Soft 7004 – OOP1 - Labs

## LAB 2: Completion Date: 15th October 2017

## 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 TestDVD

public class TestDVD

{

public static void main(String[] args)

{

DVD dvd1 = new DVD(); //

dvd1.setTitle("Song Bird"); //

dvd1.setGenre("Blues");

dvd1.setArtist("Eva Cassidy")

dvd1.print();

DVD dvd2 = new DVD("Johnny B. Goode", "Chuck Berry");

print();//

}

}

Part a) Write this code into BlueJ 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 DVD class which will be a template for creating as many DVD 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 actors and their details below:
  + Jack Nicholson who’s 74 and lives in Miami, “Wolf”, “As good as it gets”, “ One flew over the Cuckoo’s Nest”;
  + Violante Placido 38 and lives in Bologna "The american", "Ghost Rider spirit of vengence" " Barah Aanan"

Using the Actor array/Arraylist **print** the actor’s details on the first line followed by the details of his/her films on the following lines.

Note :- each Actor has to have his/her own collection of Films – this is known as a deep copy. If the actor shares his copy of films with another actor it is a shallow copy.

Note :- the main method is only to use one film array so reuse this array for all actors, the actor owns his/her own films.

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

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

## Film

name: String

code: String

Film(String)

setName(String)

getName: String

getCode: String

toString(): String

print()

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

1,2,3… (film object)

1 (actor object)

# Actor

name: String

address: String

age: int

myFilm: Film [] (3)

Actor(String, String, int)

setName(String)

setAddress(String)

setAge(int)

setFilm(Film [])

getName: String

getAddress: String

getAge: int

getFilm: Film []

toString(): String

print()

Print to the console the name of the actor, his/her address, his/her age and then the 3 films he/she was in using the film print method. (1.5)

**Q3**

*Based on Lab1 Q2 complete the following:*

Part b) Develop a student object. By using an array solve the same problem as in Part a) in Lab1 question 2. Hint use an array of Student Objects. Call your main class TestStudentPartb

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