1. **Dupledromes (Exercise 5 question 1)**

#include<iostream>

#include<string.h>

using namespace std;

class str

{

public:

char s[15];

int len;

}obj;

int main()

{

char du[15];

int count,j=0;

cout<<"\nEnter a string: ";

cin>>obj.s;

obj.len=strlen(obj.s);

for (int i=0;i<=obj.len;i++)

{

if(obj.s[i]==obj.s[i+1])

{

du[j]=obj.s[i];

i++;

j++;

}

}

for (int i=0;i<j-1;i++)

{

count=1;

if (du[i]!=' ')

{

for (int k=i+1;k<j-1;k++)

{

if(du[i]==du[k])

{

count+=1;

du[k]=' ';

}

}

cout<<du[i]<<" - "<<count<<"\n";

}

}

return 0;

}

1. **Exercise 5 question 3**

#include<iostream>

#include<string.h>

#include<ctype.h>

using namespace std;

int main()

{

char s1[20],s2[20],copys1[20],copys2[20],temp;

int len1,len2;

cout<<"\nEnter two names: \n";

cin>>s1>>s2;

strcpy(copys1,s1);

strcpy(copys2,s2);

len1=strlen(s1);

len2=strlen(s2);

cout<<"\nLength of first string: "<<len1;

cout<<"\nLength of second string: "<<len2;

cout<<"\nConcatenated strings are: "<<strcat(copys1,copys2);

for(int i=0,j=0;i<len1,j<len2;i++,j++)

{

s1[i]=toupper(s1[i]);

s2[j]=tolower(s2[j]);

}

cout<<"\nConverted strings are: \n";

cout<<s1<<"\n"<<s2;

if(strcmp(s1,s2)!=0)

cout<<"\nThe strings are not same!!!";

for(int i=0,j=len1-1;i<len1/2,j>=len1/2;i++,j--)

{

temp=s1[i];

s1[i]=s1[j];

s1[j]=temp;

}

cout<<"\nReversed first string and concatenated strings are: \n";

cout<<s1<<"\n";

cout<<strcat(s1,s2);

return 0;

}

1. **Exercise 5 question 4**

#include<iostream>

#include<string.h>

using namespace std;

int main()

{

char s[10][20],maxstr[20],minstr[20];

int minlen, maxlen, i, j;

cout<<"\nEnter 10 strings: \n";

for (i=0;i<10;i++)

cin>>s[i];

minlen=maxlen=strlen(s[0]);

strcpy(minstr,s[0]);

strcpy(maxstr,s[0]);

for(i=1,j=1;i<10,j<10;i++,j++)

{

if(strlen(s[i])<minlen)

{

strcpy(minstr,s[i]);

minlen=strlen(s[i]);

}

if(strlen(s[j])>maxlen)

{

strcpy(maxstr,s[j]);

maxlen=strlen(s[j]);

}

}

cout<<"\nSmallest string is "<<minstr;

cout<<"\nLargest string is "<<maxstr;

return 0;

}

1. **Exercise 5 question 5**

#include<iostream>

#include<string.h>

#include<ctype.h>

using namespace std;

int main()

{

char str[20],copy[20];

int len, count=0, k, ucount=0, lcount=0;

cout<<"\nEnter a string:\n";

cin>>str;

strcpy(copy,str);

len=strlen(str);

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

{

k=0;

for (int j=i+1;j<len;j++)

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

{

str[j]=' ';

k++;

}

if(k!=0)

str[i]=' ';

}

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

{

if(str[i]==' ')

continue;

else

count++;

}

cout<<"\nThe number unique characters: "<<count;

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

{

if(isupper(copy[i])!=0)

ucount++;

else if(islower(copy[i])!=0)

lcount++;

}

cout<<"\nNumber of UPPER case characters: "<<ucount;

cout<<"\nNumber of LOWER case characters: "<<lcount;

return 0;

}