

Algorithms Level 4



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Problem # 15/4 Solution Using C++

```
#include <iostream>
using namespace std;

struct stDate
{
    short Year;
    short Month;
    short Day;
};

bool isLeapYear(short Year)
{
    return (Year % 4 == 0 && Year % 100 != 0) || (Year % 400 == 0);
}

short NumberOfDaysInAMonth(short Month, short Year)
{
    if (Month < 1 || Month>12)
        return 0;

    int days[12] = { 31,28,31,30,31,30,31,31,30,31,30,31 };
    return (Month == 2) ? (isLeapYear(Year) ? 29 : 28) :
days[Month - 1];
}

bool IsLastDayInMonth(stDate Date)
{
    return (Date.Day == NumberOfDaysInAMonth(Date.Month,
Date.Year));
}

bool IsLastMonthInYear(short Month)
{
    return (Month == 12);
}

short ReadDay()
{
    short Day;
    cout << "\nPlease enter a Day? ";
    cin >> Day;
    return Day;
}
```



Problem # 15/4 Solution Using C++

```
short ReadMonth()
{
    short Month;
    cout << "Please enter a Month? ";
    cin >> Month;
    return Month;
}

short ReadYear()
{
    short Year;
    cout << "Please enter a Year? ";
    cin >> Year;
    return Year;
}

stDate ReadFullDate()
{
    stDate Date;

    Date.Day = ReadDay();
    Date.Month = ReadMonth();
    Date.Year = ReadYear();

    return Date;
}

int main()
{
    stDate Date1 = ReadFullDate();

    if (IsLastDayInMonth(Date1))
        cout << "\nYes, Day is Last Day in Month.";
    else
        cout << "\nNo, Day is Not Last Day in Month.";

    if (IsLastMonthInYear(Date1.Month))
        cout << "\nYes, Month is Last Month in Year.";
    else
        cout << "\nNo, Month is Not Last Month in Year.";

    system("pause>0");
    return 0;
}
```