CSCI-101 Programming I
Exam 3

Full Name _____

Please follow the rules below as you work through this exam.

- Please leave all notebooks and electronics (including cell phones and smart watches) at the side of the room.
- This is a closed book/closed notes exam.
- Do not spend too much time on any one problem. You have 50 minutes to complete this exam.
- Partial credit is awarded.
- Please write legibly. If I cannot read your answers, I cannot give you credit.
- Please write your answers in the order specified. If you need additional paper, please raise your hand to ask your instructor for additional paper.
- Your code must be written to behave as specified.
- You must properly use all identifiers that are explicitly stated.
- Please use proper and consistent coding conventions (indentation, naming identifiers, etc.).
- Please stay in your seat until you are ready to hand in your exam. You may leave when you are finished.
- Once you leave the testing room you cannot return until the exam is over. If you need to use the restroom, please use it now.

1. Write a class named **SoccerPlayer** that models a soccer player and satisfies the following:

    A. The class has a field to hold a soccer player's name (**String**).

    B. The class has a constructor that initializes the field using data passed into the constructor.

    C. The class has a getter method and a setter method for the field.

    D. The class overrides the **Object** class' **toString()** method to return the soccer player's name.

    E. The class overrides the **Object** class' **equals()** method and considers two soccer players equal if their names are the same.

For problem 2, suppose there exists a file named **players.txt**. The first line indicates the number of names of soccer players that are included in the file, and each subsequent line contain the name of a soccer player.

Below is an example of what the file looks like. Do not assume there are 3 names in the file or that the names are the names given in the example below.

Example:

```
3
Erling Haaland
Vinicius Jr.
Jude Bellingham
```

2. Write a class named **Exam3** that satisfies the following:

    A. Create a method named **printPlayers()** that has two parameters. The first parameter is a **String** named **fileName**. The second parameter is an array named **arr** that holds references to instances of the **SoccerPlayer** class. The method prints on the first line of the file whose name is in **fileName,** the length of the array. The method then prints to the file the names of the soccer players in the array, one on each line.

    B. Create a method named **main()** that does the following:

        i. Allocate an array that can hold references to instances of the **SoccerPlayer** class. The length of the array should be equal to the value of the integer on the first line of **players.txt**.

        ii. Read the data from **players.txt** and populate the array with references to instances of the **SoccerPlayer** class.

        iii. Print the names of the players in the array to a file named **players.bkup** using the method named **printPlayers()**.