RMIT UNIVERSITY

COLLEGE OF VE, FUTURE TECHNOLOGIES

Course Code and Name: C2511C: Introduction to Programming

Semester 1, 2024 - Lab: 02

VARIABLES, DATATYPES AND OPERATORS

Task 1 – Coding Exercises

Write Java code in your preferred IDE for the following exercises

1. Using a calculator to add four numbers, store the four numbers in appropriate variables and display a running total. Print the final total.

2. Assign five students names and their ages in variables. Print out the names and ages.

3. Create a program called Maths.java based on the following algorithm:

Inputs

none

Processing

Declare int: num1 = 233, num2 = 11
Declare double: sum, diff, prod, quot
sum = num1 + num2
diff = num1 - num2
prod = num1 * num2
quot = num1 / num2

Output

Display results of: sum, diff, prod, quot in septate outputs

Is result for quotient correct? If not, what do you need to change to ensure a correct result?

4. Create a new program named `Date.java`

   Use the following algorithm to complete this task:

Inputs

none

Processing

Declare strings: day, month Declare int: date, year Assign values that match today's date

Output

Display variables in American format (day, month, date, year) Display variables in European format (day, date, month, year) Display variables in Japanese format (year, month, date, day)

5. Write Java code to create a String variable called `firstName`, define it to be your first name as a String. Then define a variable called `lastName` and define it to be your last name as a String. Then define a variable called `fullName` and set it to be your first name followed by a space followed by your last name. Use the existing variables for your first and last name and String concatenation to define `fullName`. Finally, write code to print this text:

```
Hello, my name is [full name].
```

   Use String concatenation to create the first String to print using the `fullName` variable.

   Note: you can concatenate an integer and a String, and the integer will be converted to a String. For example, this expression:

```
"There are "+ 7 + " days in a week."
```

   will be evaluated as the String:

```
"There are 7 days in a week."
```

6. Write an algorithm and then create a program based on the following:
   Write Java code to define a double variable called `fahrenheit` and set it to an initial value between 0 and 100. Then, create a double variable called `celsius`, and calculate its value based on the value of `fahrenheit`. (Formula: `celsius` = (5/9) * (`fahrenheit` - 32)

7. A customer enters a store and buys 3 items from the store. Store the name and price of each item in appropriate variables.

Create an algorithm and then write a java program where you will need to print an invoice for the customer using your own design which has the following information on (the invoice) it.

- Name of the store
- Address
- Contact number
- The text “TAX INVOICE”
- Date and time of transaction
- List of items purchased along with the price
- Total price
- Calculated GST (You will need to calculate 10% of the total price)
- Total price (with GST added) that the customer needs to pay

Task 2 –Introduction to Git

Download and work through the Introduction to Git tutorial. This is a guided tutorial which will assist you in setting up Git on your personal machine or VM.

Task 3 – Complete Online Reflection Quiz

Complete the multi-choice online reflection quiz on canvas. This quiz can be taken as many times as you like and should be used to assist you with your studies. This quiz will mark itself.

This quiz is not part of your overall grade for the subject.