

### In-Lab task # 15.1

Write a function **power** that takes two parameters a and b. And it returns the power as  $(a)^b$

### In-Lab task # 15.2

Write a function that takes an integer n as parameter and returns the number of digits in that number. i.e. n=512364 should return 6.

### In-Lab task # 15.3

Write a function that receives an integer n as argument and returns the number of ones (1s) in the binary representation of n.

### In-Lab task # 15.4

Write a function that takes an array of integers and size of that array as argument and returns the median, which is the mid value in an array.

Hint: Sort numbers first

### In-Lab task # 15.5

Write a function named **ProductOfSum** which takes two 1D integer arrays and an integer **n** as parameters and returns the product of sum of the first **n** elements of the two arrays.

For example, given the following two 1D arrays:

```
int arr1[] = {1, 2, 3, 4, 5};  
int arr2 []= {6, 7, 8, 9, 10};
```

Invoking **ProductOfSum(arr1, arr2, 4)** will return the product of sum of the first 3 elements of **arr1** and **arr2**, that is,  $(1 + 6) * (2 + 7) * (3 + 8) = 693$  as the result.

### In-Lab task # 15.6

Write a function named "**scalarProduct**" that takes as its arguments the following:

- (1) an array of floating point values;
- (2) an integer that tells how many floating point values are in the array.
- (3) an x variable of type int

The function should multiply each element in that array with give x number and saves the result at the same location in given array.

For given following array and x=2

5 | 2 | 9.0 | 3 | 7

Resultant array would be:

10 | 4 | 18.0 | 6 | 14

### In-Lab task # 15.7 (Initializing Pointers)

Write a program to initialize an int pointer with memory address of variable. Enter the value into variable through pointer and print the value of variable with reference to the name of variable.

**In-Lab task # 15.8**  
**(De-referencing Pointers (Sum of Values))**

Write a program that declares 3 pointers of type float. Initialize these pointers using three float variables. Assign values to data variables using pointer variables. Compute the sum of variables and print the result.

**In-Lab task # 15.9**

Write a program to declare and initialize variables x of integer type and y of float type. Also print the values and addresses of these variables on the screen using pointer.

**In-Lab task # 15.10**  
**(Pointers Arithmetic (Odd values in array))**

Write a program to enter the values into an array and then print the odd values of array on screen using pointer notation.

**In-Lab task # 15.11**  
**(Pointers Arithmetic (Reverse order of array))**

Write a program to enter the values into an array using pointer notation. Also display the values of array in reverse order on screen using pointer notation.

**In-Lab task # 15.12**  
**(Passing Pointers as argument to Function (Cube))**

Write a program to compute the cube of a number using int pointer as argument to a function.

**In-Lab task # 15.13**  
**(Passing Pointers as argument to function (Arrays))**

Write a program to multiply each index of a double type array with 2 using pointer as argument to a function.

**In-Lab task # 15.14**

Write a program to allocate memory locations for an array of 'int' type using 'new' operator. The program should input value for the length of array during program execution. Enter values into array and find the maximum value in the Array.

### In-Lab task # 15.15

Write a program to allocate memory locations for an array of 'int' type using 'new' operator. The program should input value for the length of array during program execution. Enter values into array and find the total number of prime values in that Array.

Result should be:

```
Enter the size of array ? 5
Enter 5 values in array
98
64
32
256
128
Maximum value is : 256_
```