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#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';
}

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

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

      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 );
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                }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];
      }
      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();
```

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}
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