

**LEADING UNIVERSITY**

**Course Title: Compiler Design & Construction Sessional**

**Course Code: CSE-3316**

**Lab Report - 02**

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**Experiment – 02**

**Code and Explanation is given below:**

#include<iostream>

using namespace std;

int main(){

    string st1 = "abcdefghijKLMNOPQRSTuvwxyz0123456789!@#$%^&\*(){}[]=-", v = "", c = "", u = "", l = "", d = "", s = "";

    for(int i = 0; i<st1.size(); i++){

        if(st1[i] == 'a' || st1[i] == 'e' || st1[i] == 'i' || st1[i] == 'o' || st1[i] == 'u' || st1[i] == 'A' || st1[i] == 'E' || st1[i] == 'I' || st1[i] == 'O' || st1[i] == 'U')

        v+=st1[i];

        else if((st1[i] >= 'a' && st1[i] <= 'z') || (st1[i] >= 'A' && st1[i] <= 'Z'))

        c+=st1[i];

        if(st1[i] >= 'A' && st1[i] <= 'Z')

        u+=st1[i];

        else if(st1[i] >= 'a' && st1[i] <= 'z')

        l+=st1[i];

        if(st1[i] >= '0' && st1[i] <= '9')

        d+=st1[i];

        if((st1[i] >= 32 && st1[i] <= 47) || (st1[i] >= 58 && st1[i] <= 64) || (st1[i] >= 91 && st1[i] <= 96) || (st1[i] >= 123 && st1[i] <= 126))

        s+=st1[i];

    }

    cout<<"Vowel: "<<v<<endl;

    cout<<"Consonent: "<<c<<endl;

    cout<<"Uppercase: "<<u<<endl;

    cout<<"Lowercase: "<<l<<endl;

    cout<<"Digit: "<<d<<endl;

    cout<<"Special characters: "<<s<<endl;

    return 0;

}

**Output:**

Vowel: AEIOiaU

Consonent: BCDFGHJKLMNPQRsdfghdfggdSTVWXYZ

Uppercase: ABCDEFGHIJKLMNOPQRSTUVWXYZ

Lowercase: sdfghiadfggd

Digit: 0123456789

Special characters: !@#$%^&\*(){}[]=-

**Explanation:**

1. Program starts.
2. We have initialize a fixed string for test this program and to store multiple type of string, we initialize another 6 string, which are null.
3. Traverse the given string character by character.
4. Check if the character belongs to the vowel, consonant, uppercase, lowercase, digit, or special character.

* If the character is a vowel, store this character into specific variable which stores all vowels in to a string.
* Else the character is a consonant, store this character into specific variable which stores all consonant in to a string.
* If the character is an uppercase character, store this character into specific variable which stores all uppercase character in to a string.
* Else the character is a lowercase character, store this character into specific variable which stores all lowercase character in to a string.
* If the character is a digit, store this character into specific variable which stores all digits in to a string.
* If the character is a special character, store this character into specific variable which stores all special character in to a string.

1. Display all generated string as an output.