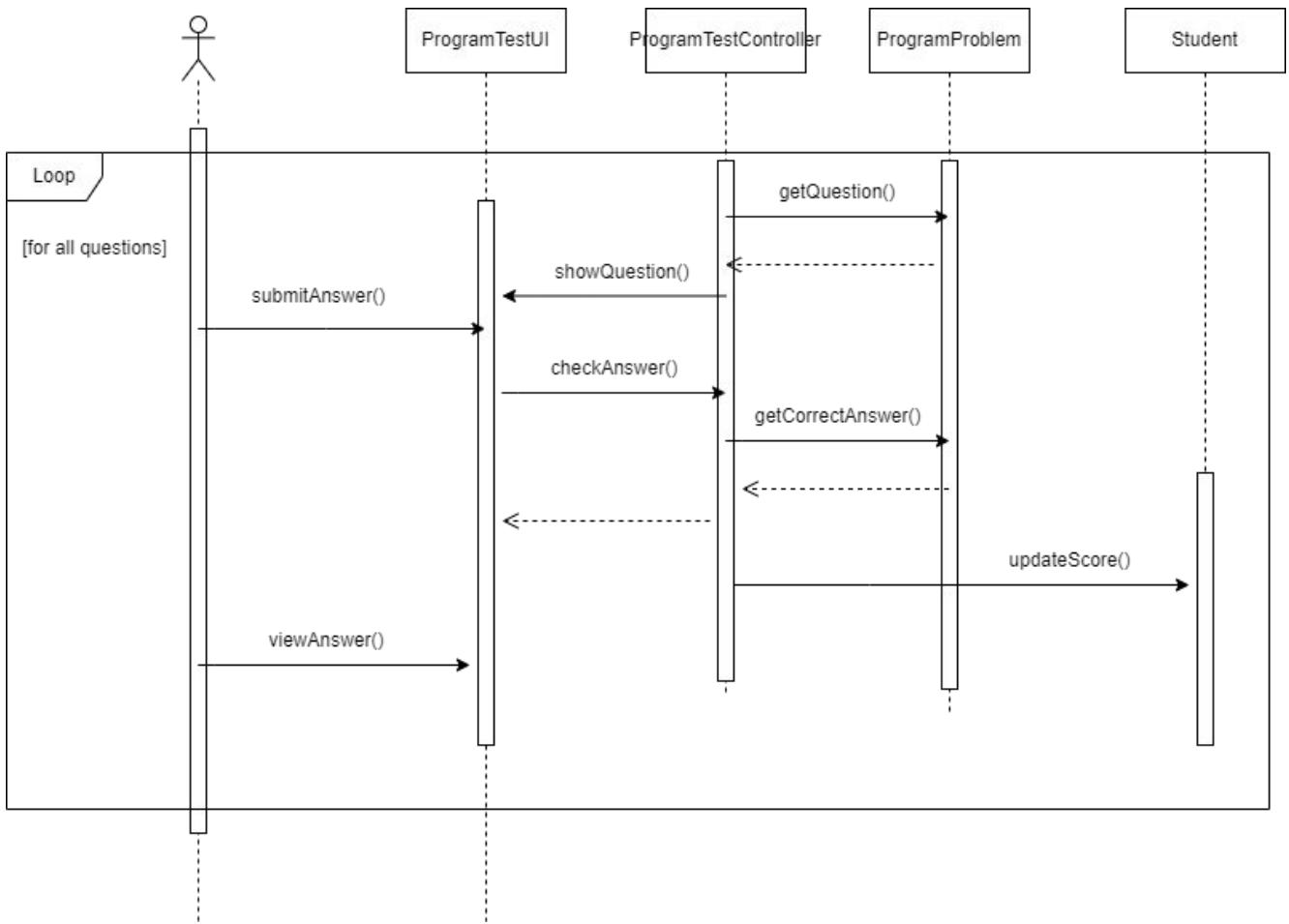
## 4. Reading Materials:



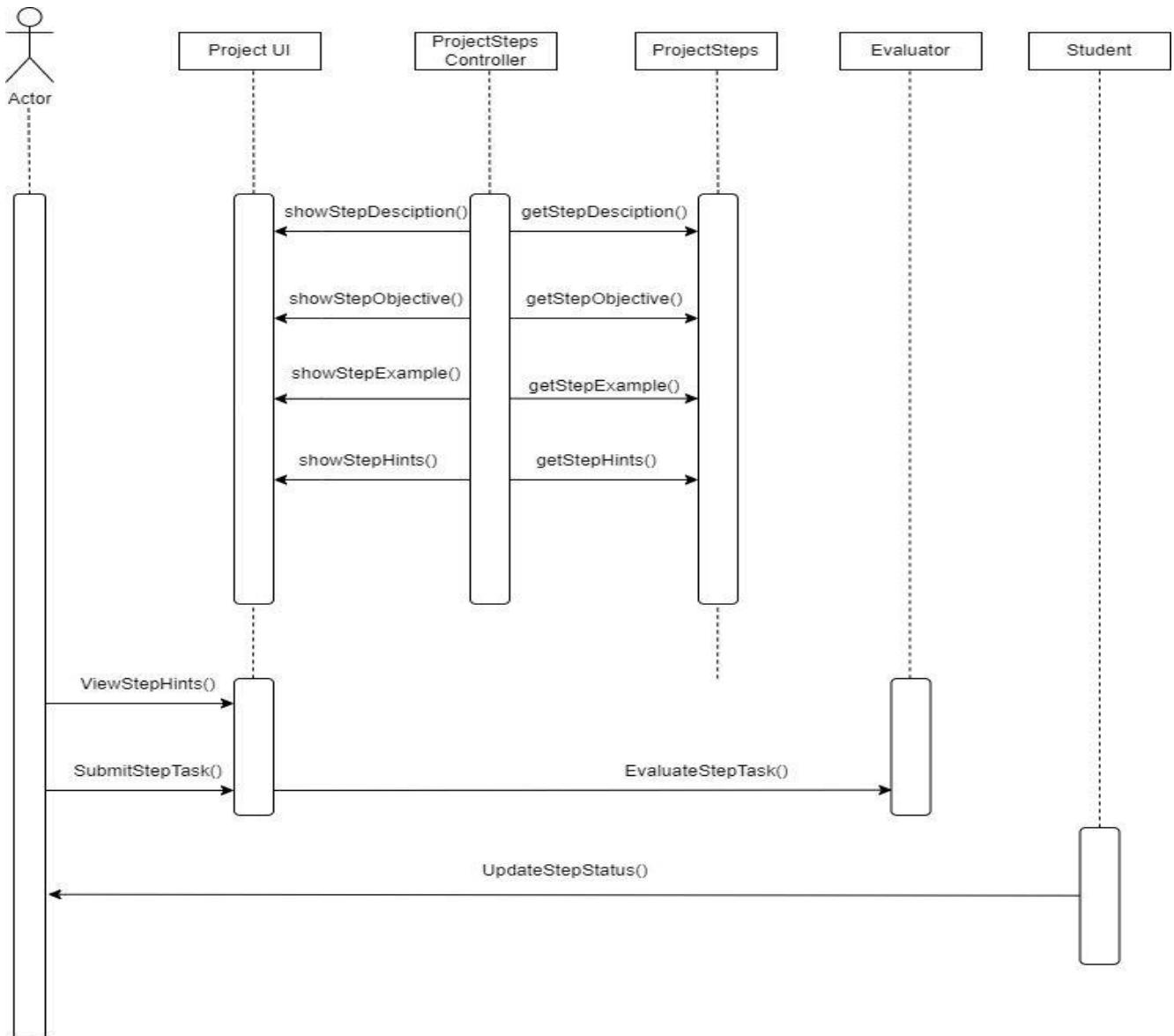
## 5. MCQ Test:



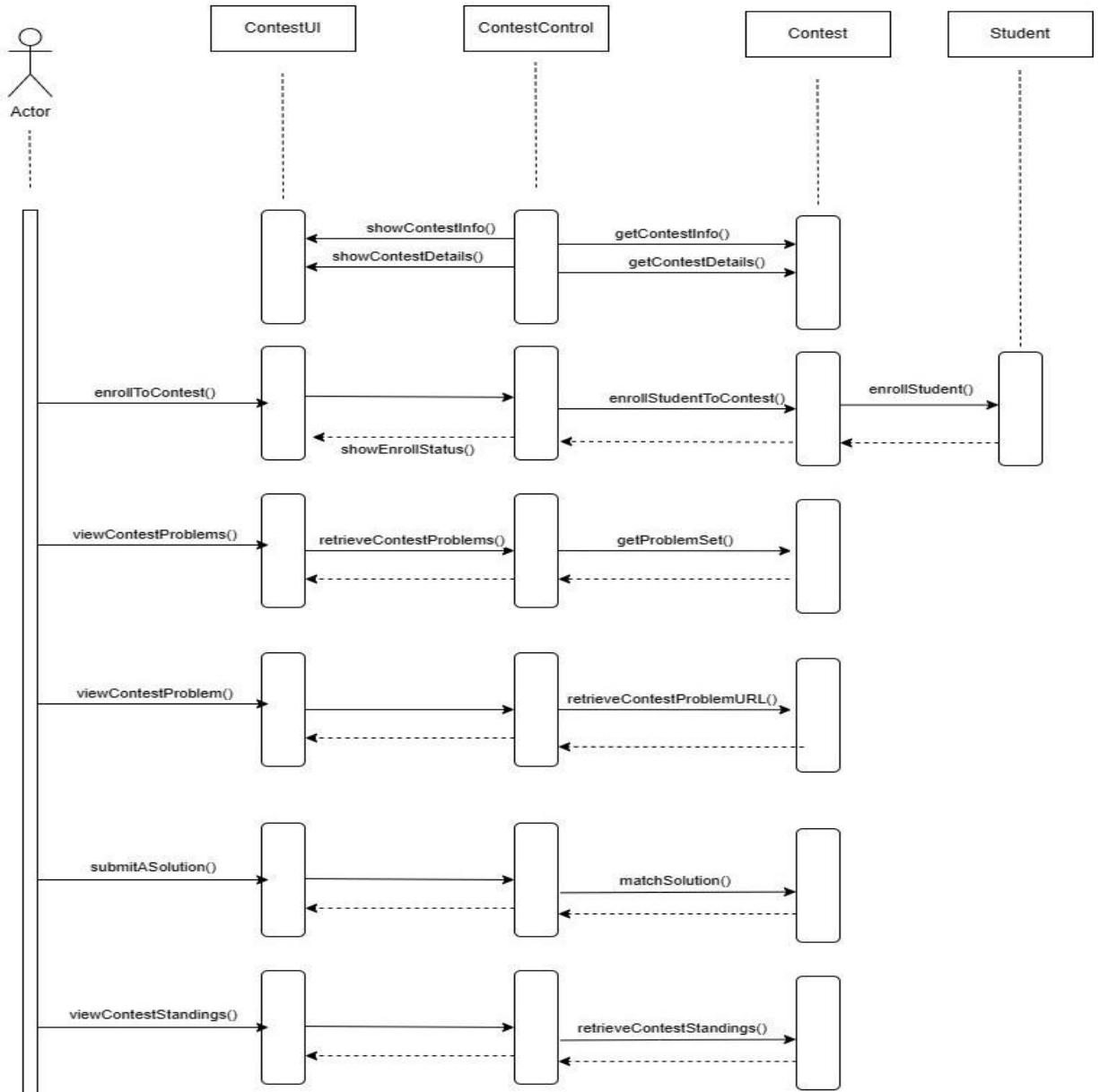
## 6.Programming Problem Test:



## 7.Project Steps:



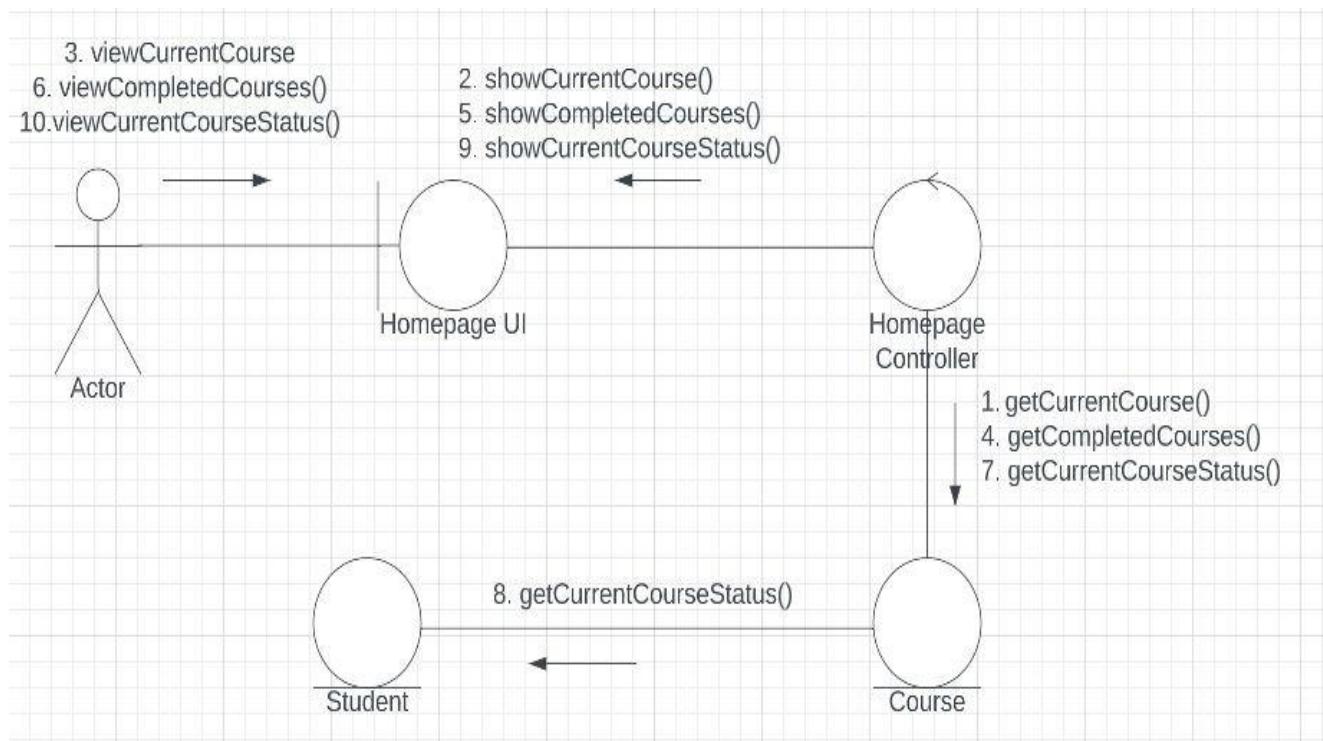
## 8.Contest:



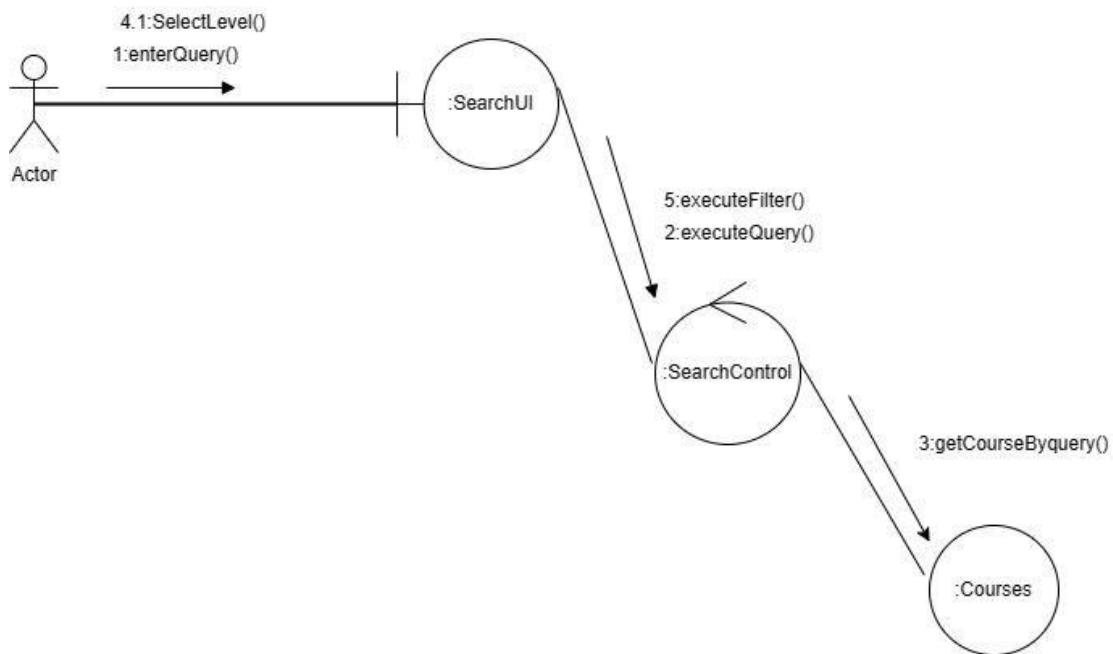
# Chapter 8

## Collaboration Diagram

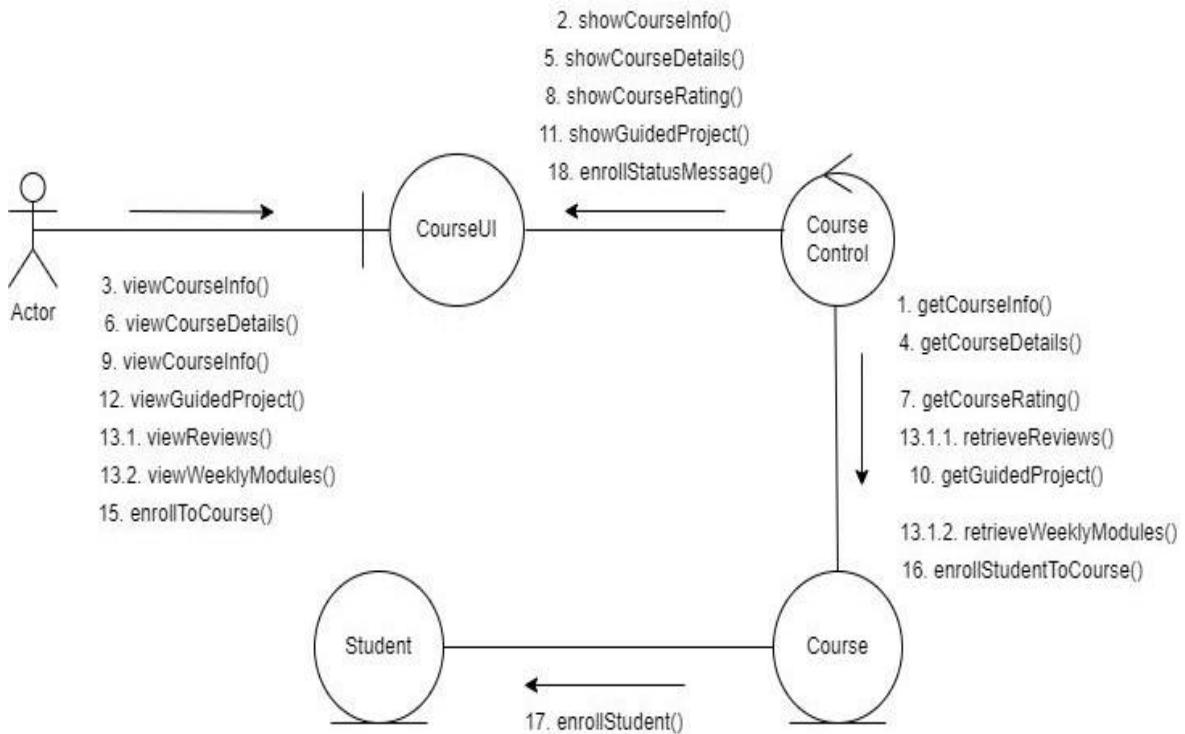
### 1. User Dashboard(HomePage):



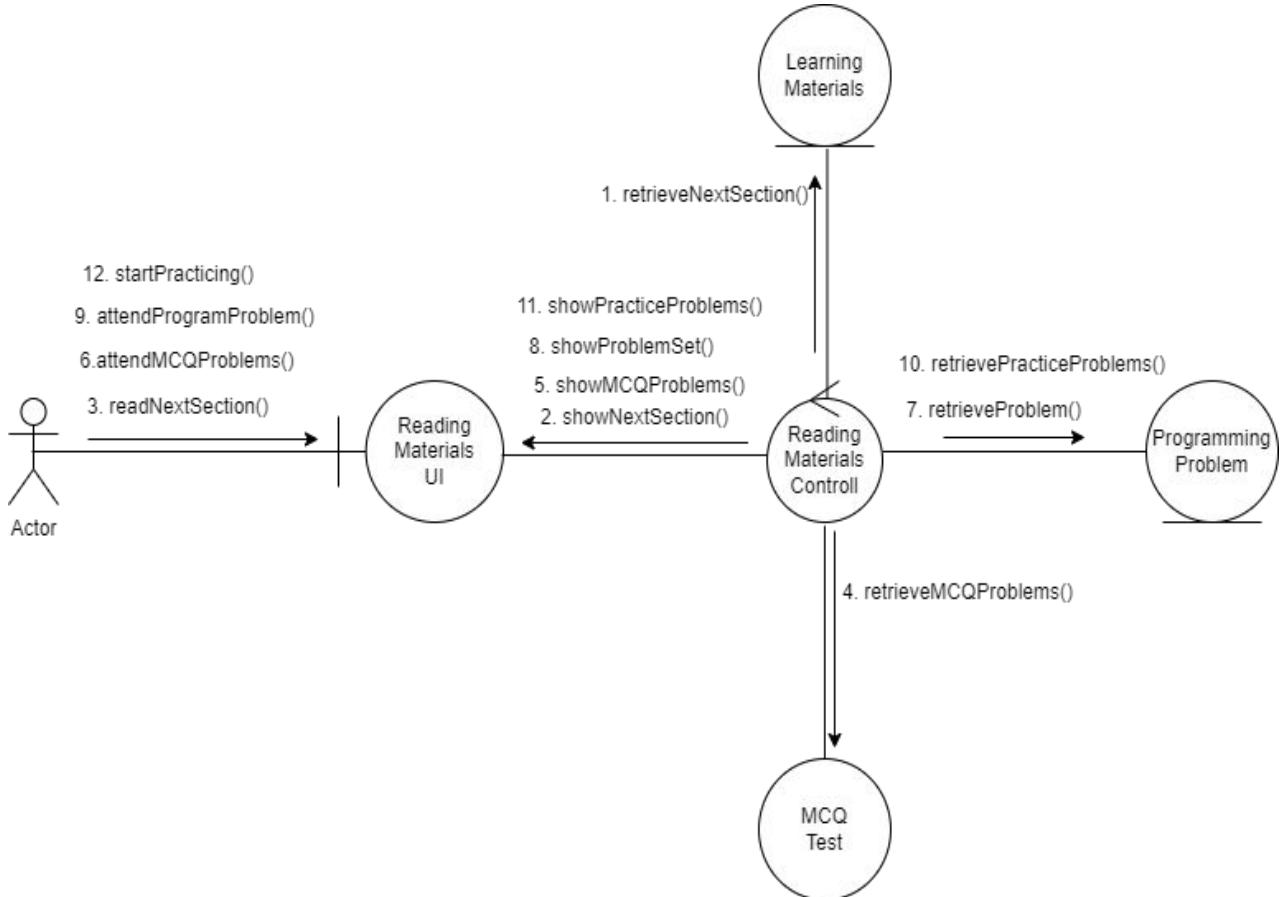
### 2. Course Searching:



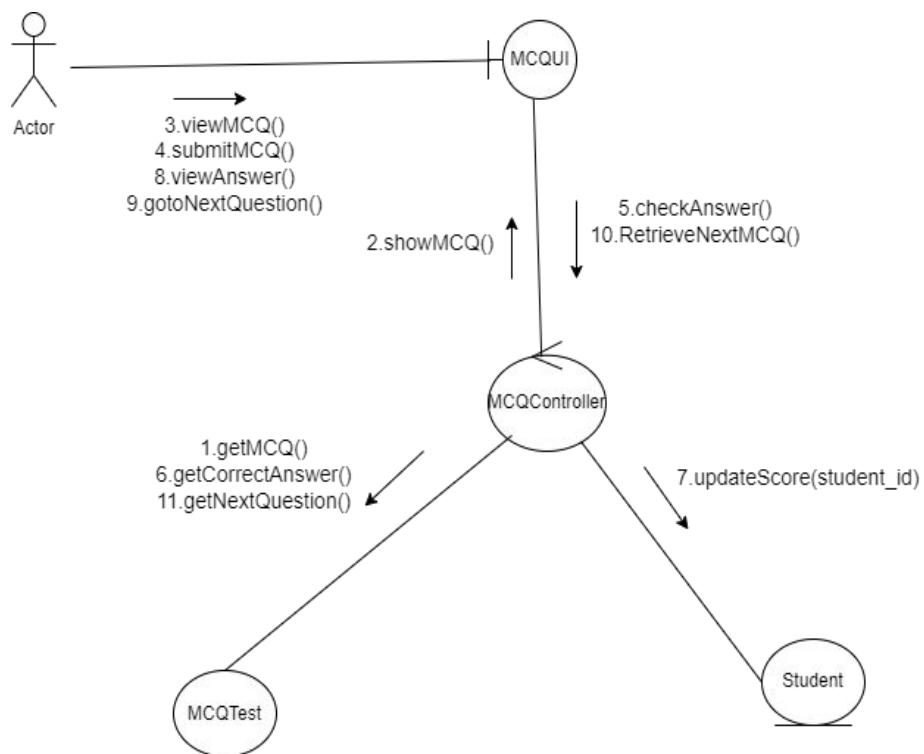
### 3.Course Details Page:



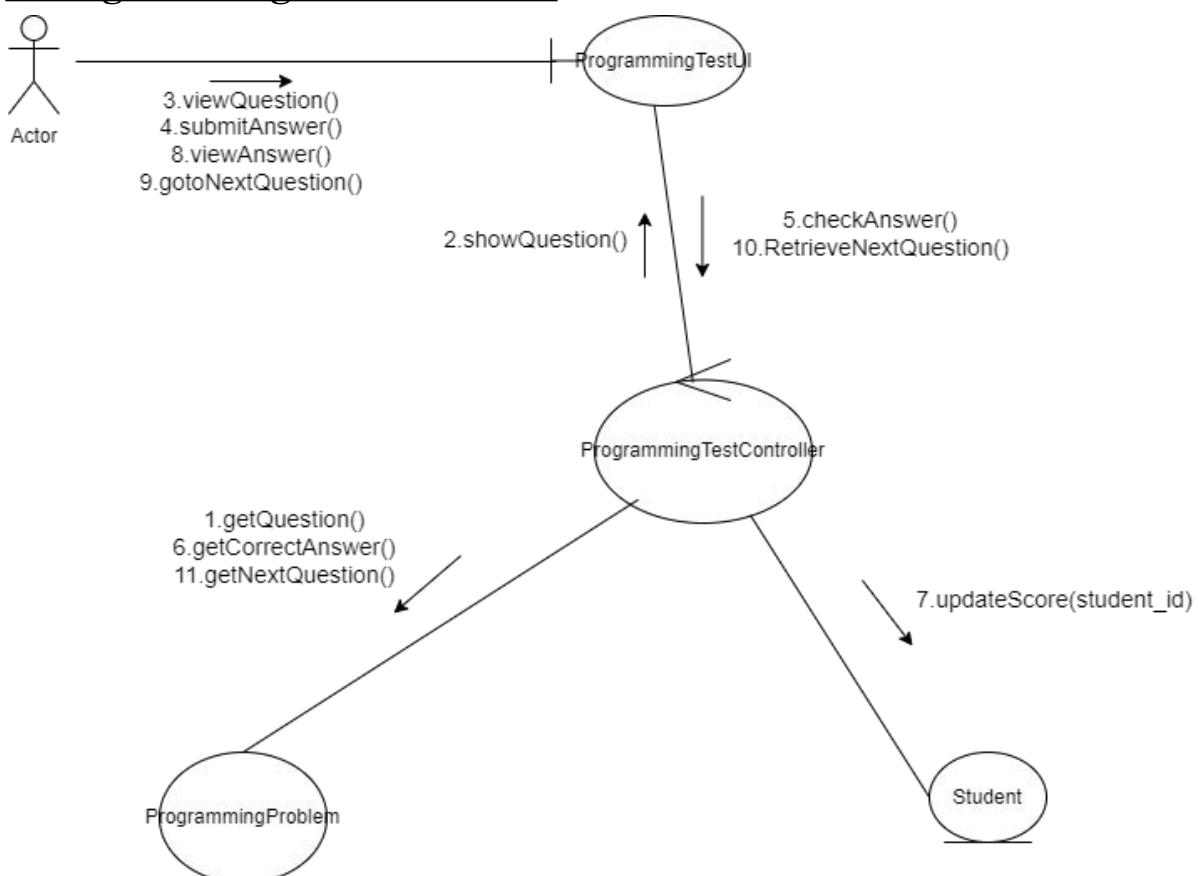
### 4.Reading Materials:



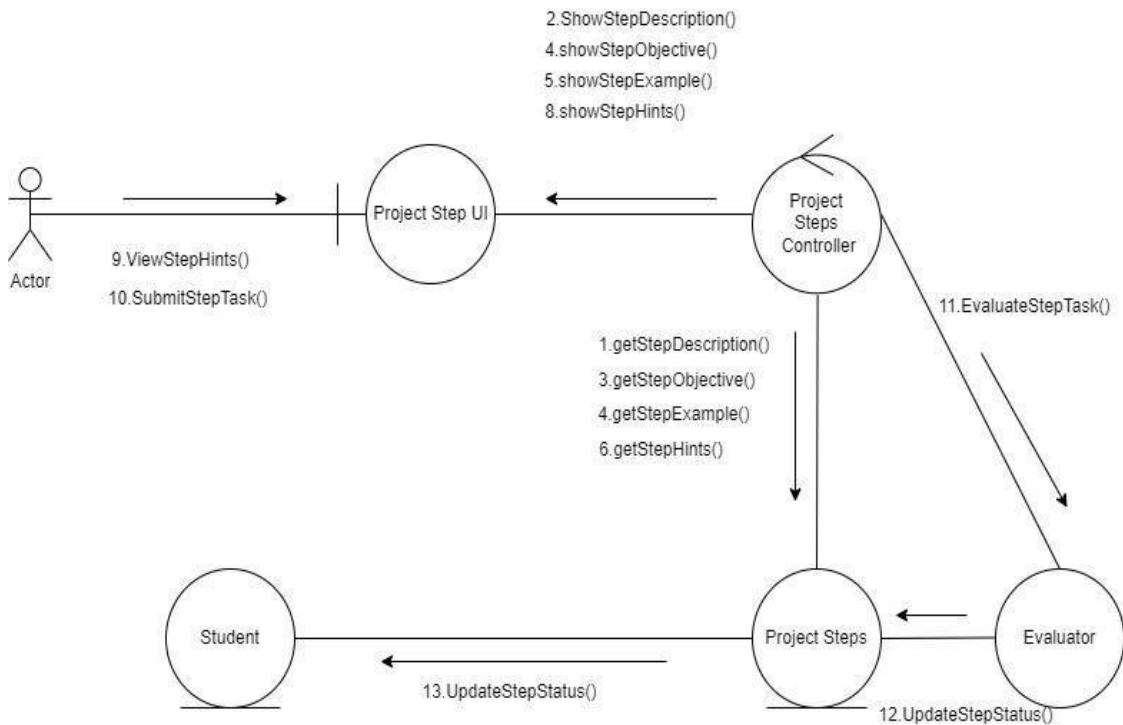
## 5.MCQ Test:



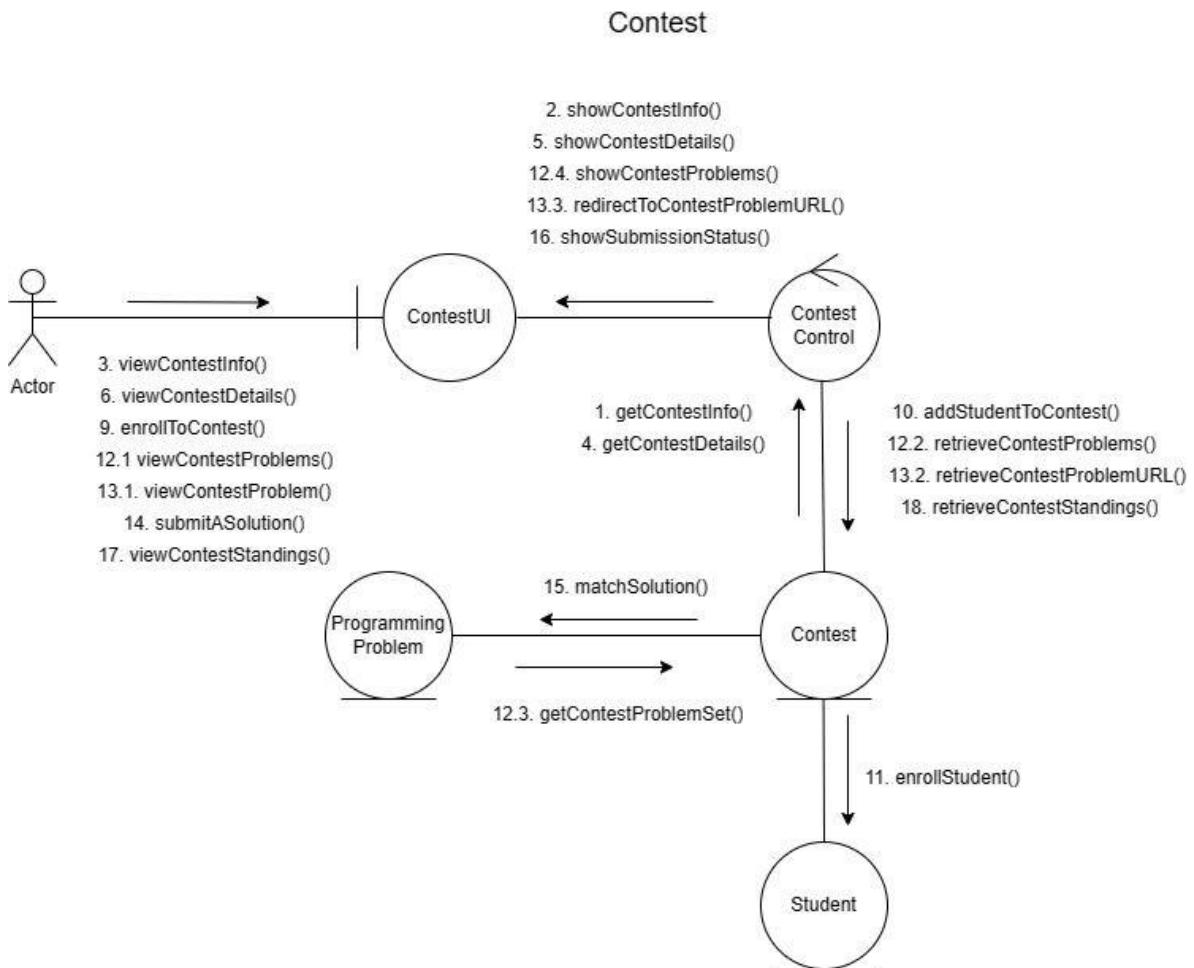
## 6.Programming Problem Test:



## 6.Project Steps:

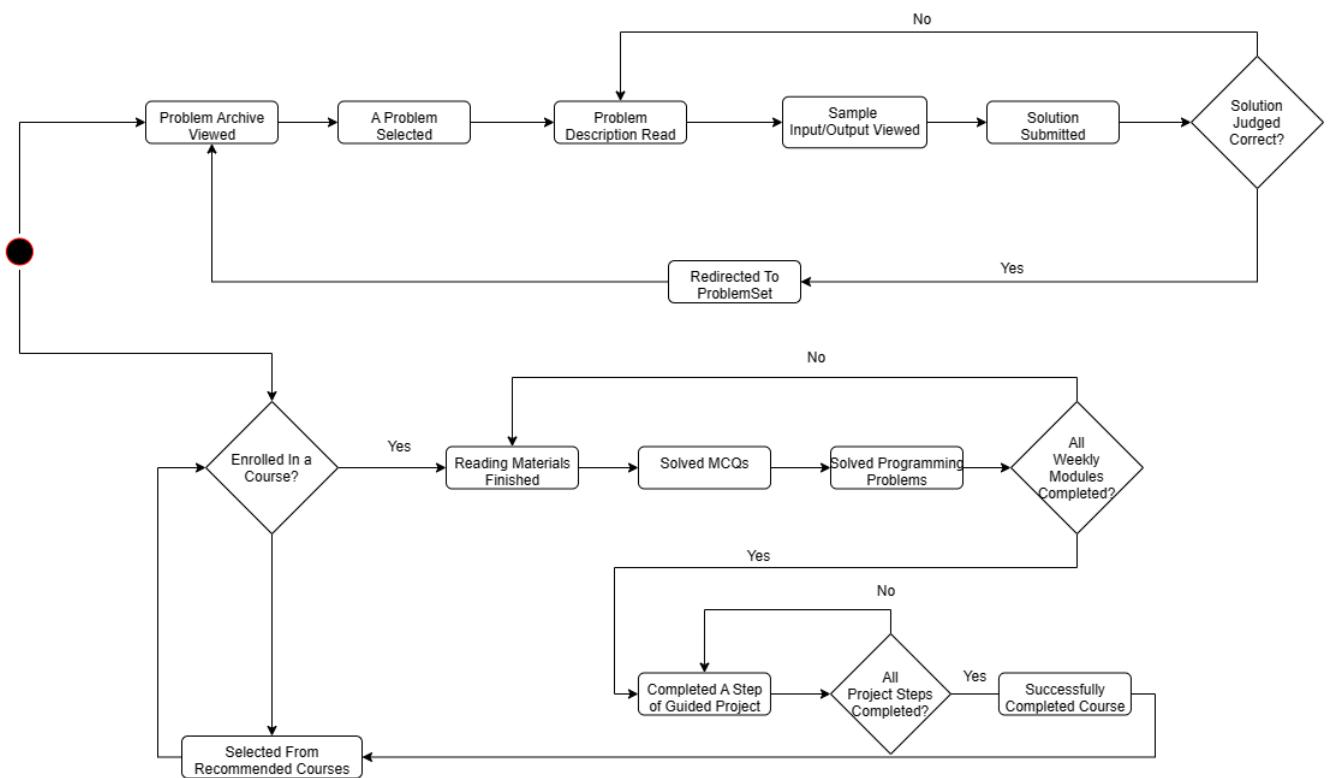


## 7.Contest:



# Chapter 9

## State Diagram



# Chapter 10

## Implemented Modules

### Dashboard Module:

#### My Courses

[Home](#)



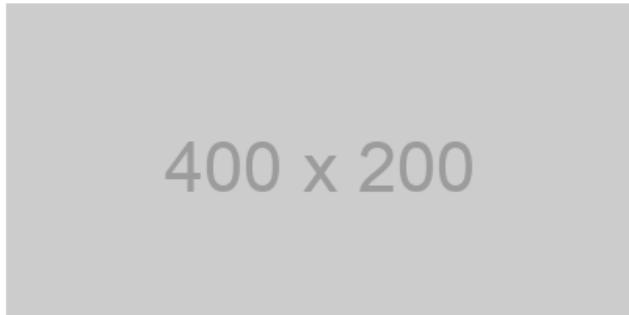
Course  
1



Course  
2



Course  
3



400 x 200

#### Current Course

Description of current course goes here.

[Continue](#)

# My Courses

[Home](#)



400 x 200

## Current Course

Description of current course goes here.

[Continue Current Course](#)

Student Name: John Doe  
Class: 8th Grade

## Course Module:

# Programming For Kids

## Week 1

Some content for week 1  
goes here...



## Week 2

Some content for week 2  
goes here...



## Week 3

Some content for week 3  
goes here...



## Week 4

Some content for week 4  
goes here...



## MCQ Test

What is the output of the following C code?

```
int main() {
    int a = 5;
    int b = 10;
    printf("%d", a + b);
}
```

a) 10

b) 15

c) 20

d) 25

Submit

## C Programming Test

What is the correct syntax to declare a pointer variable in C?

- a) int \*ptr;
- b) int ptr;
- c) \*int ptr;
- d) pointer \*ptr;



Submit

[Home](#)

## C Programming Problem

Write a C program to calculate the sum of two numbers.

### Sample Input

```
5 10
```

### Sample Output

```
Sum = 15
```

### Editor

Enter your code here...

[Submit](#)

[NEXT](#)