AIM:-

Assignment 1

To perform various string operations using pointer.

a) String length.

b) String compare.

c) String copy.

d) String concate.

e) String reverse.

OBJECTIVE:-

Performing various string operations such as finding the length of the string,

comparing two strings, copying one string into another string, joining two strings or reversing

a string can be done by using the concept of pointers.

Theory :-

1) We know that, string is a collection of characters. By writing char x[20] where x

is any variable, we declare an array of characters giving it a size of 20.

2) A string can also be declared using pointers.

3) char \*p, this stores the address of x (p=x) ,therefore the value of \*p = x[20].

4) We can perform different kinds of string functions under pointers in predefined

string functions.

Algorithm :-

TO FIND LENGTH

Step1:define length function

Step 2:take input in str1[20]

Step 3:declare integer i and pointer ptr1 ,initialise i=0 and ptr1=str1

Step 4:increament i and ptr1 until ptr1!=NULL

Step 5 :Print length of string as value of i

COMPARE STRINGS

Step 1:define compare function

Step 2:declare 2 strings str1 and str2

Step 3:find length of both strings using length function

Step 4:if lengths are different ,strings are different

Step 5:else compare each character of string,if each and every character is identical strings are identical else strings are different

CONCAT STRINGS

Step 1:declare 2 strings str1 and str2

Step 2:take input from user for both strings

Step 3:join two strings using following code

for(i=0;\*ptr1!='\0';i++,ptr1++);

char \*ptr2;

ptr2=str2;

int j;

for(j=0;\*ptr2!='\0';j++,ptr2++,ptr1++)

{ \*ptr1=\*ptr2; }

\*ptr1='\0';

Step 4:str1 will be the concatenated string, print str1

COPY STRINGS

Step 1:define copy function

Step 2: declare 2 strings str1 and str2

Step 3:take input in str1

Step 4:copy str1 in str2 using following code

char \*ptr1;

ptr1=str1;

char \*ptr2;

ptr2=str2;

int i=0;

for(i=0;\*ptr1!='\0';i++,ptr1++,ptr2++)

{ \*ptr2=\*ptr1; }

\*ptr2='\0';

Step 5:print str2 as copied string

REVERSE STRING

Step 1:declare string str1 and str2

Step 2:take input in str1

Step 3:reverse string 3 using following code

char \*ptr1;

ptr1=str1;

char \*ptr2;

ptr2=str2;

int i,j,k;

for(i=0;\*ptr1!='\0';i++,ptr1++);

cout<<i<<endl;

k=i-1;

i--;

for(j=0;j<=k;j++,i--)

{ str2[j]=str1[i];

}

str2[j]='\0';

Step 4:str2 is reversed string, print str2

Source Code:

/\*

PROGRAM BY ANOM DEVGUN

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Successfully implemented various string operations using pointers.

use of switch case.

\*/

#include<iostream>

#include<string.h>

using namespace std;

class str

{

private :

int i,j;

public:

int len(char \*);

void rev(char \*);

void cop(char \*,char \*);

void com(char \*,char \*);

void con(char \*,char \*);

};

int str::len(char \*p)

{

int l=0;

while(\*p!='\0')

{

l++;

p++;

}

return l;

}

void str::rev(char \*p)

{

int len=strlen(p);

char \*ept,\*bpt,c;

bpt=p;

ept=p;

for(i=0;i<len-1;i++)

{

ept++;

}

for(i=0;i<len/2;i++)

{

c=\*ept;

\*ept=\*bpt;

\*bpt=c;

bpt++;

ept--;

}

}

void str::cop(char \*p,char \*q)

{

while(\*p!='\0')

{

\*q=\*p;

p++;

q++;

}

}

void str::com(char \*p,char \*q)

{

int flag=0;

while(\*p == \*q)

{

if(\*p=='\0'&&\*q=='\0')

flag=1;

p++;

q++;

}

if(flag==1)

cout<<"The Strings are equal\n";

else if(flag==0)

cout<<"The Strings are unequal\n";

}

void str::con(char \*p,char \*q)

{

char cd[100];

char \*cp;

cp=cd;

while(\*p!='\0')

{

\*cp=\*p;

cp++;

p++;

}

while(\*q!='\0')

{

\*cp=\*q;

cp++;

q++;

}

\*cp='\0';

cout<<"Concatenated string is :\n"<<cd<<"\n";

}

int main()

{

int ch;

str obj;

char st1[50],st2[50]=" ";

int l1;

while(1)

{

cout<<"\nEnter 1 for finding input string length\n";

cout<<"Enter 2 for reversing input string \n";

cout<<"Enter 3 for copying input string\n";

cout<<"Enter 4 for comparing 2 input strings\n";

cout<<"Enter 5 for concatenation of 2 input strings\n";

cout<<"Enter 6 to exit\n";

cin>>ch;

switch(ch)

{

case '0':

exit(0);

break;

case 1:

cout<<"Enter The String\n";

cin>>st1;

l1=obj.len(st1);

cout<<"The Length of Input String is:"<<l1<<"\n";

break;

case 2:

cout<<"Enter String to be reversed\n";

cin>>st1;

obj.rev(st1);

cout<<st1;

break;

case 3:

cout<<"\nEnter the String to be copied\n";

cin>>st1;

cout<<"\nString 2 before copying:"<<st2<<"\n";

obj.cop(st1,st2);

cout<<"String 2 after copying :"<<st2<<"\n";

break;

case 4:

cout<<"Enter The 2 Strings to be compared\n";

cin>>st1>>st2;

obj.com(st1,st2);

break;

case 5:

cout<<"Enter the strings to concat \n";

cin>>st1>>st2;

obj.con(st1,st2);

break;

case 6:

cout<<"Now Exiting.\n";

exit(0);

break;

default:

cout<<"\nInvalid Choice\n";

}

}

return 0;

}

