Program 1

Deleting the character T of a string

Program code

#include<iostream>

using namespace std;

const int N=100;

inline void del(char c[]);

int main()

{

char c[N];

gets(c);

del(c);

cout<<c<<endl;

return 0;

}

inline void del(char c[])

{

int i,j,k;

for(k=0;k<=N;k++)

{

for(i=0;c[i]!='\0';i++)

{

if(c[i]=='T')

{

for(j=i;c[j]!='\0';j++)

c[j]=c[j+1];

}

}

}

}

Program analysis

1. Store the string in a char array
2. If a[i]==T, then move the character behind a[i] to the front position
3. Execute the loop for the size of the array. to ensure that all the T is deleted

Program result

Program 2

Using overloaded function to calculate the maximum of several integers or doubles.

Program code

#include<iostream>

using namespace std;

int max(int a,int b);

int max(int a,int b,int c);

double max(double e, double f);

double max(double e, double f, double g);

int main()

{

int a,b,c;

double e,f,g;

cin>>a>>b;

cout<<max(a,b)<<endl;

cin>>a>>b>>c;

cout<<max(a,b,c)<<endl;

cin>>e>>f;

cout<<max(e,f)<<endl;

cin>>e>>f>>g;

cout<<max(e,f,g)<<endl;

return 0;

}

int max(int a,int b)

{

if (a>b)

return a;

else return b;

}

int max(int a,int b,int c)

{

int k;

if (a>b)

k=a;

else k=b;

if (c>k)

k=c;

return k;

}

double max(double e, double f)

{

if (e>f)

return e;

else return f;

}

double max(double e, double f, double g)

{

double k;

if (e>f)

k=e;

else k=f;

if (g>k)

k=g;

return k;

}

Program analysis

Ensure that the datatype or the number of the variables is different in the overloaded function.

Program result

Program 3

output the calendar after knowing the year and the months

Program code

Program code

#include<iostream>

#include<iomanip>

using namespace std;

void printmonth(int year, int month);

void title(int year, int month);

void monthbody(int year, int month);

int getstartday(int year,int month);

int gettotalnumberofdays(int year, int month);

int getnumberofdaysinmonth(int year,int month);

bool isleapyear(int year);

int main()

{

int year,month;

cin>>year>>month;

printmonth(year,month);

cout<<endl;

return 0;

}

void printmonth(int year, int month)

{

title(year,month);

monthbody(year, month);

}

void title(int year,int month)

{

cout<<" Sun Mon Tue Wed Thu Fri Sat"<<endl;

}

void monthbody(int year,int month)

{

int startday=getstartday(year, month);

int i;

int numberofdaysinmonth=getnumberofdaysinmonth(year,month);

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

cout<<" ";

for(i=1;i<=numberofdaysinmonth;i++)

{

cout<<setw(4)<<i;

if((i+startday)%7==0)

cout<<endl;

}

}

int getstartday(int year, int month)

{

int startday1800=3;

int totalnumberofdays=gettotalnumberofdays(year,month);

return (totalnumberofdays+startday1800)%7;

}

int gettotalnumberofdays(int year, int month)

{

int total=0;

for(int i =1800;i<year;i++)

if (isleapyear(i))

total=total+366;

else total=total+365;

for(i =1;i<month;i++)

total=total+getnumberofdaysinmonth(year,i);

return total;

}

int getnumberofdaysinmonth(int year,int month)

{

if(month==1||month==3||month==5||month==7||month==8||month==10||month==12)

return 31;

if(month==4||month==6||month==9||month==11)

return 30;

if(month==2)

return isleapyear(year)?29:28;

return 0;

}

bool isleapyear(int year)

{

return year%400==0||(year%4==0&&year%100!=0);

}

Program analysis

1. suppose the 1st of January in 1800 is Wednesday
2. Calculate the total day from the 1800. 1.1 to the knowing date.
3. Using the total date % 7to know the first day of the wanting month.
4. Using a function to check whether the year is a leap year.
5. Pay attention to the number of the “ ”(space)

Program result

Program 4

Using the knowing conditions to calculate the number of the light in the bottom of a tower

Program code

#include<iostream>

#include<math.h>

using namespace std;

int main()

{

int i,sum,j,n,n0;

for(i=2;i<=765;i=i+2)

{

n=i;

sum=0;

for(j=1;j<=8;j++)

{

sum=sum+n;

n=n/2;

}

if (sum==765)

n0=i;

}

cout<<n0<<endl;

return 0;

}

Program analysis

Using a loop of I to check that if the light in the bottom is I, whether the total number is 765

Program result