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## ICT1142 – Programming Practicum

### Tutorial 03

Level 1 Semester 1 | 2022

#### Question1

Write a C program using *for* loops to print the following sequence of values.

- i) 3, 8, 13, 18, 23
- ii) 20, 14, 8, 2, -4, -10
- iii) 19, 27, 35, 43, 51

#### Question 2

- i) Why do programs need functions?
- ii) How many values can a function return?
- iii) When is the execution of the function terminated?

#### Question 3

Write a C program to enter any number and calculate its factorial using a for loop.

Hint:

Factorial of any number is the product of all positive integers less than or equal to n. It is denoted by n!. For example factorial of 5 =  $1 * 2 * 3 * 4 * 5 = 120$

#### Question 4

Write a program to input numbers between 0 and 100, to an array of 10 integers. Find numbers which are less than 50 and print them.

#### Question 5

Write a program to multiply the content of array A and B and store it in a new array called C.

```
int A[7]={9,4,7,2,7,12,24};  
int B[7]={ 12,8,23,9,18,6,3};
```

```
int C[7];
```

Calculate  $A * B$  and store in Array C.

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### Question 6

Write a C program to handle in ordering exercise books from a whole seller, using the functions given below.

- a. Implement a function to calculate the total price paid for the order when the book type and the quantity are given,

```
float GetTotalPrice (Char bookType, int qty);
```

<u>Book type</u>	<u>Price per unit</u>
Single rule-s	Rs 35.00
Double rule-d	Rs. 40.00
Square rule – q	Rs. 45.00

You can consider the book type as **s**, **d** and **q** as above mentioned.

- b. Implement a function to find the discount given for the customer according to the total price of the order.

```
float getDiscount (float TotPrice);
```

<u>Total</u>	<u>Discount</u>
>=5000	10%
4999-2000	5%
1999-500	2%
<499	no discount

You need to update the total price after subtracting the discount amount.

- c. Write a main program to do the following,
- Input the book type (s/d/q) and the quantity from the keyboard and call the **getTotalPrice()** function to find the total price to be paid by the customer.
  - Call **getDiscount()** function to update the total price with the discount amount.

### Sample Output

Input Book Type: s  
Input the Quantity: 500  
Discount is Rs: 1750  
Total Price (After subtracting the discount amount): 15750

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### Question 7

Write C programs using given functions according to the given scenario.

- Function ***smallest*** that takes three integers x, y, z and return the smallest integer.
- Function ***cube*** that takes input from the user to find the cube of the given number and return it.
- Function ***decimatToBinary*** that takes decimal number as the input from the user and convert it to the binary number.

### Question 8

Write a program using function that takes four digit integer value and returns the number with its digits reverse order.

Ex:- Given number is 8934, the function should return 4398.

Function Prototype: int reverse (int);

### Question 9

Write a program that input a series of integers and pass them one at a time to function ***even***, which uses the remainder operator to determine if an integer is even. The function should take an **integer type array** and return 1 if the integer is even and 0 otherwise.