**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**

**Monday 22 June 2015**

**9:00-11:10**

**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 5 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 test’s zip file from Moodle onto your local drive. Unzip all directories (and all sub-directories) and all 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.

(4 marks)

1. In the setup method of the Controller class write code that to create the following four Families using the addFamily method that exists in the World class

**ID Name Feature Avg Size**

**1 Ceratops Protruding horn 5.5m**

**2 Sauropod long neck 31.3m**

**3 theropod small arms 5.5m**

**4 Ornithopod lizard like 7.25m**

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

(3 marks)

1. Write a getFamilies method for World class that displays only the Name, Feature and average size of all the Families.

***(Note that the other data for them should not be displayed).***

The required output is:

Families, according to average size  
2 Sauropod 31.3m  
4 Ornithopod 7.25m  
1 Ceratops 5.5m  
3 theropod 5.5m

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

***Hints:***

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

***You will need to call the .sort method.***

(3 marks)

1. Write an addSpecies method for Family class that can be used to create a new Species.

Note: You will need to add some code in the Species class as well.

(3 marks)

1. In the setup method of the Controller class write code to create the following Species, using the addSpecies method that has been created previously.

***NOTE: You will have to use the findFamily method in the World class***

**ID Name Size Weight Family**

**1 Triceratops 7.9m to 9.0m 6.1 – 12.0 tonnes Ceratops**

**2 Styracosaurus 5.5 metres 2.7 tonnes Ceratops**

**1 Brachiosaurus 20 metres 35 - 56 tonnes Sauropod**

**2 Brontosaurus 23 metres 15 tonnes Sauropod**

**1 Tyrannosaurus Rex 12.3m 9.5 tonnes Theropod**

**2 Velociraptor 2m 15kg Theropod**

**1 Hypsilophodont 1.5m - 2.3m 20kg Ornithopod**

(4 marks)

1. Write a **Boolean** get method named hasSpecies for the Family class that returns true if family has any species and false otherwise.

***HINT: Check the value returned by the .length method of the array.***

(2 marks)

1. Write a getSpeciesByFamily method for the World class that first lists for each Family who has any species the Species’ ID, Name and Average Size and then lists underneath the details of the Species as shown below. This method must call the method created in the previous question.

The required output is:

Species

1 Brachiosaurus 20 metres 35 - 56 tonnes

2 Brontosaurus 23 metres 15 tonnes

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

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

(6 marks)

**HOW TO SUBMIT YOUR COMPLETED TEST**

When you have finished the test, zip and send. /**src** folder 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.