**Advanced Object Oriented Programming**

**Mini Assignment 2**

**(10%)**

**Average Time to complete: 2 and a half hours**

**Time given: 1 Week and 3 days.**

**Due:** Friday 15th October at 11:30 pm

**Submission:** On Blackboard.

Format: Upload this completed document

This project must be done in a group. **Group size: 2 to 4 people**.

It consists of 3 parts.

|  |  |  |  |
| --- | --- | --- | --- |
| **Group member** | **First name** | **Last name** | **Student id number** |
| **1** |  |  |  |
| **2** |  |  |  |
| **3** |  |  |  |
| **4** |  |  |  |

**One member of the group is responsible for uploading the completed document.**

Question1:

What is inheritance with respect to OOP? (You must mention appropriate terminology)

In your explanation you must :

* Explain how it is implemented in the C# programming language
  + This includes constructor parameter passing and keywords
* Explain how it is represented in a UML diagram.

Total for question: [**4 marks**]

(Delete the lines after the question and insert your response)

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Question 2:

What is polymorphism with respect to OOP? In your explanation you must:

Briefly explain the two main forms and any requirements they may have. You must also indicate how the forms are identified in a UML diagram**.**

Total for question: [**6 marks**]

(Delete the lines after the question and insert your response)

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Question 3: [10 marks]

Draw a UML Class Diagram representing the following elements from the problem domain for a soccer league. A soccer league is made up of at least four soccer teams. Each soccer team is composed of seven(7) to eleven(11) players, and one player captains the team. A team has a name and a record of wins and losses. Players have a number and a position. Soccer teams play games against each other. Each game has a score and a location. Teams are sometimes lead by a coach. A coach has a level of accreditation and a number of years of experience, and can coach multiple teams. Coaches and players are people, and people have names and addresses. Draw a class diagram for this information, and be sure to label all associations with appropriate multiplicities

All collections must be shown as arrays.

Carry out an initial object-oriented design for the above specification, in which you should identify and show in a UML diagram:

* Classes that you think will be required.
* Their attributes and behaviours
* Any aggregation relationships
* Any inheritance relationships you can identify
* Any other relationships between your classes

The UML Diagram should show all the information of the classes. No coordinator class is required.

**Please note that you must show or display competency in the techniques taught in the classes.**

**Proper usage of concepts such as manager classes, coordinator classes, aggregation and responsibility delegation must be displayed in your design.**

**The names and ID numbers of all group members must be in the diagram.**

**You can use the website “draw.io” to do your design and export the image. This was shown in the recorded class.**

Insert your UML diagram on the next page

**Insert your UML diagram after this line.**

CAREFUL NOTE:

- Please safeguard your own team’s work.

- You are to do this project with your group members only.

- Note: Mobi Help members are NOT supposed to do or help you with your assignment.