ASSIGNMENT 1: SEQUENCE

1. Write a program to Accept two numbers and
   a. find its sum.
   b. find its difference.
   c. find its product.

   Test the program using different integral data type signed/unsigned char/int/long.
   First test the result using small values. Then test the same program using large values.
   Observe the results.

2. Write a program to accept a number and print the number in character, decimal, octal and hex formats.

3. Print the ASCII value of user entered character in decimal, hex, octal format and also print the character for user entered ASCII value.

4. Write a program to print following pattern.
   a. Using multiple printf statements
   b. Using single printf statement

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5. Write a program to display ASCII values for character constants '\n', '\r', '\t', '\a', '\b'.

6. Write a program to accept an integer value and print its table.

7. Write a program to accept a 4 digit number and
   a. Display face value of each decimal digit
   b. Display place value of each decimal digit
   c. Display no in reverse order by changing decimal place values

   If user enters a 4 digit number 9361 output should be
   a. 9 3 6 1
   b. 9361 = 9 000 + 300 + 60 + 9
   c. 1639

8. Write a program to accept three integer numbers and find its average.

9. Write a program to convert temperature in Celsius to Fahrenheit and vice versa. Formula for conversion is

$$^0C = \frac{5}{9} \times (^0F - 32)$$

10. Write a program to calculate Area and Perimeter of Triangle for given length of three sides of triangle. Use sqrt() function from math.h to calculate square root.
    Perimeter = a + b + c$a + b + c$
    Area = $\sqrt{s \times (s-a) \times (s-b) \times (s-c)}$
    Test the program using values 3,4,5 and 1, 2, 3 and 1, 2, 4 for a, b, c. Observe the results.

11. Write a program to determine the ranges of char, short, int, and long variables, both signed and unsigned, by printing appropriate values from standard headers.
    Do not use spaces to align table columns.
    (note: the size and range changes from compiler to compiler)

Data Type	Size	Format Specifier	Range
char	1	%c	-128 to +127
unsigned char	1	%c	0 to 255
short int	2	%hd	-32768 to +32767
unsigned short int	2	%hu	0 to 65535
int	2	%d	-32768 to +32767
unsigned int	2	%u	0 to 65535
long int	4	%ld	–2,147,483,648 to 2,147,483,647
unsigned long int	4	%lu	0 to 4,294,967,295

12. Extend above program (11) to print ranges for float, double, and long double. Use <float.h>. “float” numbers can be printed using %f, %g, %e, %E.