Group D-25:--- Kaustubh Shrikant Kabra SE COMP-1 20

Program:---

#include<iostream>

#include<string.h>

#include<ctype.h>

using namespace std;

#define MAX 50

class Stack

{

private:

char data[MAX],str[MAX];

int top,length,count;

void pushData(char);

char popData();

public:

Stack()

{

top=-1;

length=0;

count=0;

}

void getString();

void checkPalindrome();

void extractString();

void displayReverse();

};

int main()

{

Stack obj;

obj.getString();

cout<<"\n Extracted string: ";

obj.extractString();

cout<<"\n Reverse of entered string: ";

obj.displayReverse();

obj.checkPalindrome();

return 0;

}

void Stack::getString()

{

cout<<"\n Enter a String: ";

cin.getline(str,MAX);

length=strlen(str);

}

void Stack::extractString()

{

char temp[MAX];

int i,j;

for(i=0; i<length; i++)

{

temp[i]=str[i];

}

j=0;

for(i=0; i<length; i++ )

{

if(isalpha(temp[i]))

{

str[j]=tolower(temp[i]);

j++;

}

}

length=j; //update length with new str length

for(int i=0; i<length; i++)

cout<<str[i];

}

void Stack::checkPalindrome()

{

for(int i=0; i<length; i++)

pushData(str[i]);

for(int i=0; i<length; i++)

{

if(str[i]==popData())

count++;

}

if(count==length) {

cout<<"\n Entered string is a Palindrome. \n";

}

else cout<<"\n Entered string is not a Palindrome. \n";

}

void Stack::displayReverse()

{

for(int i=length-1; i>=0; i--)

cout<<str[i];

}

void Stack::pushData(char temp)

{

if(top==MAX-1)

{

cout<<"\n Stack Overflow!!!";

return;

}

top++;

data[top]=temp;

}

char Stack::popData()

{

if(top==-1)

{

cout<<"\n Stack Underflow!!!";

return 0;

}

char temp=data[top];

top--;

return temp;

}

Output:-

*Case1:--*

Enter a String: Was it a car or a cat I saw

Extracted string: wasitacaroracatisaw

Reverse of entered string: wasitacaroracatisaw

Entered string is a Palindrome.

*Case2:---*

Enter a String: My name is Kaustubh.

Extracted string: mynameiskaustubh

Reverse of entered string: hbutsuaksiemanym

Entered string is not a Palindrome.