

# Programming in C

Duration time: 90 minutes

## Introduction

### Requirements

- Loops.

## Exercise 1

Write a C program that will print the following pattern:

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

## Exercise 2

Write a C program that will print the following pattern:

```
1*****
12*****
123****
1234***
12345**
123456*
1234567
```

## Exercise 3

Write a C program that will print the patterns as shown below:

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

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

#### Exercise 4

Write a C program that will ask the user to input n positive numbers. The program will terminate if one of those number is not positive.

#### Exercise 5

Write a C program that will ask the user to input n numbers (float number). The program will calculate the average of the read numbers. Please use loop `for`. First ask user to input n.

```
Please enter n: 5
Please enter number 1: 4.5
Please enter number 2: 2
Please enter number 3: 3
Please enter number 4: 1
Please enter number 5: 4.5
The average value is: 3.0
```

#### Exercise 6

Write a C program that will calculate value of the following formula  $S=1+2+3+...+n$  for the first n numbers. Please use loop `for`.

#### Exercise 7

Write a C program that will calculate value of the following formula  $S=1+1/2+1/3+...+1/n$  for the first n numbers. Please use loop `while`.

#### Exercise 8

Write a C program that will calculate product of two numbers WITHOUT using the `*` operator.