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# Section:BSE-1B

# Lab 14

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## Question.1:

Code:

```
#include<iostream>
#include<cstring>

using namespace std;

void reverseit(char str[30])
{

    for(int i=0;i<int(strlen(str)/2);i++)    //if string has odd length, we will
swap all characters except middle.
    {
        char temp = str[i];             //Swapping the positions
        str[i]=str[(strlen(str))-i-1];
        str[(strlen(str))-i-1]=temp;

    }

    cout<<"The reverse of input is: "<<str<<endl;
```

```
}

int main()
{

    char str[30];   //Using C-style string, we have to specify length if we have
to take input.
    cout<<"Enter the string to get its reverse: "<<endl;
    cin.getline(str,30);

    //reverseit function.
    reverseit(str);

    return 0;
}
```

**Screenshots:**

```
Enter the string to get its reverse:
able was i ere i saw elba
The reverse of input is: able was i ere i saw elba
```

```
Enter the string to get its reverse:
Programming Fundamentals Lab
The reverse of input is: baL slatnemadnuF gnimmargorP
```

```
Enter the string to get its reverse:
FAST NUCES
The reverse of input is: SECUN TSAF
```

**See next page please.**

## Question.2:

Code:

```
#include<iostream>
#include<string>
#include<cstring>

using namespace std;
const int SIZE = 15;
```

```
void cStyleAndObjectStr(char *ptrS2)
{
    cout<<ptrS2<<" is a c-style string"<<endl;
}

void cStyleAndObjectStr(string *ptrS1)
{
    cout<<*ptrS1<<" is a C++ String Object"<<endl;
}


int main()
{
    string S1=" FAST-National University of Computer and Emerging Sciences ";
    char S2[SIZE]= {" FAST-NUCES "};

    string *ptrS1 = &S1;
    char *ptrS2 = S2;

/*  If two functions have same names but different arguments and these
Functions are called in main with their respective arguments, Compiler will
Decide on basis of argument, which one to enter. Here one Function has argument
as string pointer and the other has character. This will be used to make calling
decision.  */

    cStyleAndObjectStr(ptrS2);
    cStyleAndObjectStr(ptrS1);

    return 0;
}
```

Screenshot:

```
FAST-NUCES  is a c-style string
FAST-National University of Computer and Emerging Sciences  is a C++ String Object
```

**See next page please.**

## Question.3:

Code:

```
#include<iostream>
#include<string>

using namespace std;

int ispalindrome(string str,int length)
{
    for(int i=0;i<length/2;i++)
    {
        if(str[i]!=str[length-i-1] )   //If a single mismatch found, it will
directly return 1.
        {
```

```
            return 1;
        }
    }

    return 0;
}



int main()
{
    string str;
    cout<<"Enter the string to check if it's a palindrome: "<<endl;
    getline(cin,str);

    for(int i=0;i<str.length();i++)   //This loop will remove anything in between
letters to ensure only letters are compared and decision is based on that.
    {
        if(!(str[i]>=65 && str[i]<=90) && !(str[i]>=97 && str[i]<=122)  )
        {
            str.erase(i,1);
            --i;
        }
        str[i]=tolower(str[i]); // To make letters smaller.
    }




    int size = str.length();


    // Decision based on ispalindrome function.
    if(!ispalindrome(str,size))    //Any integral value is true, except 0.
    {
        cout<<"The given string is a Palindrome."<<endl;
    }
    else
    {
        cout<<"Not a Palindrome"<<endl;
    }


    return 0;
```

```
}
```

**Screenshot:**

```
Enter the string to check if it's a palindrome:
A man, A plan, A canal; Panama
The given string is a Palindrome.
```

```
Enter the string to check if it's a palindrome:
"Karak" is a place.
Not a Palindrome
```