

Q1

INPUT

```
#include <iostream>
using namespace std;
void reverse(int n, int &rev)
{
    if (n == 0) {
        return;
    }

    rev = rev * 10 + (n % 10);
    reverse(n / 10, rev);
}
int isPalindrome(int num)
{
    int rev = 0;
    reverse(num, rev);
    return (num == rev);
}

int main()
{
    int n;
    cout<<"input the number: ";
    cin>>n;

    if (isPalindrome(n)) {
        cout <<n<< " is a Palindrome";
    }
    else {
        cout <<n<< " is not a Palindrome";
    }
    return 0;
}
```

OUTPUT

```
PS D:\C++> cd "d:\C++\" ; if ($?) { g++ recursivepalindrome.cpp -o recursivepalindrome } ; if ($?) { .\recursivepalindrome }
input the number: 345
345 is not a Palindrome
PS D:\C++> cd "d:\C++\" ; if ($?) { g++ recursivepalindrome.cpp -o recursivepalindrome } ; if ($?) { .\recursivepalindrome }
input the number: 444
444 is a Palindrome
PS D:\C++> 
```

Q2

INPUT

```
#include<iostream>
#include<cstdio>
#include<cstring>
using namespace std;
int main(){
    char a[40],b[40],c[40],d[40];
    cout<<"input string 1: ";
    gets(a);
    cout<<"input string 2: ";
    gets(b);
    int o,len1,len2,i,vow=0,con=0;
    cout<<"\nMENU"<<"\n";
    cout<<"\n1.To find the length of both strings";
    cout<<"\n2.Connect both strings";
    cout<<"\n3.Find no. of vowels and consonants in both strings";
    cout<<"\n4.Create copies of the strings and print them"<<"\n";
    cout<<"\nEnter the option no: ";
    cin>>o;
    len1=strlen(a);
    len2=strlen(b);
    switch(o){
        case 1:{
            cout<<"\nLenth of string a= "<<len1;
            cout<<"\nLength of string b= "<<len2;
            break;
        }
        case 2:{
            strcat(a,b);
            cout<<"\nConnected string: "<<a;
            break;
        }
        case 3:{
            for(i=0; i<len1; i++){
                if(a[i]=='a' || a[i]=='e' || a[i]=='i' || a[i]=='o' || a[i]=='u')
                    vow++;
                else
                    con++;
            }
            cout<<"\nstring a"<<"\nNo of vowels= "<<vow<<"\tNo of consonants=
"<<con;
            vow=0,con=0;
            for(i=0; i<len2; i++){
                if(b[i]=='a' || b[i]=='e' || b[i]=='i' || b[i]=='o' || b[i]=='u')
                    vow++;
                else
```

```

        con++;
    }
    cout<<"\nString b"<<"\nNo of vowels= "<<vow<<"\tNo of consonants=
"<<con;
    break;
}
case 4:{
    strcpy(c,a);
    strcpy(d,b);
    cout<<"\nString c= "<<c;
    cout<<"\nString d= "<<d;
    cout<<"\nCopied successfully!!";
    break;
}
default: cout<<"\nwrong option!!";
        break;
}
return 0;
}

```

OUTPUT

```
PS D:\C++> cd "d:\C++\" ; if ($?) { g++ stringmenu.cpp -o stringmenu } ; if ($?) { .\stringmenu }  
input string 1: alan  
input string 2: sabu
```

MENU

- 1.To find the length of both strings
- 2.Connect both strings
- 3.Find no. of vowels and consonants in both strings
- 4.Create copies of the strings and print them

Enter the option no: 1

Length of string b= 4

```
PS D:\C++> cd "d:\C++\" ; if ($?) { g++ stringmenu.cpp -o stringmenu } ; if ($?) { .\stringmenu }  
input string 1: alan  
input string 2: sabu
```

MENU

- 1.To find the length of both strings
- 2.Connect both strings
- 3.Find no. of vowels and consonants in both strings
- 4.Create copies of the strings and print them

Enter the option no: 2

Connected string: alan sabu

```
PS D:\C++> cd "d:\C++\" ; if ($?) { g++ stringmenu.cpp -o stringmenu } ; if ($?) { .\stringmenu }  
input string 2: sabu
```

MENU

- 1.To find the length of both strings
- 2.Connect both strings
- 3.Find no. of vowels and consonants in both strings
- 4.Create copies of the strings and print them

Enter the option no: 3

string a
No of vowels= 2 No of consonants= 2
string b
No of vowels= 2 No of consonants= 2

```
PS D:\C++> cd "d:\C++\" ; if ($?) { g++ stringmenu.cpp -o stringmenu } ; if ($?) { .\stringmenu }  
input string 1: alan  
input string 2: sabu
```

MENU

- 1.To find the length of both strings
- 2.Connect both strings
- 3.Find no. of vowels and consonants in both strings
- 4.Create copies of the strings and print them

Enter the option no: 4

String c= alan
String d= sabu
Copied successfully!!
PS D:\C++> █