



## C Lab Programs/Assignments for Practice

### 1 Assignment:

1. WAP to print "Hello PMEC EE 2nd Sem"?
2. WAP to print and display like this- PMEC:

- +++++ ++ ++ +++++ +++++
- +++++ + + + +++++ +
- + + + +++++ +++++

3. WAP to Print inverted half pyramid of numbers:

```
1 2 3 4 5
1 2 3 4
1 2 3
1 2
1
```

4. WAP to Print full pyramid of \*:

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

## 2 Assignment:-

1. Write a program to find the cube of a number?
2. Write a program to find the sum of two numbers?
3. Write a program to find the multiplication of two numbers?
4. Write a program to find addition and multiplication of two numbers?
5. Write a program to find addition and multiplication of three numbers?
6. Write a program to swap two numbers?
7. Write a program to find the area of square?
8. Write a program to find the area of rectangle?
9. Write a program to find the area of circle and circumference of circle?
10. Write a program to find the average of 5 marks of a student?
11. Write a program to convert Centigrade to Fahrenheit?

## 3 Assignments:

1. Write a program to show the result of two input values (int a =5 and b=2) using arithmetic operators +,-,\*,/ and %.
2. Write a program to show the use of increment and decrement operators by taking a input variable int a=3; find x, when x=a++, x=++a, x--a, x=a--?
3. Write a program to show the result (find a) of a input value (int b=5) using assignment operators for expressions: a=b, a+=b, a-=b, a\*=b?
4. Take two inputs and find the bitwise operations &, I, ~, ^, and shift a number by using the operators >>,<<?
5. Write a program to find the ASCII value of a character entered?
6. Write a program to find the character for an ASCII value entered?

#### 4 Assignment:

1. Write a program by entering a number and check whether it is even using **only IF statement**?
2. Write a program to check from the three numbers entered to find the largest using **only IF statements**?
3. Write a program by entering a number and check whether it is even or odd using **only IF Else statement**?
4. Write a program by entering the age of a person and check whether eligible to vote or not using **only IF Else statement**?
5. Write a program to check whether a character entered is Vowel or Consonant **using If Else**?
6. Write a program to Design an ATM machine which only accepts the amount entered: Rs 500, Rs 1000, Rs 1500, and Rs 2000 **using If Else If statements**?
7. Write a program to find the Grade of a student by entering the mark/percentage **using if else if statements** (Hint: marks distribution with Grade- 90-100:O, 80-89:E,70-79:A,60-69:B,50-59:C,40-49:D,less than 40: Fail)?
8. Write a program to check the eligibility of candidate for a particular job if he scored 50% in 10<sup>th</sup>, 55% in 12<sup>th</sup>, and 55% in B.Tech **using Nested IF statements**?
9. Write a program to Design an Restaurant Menu by entering the options by using **only SWITCH case** (Hint:- 1:Tea, 2: Coffee, 3: Ice Cream, 4: Milk, 5: Bread, Default: Dishes not available)?
10. Write a program to Design an Restaurant Menu by entering the options by using **only Nested SWITCH cases** (Hint:- options- 1: Veg (options- 1: Veg Biryani,2:Veg Pulao), 2: Non Veg (Options- 1: Fish Curry, 2: Egg Curry))?

## 5: Class Assignments (using FOR loops only)

1. Write a program in C to display the first 10 natural numbers.
2. Write a C program to find the sum of first 10 natural numbers and find the average of it.
3. Write a program in C to enter a number and find the total sum from 1 to that number and find the average.
4. Write a program in C to read 10 numbers from keyboard and find their sum and average
5. Write a program in C to display the cube of the number upto given an integer.
6. Write a program in C to display the multiplication table of a given integer.
7. Write a program in C to enter a number (hint: >10) and find the odd numbers between 1 to that number, and find the sum and average of it.
8. Write a program in C to display the pattern like right angle triangle using an asterisk  
\*  
\*\*  
\*\*\*  
\*\*\*\*
9. Write a program in C to display the pattern like right angle triangle with a number  
1  
12  
123  
1234
10. Write a program in C to make such a pattern like right angle triangle with a number which will repeat a number in a row.  
1  
22  
333  
4444
11. Write a program in C to make such a pattern like right angle triangle with number increased by 1  
1  
2 3  
4 5 6  
7 8 9 10

## 6 Assignment (Functions and Jumping statements)

1. Write a program to print from 4 to 20 by skipping values 5 and 7 using continue statement.
2. Write a program to print till 4 to 11 only when the rounds start from 4 till 20 using break statement.
3. Write a program to find sum of two numbers using user defined Functions. Hint: The function will not return any value and have no arguments.
4. Write a program to find sum of two numbers using user defined Functions. Hint: The function will return sum value and have no arguments.
5. Write a program to find sum of two numbers using user defined Functions. Hint: The function will return sum value and have two arguments.
6. Write a program to find average of 5 subjects using user defined Functions. Hint: The function will return average value and have five arguments.
7. Write a program to find a number as even or odd using user defined Functions. Hint: The function will not return any value and have one argument.
8. Write a program to swap two values using user defined Functions. The function will not return any value and have two arguments.
9. Write a program to find the average of even numbers between 150 to 230 using user defined functions and for loop. Hint: function has average return value and have no arguments.
10. Write a program to create a menu for Tea option and Coffee option using user defined functions and switch case. Hint: Function will not return any value and it has only one argument (Option).

## 7 Assignment (Array 1D)

1. Write a program to print the 1D array (size 5) by initializing the array first?
2. Write a program to print the 1D array (size 5) from last element to first element?
3. Write a program to find sum of the array (size 5)?
4. Write a program to find average of the array (size 5)?
5. Write a program to enter 5 values into the array using for loop find the average of the sum of the array?
6. Write a program to find an element in an array (size 10) and display its location or index?
7. Write a program to find the middle element of an array (odd size 5 and even size 6)?
8. Write a program to find the elements in the odd locations of an array (size 8)?
9. Write a program to count number of zeros and number of ones in an bit array  $B[8]=\{1,0,0,0,0,1,1,0\}$ ?
10. Write a program to return the average value of an array (size 5) using functions? Hint: the function has no arguments and average value will be returned?
11. Write a program to sort the elements of an array:  $srt[7]=\{33,42,16,12,45,57,5\}$  in increasing and decreasing order and display both order?

## 8 Assignment (Array 2D/1D)

1. Write a program to print the elements in a 2D array of size 3\*3?
2. Write a program to search an element in a 2D array? (Hint: Enter the element want to Search)
3. Write a program to add two 2D arrays of size 2\*2?
4. Write a program to multiply two 2D arrays of size 3\*3?
5. Write a program to find the average of a 2D array of size 3\*3?
6. Write a program to swap the values of two 2D arrays of size 3\*3?
7. Write a program to declare and pass an 1D array to a function and print the values of that array at the function definition? (Hint: function has no return value and no arguments.)
8. Write a program to return an 1D array from a function definition?

## 9 Assignment (Pointers and Dynamic Memory Allocation)

1. Write a program to print the value of a variable: `int number=50` using a pointer and also print the address the pointer contains?
2. Write a program to display the content in the NULL pointer?
3. Write a program to swap two numbers `a=10` and `b=20` using pointers and no use of third variable?
4. Write a program to print the value of a variable: `int number =50` using double pointer and triple pointer and also print the addresses at first pointer, second pointer and third pointer?
5. Write a program to show the increment of a pointer by 1, 2, and 3 by showing the decimal form addresses?
6. Write a program to show the decrement of a pointer by 1, 2, and 3 by showing the decimal form addresses?
7. Write a program to print the values and address of the values of an array using pointers? Hint: use for loop for representation.
8. Write a program to find the sum of elements in an array using pointers? Hint: use for loop.
9. Write a program to find the sum of two numbers `a` and `b` using Pointer to function operation? (Hint: function returns an int value and have no arguments.)
10. Write a program to print the size of int, float, double and character ?
11. Write a program to sort the elements in an array of size 5 by allocating the memory using `malloc()`?
12. Write a program to sort the elements in an array of size 5 by allocating the memory using `calloc()`?
13. Write a program to reallocate space of 20 more using `realloc()` for an array of size 10?
14. Write a program to show the freeing of space using `free()`?

### **10 Assignment (Strings)**

1. Write a program to count vowels in a string?
2. Write a program to read and print a string using gets() and puts()?
3. Write a program to enter a string and find its length?
4. Write a program to enter a string and reverse the string?
5. Write a program to copy one string into another string?
6. Write a program to concatenate two strings?

### **11 Assignment (Structures and Unions)**

1. Write a program to enter records of 5 students such as Name, Roll No., and Mark in a Subject using Structure "Student" and print the data of 5 students? (use array of structure variables)
2. Write a program to find the total size taken by Structure members (for ex. Int a, float b, etc.)?
3. Write a program to find the total size taken by Union members (for ex. Int a, float b, etc.)?
4. Write a program to access a member of a Union using pointer and display the result of it?

### **12 (Files)**

1. Write a program to create a file, write in that file, and close the file?
2. Write a program to open a file, read the contents in that file (display it), and close the file?

### **13 (Sorting and Searching)**

1. Write a program to show linear searching while searching an element in an 1D array?
2. Write a program to show binary searching in a sorted 1D array?
3. Write a program to implement bubble sorting for a random order elements 1D array to order in increasing manner?
4. Write a program to implement insertion sorting for a random order elements 1D array to order in increasing manner?
5. Write a program to implement selection sorting for a random order elements 1D array to order in increasing manner?



## 14 (Recursion)

1. Write a program to find factorial of a number using Recursion?
2. Write a program to print fibonacci series using Recursion?
3. Write a program to show the result of Ackerman Function?
4. Write a program to show the results of Quick sort using Recursion?
5. Write a program to show the results of Merge sort using Recursion?

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