**CPIT Department of Computing**

**Graduate Diploma in Information and Communication Technologies**

**Bachelor of Information and Communication Technologies**

**Diploma in Information and Communications Technology**

**Diploma in Information Technology**

**BCSE101 – Software Engineering 1A**

**JavaScript Practical Test**

**Student Name:**

**CPIT 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 BCSE101

This test has 4 pages including the cover sheet

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

Copy the zip file containing the FarmJS 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 attribute and methods) and relationships.

(4 marks)

1. In the setup method of the Controller class write code that creates the following four FarmWorkers using the addFarmWorker method that exists in the Farm class

**First Name Last Name Main Job Gender**

Bobby Elba shearer M

Selene Mocha labourer F

Idris Kim farmhand M

Jasmine Patel labourer F

NOTE: the defect in this data is deliberate – fix it!

(3 marks)

1. Write a getFarmWorkers method that displays only the .firstName, and .lastName and .mainJob of all the FarmWorkers.

The required output is:

Bobby Elba: Shearer  
Idris Kim: Labourer  
Selene Mocha: Labourer  
Jasmine Patel: Farm Hand

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

***Hints:***

***You WILL need to use <br> and spaces in your methods.***

***You WILL need to call the .sortFarmWorkers method in Farm.***

(3 marks)

1. Write an addFarmAnimal method for the Farm class that can be used to create a new FarmAnimal. NB. You will need to add some code in the FarmAnimal class as well.

(3 marks)

1. In the setup method of the Controller class write code creates the following Animals, using the addFarmAnimal method that has been created previously.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Type** | **Food** | **Total Number** | **Breed** | **Can Eat Humans** |
| Sheep | Grass | 320 | Merino | False |
| Crocodile | Sheep | 50 | Crocodylus Porosus | True |
| Panda Ant | Nectar/meat | 1000 | Mutillidae | True |
| Dog | Meat | 10 | Huntaway | False |
| Anaconda | Meat | 5 | Eunectes murinus | True |

(3 marks)

1. Write a Boolean get method named hasHumanFlesh for the FarmAnimal class that returns true if the FarmAnimal can eat humans and false otherwise.

(2 marks)

1. Write a getAnimalsThatCanEatHumans method that lists the breed & type of each FarmAnimal that can eat humans. This method must call methods created previously.

The required output is

*Eunectes murinus* (Anaconda).   
*Crocodylus porosus* (Crocodile).   
*Mutillidae* (Panda Ant).

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

***Hint: You might need to use <br>, <i> and space in your method.***

(2 marks)

**HOW TO SUBMIT YOUR COMPLETED TEST**

When you have finished the test, zip 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.

