**Ara Department of Computing**

**Graduate Diploma in Information and Communication Technologies**

**Bachelor of Information and Communication Technologies**

**BCDE101 – Introduction to Programming**

**Python Practical Test**

**Student Name:**

**ID Number:**

**NOTE: For the purposes of this test you may use textbooks, your notes and any electronic files that are in your area of the network.**

This test is worth 25% of the overall mark for BCDE101

This test has 4 pages including the cover sheet

***Note that for some questions it may be necessary to write an extra method over and above the method that is asked for.***

Copy the zip file contained the test directory (and all sub-directories) from Moodle onto your local drive. Unzip all directories and files.

1. Four classes have been created in this project. Draw a class diagram in the space below showing the classes (including their attributes and methods) and relationships.

(1 mark)

1. In the setup method of controller.py write code to create the following five Members using the add\_member method that exists in the Club class

|  |  |  |  |
| --- | --- | --- | --- |
| **id** | **first\_name** | **last\_name** | **birth\_date** |
| M02 | Mary | Shelly | 17/01/1981 |
| M04 | Melvin | Dean | 08/08/2000 |
| M05 | Jim | Beam | 27/12/1980 |
| M01 | Carla | Main | 11/07/1980 |
| M03 | James | Bean | 15/08/2001 |

(2 marks)

1. Write a display\_members method for the Club class that displays only the last\_name, first\_name and id of all the members.

***NOTE: the other data for members should not be displayed.***

The required output is:

Main, Carla [M01]

Shelly, Mary [M02]

Bean, James [M03]

Dean, Melvin [M04]

Beam, Jim [M05]

***NOTE: Punctuation and spacing and ORDER must also be as shown above.***

***Hints:***

***You will need to use \n in your methods.***

***You will need to call the .sort\_members method in club.***

(3 marks)

1. Write an add\_activity method for the Member class that can be used to create a new activity.

***NOTE: You will need to add some code in the Activity class as well.***

(4 marks)

1. In the setup method of the controller.py class write code to create the following Activities, using the add\_activity method that has been created previously.

***NOTE: You will have to use the*** find\_member ***method in the club class***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***member\_id*** | **event** | **place** | **Start\_date** | **cost** |
| *M01* | Autumn Festival | Arrowtown | 1/1/2018 | $0.00 |
| *M05* | Joyride Carnival | Auckland | 5/2/2019 | $300.00 |
| *M05* | Easter High Tea | Wellington | 10/12/2018 | $150.00 |
| *M05* | Festival of Colour | Hamilton | 7/11/2018 | $0.00 |
| *M02* | Wine and Food Festival | Napier | 10/02/2020 | $350.00 |
| *M04* | Music in Park | Hamilton | 08/12/2018 | $0.00 |

(5 marks)

1. Write a **Boolean** get method named has\_many\_activities method for the Member class that returns true if the number of activities that member plays is more than one and false otherwise.

***NOTE: Check the value returned by the length method of all\_my\_activities Array.***

(2 marks)

1. Write display\_busy\_members method for the club class that first lists for each member who has more than one activity, the Member’s last\_name, first\_name and id is display. Then lists underneath the details of the Activity as shown below. This method must call the method created in the previous question.

The required output is:

Beam, Jim [M05]

Festival of Colour starts on 11/07/18 at Hamilton

Easter High Tea starts on 12/10/18 at Wellington

Joyride Carnival starts on 05/02/19 at Auckland

***NOTE: The order shown above is the required order. Punctuation and spacing must also be as shown above.***

***Hints:***

***You WILL need to use \n, \t and space in your method.***

***Use the date method strftime(“x%”)***

(8 marks)

**HOW TO SUBMIT YOUR COMPLETED TEST**

* When you have finished the test, zip all the files in \src and send ALL files to the digital drop box on Moodle.
* You must check with one of the tutors that this has been done properly before you leave the room.
* If your work has not been loaded into digital drop box while you are in the room your test will not be marked.