**Assignment # 2**

1. Write a C++ program that asks the user to enter 10 integer values in an array. After entering 10 elements calculate sum and average of total elements in the array and display it on output screen.

**Sample Input:**

Please enter elements for array:

10 8 5 9 14 7 12 10 1 2

**Sample Output:**

Sum: 78

Average: 7.8

1. Write a program that reads a list of positive integers only (in case a user enters a negative integer it should not be added into array) from the user in an array of size 10. Array must be filled completely. It then prints the odd numbers on first line and even numbers on second line.

**Sample Input:**

Please enter elements for array:

10 8 5 9 -14 7 -12 10 1 2 3 66

**Sample Output:**

Odd Numbers: 5 9 7 1 3

Even Numbers: 10 8 10 2 66

1. Write a C++ program that creates two one dimensional arrays “A” and “B” of size 20 elements each. The main program should get the input in the array “A” from the user and initialize array “B” with values “0”. Your program should calculates the (number \* 3) of each element of array “A” and should store in the square value in corresponding positions (index) in the array “B”. In the end, the main program (main function) prints the calculated values of array “B”. Also display the values in array B which are divisible by 2 (if any).

**Sample Inputs:**

Please enter values in array A:

2 8 3 4 10 5 9 3 2 1

**Sample Outputs:**

The values in Array B are:

6 24 9 12 30 15 27 9 6 3

Values in Array B which are divisible by 2:

6 24 12 30

1. Write a program to define an array of size 10, ask the user to enter the array elements. Replace all EVEN elements by 1 and ODD by 0.

**Sample Input:**

Enter 10 elements, please:

2 4 7 4 5 1 8 11 20 6

**Sample Output:**

The array after the replacement:

1101001011.

1. Write a program to read a set of alphabets in an array and replace each alphabet with the next one except ‘ ’, ‘o’, ‘O’, ‘z’, ‘Z’. Save this new string into another array and finally display it.

**Sample Input:** “Practice makes a man perfect”

**Sample Output:** “Qsbdujdf nblft b nbo qfsgedu”

1. Write a program to define a variable size array, ask the user to enter the size of array and its elements. Then search whether an element (x) exists in the array or not and print the indexes where it found (if it exists in more the one index).

**For example, the output is:**

|  |  |
| --- | --- |
| **Example 1** | **Example 2** |
| Enter the size of array, please: 5  Enter the elements of the array, please:  10 20 30 70 20  Enter the element to search:  20 20 exists in index: 1 4 | Enter the size of array, please: 5  Enter the elements of the array, please:  10 20 30 70 20  Enter the element to search: 50 50 does not exists |

1. Write a C++ program that takes 4 numbers (whole number) from user and saves them in array named num\_array. Now, calculate factorial, square and cube of each entered number and save them in three different arrays named Factorial, Square, and Cube.

**Sample Output:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sample Input:** | 2 | 4 | 10 | 9 |
| **Sample Output:** |  |  |  |  |
| **Square:** | 4 | 16 | 100 | 81 |
|  |  |  |  |  |
| **Cube:** | 8 | 64 | 1000 | 729 |
|  |  |  |  |  |
| **Factorial:** | 2 | 24 | 3628800 | 362880 |

1. Implement a C++ program that declares 2 arrays of size 3 and merge both the arrays in third array of size 6. Example:

**Sample Input:**

Array1:

|  |  |  |
| --- | --- | --- |
| 2 | 4 | 7 |

Array2:

|  |  |  |
| --- | --- | --- |
| 1 | 8 | 6 |

**Sample Output:**

Array3:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 2 | 4 | 7 | 1 | 8 | 6 |

1. Write a C++ program to read a name of city of Pakistan and store it in a one-dimensional array and change the small leter of name to capital letters and capital letters to small leters, also display count the number of small and capital letters .

**Sample Input:**

Toba Tek Singh

**Sample Output:**

tOBA tEK sINGH

Small Letters: 3

Capital Letters: 9

1. Write a C++ program to store the roll numbers and names of 5 students and search for a specific roll number and print the name and roll number of that student.

**Sample Input:**

Please enter roll numbers:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1252 | 1254 | 1257 | 1251 | 1258 |

Please enter names of students:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Ali Khan | Ahmed Nawaz | Farooq Ahmed | Bashir | Muslim |

Please enter the roll number of a student to search for: 1257

**Sample Output:**

Student Name: 1257

Student Roll Number: Farooq Ahmed

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