

```
//Mickie Blair
//Java I – CIST 2371
//Final Project Invoice - Invoice Class
```

```
package FinalProjectInvoice;
```

```
public class Invoice
```

```
{
    private int invoiceNumber;           //field for invoice number
    private double balanceDue;           //field for balance due
    private int month;                   //field for month
    private int day;                     //field for day
    private int year;                    //field for year
}
```

```
public Invoice(int number, double balance, int month, int day, int year)
```

```
{
    //force invoice number to be 0 if it's less than 1000
    if (number < 1000)
    {
        invoiceNumber = 0;
    }
    else
    {
        invoiceNumber = number;
    }

    //balance field
    balanceDue = balance;

    //if month is not between 1 and 12 force month to be 0
    if (month < 1 || month > 12)
    {
        this.month = 0;
    }
    else
    {
        this.month = month;
    }

    //if day is not between 1 and 31 force month to be 0
    if (day < 1 || day > 31)
    {
        this.day = 0;
    }
    else
    {
        this.day = day;
    }
}
```

```

        //if year is not between 2011 and 2017 force month to be 0
        if (year < 2011 || year > 2017)
        {
            this.year = 0;
        }
        else
        {
            this.year = year;
        }
    }

    public void displayResults()
    {
        System.out.println("Test Results:");
        System.out.println("-----");
        System.out.printf("Invoice Number: \t%11d\n", invoiceNumber);
        System.out.printf("Balance Due:\t\t$%10.2f\n", balanceDue);
        System.out.printf("Due Date: \t\t %02d-%02d-%04d\n", month, day, year);
    }
}

```

```

//Mickie Blair
//Java I – CIST 2371
//Final Project Invoice - TestInvoice Class

```

```

package FinalProjectInvoice;

```

```

public class TestInvoice
{

    public static void main(String[] args)
    {
        System.out.println("Invoice Constructor Tests\n");

        //test 1
        System.out.println ("Constructor Test 1 - Invoice Test");
        System.out.println("-----");
        System.out.println ("Data to be sent to constructor:\n"
            + "Invoice Number:\t 100\n"
            + "Balance Due:\t 212.12\n"
            + "Month:\t\t 1\n"
            + "Day:\t\t 15\n"
            + "Year:\t\t 2015\n");

        //create test1 object
        Invoice test1=new Invoice(100, 212.12, 1, 15, 2015);

        //display test1 results
        test1.displayResults();
    }
}

```

```

//test 2
System.out.println();
System.out.println();
System.out.println ("Constructor Test 2- Month Invalid");
System.out.println("-----");
System.out.println ("Data to be sent to constructor:\n"
    + "Invoice Number:\t 1245\n"
    + "Balance Due:\t 315.21\n"
    + "Month:\t\t 15\n"
    + "Day:\t\t 15\n"
    + "Year:\t\t 2016\n");

//create test2 object
Invoice test2=new Invoice(1245, 315.21, 15, 15, 2016);

//display test2 results
test2.displayResults();

//test 3
System.out.println();
System.out.println();
System.out.println ("Constructor Test 3 - Day Invalid");
System.out.println("-----");
System.out.println ("Data to be sent to constructor:\n"
    + "Invoice Number:\t 4588\n"
    + "Balance Due:\t 825.72\n"
    + "Month:\t\t 5\n"
    + "Day:\t\t 45\n"
    + "Year:\t\t 2012\n");

//create test3 object
Invoice test3=new Invoice(4588, 825.72, 5, 45, 2012);

//display test3 results
test3.displayResults();

//test 4
System.out.println();
System.out.println();
System.out.println ("Constructor Test 4 - Year Out of Range");
System.out.println("-----");
System.out.println ("Data to be sent to constructor:\n"
    + "Invoice Number:\t 7251\n"
    + "Balance Due:\t 129.92\n"
    + "Month:\t\t 7\n"
    + "Day:\t\t 21\n"
    + "Year:\t\t 2010\n");

//create test4 object
Invoice test4=new Invoice(7251, 129.92, 7, 21, 2010);

//display test results
test4.displayResults();

```

```

//test 5
System.out.println();
System.out.println();
System.out.println ("Constructor Test 5 - All Data Valid");
System.out.println("-----");
System.out.println ("Data to be sent to constructor:\n"
    + "Invoice Number:\t 3269\n"
    + "Balance Due:\t 719.33\n"
    + "Month:\t\t 9\n"
    + "Day:\t\t 28\n"
    + "Year:\t\t 2013\n");

//create test5 object
Invoice test5=new Invoice(3269, 719.33, 9, 28, 2013);

//display test results
test5.displayResults();
}
}

```

OUTPUT

Invoice Constructor Tests

Constructor Test 1 - Invoice Test

Data to be sent to constructor:

Invoice Number:	100
Balance Due:	212.12
Month:	1
Day:	15
Year:	2015

Test Results:

Invoice Number:	0
Balance Due:	\$ 212.12
Due Date:	01-15-2015

Constructor Test 2- Month Invalid

Data to be sent to constructor:

Invoice Number:	1245
Balance Due:	315.21
Month:	15
Day:	15
Year:	2016

Test Results:

Invoice Number:	1245
Balance Due:	\$ 315.21
Due Date:	00-15-2016

Constructor Test 3 - Day Invalid

Data to be sent to constructor:

Invoice Number: 4588
Balance Due: 825.72
Month: 5
Day: 45
Year: 2012

Test Results:

Invoice Number: 4588
Balance Due: \$ 825.72
Due Date: 05-00-2012

Constructor Test 4 - Year Out of Range

Data to be sent to constructor:

Invoice Number: 7251
Balance Due: 129.92
Month: 7
Day: 21
Year: 2010

Test Results:

Invoice Number: 7251
Balance Due: \$ 129.92
Due Date: 07-21-0000

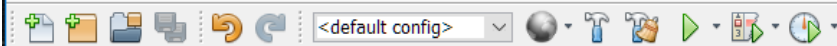
Constructor Test 5 - All Data Valid

Data to be sent to constructor:

Invoice Number: 3269
Balance Due: 719.33
Month: 9
Day: 28
Year: 2013

Test Results:

Invoice Number: 3269
Balance Due: \$ 719.33
Due Date: 09-28-2013



Output - Invoice (run)

```
run:
Invoice Constructor Tests

Constructor Test 1 - Invoice Test
-----
Data to be sent to constructor:
Invoice Number: 100
Balance Due: 212.12
Month: 1
Day: 15
Year: 2015

Test Results:
-----
Invoice Number: 0
Balance Due: $ 212.12
Due Date: 01-15-2015

Constructor Test 2- Month Invalid
-----
Data to be sent to constructor:
Invoice Number: 1245
Balance Due: 315.21
Month: 15
Day: 15
Year: 2016

Test Results:
-----
Invoice Number: 1245
Balance Due: $ 315.21
Due Date: 00-15-2016

Constructor Test 3 - Day Invalid
-----
Data to be sent to constructor:
Invoice Number: 4588
Balance Due: 825.72
Month: 5
Day: 45
Year: 2012

Test Results:
-----
Invoice Number: 4588
Balance Due: $ 825.72
Due Date: 05-00-2012

Constructor Test 4 - Year Out of Range
-----
Data to be sent to constructor:
Invoice Number: 7251
```

Output

Invoice - NetBeans IDE 8.2

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Projects Files Services

Source Packages

- FinalProjectInvoice
 - Invoice.java
 - Invoice2.java
 - TestInvoice.java
 - TestInvoice2.java
- Test Packages
- Libraries
- Test Libraries

Invoice - Navigator

Members

- Invoice
 - Invoice(int number, double balance, int month, int day, int year)
 - displayResults()
 - balanceDue : double
 - day : int
 - invoiceNumber : int
 - month : int
 - year : int

```

4
5
6 package FinalProjectInvoice;
7
8 public class Invoice
9 {
10     private int invoiceNumber; //field for invoice number
11     private double balanceDue; //field for balance due
12     private int month; //field for month
13     private int day; //field for day
14     private int year; //field for year
15
16     public Invoice(int number, double balance, int month, int day, int year)
17     {
18         //force invoice number to be 0 if it's less than 1000
19         if (number < 1000)
20         {
21             invoiceNumber = 0;
22         }
23         else
24         {
25             invoiceNumber = number;
26         }
27
28         //balance field
29         balanceDue = balance;
30
31         //if month is not between 1 and 12 force month to be 0
32         if (month < 1 || month > 12)
33         {
34             this.month = 0;
35         }
36         else
37         {
38             this.month = month;
39         }
40
41         //if day is not between 1 and 31 force month to be 0
42         if (day < 1 || day > 31)
43         {
44             this.day = 0;
45         }
46         else
47         {
48             this.day = day;
49         }
50     }
51 }

```

Invoice - NetBeans IDE 8.2

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Projects Files Services

Source Packages

- FinalProjectInvoice
 - Invoice.java
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- Test Libraries

TestInvoice - Navigator

Members

- TestInvoice
 - main(String[] args)

```

4
5
6 package FinalProjectInvoice;
7
8 public class TestInvoice
9 {
10
11     public static void main(String[] args)
12     {
13         System.out.println("Invoice Constructor Tests\n");
14
15         //test 1
16         System.out.println ("Constructor Test 1 - Invoice Test");
17         System.out.println ("-----");
18         System.out.println ("Data to be sent to constructor:\n");
19         System.out.println ("    Invoice Number:\t 100\n");
20         System.out.println ("    Balance Due:\t 212.12\n");
21         System.out.println ("    Month:\t\t 1\n");
22         System.out.println ("    Day:\t\t 15\n");
23         System.out.println ("    Year:\t\t 2015\n");
24
25         //create test1 object
26         Invoice test1=new Invoice(100, 212.12, 1, 15, 2015);
27
28         //display test1 results
29         test1.displayResults();
30
31         //test 2
32         System.out.println ();
33         System.out.println ();
34         System.out.println ("Constructor Test 2- Month Invalid");
35         System.out.println ("-----");
36         System.out.println ("Data to be sent to constructor:\n");
37         System.out.println ("    Invoice Number:\t 1245\n");
38         System.out.println ("    Balance Due:\t 315.21\n");
39         System.out.println ("    Month:\t\t 15\n");
40         System.out.println ("    Day:\t\t 15\n");
41         System.out.println ("    Year:\t\t 2016\n");
42
43         //create test2 object
44         Invoice test2=new Invoice(1245, 315.21, 15, 15, 2016);
45
46         //display test2 results
47         test2.displayResults();
48
49         //test 3
50         System.out.println ();
51         System.out.println ();
52         System.out.println ("Constructor Test 3 - Day Invalid");
53         System.out.println ("-----");
54     }
55 }

```

```
//Mickie Blair
//Java I – CIST 2371
//Final Project Invoice - Invoice2 Class
```

```
package FinalProjectInvoice;
```

```
public class Invoice2
{
```

```
    private int invoiceNumber;        //field for invoice number
    private double balanceDue;        //field for balance due
    private int month;                //field for month
    private int day;                  //field for day
    private int year;                 //field for year
```

```
    public Invoice2(int number, double balance, int month, int day, int year)
```

```
    {
        //force invoice number to be 0 if it's less than 1000
        if (number < 1000)
        {
            invoiceNumber = 0;
        }
        else
        {
            invoiceNumber = number;
        }
    }
```

```
    //balance field
    balanceDue = balance;
```

```
    //month and day if statements
```

```
    if (month < 1 || month > 12)
```

```
    {
        this.month = 0;
        this.day = 0;
    }
```

```
    else if (month == 2)
```

```
    {
        this.month = month;
```

```
        if (day > 28)
```

```
        {
            this.day = 28;
        }
```

```
        else
```

```
        {
            this.day = day;
        }
```

```
    }
```

```
    else if (month == 1 || month == 3 || month == 5 || month == 7
```



```

        || month == 8 || month == 10 || month == 12)
    {
        this.month = month;

        if (day>31)
        {
            this.day = 31;
        }
        else
        {
            this.day = day;
        }
    }

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

    {
        this.month = month;

        if (day>30)
        {
            this.day = 30;
        }
        else
        {
            this.day = day;
        }
    }

    //if year is not between 2011 and 2017 force month to be 0
    if (year < 2011 || year > 2017)
    {
        this.year = 0;
    }
    else
    {
        this.year = year;
    }

}

public void displayResults()
{
    System.out.println("Test Results:");
    System.out.println("-----");
    System.out.printf("Invoice Number: \t%11d\n", invoiceNumber);
    System.out.printf("Balance Due:\t\t$%10.2f\n", balanceDue);
    System.out.printf("Due Date: \t\t %02d-%02d-%04d\n", month, day, year);
}
}

```

```
//Mickie Blair
//Java I – CIST 2371
//Final Project Invoice - TestInvoice2 Class
```

```
package FinalProjectInvoice;
```

```
public class TestInvoice2
```

```
{
```

```
    public static void main(String[] args)
```

```
    {
```

```
        System.out.println("Invoice2 Constructor Tests\n");
```

```
        //test 1
```

```
        System.out.println ("Constructor Test 1 - Invoice Test");
```

```
        System.out.println("-----");
```

```
        System.out.println ("Data to be sent to constructor:\n"
```

```
            + "Invoice Number:\t 100\n"
```

```
            + "Balance Due:\t 212.12\n"
```

```
            + "Month:\t\t 1\n"
```

```
            + "Day:\t\t 15\n"
```

```
            + "Year:\t\t 2015\n");
```

```
        //create test1 object
```

```
        Invoice2 test1=new Invoice2(100, 212.12, 1, 15, 2015);
```

```
        //display test1 results
```

```
        test1.displayResults();
```

```
        //test 2
```

```
        System.out.println();
```

```
        System.out.println();
```

```
        System.out.println ("Constructor Test 2 - Invalid Month");
```

```
        System.out.println("-----");
```

```
        System.out.println ("Data to be sent to constructor:\n"
```

```
            + "Invoice Number:\t 1245\n"
```

```
            + "Balance Due:\t 315.21\n"
```

```
            + "Month:\t\t 15\n"
```

```
            + "Day:\t\t 15\n"
```

```
            + "Year:\t\t 2016\n");
```

```
        //create test2 object
```

```
        Invoice2 test2=new Invoice2(1245, 315.21, 15, 15, 2016);
```

```
        //display test2 results
```

```
        test2.displayResults();
```

```
        //test 3
```

```
        System.out.println();
```

```
        System.out.println();
```

```
        System.out.println ("Constructor Test 3a - February Test - Days > 28");
```

```
        System.out.println("-----");
```

```
        System.out.println ("Data to be sent to constructor:\n"
```

```
            + "Invoice Number:\t 4588\n"
```

```

        + "Balance Due:\t 825.72\n"
        + "Month:\t\t 2\n"
        + "Day:\t\t 30\n"
        + "Year:\t\t 2012\n");
//create test3 object
Invoice2 test3a=new Invoice2(4588, 825.72, 2, 30, 2012);

//display test3 results
test3a.displayResults();

//test 3b
System.out.println();
System.out.println();
System.out.println ("Constructor Test 3b - February Test - Days < 28");
System.out.println("-----");
System.out.println ("Data to be sent to constructor:\n"
        + "Invoice Number:\t 4588\n"
        + "Balance Due:\t 825.72\n"
        + "Month:\t\t 2\n"
        + "Day:\t\t 21\n"
        + "Year:\t\t 2012\n");
//create test3 object
Invoice2 test3b=new Invoice2(4588, 825.72, 2, 21, 2012);

//display test3 results
test3b.displayResults();

//test 4a
System.out.println();
System.out.println();
System.out.println ("Constructor Test 4a - 31 day Months - Days > 31");
System.out.println("-----");
System.out.println ("Data to be sent to constructor:\n"
        + "Invoice Number:\t 7251\n"
        + "Balance Due:\t 129.92\n"
        + "Month:\t\t 7\n"
        + "Day:\t\t 35\n"
        + "Year:\t\t 2014\n");
//create test4 object
Invoice2 test4a=new Invoice2(7251, 129.92, 7, 35, 2014);

//display test results
test4a.displayResults();

//test 4b
System.out.println();
System.out.println();
System.out.println ("Constructor Test 4b - 31 day Months - Days < 31");
System.out.println("-----");
System.out.println ("Data to be sent to constructor:\n"

```

```

        + "Invoice Number:\t 7251\n"
        + "Balance Due:\t 129.92\n"
        + "Month:\t\t 7\n"
        + "Day:\t\t 28\n"
        + "Year:\t\t 2014\n");

//create test4 object
Invoice2 test4b=new Invoice2(7251, 129.92, 7, 28, 2014);

//display test results
test4b.displayResults();


//test 5a
System.out.println();
System.out.println();
System.out.println ("Constructor Test 5a - 30 day Months - Days > 30");
System.out.println("-----");
System.out.println ("Data to be sent to constructor:\n"
        + "Invoice Number:\t 3269\n"
        + "Balance Due:\t 719.33\n"
        + "Month:\t\t 9\n"
        + "Day:\t\t 31\n"
        + "Year:\t\t 2013\n");

//create test5 object
Invoice2 test5a=new Invoice2(3269, 719.33, 9, 31, 2013);

//display test results
test5a.displayResults();


//test 5b
System.out.println();
System.out.println();
System.out.println ("Constructor Test 5b - 30 day Months - Days < 30");
System.out.println("-----");
System.out.println ("Data to be sent to constructor:\n"
        + "Invoice Number:\t 3269\n"
        + "Balance Due:\t 719.33\n"
        + "Month:\t\t 9\n"
        + "Day:\t\t 27\n"
        + "Year:\t\t 2013\n");

//create test5 object
Invoice2 test5b=new Invoice2(3269, 719.33, 9, 27, 2013);

//display test results
test5b.displayResults();

}

}

```

OUTPUT

Invoice2 Constructor Tests

Constructor Test 1 - Invoice Test

Data to be sent to constructor:

Invoice Number: 100
Balance Due: 212.12
Month: 1
Day: 15
Year: 2015

Test Results:

Invoice Number: 0
Balance Due: \$ 212.12
Due Date: 01-15-2015

Constructor Test 2 - Invalid Month

Data to be sent to constructor:

Invoice Number: 1245
Balance Due: 315.21
Month: 15
Day: 15
Year: 2016

Test Results:

Invoice Number: 1245
Balance Due: \$ 315.21
Due Date: 00-00-2016

Constructor Test 3a - February Test - Days > 28

Data to be sent to constructor:

Invoice Number: 4588
Balance Due: 825.72
Month: 2
Day: 30
Year: 2012

Test Results:

Invoice Number: 4588
Balance Due: \$ 825.72
Due Date: 02-28-2012

Constructor Test 3b - February Test - Days < 28

Data to be sent to constructor:

Invoice Number: 4588
Balance Due: 825.72
Month: 2
Day: 21
Year: 2012

Test Results:

Invoice Number: 4588
Balance Due: \$ 825.72
Due Date: 02-21-2012

Constructor Test 4a - 31 day Months - Days > 31

Data to be sent to constructor:

Invoice Number: 7251
Balance Due: 129.92
Month: 7
Day: 35
Year: 2014

Test Results:

Invoice Number: 7251
Balance Due: \$ 129.92
Due Date: 07-31-2014

Constructor Test 4b - 31 day Months - Days < 31

Data to be sent to constructor:

Invoice Number: 7251
Balance Due: 129.92
Month: 7
Day: 28
Year: 2014

Test Results:

Invoice Number: 7251
Balance Due: \$ 129.92
Due Date: 07-28-2014

Constructor Test 5a - 30 day Months - Days > 30

Data to be sent to constructor:

Invoice Number: 3269
Balance Due: 719.33
Month: 9
Day: 31
Year: 2013

Test Results:

Invoice Number: 3269
Balance Due: \$ 719.33
Due Date: 09-30-2013

Constructor Test 5b - 30 day Months - Days < 30

Data to be sent to constructor:

Invoice Number: 3269
Balance Due: 719.33
Month: 9
Day: 27
Year: 2013

Test Results:

Invoice Number: 3269
Balance Due: \$ 719.33
Due Date: 09-27-2013

```
run:
Invoice2 Constructor Tests

Constructor Test 1 - Invoice Test
-----
Data to be sent to constructor:
Invoice Number: 100
Balance Due: 212.12
Month: 1
Day: 15
Year: 2015

Test Results:
-----
Invoice Number: 0
Balance Due: $ 212.12
Due Date: 01-15-2015

Constructor Test 2 - Invalid Month
-----
Data to be sent to constructor:
Invoice Number: 1245
Balance Due: 315.21
Month: 15
Day: 15
Year: 2016

Test Results:
-----
Invoice Number: 1245
Balance Due: $ 315.21
Due Date: 00-00-2016

Constructor Test 3a - February Test - Days > 28
-----
Data to be sent to constructor:
Invoice Number: 4588
Balance Due: 825.72
Month: 2
Day: 30
Year: 2012

Test Results:
-----
Invoice Number: 4588
Balance Due: $ 825.72
Due Date: 02-28-2012

Constructor Test 3b - February Test - Days < 28
-----
Data to be sent to constructor:
Invoice Number: 4588
```

Projects × Files Services

Invoice

- Source Packages
 - FinalProjectInvoice
 - Invoice.java
 - Invoice2.java
 - TestInvoice.java
 - TestInvoice2.java
- Test Packages
- Libraries
- Test Libraries

Invoice2 - Navigator ×

Members

- Invoice2
 - Invoice2(int number, double balance, int month, int day, int year)
 - displayResults()
 - balanceDue : double
 - day : int
 - invoiceNumber : int
 - month : int
 - year : int

Source

```

1 //Mickie Blair
2 //Java I - CIST 2371
3 //Final Project Invoice - Invoice2 Class
4
5 package FinalProjectInvoice;
6
7 public class Invoice2
8 {
9
10     private int invoiceNumber;    //field for invoice number
11     private double balanceDue;    //field for balance due
12     private int month;            //field for month
13     private int day;              //field for day
14     private int year;             //field for year
15
16     public Invoice2(int number, double balance, int month, int day, int year)
17     {
18         //force invoice number to be 0 if it's less than 1000
19         if (number < 1000)
20         {
21             invoiceNumber = 0;
22         }
23         else
24         {
25             invoiceNumber = number;
26         }
27
28         //balance field
29         balanceDue = balance;
30
31         //month and day if statements
32         if (month < 1 || month > 12)
33         {
34             this.month = 0;
35             this.day = 0;
36         }
37         else if (month == 2)
38         {
39             this.month = month;
40
41             if (day > 28)
42             {
43                 this.day = 28;
44             }
45             else
46             {
47                 this.day = day;

```

Projects × Files Services

Invoice

- Source Packages
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 - TestInvoice2.java
- Test Packages
- Libraries
- Test Libraries

Navigator ×

Members

- TestInvoice2
 - main(String[] args)

Source

```

4
5 package FinalProjectInvoice;
6
7 public class TestInvoice2
8 {
9
10
11     public static void main(String[] args)
12     {
13         System.out.println("Invoice Constructor Tests\n");
14
15         //test 1
16         System.out.println ("Constructor Test 1 - Invoice Test");
17         System.out.println("-----");
18         System.out.println ("Data to be sent to constructor:\n"
19             + "Invoice Number:\t 100\n"
20             + "Balance Due:\t 212.12\n"
21             + "Month:\t\t 1\n"
22             + "Day:\t\t 15\n"
23             + "Year:\t\t 2015\n");
24
25         //create test1 object
26         Invoice2 test1=new Invoice2(100, 212.12, 1, 15, 2015);
27
28         //display test1 results
29         test1.displayResults();
30
31         //test 2
32         System.out.println();
33         System.out.println ("Constructor Test 2 - Invalid Month");
34         System.out.println("-----");
35         System.out.println ("Data to be sent to constructor:\n"
36             + "Invoice Number:\t 1245\n"
37             + "Balance Due:\t 315.21\n"
38             + "Month:\t\t 15\n"
39             + "Day:\t\t 15\n"
40             + "Year:\t\t 2016\n");
41
42         //create test2 object
43         Invoice2 test2=new Invoice2(1245, 315.21, 15, 15, 2016);
44
45         //display test2 results
46         test2.displayResults();
47
48         //test 3
49         System.out.println();
50         System.out.println ("Constructor Test 3a - February Test - Days > 28");

```