Exercise :

Create a class named **Book** that contains the following data fields :

title(string) ,author (string) ,pages(integer),price (decimal),published_year(int).

-default and parameterized constructor .

- set and gate method for each data field.

-test the class and display the book info .

Solution :

- create a class **Book**

-Open new windows form project named class Book .

-add a button to the form .

-Write the following instructions in the file form1.cs :

```
class Book {
        }/// end of class book
```

Note : the Class name preferred begin with capital letter.

The above code will be added at any part in the file (outside any method and before the end of namespace }.

```
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;

namespace class_book{
```

```
    public partial class Form1 : Form   {
        public Form1()   {
            InitializeComponent();
        }

private void button1_Click(object sender, EventArgs
e)        {

        }

        class Book {
        }/// end of class book

    }
}
```

-Add the following data fields as private data fields inside the body of class Book:

-title(string) ,author (string) ,pages(integer),price (decimal),published_year(int).

```
class Book {
            private string title, author;
            private int  pages,published_year;
                private decimal price;
       }/// end of classs book
```

- Add parameterized constructor in the following formats :

```
1)

//parameterized  constructor
     public Book(string t, string ath, int pg, int py, decimal pr) {
                title = t;
                author = ath;
                pages = pg;
```

```
                published_year = py;
                price = pr;           }

2) Or in the following format :
//parameterized constructor
            public Book(string title, string author, int pages, int
published_year, decimal price) {
               this.title = title;
               this.author = author;
                this.pages = pages;
                this.published_year = published_year;
                this.price = price;   }
```

- Create an object of class Book :

```
   private void button1_Click(object sender, EventArgs e)
        {
            // create an object of class Book and intitalits values
   Book b = new Book("C# programming ", "aaaaa", 250, 2015, 25.5m);
}
```

- Add a method named display that display the Book info inside the class Book.

```
       // display method
            public void display() {
                MessageBox.Show("book title:" + title +
                    "\n book autor :" + author+
                    "\n book pages : " + pages.ToString()+
                    "\n book publish year:" +
published_year.ToString()+
                    "\n book price:" + price.ToString());
}
```

- Call the method by the object b outside the class Book :

```
                b.display();
```

```
private void button1_Click(object sender, EventArgs e)
       {
           // create an object of class Book and intitalits values
```

```
    Book b = new Book("C# programming ", "aaaaa", 250, 2015, 25.5m);
            // call the method display
            b.display();       }
```

- Add a default constructor inside the class Book .

```
    //default constructor
            public Book()  {

            }
```

- Create an object bb of class Book by calling the default constructor ,then call the method display by the object bb.

```
        Book bb = new Book();
            bb.display();
```

- the final program will be in the following format :

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;

namespace class_book
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }

        private void button1_Click(object sender, EventArgs e)
        {
            // create an object of class Book and intitalits values
            Book b = new Book("C# programming ", "aaaaa", 250, 2015, 25.5m);
            // call the method display
            b.display();
            Book bb = new Book();
            bb.display();
        }
```

```
        class Book {
            private string title, author;
            private int  pages,published_year;
                private decimal price;
            //parameterized constructor
            public Book(string title, string author, int pages, int published_year,
decimal price) {
               this.title = title;
               this.author = author;
                this.pages = pages;
                this.published_year = published_year;
                this.price = price;
            }
            //default constructor
            public Book()  {

            }

            // display method
            public void display() {
                MessageBox.Show("book title:" + title +
                    "\n book autor :" + author+
                    "\n book pages : " + pages.ToString()+
                    "\n book publish year:" + published_year.ToString()+
                    "\n book price:" + price.ToString());
            }
        }/// end of classs book

    }
}
```

Example :

1)create a class named bankaccount that contains the following :

- data fields :
  AccountNumber (int) and balance (decimal).
- methods :
  constructors methods ,withdraw , deposit methods, and display .

solution:

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
```

```
using System.Windows.Forms;

namespace class_bankaccount
{
    public partial class Form1 : Form
    {
         BankAccount b = new BankAccount(1, 20.6M);
        public Form1()
        {
            InitializeComponent();
        }



        private void Form1_Load(object sender, EventArgs e)
        {



        }

        private void button1_Click_1(object sender, EventArgs e)
        {

            label2.Text = "account info======" + b.ToString();




        }

        private void button2_Click(object sender, EventArgs e)
        {
            decimal a = Convert.ToDecimal(textBox1.Text);

            b.Withdraw(a);
            label2.Text = "after withdrw======" + b.ToString();
        }

        private void button3_Click(object sender, EventArgs e)
        {
            decimal a = Convert.ToDecimal(textBox1.Text);

            b.Deposit(a);
            label2.Text = "after deposit======" + b.ToString();
        }
        public class BankAccount
        {

            public int AccountNumber;
            public decimal Balance;
            //default constructor
            public BankAccount()
            {
                AccountNumber = 0;
                Balance = 0.0m;
            }
```

```
            //parameterized constructor
            public BankAccount(int no, decimal bl)
            {
                AccountNumber = no;
                Balance = bl;
            }
            public void Deposit(decimal amount)
            {
                if (amount >= 0.0m)
                {
                    Balance += amount;
                }
            }

            public void Withdraw(decimal amount)
            {
                if (Balance >= amount)

                    Balance -= amount;

            }
            public override string ToString()
            {
                return "\n no :" + AccountNumber + "\n balance :" + Balance;
            }

        }//end of class bankaccount

    }
}
```

Output :