

```

/*
Program: Quiz1.cpp
Author: Michael Campbell
Date: 4/16/2011
Synopsis: Create a DayOfYear class that outputs the number of
the day of the year
Quiz # 1
*/

#include <iostream>
using namespace std;

class DayOfYear{
    int Dday, Dmonth, Dyear;
    int day_of_year;
public:
    DayOfYear():Dday(1), Dmonth(1), Dyear(2011){};
    DayOfYear(int month, int day, int year);
    ~DayOfYear();
    int DoYOutput();
    bool IsLeapYear(int year);
    friend ostream& operator <<(ostream& outputStream, const
DayOfYear& Date);
};

int main () {

    int month, day, year;

    cout << "\nLet's calculate the number of the Day of year(use
digits for month).\n"
    << "Please put in a date. ";
    cout << "\nMonth: ";
    cin >> month;
    cout << "\nDay: ";
    cin >> day;
    cout << "\nYear: ";
    cin >> year;
    DayOfYear DATE(month, day, year);
    int DoYear = DATE.DoYOutput();

    cout << "\nYou entered: " << DATE << "\n"
    << "Day of year = " << DoYear << endl;

    return EXIT_SUCCESS;
}

```

```

DayOfYear::DayOfYear(int month, int day, int year):Dmonth
(month), Dday(day), Dyear(year){

    int NumDaysInMonth[13] = {0, 31, 28, 31, 30, 31, 30, 31, 31,
30, 31, 30, 31};

    //Error checking - invalid input
    if (Dday < 1 || Dday > 31) {
        cerr << "Day Input Error.";
        EXIT_FAILURE;
    } else if (Dmonth < 1 || Dmonth > 12) {
        cerr << "Month Input Error.";
        EXIT_FAILURE;
    } else if (Dyear < 0 || Dyear > 3000) {
        cerr << "Year Input Error.";
        EXIT_FAILURE;
    }
    //Is this a leap year?
    if (IsLeapYear(Dyear) == true){
        day_of_year = NumDaysInMonth[Dmonth] + Dday + 1;
    } else
        day_of_year = NumDaysInMonth[Dmonth] + Dday;
}

DayOfYear::~DayOfYear(){}

int DayOfYear::DoYOutput(){
    return day_of_year;
}

bool DayOfYear::IsLeapYear(int year){
    if ((year % 400 == 0) || (year % 100 != 0 && year % 4 == 0))
    {
        return true;
    } else
        return false;
}

ostream& operator <<(ostream& outputStream, const DayOfYear&
Date){

    cout << Date.Dmonth << "/" << Date.Dday << "/" <<
Date.Dyear;
    return outputStream;
}

```



Terminal — bash — 80x24

Let's calculate the number of the Day of year(use digits for month).

Please put in a date.

Month: 3

Day: 11

Year: 1958

You entered: 3/11/1958

Day of year = 42

Michael-Campbells-MacBook-Pro:~ Myko\$ /Users/Myko/Library/Developer/Xcode/DerivedData/Quiz-etcgeabqsvkvdgphxtpscofceka/Build/Products/Debug/Quiz

Let's calculate the number of the Day of year(use digits for month).

Please put in a date.

Month: 3

Day: 11

Year: 2012

You entered: 3/11/2012

Day of year = 43

Michael-Campbells-MacBook-Pro:~ Myko\$ █