

Object-Oriented Programming Fundamentals

Lecture/Workshop (Week 11)

Task 1

Write a class named **Animal**.

The **Animal** class has the following attributes:

food this is a **String** and may be more than one word.

The **Animal** class has the following methods:

a **default constructor**

(the default food is **grass**)

a **constructor** that takes one parameter, **String food**

a **toString** method that returns the **name** of the **class** and the **food**.

an accessor method **getFood**, that returns the **food** of the **Animal**

Task 2

Write a class **Emu** which is a sub-class of **Animal**

The **Emu** class has the following attribute:

speed this is a **double**

The **Emu** class has the following methods:

- a **constructor** that takes one parameter, **double speed**

- (the **food** for an **Emu** is insects)

- a **toString** method that returns the details of the **Emu** class, including the information in the base class

- an accessor method that returns the **speed** of the **Emu**

Task 3

Write a class **Koala** which is a sub-class of **Animal**

The **Koala** class has the following attribute:

sleep this is an **integer** and is the number of hours that the **Koala** sleeps

The **Koala** class has the following methods:

 a **constructor** that takes two parameters, **String food** and **int sleep**
 (the **food** for a **Koala** is **gum leaves**)

 a **toString** method that returns the details of the **Koala** class,
 including the information in the base class

 an **accessor** method that returns the number of **hours** that
 the **Koala** sleeps

Task 4

Write a code fragment (assume it is in a driver program), that declares an array, of size 10 that can hold **Animal**, **Emu** and **Koala** objects

Task 5

Write a code fragment that instantiates one **Emu** object, one **Koala** object and one **Animal** object

Task 6

Write a code fragment that would display the contents of the array

Task 7

Write a code fragment that would display the **speed** of the **Emu**
Again, assume that you are in a driver program and using the array that you Instantiated in Tasks 4 and 5