**Further Object- Oriented Programming**

U08026: Week 5

package, import, static, final

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# Agenda

## In these exercises, you will

## use packages

## use *import* statements

## use *static*

## use *final*

# What to submit

## Please compose a *Word* document. Where appropriate write fragments of Java code to help you determine the answers to the following exercises.

## Paste any code you have written into the Word document with answers to *all* the following questions and submit this as your work for this week.

# Exercise 1

## Assume that you have written some classes. Belatedly, you decide that they should be split into three packages, as listed in the table below. Furthermore, assume that the classes are currently in the default package (they have no package statements).

## *Package Name Class Name*

## mygame.server Server

## mygame.shared Utilities

## mygame.client Client

## What line of code will you need to add to each source file to put each class in the right package?

# Exercise 2

## You are writing a new class and want to define an instance variable to store a web page address, making use of the class *URL* from the Java standard package *java.net*.

## By using fragments of Java, show *three* different ways in which you can indicate that you want to use the *URL* library class, given that it is in a different package to your class.

## Explain the advantages or disadvantages of each approach.

# Exercise 3

## See if you can work out what will be displayed by the following program:

## public class What {

# static int i;

# int j;

# }

## public class Main {

# public static void main(String [] args) {

# What a = new What ();

# What b = new What ();

# a.i = 3; a.j = 4; b.i = 2; b.j = 5;

# System.out.println(a.i);

# System.out.println(a.j);

# System.out.println(b.i);

# System.out.println(b.j);

# }

}

# Exercise 4

## Run the program of exercise 3. Do you get the output what you expected? In any case, write a brief explanation of what happened.

# Exercise 5

## The class *Borrower* is part of a system for a lending library:

## public class Borrower {

# private int borrowerId;

# private static int maxBooksBorrowed;

# private int numBooksBorrowed;

# private String name;

# }

## Explain the difference between the behaviour of the class *Borrower*

## *with* the keyword *static* before *maxBooksBorrowed* and

## *without* the keyword *static*.

# Exercise 6

## Consider the class *Borrower* of Exercise 5.

## Explain the difference between the behaviour of the class *Borrower*

## *with* the keyword *final* before *maxBooksBorrowed* and

## *with* the keywords static *final* before *maxBooksBorrowed*.