

# RIPHAH INTERNATIONAL UNIVERSITY, LAHORE CAMPUS.

*SCHOOL OF COMPUTING & INNOVATION*



## **OBJECT ORIENTED PROGRAMMING (CS 2104)**

### **ASSIGNMENT 02**

**Issue Date: 10-05-2022**  
**Due Date: 16-05-2022**  
**Semester: SPRING 2022**  
**Class: BSCS (2A, 2B)**  
**Total Marks: 100**

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#### **Objectives:**

- Implementation of inheritance hierarchy.

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#### **Instructions:**

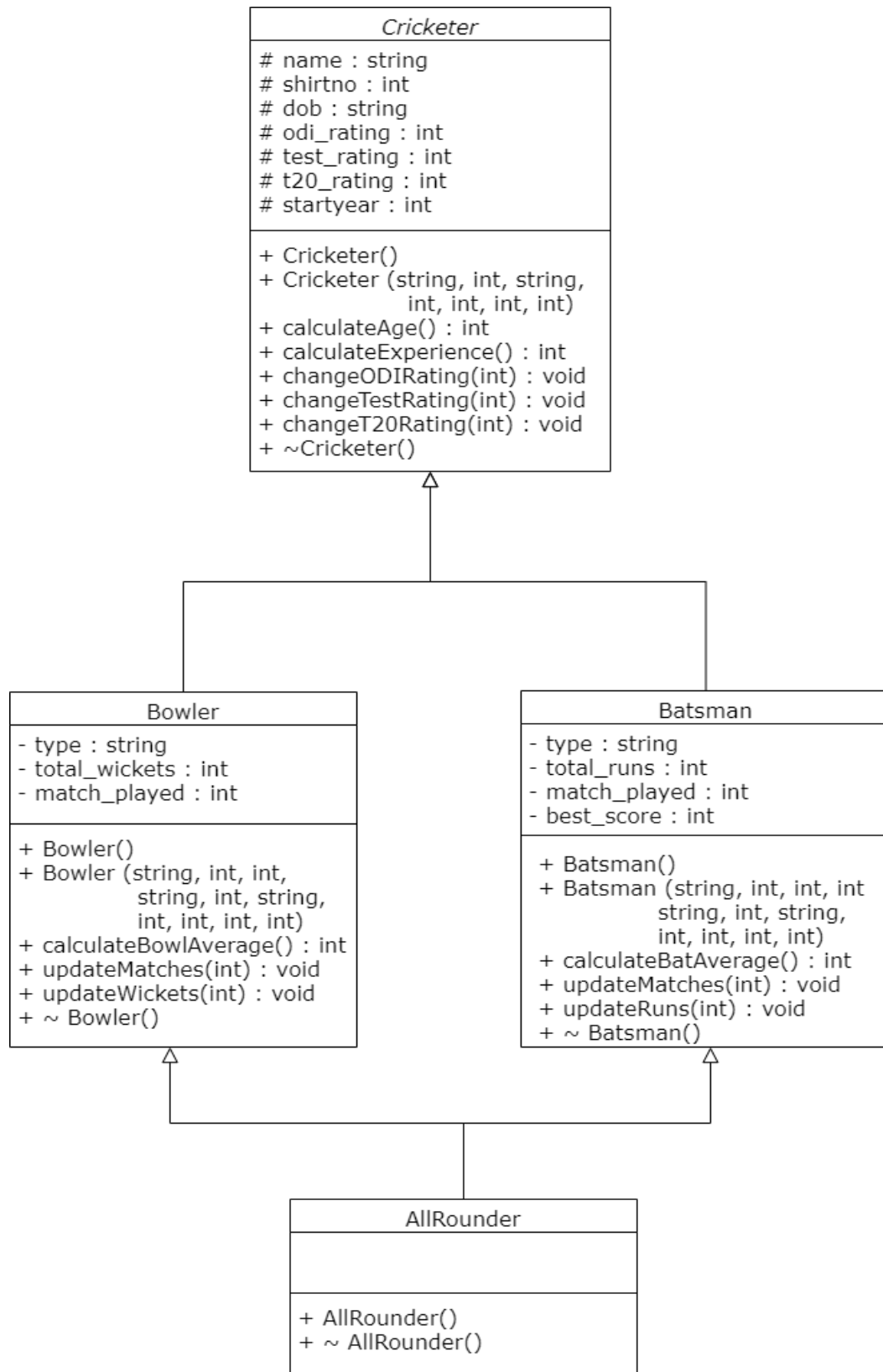
- Assignment type is individual, so no sharing is allowed.
- You can use internet and books as helping resources but sharing content with peers is strictly prohibited.
- **Plagiarized assignments will get zero and may fail the course.**
- I am available for your help/guidance.
- **Start early!**

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#### **Submission Method:**

- There will one .cpp file.
  - Submit your .cpp file at **Moellim only**. No submission is allowed on email.
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Consider the following UML Class Diagram:



Implement the above given UML Class Diagram in C++. Details of functions is given below.

### Explanation of Functions:

CLASS: Cricketer	
Function Name	Explanation
+ Cricketer()	Default constructor. Set all values to 0 or null. <i>You can print any message to recognize this constructor.</i>
+ Cricketer (string, int, string, int, int, int, int)	Parameterized constructor. Set given values. <i>You can print any message to recognize this constructor.</i>
+ calculateAge() : int	Calculate age of cricketer based upon date of birth given. <b>Hint:</b> Get year from date of birth, convert to integer using stoi() and subtract from current year.
+ calculateExperience() : int	Calculate number of years experience of cricketer based upon start year given.
+ changeODIRating(int) : void	Change ODI Rating and set to given rating.
+ changeTestRating(int) : void	Change Test Rating and set to given rating.
+ changeT20Rating(int) : void	Change T20 Rating and set to given rating.
+ ~Cricketer()	Print any message to recognize the destructor.

CLASS: Bowler	
Function Name	Explanation
+ Bowler()	Default constructor. Set all values to 0 or null. <i>You can print any message to recognize this constructor.</i>
+ Bowler (string, int, int, string, int, string, int, int, int, int)	Parameterized constructor. Set given values. <i>You can print any message to recognize this constructor.</i>
+ calculateBowlAverage() : int	Calculate bowler average using below formula. Average = Number of Wickets / Number of Matches Played
+ updateMatches(int) : void	Add given matches to existing matches
+ updateWickets(int) : void	Add given wickets to existing wickets
+ ~Bowler()	Print any message to recognize the destructor.

CLASS: Batsman	
Function Name	Explanation
+ Batsman()	Default constructor. Set all values to 0 or null. <i>You can print any message to recognize this constructor.</i>
+ Batsman (string, int, int, int, string, int, string, int, int, int, int)	Parameterized constructor. Set given values. <i>You can print any message to recognize this constructor.</i>
+ calculateBatAverage() : int	Calculate batsman average using below formula. Average = Number of Runs / Number of Matches Played
+ updateMatches(int) : void	Add given matches to existing matches
+ updateRuns(int) : void	Add given runs to existing runs
+ ~ Batsman()	Print any message to recognize the destructor.

CLASS: AllRounder	
Function Name	Explanation
+ AllRounder()	Default constructor. Print any message to recognize this constructor.
+ ~ AllRounder()	Print any message to recognize the destructor.

**Write any suitable main() function to test your functions. I will add my own main function in your code to test it and it will contain all the functions used in this class. So write a generic code to run on any main function provided.**

**Good Luck 😊**