JAVA PROGRAMMING – QUIZ 2 and EXERCISE 6

WARNING. This test is to be treated as if taken under exam conditions. Any plagiarism or collusion will result in immediate disqualification and zero marks awarded, and will be pursued as a disciplinary matter.

As explained previously, part of the coursework consists of five multiple-choice quizzes, that are designed to test your understanding of Java. They appear in weeks 5, 6, 7, 8 and 11. Each one is worth 2% of the course unit mark, must be undertaken during a lab session, that is between 2.00-4.00pm on the day you attend. Each quiz can only be taken once, and must be completed within 20 minutes of starting. You will need a password to access the quiz, which will be announced during the lab.

The second of these quizzes is now available under 'Assessment' on Blackboard and should be taken NOW, before attempting the exercises below.

EXERCISE 6

In this lab, we'll be going through various tasks that will serve to reinforce the concepts you have learnt over the past few weeks.

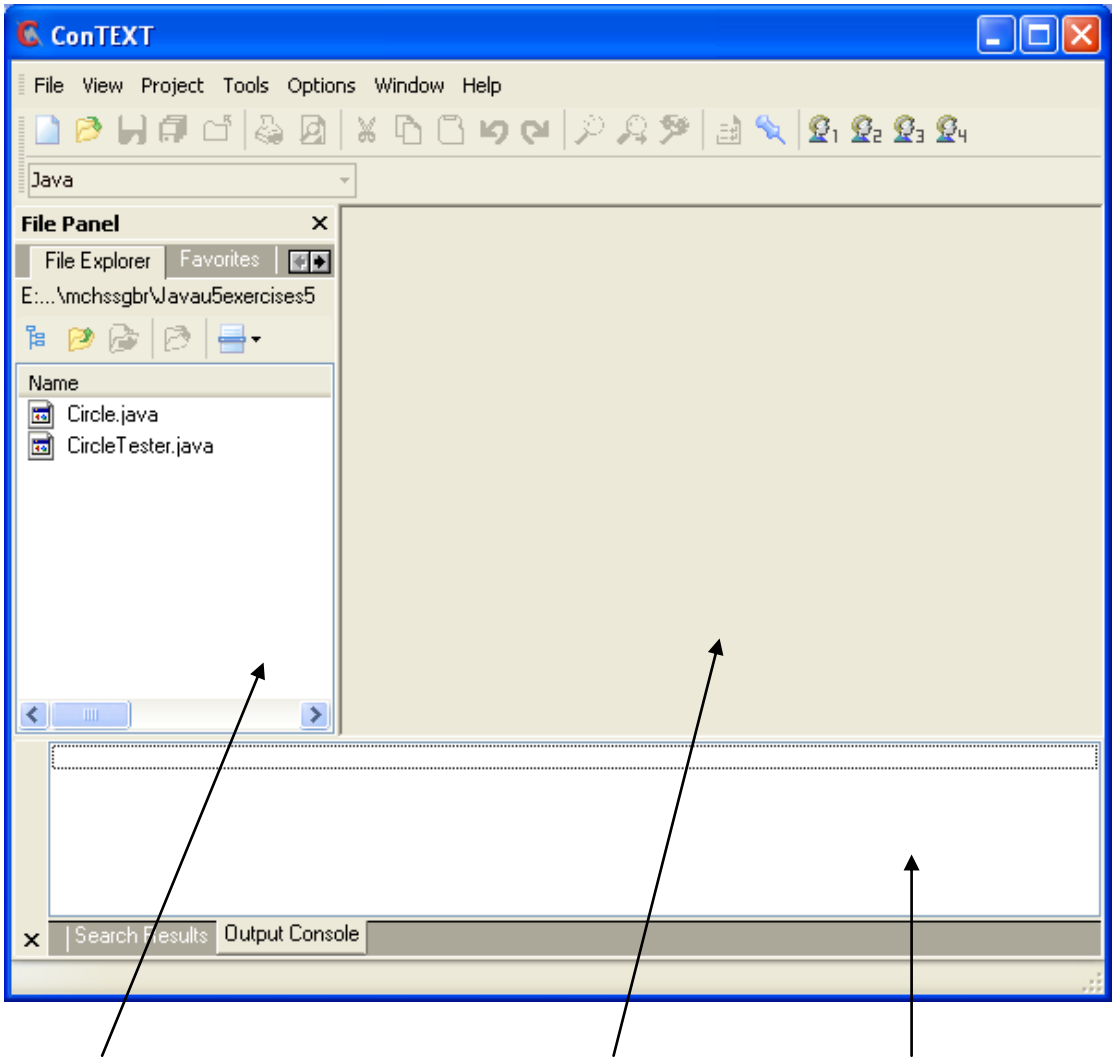
Instructions:

- Write, compile, run and test these programs using notepad and command prompt.
- There is no Course Marker involved, so you can start coding right away. Instead of using Notepad however, this lab introduces you to an alternative editor called ConTEXT.

Task 1: Try ConTEXT.

ConTEXT has been installed on the A19 computers. ConTEXT is free and simple to use. It can be started with: **Start>All Programs>ConTEXT**

An example screenshot is shown below:



File Panel Editor Window Output Window

Think of ConTEXT as an editor, like Notepad, except with features such as line numbering, color-coding, etc. Use the File Panel to navigate to **P:\mchXXYY\EEEN10035u5exercises5** and you will see the ArrayTest Java programs that you worked on last time. By double-clicking on any of these files, the content will be displayed in the Editor Window. The function keys F9, F10 and F11 can be used to compile and run Java programs, as follows:

F9 - compiles Java –output is shown in the Output Console
F10 - runs a program
F11 - runs a program with arguments

Mostly you will use F9 and F10.

If you want to use ConTEXT instead of Notepad and the commands javac and java, for the remainder of this, and all remaining exercises in the course, go right ahead.

ConTEXT is free and can be downloaded from http://www.contexteditor.org.

Task 1:
What does the following program print out?
Note: A String is a data-type that can store words and sentences.

```
public class Hello {
        public static void main (String [ ] args) {
        String name = "There";
        int num=2;
        /* System.out.println(name);
        */
        System.out.println("Hello + num");
       }
}
```

Task 2:
Write a program called **PassFail** which prints "PASS" if the int variable **mark** is more than or equal to 40, else print “FAIL”. The value of the **mark** variable is to be read in to the program using a **Scanner**.

Task 3:
Write a program called **PrintNumbers** which prints "ONE", "TWO",... , "NINE", "OTHER" if the int variable **number** is 1, 2,... , 9, etc using **switch** statements. The value of the **number** variable is to be read in to the program using a **Scanner**.

Task 4:
Modify the program in Task 3, so as to use if-statements, instead of switch statements.

Task 5:
There is an error in the following piece of code. Identify and correct it, and test your correction.

```
int i = 5;
while (i < 5) ; {
  i++; System.out.println(i);
}
```

Task 6:
Using a for-loop, write a program called **SumAvg** to sum up all the numbers from 1 to 100. Also compute and display the average using a variable called **avg**.
The output should look like:

```
The sum is 5050
The average is 50.5
```

Task 7:
Modify the program in Task 6 to only sum up the odd numbers from 1 to 100, and compute the average.
Hint: Use the ‘%’ operator.

Task 8:
Modify the previous program to work with a do-while loop.

Task 9:
Write a program called Grade, which reads in **n** number of grades (n is an int variable, with a permitted value of 0-100 marks) and displays the average. You should keep the grades in an **integer** array.

Your output should look like:

```
Enter the number of students: 3
Enter the grade for student 1: 55
Enter the grade for student 2: 108
Invalid grade, try again...
Enter the grade for student 2: 56
Enter the grade for student 3: 57
The average is 56.0
```

Task 10:
There are some additional , “advanced”, java exercises, see “Week 6” under Further Exercises on Blackboard. See how many you can complete.