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//============================================================================
// Name        : fds9.cpp
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// Roll No.    : COSA23
// Description : Assignment No.9
//============================================================================

#include<iostream>
#include<string.h>
#define max 50
using namespace std;

class STACK
{
private:
char a[max];
int top;

public:
STACK()
{
top=-1;
}

void push(char);
void reverse();
void convert(char[]);
void palindrome();
};

void STACK::push(char c)
{
top++;
a[top] = c;
a[top+1]='\0';

cout<<endl<<c<<" is pushed on stack ...";
}

void STACK::reverse()
{
char str[max];

cout<<"\n\nReverse string is : ";
```

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for(int i=top,j=0; i>=0; i--,j++)
{
cout<<a[i];
str[j]=a[i];
}

cout<<endl;
}


void STACK::convert(char str[])
{
int j,k,len = strlen(str);

for(j=0, k=0; j<len; j++)
{
if( ( (int)str[j] >= 97 && (int)str[j] <=122 ) || ( (int)str[j] >= 65 && (int)str[j] <=90 ))
{
if( (int)str[j] <=90 )
{
str[k] = (char)( (int)str[j] + 32 );
}else
{
str[k] = str[j];
}

k++;
}
}
str[k]='\0';

cout<<endl<<"Converted String : "<<str<<"\n";
}

void STACK::palindrome()
{
char str[max];
int i,j;

for(i=top,j=0; i>=0; i--,j++)
{
str[j]=a[i];
}
```

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str[j]='\0';


if(strcmp(str,a) == 0)
cout<<"\n\nString is palindrome...";
else
cout<<"\n\nString is not palindrome...";
}


int main()
{
STACK stack;

char str[max];
int i=0;

cout<<"\nEnter string to be reversed and check is it palindrome or not : \n\n";

cin.getline(str , 50);

stack.convert(str);

while(str[i] != '\0')
{
stack.push(str[i]);
i++;
}

stack.palindrome();

stack.reverse();

}
```