Sequence Diagram

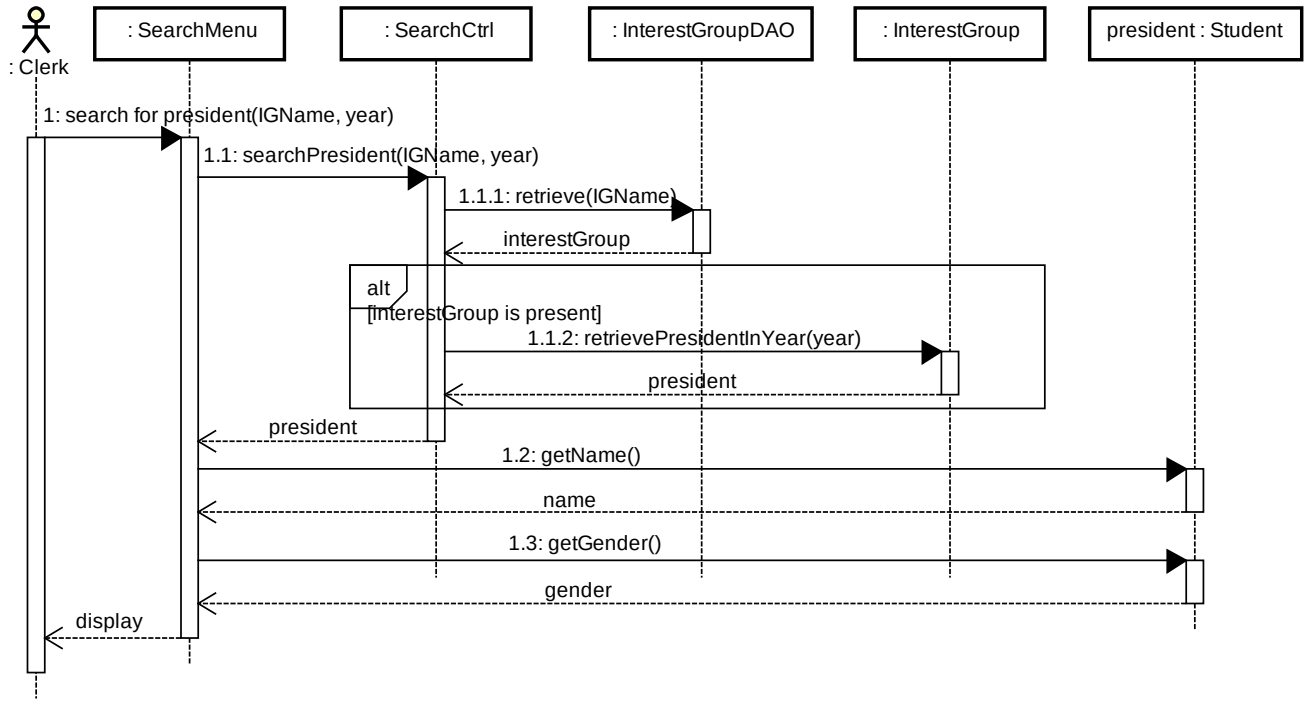
Resource: *http://blue.smu.edu.sg/sequence-diagram-resource.zip*

1. You are tasked to implement an Interest Group Management System. The following Java class files are provided with their Java API:
   I. `Student.class`
   II. `InterestGroup.class`
   III. `InterestGroupDAO.class`

   You are provided with the following Java source files:
   I. `IGApp.java` (Contains the main method)
   II. `SearchMenu.java`
   III. `SearchCtrl.java`

   Note: You just need to implement the `searchPresident` method in `SearchMenu`, and the `searchPresident` method in `SearchCtrl`.

"Search for President" Sequence Diagram



Refer to the sequence diagram and complete the application so that it produces the output shown on the next page. You just need to handle the scenarios detailed (next page) without any **hard-coding**.

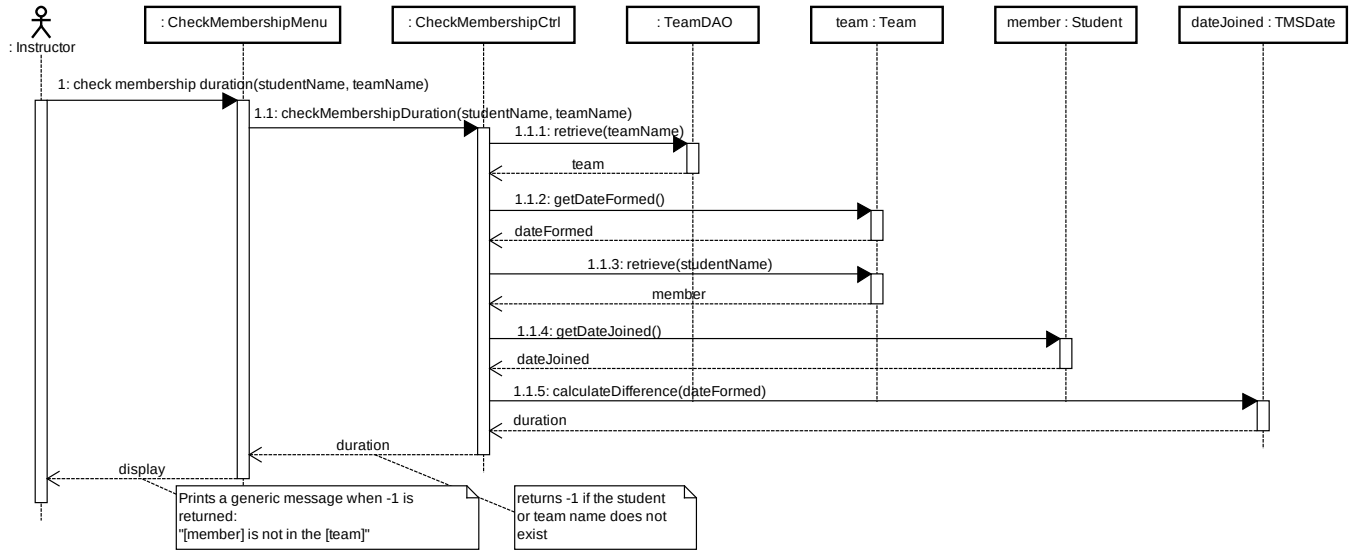
```
== Interest Group Management System ==
1. President Gender Search
2. Quit Application
Please enter your choice:1
Enter the Interest Group's name> alpha
Enter the year > 2008
The president Stephan is a gentleman

== Interest Group Management System ==
1. President Gender Search
2. Quit Application
Please enter your choice:1
Enter the Interest Group's name> alpha
Enter the year > 2010
The president Athena is a lady

== Interest Group Management System ==
1. President Gender Search
2. Quit Application
Please enter your choice:1
Enter the Interest Group's name> charlie
Enter the year > 2010
Invalid Interest Group/Year entered.

== Interest Group Management System ==
1. President Gender Search
2. Quit Application
Please enter your choice:2
bye bye
```

2. You are tasked to implement a Team Management System. The following Java class files are provided with their Java API.
    I. `Student.class`
    II. `Team.class`
    III. `TeamDAO.class`
    IV. `TMSDate.class`
    V. `TMSApp.class` (contains the main method)

    You are provided with the following Java source files:
    I. `CheckMembershipMenu.java`
    II. `CheckMembershipCtrl.java`

    Given the below sequence diagram, implement `checkMembershipDuration` method in `CheckMembershipMenu`, and `checkMembershipDuration` method in `CheckMembershipCtrl`.

"Check Membership Duration" Sequence Diagram



Refer to the sequence diagram and complete the application so that it produces the output shown on the next page. You just need to handle the scenarios detailed (next page) without any **hard-coding**. The completed application produces the following output:

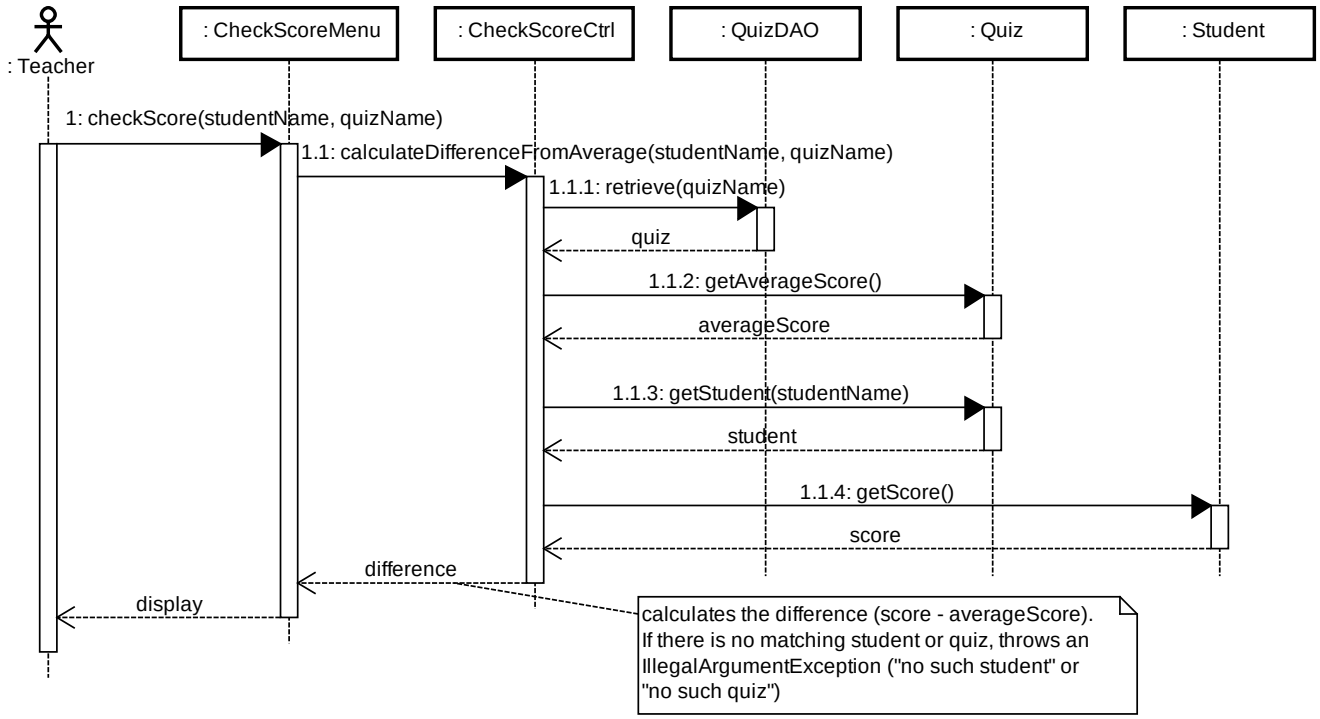
```
== Team Management System ==
1. Check student's team enrolment
2. Quit Application
Please enter your choice: 1
Enter the student's name> apple
Enter the team's name> alpha
apple joined the team 2 days after the team is formed.

== Team Management System ==
1. Check student's team enrolment
2. Quit Application
Please enter your choice: 1
Enter the student's name> orange
Enter the team's name> alpha
orange joined the team when the team is formed.

== Team Management System ==
1. Check student's team enrolment
2. Quit Application
Please enter your choice: 1
Enter the student's name> guava
Enter the team's name> alpha
guava is not in the team alpha.
```

3. You are tasked to implement a Quiz Management System. The following Java class files are provided with their Java API.
   I. `Quiz.class`
   II. `Student.class`
   III. `QuizDAO.class`

   You are provided with the following Java source files:
   A. `CheckScoreMenu.java`
   B. `CheckScoreCtrl.java`
   C. `QMSApp.java` (Contains the main method)

   Note: You just need to implement the `checkScore()` method in `CheckScoreMenu`, and the `calculateDifferenceFromAverage()` method in `CheckScoreCtrl`.

"Check Student's Score" Sequence Diagram



Refer to the sequence diagram and complete the application so that it produces the output shown on the next page. You just need to handle the scenarios detailed (next page) without any **hard-coding**.

```
== Quiz Management System ==
1. Check student's score
2. Quit Application
Please enter your choice: 1
Enter the student's name> Adam
Enter the quiz's name > Week-1
Adam is 10.0 marks below the average

== Quiz Management System ==
1. Check student's score
2. Quit Application
Please enter your choice: 1
Enter the student's name> Adam
Enter the quiz's name > Week-7
Adam is 5.0 marks above the average

== Quiz Management System ==
1. Check student's score
2. Quit Application
Please enter your choice: 1
Enter the student's name> Penny
Enter the quiz's name > Week-1
Penny is sitting on the fence!

== Quiz Management System ==
1. Check student's score
2. Quit Application
Please enter your choice: 1
Enter the student's name> Penny
Enter the quiz's name > Week-11
No such quiz.

== Quiz Management System ==
1. Check student's score
2. Quit Application
Please enter your choice: 1
Enter the student's name> Elise
Enter the quiz's name > Week-1
No such student.

== Quiz Management System ==
1. Check student's score
2. Quit Application
Please enter your choice: 2
bye bye
```