

**Assignment III**  
**Lab MC504**

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Send your assignment solution to [mc504lab@gmail.com](mailto:mc504lab@gmail.com).

Deadline: 27.01.2021, 12 midnight.

Put all files into one folder create a zip and name it as <RollNo>\_<Assignment\_<No> and mention the files name as: Q1.c, Q2.c and so on. **In each file please mention your roll number.**

Subject of mail should be: <RollNo>\_Assignment\_<No>. For example : 1911MC04\_Assignment\_II.

**You have to take inputs from user. Otherwise marks (40%) will be deducted.**

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Non-CSE : Q1 to Q5.

CSE: 1 to 5

Q1.

Write a program to enter three numbers by user and print the largest and the smallest number.

**Input:** Enter the first number: 34

Enter the second number: 98

Enter the third number: 12

**Output:** The largest number is: 98

The smallest number is:12

Q2.

Write a program to calculate factorial of the number entered by user.

(Example: factorial of 5=  $5*4*3*2*1=120$  )

**Input:** Enter a number: 5

**Output:** The factorial of 5 is 120

Q3.

Write a program to enter an array of size N-1 from user in which the elements are from 1 to N and then print the missing number.

Input: 1 2 3 4 6

Output: 5

Q4.

Write a program to design a calculator (using switch case) that takes choice from user to perform addition, subtraction, multiplication and division between two operands which are input by user.

Q5

Write a C program to find gross salary if daily allowance(da) and house rent allowance(hra)

is varied as follows-

Basic Salary	hra	da
<10000	0.5	0.2
10000<=15000	0.45	0.3
>15000	0.65	0.4

## CSE

1.

For a given array find a triplets whose sum is equal to a given value. If no such triplet present than print false else print the triplet

E.g.

**Input:** array = {1, 2, 3, 4, 5}, sum = 9

**Output:** 5, 3, 1

**Explanation:** There is a triplet (5, 3 and 1) present in the array whose sum is 9.

2.

Given a non-negative integer num, write a program to repeatedly add all its digits until the result has only one digit.

Input : 1234

Output: 1

(1+2+3+4=10, again 1+0=1 stop)

Input: 643

Output: 4

(6+4+3=13, again 1+3=4 stop )

3.

You are given an array of prices, where prices[i] is the price of a given stock on the i<sup>th</sup> day.

You want to maximize your profit by choosing a **single day** to buy one stock and choosing a **different day in the future** to sell that stock.

Return *the maximum profit you can achieve from this transaction*. If you cannot achieve any profit, return 0.

E.g-1

**Input:** prices = [7,1,5,3,6,4]

**Output:** 5

**Explanation:** Buy on day 2 (price = 1) and sell on day 5 (price = 6), profit = 6-1 = 5.

Note that buying on day 2 and selling on day 1 is not allowed because you must buy before you sell.

E.g-2

**Input:** prices = [7,6,4,3,1]

**Output:** 0

**Explanation:** In this case, no transactions are done and the max profit = 0.

4.

Given an integer array nums of **unique** elements, return *all possible subsets (the power set)*.

The solution set **must not** contain duplicate subsets. Return the solution in **any order**.

**Input:** nums = [1,2,3]

**Output:** [[],[1],[2],[1,2],[3],[1,3],[2,3],[1,2,3]].

5.

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