

### **Lab Assignment-1 (Basics)**

1. Write a C program that will print your name.
2. Write a C program that will print your name, your father and mother name in three separate lines.
3. Write a C program that will print the sum of two variables **a** and **b**; where  $a = 10$  and  $b = 20$ .
4. Write a C program to calculate sum of two integer numbers (given by the user) and print it.
5. Write a C program that will take three numbers from user and find their average.
6. Write a C program that take an integer value (BDT) and convert it into US dollar and print it with remaining BDT. Where,
  - a) 1 US\$ = 77 BDT. (Sample **input:** 100, **Output:** 1 dollar 23 Tk)
  - b) 1 US\$ = 77.5 BDT. (Sample **input:** 100, **Output:** 1 dollar 22.5 Tk)
7. Write a C program that will take three integer as input from user and print their average. (You should use type-cast to get proper result)
8. Write a C Program from convert Km value into meter value.
9. Write a C Program to convert Celsius value into Fahrenheit value. (Formula :  $F = \frac{9C}{5} + 32$ )
10. Write a C Program to interchange values of two numbers using third variable.
11. Write a C Program to interchange values of two numbers without using third variable.
12. Write a C program to input two numbers and print their quotient and remainder.
13. Write a C Program to accept any character from user and display its ASCII number on screen.
14. Write a C Program to input any ASCII number and display appropriate character on screen.
15. Write a C Program to input any Capital letter and display it with small letter.
16. Write a C Program to input any Small letter and display it with capital letter.
17. Write a C Program to input any Capital letter and display it with small letter. (without using tolower() function)
18. Write a C Program to input any Small letter and display it with capital letter. (without using toupper() function)
19. Write a C program to input the number the days from the user and convert it into years, months and days.
20. Write a C Program to input three digits number from user and calculate sum of first and last numbers. (Hint : I/p : 358 O/p : 11)
21. Write a C Program to input three digits number from user and display square of first and last numbers. (Hint : I/p : 358 O/p : Square of 3 is 9 and Square of 8 is 64)
22. Write a C Program to input two digits number from user and display with reverse number on screen (Hint : I/P : 32 O/P : 23)
23. Write a C program to find out the quotient and remainder of two numbers. (Without using modulus ( % ) operator)

## ***Lab Assignment - 2***

1. WAP to input a number and check whether it is even or odd.
2. WAP to input a number. If the number is even, print its square otherwise print its cube.
3. WAP to input marks in three subjects of a student and calculate the division according to the following conditions:

### **Percentage**

$\geq 60$

50-59

40-49

$< 40$

### **Division**

First

Second

Third

Fail

4. WAP to check that a given year is a leap year or not. If not then calculate the nearest leap year.
5. WAP to input a character and check that it's a vowel or a consonant.
6. WAP to input a character and check that it's a small letter, capital letter, a digit or a special symbol.
7. WAP to find out the largest among three numbers.

## **Switch statement**

1. WAP to input two numbers and a choice and calculate the result according to the following conditions:

### **Choice**

1

2

3

4

5

### **Result**

Add

Subtract

Multiply

Divide

Remainder

2. WAP to input two numbers and an operator and calculate the result according to the following conditions:

### **Operator**

'+'

'-'

'\*'

'/'

'%'

### **Result**

Add

Subtract

Multiply

Divide

Remainder

## **Loop statement**

3. WAP to print counting from 1 to 100.
4. WAP to print counting from 100 to 1.
5. W.A.P. to display sum of first ten numbers.

6. W.A.P. to accept 3 numbers from user one by one and displays their sum on screen.
7. **W.A.P. to find out factorial value of given number.**
8. W.A.P. to accept two integer numbers from user and calculate its power value. (hint: pow)
9. WAP to input any number from user and displays the total of its digits ( I/p : 321 o/p : 6)
10. **WAP to take a number from user and check is it prime number or not.**
11. Write a C Program to display following different triangle.

(1)

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

(2)

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

(3)

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

(4)

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

(5)

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

(6)

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

(7)

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

(9)

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

(8)

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

(10)

```
A
A B
A B C
A B C D
A B C D E
```

(11)

```
A B C D E
A B C D
A B C
A B
A
```

(12)

1  
0 1  
1 0 1  
0 1 0 1  
1 0 1 0 1

(13) Floy'd Triangle

1  
2 3  
4 5 6  
7 8 9 10  
11 12 13 14 15

12. WAP to print the following series:

1. WAP to generate *Fibonacci* series up to user choice. (1 1 2 3 5 8 13 21 34.....)
2. 2, 4, 8, 16, 32, 64, 128, 256
3. 1, 4, 7, 10, ..... 40
4. 1, -4, 7, -10.....-40
5. 1, 5, 11, 19, 29 .....
6.  $(1)+(1+2)+(1+2+3)+(1+2+3+4)$ .....up to n terms
7.  $(2) + (2+4) + (2+4+6) + (2+4+6+8)$ .....up to n terms.
8.  $(1) + (1+3) + (1+3+5) + (1+3+5+7)$ .....up to n terms
9.  $(1^2) + (1^2+3^2)+(1^2+3^2+5^2)+(1^2+3^2+5^2+7^2)$ .....up to n terms
10.  $(2^2) + (2^2+4^2) + (2^2+4^2+6^2)+(2^2+4^2+6^2+8^2)$ .....up to n terms

1. If a number 972 is entered through the keyboard, your program should print “Nine Seven Two”. Write the program such that it does this for any positive integers.

2. A positive integer is entered through the keyboard, along with it the base of the numbering system in which you want to convert this number. WAP to display the number entered, the base and the converted number.

3. According to the Gregorian calendar, it was Monday on the date 01/01/1900. If any year is input through the keyboard write a program to find out what is the day on 1<sup>st</sup> January of this year.

4. WAP to print the system date. (time.h)

5. WAP to input three numbers and print them in descending order.

### ***Lab Assignment – 3***

#### **Array**

1. Write a program that will take **n** (n = any positive integer less than 100) from the user and find the biggest number among them.
2. Write a program that will take **n** (n = any positive integer less than 100) from the user and print them in descending order.
3. WAP to input the values in a two dimensional array of integers and display the values.
4. **Draw the Pascal's Triangle using two-dimensional array.**
5. WAP that takes a 5x5 matrix of integer values as input and then find out the biggest number from upper-left to lower bottom diagonal elements of that matrix.

#### **String**

1. WAP to count the number of words and number of characters in a given line of text except the spaces.
2. WAP to count the numbers of vowels, consonants, digits and special symbols in a given string.
3. WAP to input a multi word string and produce a string in which first letter of each word is capitalized.
4. WAP to search a character in a given string.
5. WAP to reverse a string.
6. WAP to input a string and replace every lower case letter with upper case letter, upper case letter with a lower case letter, digit with a '#' and a special symbol with a '%'. Display the new string.

#### **Pointer**

1. Write a function to compare two strings using pointers. Function has two string arguments and returns 0 if strings are equal else returns 1.
2. Write a program that will copy one string to another. You can't use strcpy() function.
3. Write a function having one argument of string type and print the string in the following pattern using pointers.

R	RAJAT
RA	RAJA
RAJ	RAJ
RAJA	RA
RAJAT	R

#### **Function**

1. Write a function that takes one integer argument and returns its square.
2. Write a function to calculate the area of a circle where radius is passed to the function as argument.

3. Write a function that has one character argument and displays that it's a small letter, capital letter, a digit or a special symbol.
4. Write a function to print the sum and average of first n odd numbers where n is passed to the function as argument.
5. Write a function that returns 1 if the number is prime and 0 if not prime. Number is passed to the function as argument.
6. Write a function that prints the sum of the digits, count of the digits and reverse of a number. Number is passed to the function as argument.
7. Write a program to take two numbers as input and function to swap them by passing parameters as values and also as addresses.
8. Write a recursive function that will find the average of an integer.
9. Write a recursive function that will find the GCD of two numbers.
10. Write a function that receives a string (character array) as argument and produce a string in which first letter of each word is capitalized

### **Structure**

1. WAP that takes name, age and salary of 5 employees as input and stores it in structure employee and displays all the employee details through emp\_disp function and displays employee details of employee who gets highest salary using emp\_sal function.
2. WAP to take name, age, address (street, city) input for 'n' employees in array of structures and display only the employees who belong to Pune city.

### **File**

1. WAP to open any simple text file in read mode and display its contents using fgetc.
2. WAP to print the number of characters, spaces, tabs and lines in a text file.
3. WAP to copy the contents of one file into the other using gets and puts functions.
4. WAP to create a file and write 'n' employees details (name, age and basic salary) into it using fwrite.
5. WAP to modify the contents of employee file database at required position.