RIPHAH INTERNATIONAL UNIVERSITY, LAHORE CAMPUS.

SCHOOL OF COMPUTING & INNOVATION

OBJECT ORIENTED PROGRAMMING (CS 2022)

ASSIGNMENT

Issue Date: 08-11-2022
Due Date: 15-11-2022
Semester: Fall 2022
Class: BSCS
Total Marks: 100

Objectives:

- Implementation of inheritance hierarchy.

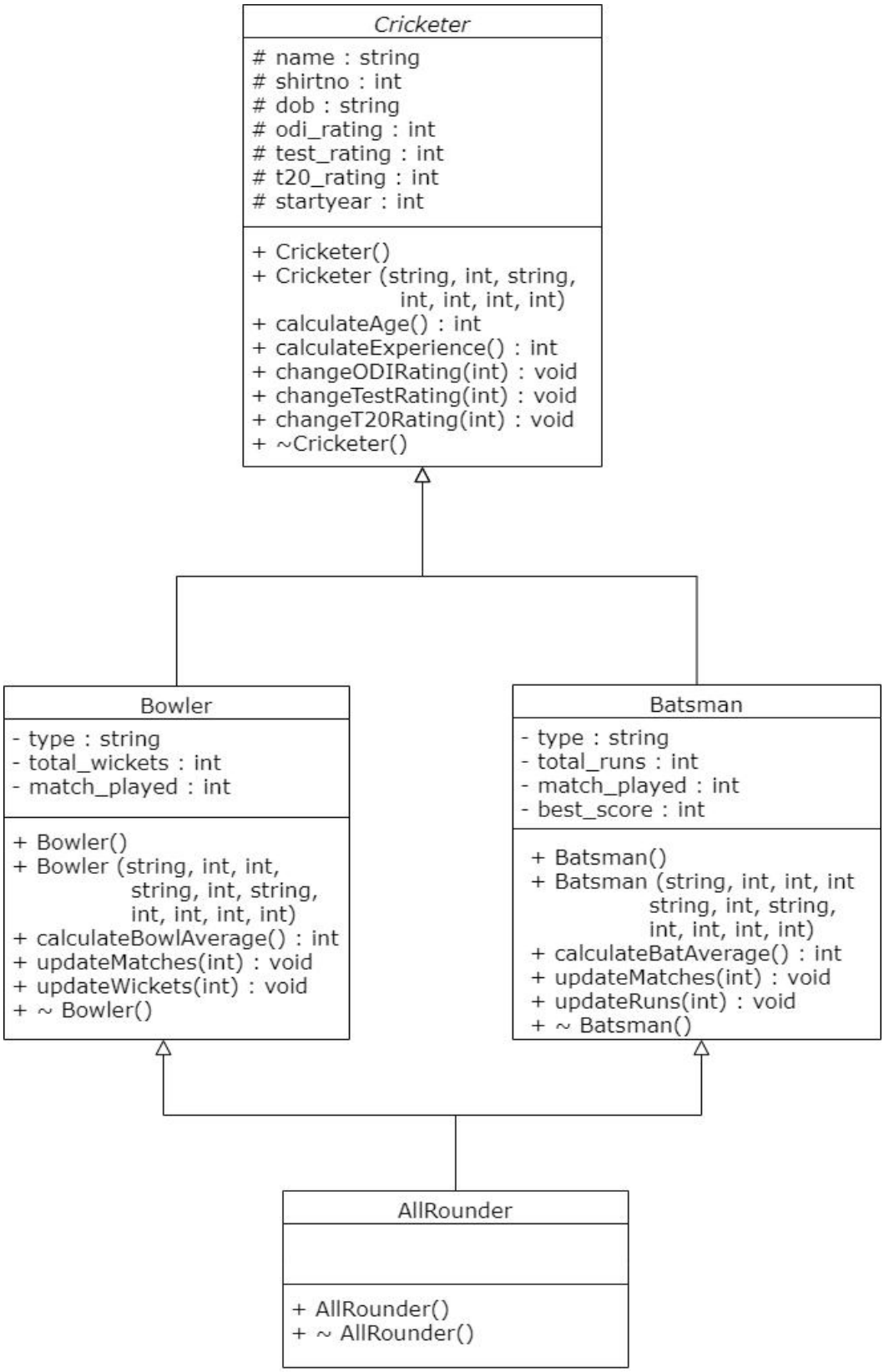
Instructions:

- 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!**

Submission Method:

- There will one .cpp file.
- Submit your .cpp file at **Moellim only**. No submission is allowed on email.

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. *You can print any message to recognize this constructor.*
+ Cricketer (string, int, string, int, int, int, int)	Parameterized constructor. Set given values. *You can print any message to recognize this constructor.*
+ calculateAge() : int	Calculate age of cricketer based upon date of birth given. **Hint:** 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. *You can print any message to recognize this constructor.*
+ Bowler (string, int, int, string, int, string, int, int, int, int)	Parameterized constructor. Set given values. *You can print any message to recognize this constructor.*
+ 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. *You can print any message to recognize this constructor.*
+ Batsman (string, int, int, int, string, int, string, int, int, int, int)	Parameterized constructor. Set given values. *You can print any message to recognize this constructor.*
+ 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