Assignment 5

Total Marks=20

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1. You are required to design a Java program for a Cricket Team Management System. Consider the blueprints for the classes as given below.

Coach
-name : String -coachId: String
<<constructor>>Coach(String name, String coachId) <<constructor>>Coach(Coach c) //Copy constructor of Coach + toString(): String (It returns coach details in a readable format)

Player
-name : String -jersyNo: int -coach: Coach -role: String (Batsman, Bowler, All-Rounder, Wicket-Keeper) -teamCode: int (static variable, common for all the players)
A static block to initialize the static variables <<constructor>>Player(String name, int jersyNo, coach c, String role) <<constructor>>Player(Player p) //Copy constructor of Player

Tasks:

1. Basic Implementation [Marks =4]
    a. Implement the Coach and Player classes exactly as per the specification.
    b. Ensure toString() methods display complete details.
2. Demonstrate Shallow Copy [Marks =5]
    a. Create one Coach object and one Player object with this coach.

    b. Create a shallow copy of the Player object where the Coach is shallow copied i.e., a new copy of the Coach is not formed. Show that modifying the coach of the original player also modifies the copied player's coach.

3. Convert to Deep Copy [Marks=5]
    a. Modify the code to form a deep copy of the student object.
    b. Demonstrate again that modifying the original player's coach does not affect the copied player.

4. Static Variable Trap [Marks=4]
    a. Show with output that teamCode is shared among all players.
    b. Change teamCode in one player and prove that it changes for all.

5. For writing clean, readable, and well-structured code with proper indentation and comments [Marks = 2]