Diploma in Computer Science, CSC2016 – Programming in Java I
Diploma in Engineering, CSC1003 – Business Programming with Java

August 2022 Semester
Practical Test-2 (Friday, 2 December 2022)

Instruction:

You are required to choose TWO (2) questions ONLY and solve the question in Java Language.
Named your file as *<QuestionNumber>.java*, email to cheah.ying.foong@imperium.edu.my

Question 1

Given the following information:

```
a = 26, b = 25, c = 24, d = 23 ..... x = 3, y = 2, z = 1
```

Write a simple program to prompt user to enter a sentence, calculate the sum of each letter of the
sentence. Test your program with this sentence: `"The quick brown fox jumped over the
cow"`. (Note, a white space has no value)

Question 2

State University charges $90.00 for each semester hour of credit, $200.00 per semester for a regular
room, $250.00 per semester for an air-conditional room, and $400.00 per semester for food. All students
are charged a $30.00 matriculation fee. Graduating students must also pay a $35.00 diploma fee.

Write a program to compute the fees that must be paid by a student. Your program should include an
appropriate warning message if a student is taking more than 21 credit hours or fewer than 12 credit
hours. A typical line of data for one student would include room type (R or A), student number (in four
digits), credit hours, and graduation status (T or F).

Question 3

The Caswell Catering and Convention Service has asked you to write a computer program to produce customers' bills. The program should read in the following data.

(a) The number of adults to be served
(b) The number of children to be served
(c) The cost per adult meal
(d) The cost per child's meal (60% of the cost of the adult's meal)
(e) The cost for dessert (same for adults and children)
(f) The room fee (no room fee if catered at the person's home)
(g) A percentage for tip and tax (not applied to the room fee)
(h) Any deposit should be deducted from the bill

Write a program and test it using data set 2, 3, and 4 from the following table:

Set	Child Count	Adult Count	Adult Cost	Dessert Cost	Room Cost	Tip/Tax Rate	Deposit
1	7	23	12.75	1.00	45.00	18%	50.00
2	3	54	13.50	1.25	65.00	19%	40.00
3	15	24	12.00	0.00	45.00	18%	75.00
4	2	71	11.15	1.50	0.00	6%	0.00

Note that data set 1 was used to produce the following sample output.

```
Caswell Catering and Convention Service
Final Bill

Number of adults: 23
Number of children: 7
Cost per adult without dessert:      $    12.75
Cost per children without dessert: $     7.65
Cost per dessert:                    $     1.00
Room fee:                            $    45.00
Tip and tax rate:                          0.18

Total cost for adult meals:          $   293.25
Total cost for child meals:          $    53.55
Total cost for dessert:              $    30.00
Total food cost:                     $   376.80
Plus tip and tax:                    $    67.82
Plus room fee:                       $    45.00
Less deposit:                        $    50.00

Balance due:                         $   439.62
```