Assessment #1

Submission deadline: 13th March 2022 11:59pm AEST via Moodle

Instruction

Below are the coding tasks that you need to complete individually for assessment 1. You should download the IntelliJ project folder as below and unzip it. Then work on the tasks in the project folder.

Assessment1.zip

This assessment is worth 6% of the unit total. It contains 70 marks, which has two components.

- Task correctness has 60 marks
    -
        o Task 1 has 11 marks
        o Task 2 has 17 marks
        o Task 3 has 15 marks
        o Task 4 has 12 marks
        o Task 5 has 5 marks
- Code readability & documentation has 5 marks
- Code development has 5 marks

Academic Integrity

Please be reminded of the academic integrity mentioned in Week 01. You should code alone and ask the unit staff for help. Do not post your code or share solutions in public forums.

Task 1 (11 marks)

Code in the method `task1()` in the Assessment1 class of the downloaded project. Code to display the numbers 5,8,4 and 2 each on its own output line. Add them up in code and display their sum on yet another line.

Do this 3 ways:

1. Without using variables at all
2. Using 4 independent variables (one for each number) and another variable for their sum
3. Reusing just one variable for the numbers and one additional variable for their sum

Task 2 (17 marks)

Code in the method `task2()` in the Assessment1 class of the downloaded project. Code declaration statements (including the assignment of an initial value) for the following values:

- Your jogging speed in miles per hour (mph).
- FIT1051 lecturer allocated to a workshop.
- The capacity of passengers in a train wagon.
- The length of a desk in millimetres.
- The state of a light switch.
- The number of books on a library shelf.
- The amount of COVID vaccination a person can have so far.
- The current temperature of the day.
- The number of Ace in a deck of cards.
- The memory size of a computer chip.
- The state of a traffic light, which can either "RED", "YELLOW", or "GREEN". (Hint: data types need to be declared and initialise before use)

Write code to display the value of each of the above together with a suitable description (e.g. Your height: 1.85m).

Task 3 (15 marks)

Code in the method `task3()` in the Assessment1 class of the downloaded project. Declare variables with data type `float`, `int`, `String`, `double` and `boolean` and give all of them an initial sensible value of the appropriate type. Now try to assign the value of each to the other variables. You will have to comment out assignment statements that cause an error. For each assignment statement, answer the following questions:

1. Which conversions does Java perform automatically?
2. Which conversions will Java perform with a cast? What are the side effects of these cast(s)?

Task 4 (12 marks)

Code in the method `task4()` in the Assessment1 class of the downloaded project. Draw a smiley face using the alias symbol (@) as figure below. The height of the figure should be 15 lines.Output your smiley face using only one line of `System.out.println()`.

Hint: You can use String concatenation & compound assignment operators.

NOTE: You are not allowed to use any selection control structure or repetition control structure as we have not covered the material yet.
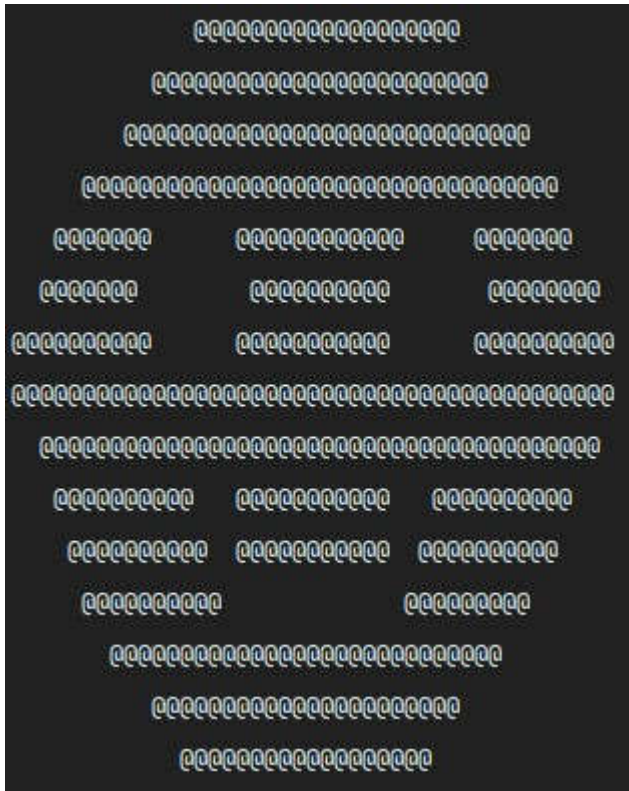
Task 5 (5 marks)

Code in the method `task5()` in the Assessment1 class of the downloaded project. Declare a String variable called `s` that is initialised as `null` and invoke a method to it. Then output your result in the IntelliJ terminal. An error will occur when you compile your code. Explain below as code comment.

1. What is the error?
2. Step by step how the error happens.

Code Readability (5 marks)

Overall code submission must be well organised and very easy to follow included but not limited to code indentation, code consistency, effective use of whitespace etc.

Code Development & Documentation (5 marks)

Overall code submission demonstrates correct syntax usage and meaningful naming conventions.Code documentations/inline comments are thorough and in detail.

Marking Rubric

Assessment#1 Marking Rubric.pdf

FIT1051 - Assessment 1