

C – Programming

LAB 1

- 1- Make a simple Calculator program that takes two operands and an arithmetic operator +, -, *, / from the user. Then performs the calculation on the two operands depending upon the operator entered by the user.
- 2- Write a program to calculate the area of a circle.
- 3- Write a program that take a char from the user and find out if it is a digit or a char or special char (%,\$,@ .. and so on), and if it is a char find out if its capital or small char

Example:

Input→ 7

Output→ the input is digit

Input→ a

Output→ the input is a small char

Input→ #

Output→ the input is a special char

- 4- Write a program that divides two numbers and give the result to the nearest 3 digits.

Example:

Input→ 9, 3

Output→ 3.000

Input →4, 3

Output→ 1.333

Input → 4, 0

Output→ error, cannot divide by zero

5- Write a program to find the biggest number between 3 digits entered by the user.

6- Swap two variables' values.

Example:

Input → x=5, y=8.

Output → x=8, y=5.

7- Swap two variables' values using two variables only in the program.

8- Write a program to print Binary representation of a given number.

Example:

Input→ 7

Output→ 111

9- Write a program to find if the input digit from the user is even or odd.

10- Write the same program as no.9 and sum any even number that is entered and keep the total sum to print it in the end, and if the user entered two odd numbers consecutively print "bye" and end the program.

Example:

Input→ 2

Print→ sum = 2

Input→ 6

Print→ sum = 8

Input→ 7

Print→ sum = 8

Input→ 1

Print→ sum = 8, bye

Program ended.

11- Write a program that reads a positive integer and check if this number is a base of 2 like 1, 2,4,8,16,32, 64...

(Four different methods available ---→ solve by two)

12- Write a C program that take an integer number and count the number of set bits of this number

Examples:

Input→ 5 (101)

Output→ 2

Input →7 (111)

Output→ 3

13- Write a C program that take an integer number and replace a chosen bit by 1 or zero.

Examples:

Input→ 8 (1000)

Print→ which bit you want to replace/ toggle?

Input→ 0

Output→ 9 (1001)

Input→ 7 (111)

Print→ which bit you want to replace/ toggle?

Input→ 1

Output→ 5 (101)

14- Write a C program that take an decimal (integer) number and sum its digits

Examples:

Input→ 125 (1 + 2 + 5)

Output→ sum = 8

Input→ 1472 (1 + 4 + 7 + 2)

Output → sum = 14