Assignment 1

Due date: Week 6 Thursday (29 August 2019) 11:45 PM AEST

Weighting: 20%

Assignment task

Write a java console application for calculating income tax for N company employees. 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 S456222 then N should be equal to 6 and you can declare it as final int N=6). The income tax and tax group for taxable income are shown below in Table 1.

Table 1. Income Tax and Tax Group for Taxable Income

Taxable Income	Income Tax	Tax Group
$0 – $18200	$0	Group 1
$18201– $37000	$0 plus 19c for each $1 over $18200	Group 2
$37001 - $87000	$3572 plus 32.5c for each $1 over $37000	Group 3
$87001 - $180000	$19822 plus 37c for each $1 over $87000	Group 4
$180001 and over	$54097 plus 45c for each $1 over $180000	Group 5

The application should ask the user to enter the taxable income for each employee (total N employees) and calculate the income tax for each employee. The application should display the income tax for each employee as shown in the example below. At the end of the N*th* employee, the details such as highest tax, lowest tax, number of employees in Group 1, number of employees in Group 5 and tax group with highest number of employees should be displayed. If more than one group has the same number of employees then the group with higher number should be displayed, e.g. Group 1 and Group 5 both have 2 employees which is highest number of employees then 5 should be displayed).

Example for N=6
Enter the taxable income for employee 1: 17500
The income tax for employee 1 is $0.00

Enter the taxable income for employee 2: 19200
The income tax for employee 2 is $190.00

Enter the taxable income for employee 3: 38000
The income tax for employee 3 is $3897.00

Enter the taxable income for employee 4: 90000
The income tax for employee 4 is $20932.00

Enter the taxable income for employee 5: 181000
The income tax for employee 5 is $54547.00

Enter the taxable income for employee 6: 15000
The income tax for employee 6 is $0

----------Report----------
Highest tax: $54547.00
Lowest tax: $0.00
Number of employees in Group 1: 2
Number of employees in Group 5: 1
Tax group number with highest number of employees: 1

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 Tax
{
	// variable/constant declarations

	public Tax()
	{
		// constructor
	}
	public double calculateTax(double taxableIncome)
	{
		// code to calculate tax based on tax brackets shown in Table 1
	}
	public int highestTaxGroup(int group1, int group2, int group3, int group4, int group5)
	{
		// code to determine and return tax group number with highest number of employees
	}
}
```

```
public class TaxTest
{
	public static void main(String[] args)
	{
		// declare variables/constants
		// display welcome message
		// loop to input taxable income, calculate and display tax
		// generate and display report
		// display exit message
	}
}
```

Warning: Arrays and other things that are not covered in COIT20245 lectures and labs (weeks 1-6) are **not allowed** in this assignment.

Submission

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

- Tax.java
- TaxTest.java
- Report.docx (this file contains a brief report that includes student name, student ID number, unit name, unit code and test results (2 screenshots with results to show that your java 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 academic misconduct procedure.

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 output (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
9	**Penalties**	
	Late submission: 5% (1 mark) / day or part of a day	
	Use of Arrays: 5 marks	
10	**Total**	/20