

National University of Computer and Emerging Sciences



Laboratory Manual *for* Programming Fundamentals

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Objective:

After doing this manual students are able to understand:

- 1D Integer array
- Character Array

Problems

NOTE: Handle invalid conditions otherwise marks will be detected.

Task: 1 *Palindrome String using Character Array*

Write a C++ program which will take a character array as user input and then check the input array is palindrome or not? Print message accordingly.

Sample Output:

```
Input array: 12344321
The input string 12344321 is a palindrome
```

```
Input array: 12345321
The input string 12345321 is not a palindrome
```

```
Input array: Afifa
The input string Afifa is a palindrome
```

```
Input array: Atiqah
The input string Atiqah is not a palindrome
```

Task: 2 *Frequency of Array Elements*

Write a C++ program which will take a character array as user input and then print the count of each element of an array.

Sample Output:

```
Input Array: wwwaaawba
Frequency of each element of an array:
4 w
4 a
1 b
```

Task: 3 *Array Sum by passing the constant Array*

Write a C++ program, which takes an integer array as user input. Then the array should be updated whose each index value must be equal to the sum of numbers from 1 to the number on each index on the array.

Sample Output:

```
Input array: 6 4 1 3 0  
Output Array: 21 10 1 6 0
```

Note: Don't create another array for storing sum, change the values of the original array.

Task: 4 *Array Sum by passing the constant Array*

Write a program that takes an integer array as input from the user and prints the number of zero bits in the binary representation of each number entered by the user.

Sample Output:

```
Input array: 7 8 3 2 19  
Output Array: 0 3 0 1 2
```

Note: This is because binary representation of 7 is 111, 8 is 1000, 3 is 11, 2 is 10, and 19 is 10011