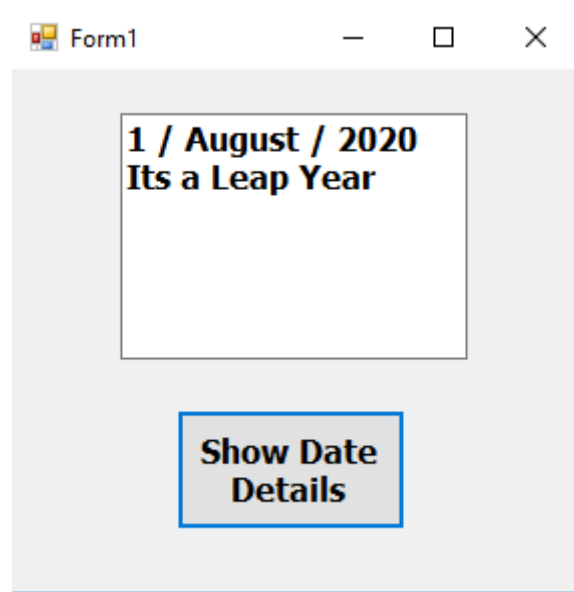


## Example (4)

### Constructor as a special type of method

1. Write a C# windows Form Application code to create a Class Named **Date** that contains the following :
  - ✓ **Fields :**
    - day,month and year of type int
  - ✓ **Methods:**
    - Default and parametrized constructor .
    - Set and get Methods .
    - **monthString()** method to change month name . Note if month=1 then month will be Jan if month=2 then month will be Feb and so on. Let the access modifier for this method private.
    - Print Details method. Note you must check whether the year is a leap year or not.

#### Solution:



1. using System;
2. using System.Collections.Generic;
3. using System.Linq;



```
58.         m = "Feb";
59.         break;
60.     case 3:
61.         m="March";
62.         break;
63.     case 4:
64.         m="April";
65.         break;
66.     case 5:
67.         m="May";
68.         break;
69.     case 6:
70.         m="Jun";
71.         break;
72.     case 7:
73.         m="July";
74.         break;
75.     case 8:
76.         m="August";
77.         break;
78.     case 9:
79.         m="September";
80.         break;
81.     case 10:
82.         m="October";
83.         break;
84.     case 11:
85.         m="Novembr";
86.         break;
87.     case 12:
88.         m="December";
89.         break;
90.     default:
91.         m = "There is no such mounth";
92.         break;
93.     }
94.     return m;
95.
96.
97.     }
98.
99.     public string print()
100.    {
101.        string l = "", m = monthString();
102.        if (year % 4 == 0)
103.            l = "Its a Leap Year";
104.        return getDay() + " / " + m + " / " + getYear()+Environment .NewLine +l;
105.    }
106. }
107.}
108. private void button1_Click(object sender, EventArgs e)
109.     {
110.         Date d=new Date(1,8,2020);
111.         textBox1.Text = d.print ();
```

← Inside the form

112. }  
113.

ملاحظة :

من المعروف ان اشهر السنة لا تتجاوز المدى من 1- 12 و كذلك ايام الاشهر من 1 - 31  
اذا اردنا ان نقوم بعمل تقييد الى الاشهر و الايام من الممكن ان نضيف شرط if في ال-  
Parameterized Constructor. و بذلك يصبح  
Class Date Constructor للـ :

```
1. public Date(int d, int m, int y)
2. {
3.     if ((d>=1&&d<=31)&&(m>=1&&m<=12)
4.     {
5.         day = d;
6.         month = m;
7.     }
8.     else
9.     {
10.        day=1;
11.        Month=1;
12.    }
13.    year = y;
14. }
```

## Example (5) BankAccount

2. Write a C# windows Form Application code to create a Class Named **BankAccount** that contains the following :

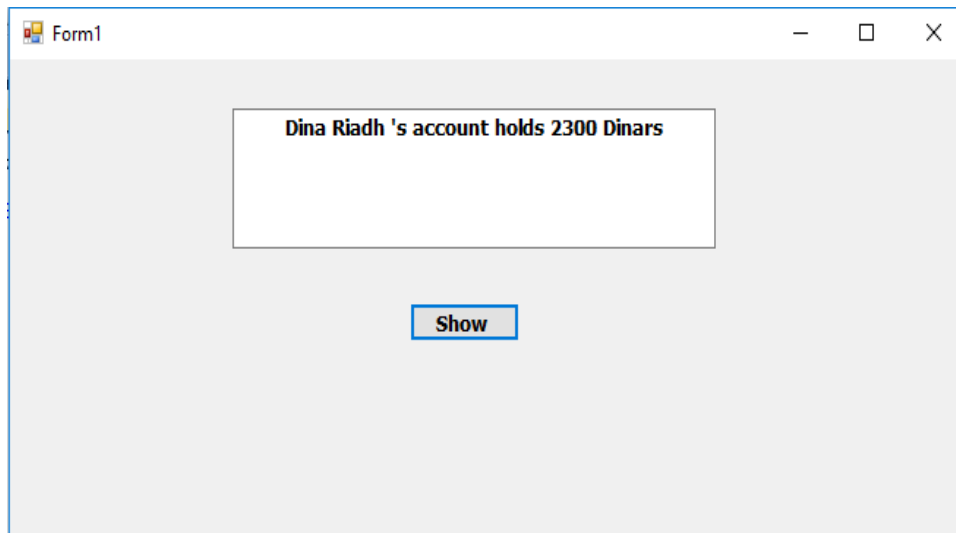
✓ **Fields :**

- name of type string, balance of type decimal

✓ **Methods:**

- Default and parametrized constructor .
- Set and get Methods .
- Withdraw and deposit .
- Print Details method.

### Solution:



```
1. using System;  
2. using System.Collections.Generic;  
3. using System.Linq;  
4. using System.Text;  
5. using System.Windows.Forms;  
6. namespace Bank_Account_Exam  
7. {  
8.     class BankAccount  
9.     {  
10.  
11.         private string name;  
12.         private double balance;  
13.  
14.         public BankAccount(string name, double balance)  
15.         {  
16.
```

تعريف الحقول او الصفات

Parameterized Constructor

```
17.     this.name = name;
18.     this.balance = balance;
19.     }
20.
21.
22.
23.     public double getBalance()
24.     {
25.         return balance;
26.     }
27.     public void setBalance(double b)
28.     {
29.         balance = b;
30.     }
31.
32.     public string getName()
33.     {
34.         return name;
35.     }
36.     public void setName(string n)
37.     {
38.         name = n;
39.     }
40.
41.     public void Withdraw(double amount)
42.     {
43.         if (amount <= balance)
44.             balance -= amount;
45.         else
46.             MessageBox.Show("Not Enough Balance");
47.
48.     }
49.
50.     public void Deposit(double amount)
51.     {
52.         balance += amount;
53.     }
54.
55.     public void AddInterests()
56.     {
57.         balance += balance * 0.04;
58.     }
59.
60.     public string print()
61.     {
62.         return name + "'s account holds " +
63.             +balance + " Dinars";
64.     }
65.
66.     }
67. }
```

```
68. private void button1_Click(object sender, EventArgs e)
69.     {
70.         BankAccount ba = new BankAccount("Dina Riadh", 1000);
71.         ba.Withdraw(200);
72.         ba.Deposit(1500);
73.         textBox1.Text = ba.print();
74.     }
```

عمل object من class  
BankAccount

## Example (6) Class Association

3. Write a C# windows Form Application code to create a Class Named *Person* that contains the following :

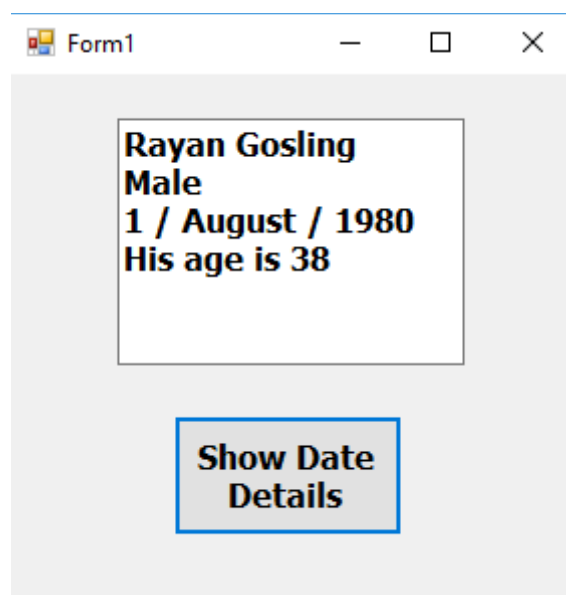
✓ **Fields :**

- name of type string
- gender of tye string
- birthDate an object of class **Date** (example4)

✓ **Methods:**

- Default and parametrized constructor .
- Set and get Methods .
- calAge() return age.
- Print Details method.

**Solution :**








```
53.     }
54.     public string print()
55.     {
56.         string r = "";
57.         r = getName() + Environment.NewLine + getGender() ;
58.         r+= Environment.NewLine + birthDate.print();
59.         return r;
60.     }
61.
62. }
63. }
```

استخدام print المتود الموجودة  
في birthdate و هو Object  
من Date Class



```
1. private void button1_Click(object sender, EventArgs e)
2.     {
3.         Date d=new Date(1,8,1980);
4.         Person p=new Person ("Rayan Gosling",'M',d);
5.         textBox1.Text = p.print();
6.         textBox1.Text += "His age is " +p.calAge();
7.     }
```