

# Tutorial 7

## BSc (Hons) in Information Technology

IT1010 – Introduction to Programming

Semester 1, 2020

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### Question 1

What do the following two code segments print for the cases  $x = 1$  and  $x = 10$ ?

i)	<pre>while (x &gt; 1) {     printf("%d", x);      x--; }</pre>	ii)	<pre>do {     printf("%d", x);      x--; } while (x &gt; 1);</pre>
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### Question 2

- i) Write a C program to enter 4 module marks of a student from the keyboard and display the total of all four module marks.
- ii) Modify the program written in i) above to enter 4 module marks of 3 students and display their total marks.
- iii) Display the student with the highest total mark.

### Question 3

Write a C++ program using *for* loops to display the following pattern on the screen.

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*****  
*****  
*****  
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*
```

# Additional Exercises

## Question 1

Write for statements that print the following sequences of values

- a) 1, 2, 3, 4, 5, 6, 7
- b) 3, 8, 13, 18, 23
- c) 20, 14, 8, 2, -4, -10

## Question 2

A program is needed for Black Cabs Transport Company, to calculate the total amount a particular customer should pay for a given trip. The services provided by the cab service company are listed below.

Package No	Package Name
1	Comfort Journey
2	Budget cab Journey
3	Crowded Journey – Dual A/C
4	Crowded Journey – Single A/C

For **comfort Journey package**, Rs.150.00 is charged for the first kilometer and for each additional kilometer, Rs.175.00 will be charged. For a **Budget cab Journey package** each kilometer is charged at Rs. 100.00. For a **Crowded Journey – Dual A/C package** the first kilometer is charged at Rs. 130.00 and each remaining kilometer is charged at Rs.150.00. If the customer selected **Crowded Journey – Single A/C package**, the first kilometer is charged at Rs120.00 and for each remaining kilometer is charged at Rs. 130.00.

- (a) Write a C program to input the **package no** and **total distance of the tour in Kilometers** through the keyboard. The program should display corresponding total amount that the customer has to pay. (Hint: use nested selection statements.)

Ex: Package No: 2

Total Distance: 5 Km

Total Amount: Rs. 500

- (b) Modify your program to display an error message “Invalid Package Number” if the user inputs a wrong package number.
- (c) Modify the program to handle many customers. After displaying the total amount to pay by the first customer, your program should display the prompt “**Do you have more customers?**” If the user inputs “y” or “Y”, program should ask for the package no and total distance of the next customer. If the user inputs “n” or “N” program should terminate.