Soft 7004 – OOP1 - Labs

## LAB 2: Completion Date: 12th October 2018

## On completion please zip up your files including any documents used for drawing the class diagram. Upload to BlackBoard. This zip file should include all Labs.

**Q1**

What follows is the main class called TestBicycle

public class TestBicycle

{

public static void main(String[] args)

{

Bicycle bike1 = new Bicycle(); //

bike1.setSpeed(100); //

bike1.setMaker("Raleigh");

bike1.setType("Mountain Bike")

bike1.print();

Bicycle bike2 = new Bicycle(10,"Home Made", "Bone Shaker");

print();//

}

}

Part a) Write this code into Eclipse explaining each line marked with a comment.

Part b) Fix any problems encountered.

Part c) To ensure this class works you will need to create the Bicycle class which will be a template for creating as many Bicycles objects as you require of the same type. Firstly you need to draw the class diagram and then write your code. Use the main test above to see if it works.

**Q2** Create the code for the two classes below.

On completion of these classes do the following:

* Create a main class called MainTest (console application)
* Now using the classes specified above create an array/arraylist to hold the two teams and their details below:
  + MyVeryBestIrish who have red Gerseys and lives in Cork, “Pakie Bonner”, “Seamus Coleman”, “Robbie Keane ”, “Liam Miller”;
  + MyVeryBestWorld who have blue gerseys and live in Dublin "Messy”, “Ronaldo”,”Maradonna”;

Using the Team array/Arraylist **print** the team’s details on the first line followed by the details of players on the following lines.

Note :- each Team a collection of Players – this is known as a deep copy. If the Team shares its copy of players with another team it is a shallow copy.

Note :- the main method is only to use one player array so reuse this array for all teams, the team must have its own unique version of its own players.

From an object perspective there are team objects who each have a number of player objects associated with them, these are stored in an array of players which is an attribute of the team class.

Add new sections to the program (if necessary) so that there can be many teams and each team can have many players. Comment out any previous sections when testing.

## Player

name: String

code: String

Player(String)

setName(String)

getName: String

getCode: String

toString(): String

print()

Use the initials of the player name to set up the player code within the constructor. (1.5)

1,2,3 (Player object)

1 (actor object)

# Team

name: String

Gersey: String

Loacation:String

Players: Player [] (3)

Team(String, String, String)

setName(String)

setGersey(String)

setlocation(String)

setPlayers(Player [])

getName: String

getGersey: String

getlocation: String

getPlayers: Player []

toString(): String

print()

Print to the console the name of the team, its location, its gersey colour and then the 3 players it uses the player print method.

**Q3**

*Based on Lab1 Q2 complete the following:*

Part a) Develop a Car object. By using an array of objects, solve the same problem as in Lab 1 question 2. Hint use an array of Car Objects. Call your main class TestCarPartb

Part b) Develop a menu driven application called TestCarPartc that allows the user to add, remove and list Car objects. For this use an ArrayList of Car. What are the advantages of using an ArrayList over an array? Place the answer in a comment at the end of your code.