Institute of Computer Technology
B. Tech Computer Science and Engineering
Subject: ESFP-II (2CSE203)

PRACTICAL-10

AIM: - To learn about Strings and Strings functions in C++.

1. Sanju wants to write a C++ program to check whether two characters present equally in a given string.

Example: 2 Characters are a,e

Input: aabcdeef

Output: True

CODE:

```
#include <iostream>
#include <cstring>
using namespace std;

int main()
{
   int charA=0;
   int charB=0;
   char arr[20];
   char char1;
   char char2;

   cout<<"Enter any string: ";
   cin>>arr;
   cout<<"Enter 1st character: ";
   cin>>char1;
   cout<<"Enter 2nd character: ";
   cin>>char2;

   for (int i = 0; i < 20; i++)
   {
      if (arr[i] == char1)
      {
         charA++;
      }
      if (arr[i] == char2)
      {
         charB++;
```

```
    }
  }
  if (charA == charB)
  {
    cout<<"\nTrue";
  }
  else
  {
    cout<<"\nFalse";
  }

  return 0;
}
```

OUTPUT:

```
Enter any string: aabcdeef
Enter 1st character: a
Enter 2nd character: e

True

...Program finished with exit code 0
```

2. A teacher has decided to make a c++ program to insert a dash character (-) between two odd numbers in a given string of numbers.
Example:
Sample Input: 1345789
Sample Output: Result-> 1-345-789

CODE:

```
#include <iostream>
#include <cstring>
using namespace std;

int main()
{
  string numbStr;

  cout<<"\nEnter any number: ";
  cin>>numbStr;

  for (int i = 0; i < numbStr.length(); i++)
```

```
    {
        if ((numbStr[i] == '1' || numbStr[i] == '3' || numbStr[i] == '5' || numbStr[i] == '7' ||
numbStr[i] == '9') && (numbStr[i + 1] == '1' || numbStr[i + 1] == '3' || numbStr[i + 1] == '5'
|| numbStr[i + 1] == '7' || numbStr[i + 1] == '9'))
        {
            numbStr.insert(i+1,"-"); numbStr = numbStr;
        }
    }

    cout<<"\nResult -> "<<numbStr<<endl;

    return 0;
}
```

OUTPUT:

```
Enter any number: 1345789

Result -> 1-345-789
PS C:\Users\Admin\Google Drive\B-Tech\SEM-2\ESFP-2\ESFP-Practicals\Prac-10>
```

3. Write a program that takes your full name as input and displays the abbreviations of the first name, middle names and the last name in UPPERCASE only.
Expected input-Sachin Ramesh Tendulkar
Expected output-S R T

CODE:

```
#include <iostream>
#include <cstring>
using namespace std;

int main()
{
    char name[50];

    cout<<"\nEnter your name: ";
    cin.getline(name,50);

    name[0]=toupper(name[0]);
    cout<<name[0]<<" ";

    for (int i = 0; i < strlen(name); i++)
```

```
    {
        if (name[i] == ' ')
        {
            cout<<(char) toupper(name[i+1])<<" ";
        }
    }

    return 0;
}
```

OUTPUT:

```
Enter your name: sachin ramesh tendulkar
S R T
PS C:\Users\Admin\Google Drive\B-Tech\SEM-2\ESFP-2\ESFP-Practicals\Prac-10>
```

Post Practical Task

1. Write an efficient program in C++ to check if two String is an anagram of each other. An anagram contains are of the same length and contains the same character, but in a different order, for example, "Army" and "Mary" is the anagram. Your program should return true if both Strings are the anagram, false otherwise.

CODE:

```
#include <bits/stdc++.h>
using namespace std;

bool Anagram(string str1, string str2)
{

    int n1 = str1.length();
    int n2 = str2.length();

    if (n1 != n2)
    {
        return false;
    }

    sort(str1.begin(), str1.end());
    sort(str2.begin(), str2.end());

    if(str1.compare(str2))
```

```
    {
        return true;
    }

    return true;
}

int main()
{
    string str1;
    string str2;

    cout<<"\nEnter first word: ";
    cin>>str1;
    cout<<"\nEnter second word: ";
    cin>>str2;

    if (Anagram(str1, str2))
    {
        cout << "\nTrue";
    }
    else
    {
        cout << "\nFalse";
    }
    return 0;
}
```

OUTPUT:

```
Enter first word: army

Enter second word: mary
True
PS C:\Users\Admin\Google Drive\B-Tech\SEM-2\ESFP-2\ESFP-Practicals\Prac-10>
```

2. What will be the output of the following C++ code?

```
#include <iostream>
#include <cstring>
using namespace std;
int main () {
char str1[10] = "Hello";
```

```
char str2[10] = "World";
char str3[10];
int len ;
strcpy( str3, str1);
strcat( str1, str2);
len = strlen(str1);
cout << len << endl;
return 0;
}
```

a) 5
b) 55
c) 11
d) 10

OUTPUT:

```
PS C:\Users\Admin\Google Drive\B-Tech\SEM-2\ESFP-2\ESFP-Practicals\Prac-10>
cd "c:\Users\Admin\Google Drive\B-Tech\SEM-2\ESFP-2\ESFP-Practicals\Prac-10\
" ; if ($?) { g++ PPQ10.cpp -o PPQ10 } ; if ($?) { .\PPQ10 }
10
PS C:\Users\Admin\Google Drive\B-Tech\SEM-2\ESFP-2\ESFP-Practicals\Prac-10>
```

3. What will be the output of the following C++ code?

#include <iostream> #include <string> using namespace std; int main () { string str ("nobody does like this"); string key ("nobody"); size_t f; f = str.rfind(key); if (f != string::npos) str.replace (f, key.length(), "everybody"); cout << str << endl; return 0; }

a) nobody does like this
b) nobody
c) everybody
d) everybody does like this

OUTPUT:

```
everybody does like this
PS C:\Users\Admin\Google Drive\B-Tech\SEM-2\ESFP-2\ESFP-Practicals\Prac-10>
```

4. What will be the output of the following C++ code?

```
#include <iostream>
#include <string>
using namespace std;
int main() {
string str {"Steve jobs"};
cout << str.capacity() << "\n"; return 0;
}
```

a) 9

b) 10

c) 11

d) Not Fix

OUTPUT:

```
10


...Program finished with exit code 0
Press ENTER to exit console.
```