Assignment 1

Due date: Week 6 Friday (24-Aug-2017) 11:45 PM AEST

Weighting: 20%

Assignment task

Write a java console application for a lawn-mowing service for N lawns. N should be declared as a constant and it should be equal to the largest digit of your student ID number (e.g. if your ID number is S143261 then N should be equal to 6 and you can declare it as final int N=6). The weekly fee for mowing a lawn is shown below in Table 1.

Table 1. Weekly Fee for Lawn Mowing

Lawn Area	Weekly Fee ($)
Lawn under 500 square meter	40
500 square meter or more but under 900 square meter	60
900 square meter or more but under 1500 square meter	75
1500 square meter or over	100

The application should ask the user to enter the area for each lawn (total N lawns) and calculate the weekly fee for lawn mowing. The application should display the fee for each lawn as shown in the example below. At the end of the N*th* lawn, the details such as total weekly fee, lowest weekly fee, highest weekly fee, and lawn number with highest monthly fee should be displayed. The lowest fee is calculated by finding the lowest value from weekly fee for N lawns. The highest monthly fee is calculated by finding the highest value from weekly fee for N lawns. The average lawn moving fee is calculated by dividing the total weekly fee with the total number of lawns. The monthly fee is calculated by multiplying the weekly fee by 4.

Example for N=4
Enter the area for lawn 1: 450
The weekly fee for lawn 1 is $40

Enter the area for lawn 2: 600
The weekly fee for lawn 2 is $60

Enter the area for lawn 3: 1200
The weekly fee for lawn 3 is $75

Enter the area for lawn 4: 3000
The weekly fee for lawn 4 is $100

----------Report----------
Total weekly lawn mowing fee: $275
Lowest weekly lawn mowing fee: $40
Highest weekly lawn mowing fee: $100
Average weekly lawn mowing fee: $68.75
Lawn number with highest monthly fee: 4

Your application is to follow the same format for input and output as in the example above, but with customised welcome and exit messages.

The application is to use the following classes.

```
public class Lawn
{
	public Lawn()
	{
		// constructor
	}
	public double lawnMowingFee(double area)
	{
		// code to calculate lawn mowing fee goes here
	}
	public int lawnNumber(double fee)
	{
		// code to determine lawn number with highest monthly fee
	}
}
public class LawnTest
{
	public static void main(String[] args)
	{
		// local variable declarations go here
		// display welcome message
		// loop to input area, calculate and display fee
		// generate and display report
		// display exit message
	}
}
```

Submission

You must submit the following three files using the Moodle online submission system.

- Lawn.java
- LawnTest.java
- Report.docx (this file contains a brief report that includes student name, student ID number, course name, course code and test results (screenshots/test cases with results to show that your application is working correctly))

Important Note

- You should start your assignment as early as possible. Your tutor will be checking your progress in weeks 4 and 5.
- You should not show your source code and report to any other student. You should not ask anyone to do your assignment. Please read CQU's plagiarism guidelines.

Marking Criteria

	Criteria	**Marks Allocated**
1	**Variables, constants and types**	
	Declaring and using variables and constants	/2
2	**Objects and classes**	
	Creating/declaring and using objects and classes	/1
3	**Loops**	
	Using loops and conditions	/1
4	**If statements**	
	Using if statements and conditions	/1
5	**Methods**	
	Declaring and using methods	/2
6	**Inputs and Outputs**	
	Reading input	/1
	Displaying results	/1
7	**Overall logic and program**	
	Calculating quantities (0 mark if program doesn't compile)	/5
	Spacing and indentation conventions	/1
	Naming conventions	/1
	Comments	/1
8	**Report**	
	Test results (0 mark if program doesn't compile)	/2
	Presentation(fonts, spaces, information, language)	/1
	Sub-Total	/20
	Penalties	
	Late submission : 5% (1 mark) / day or part of a day	
	Total	/20