```
//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

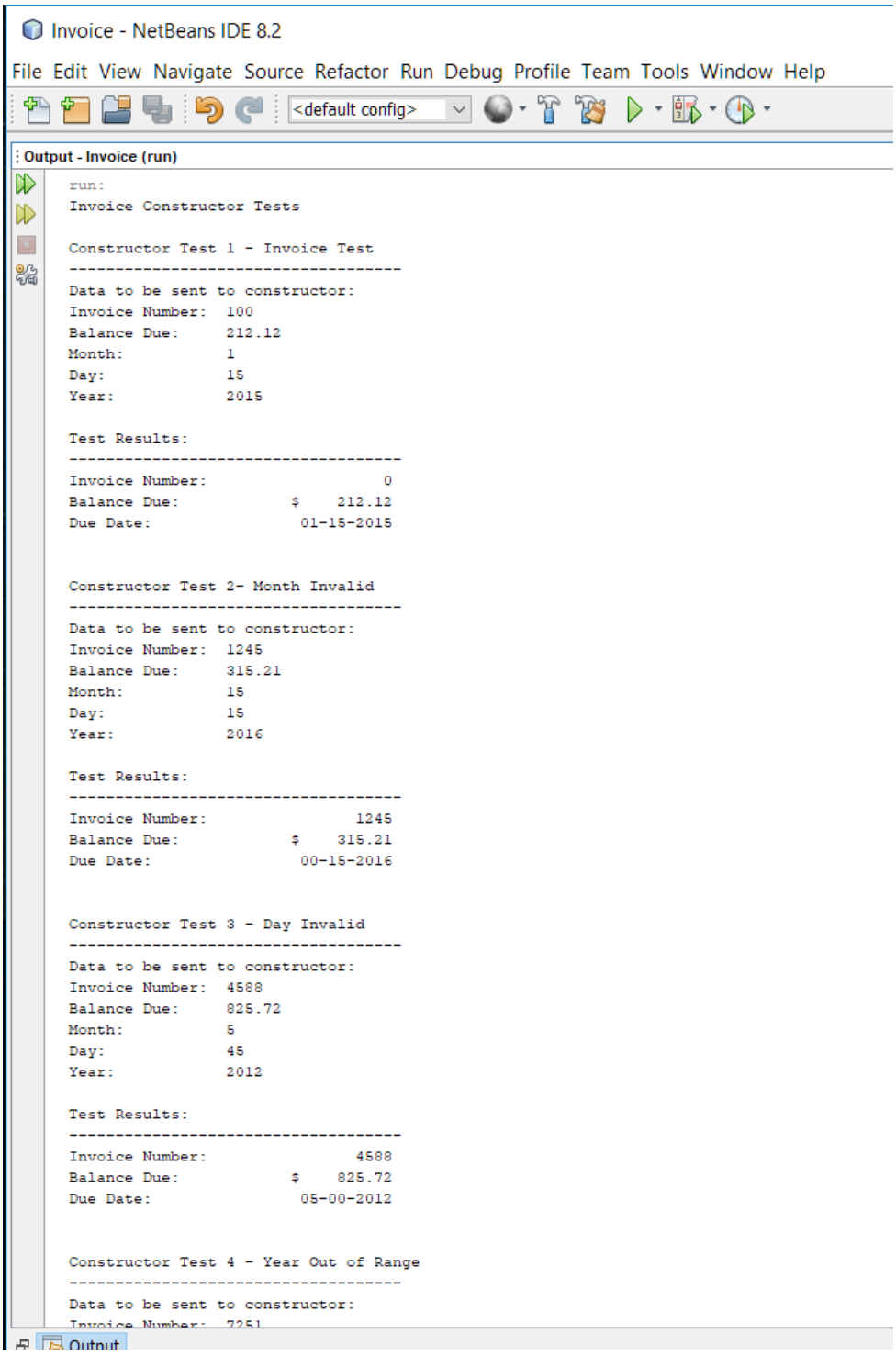
Constructor Test 5 - All Data Valid

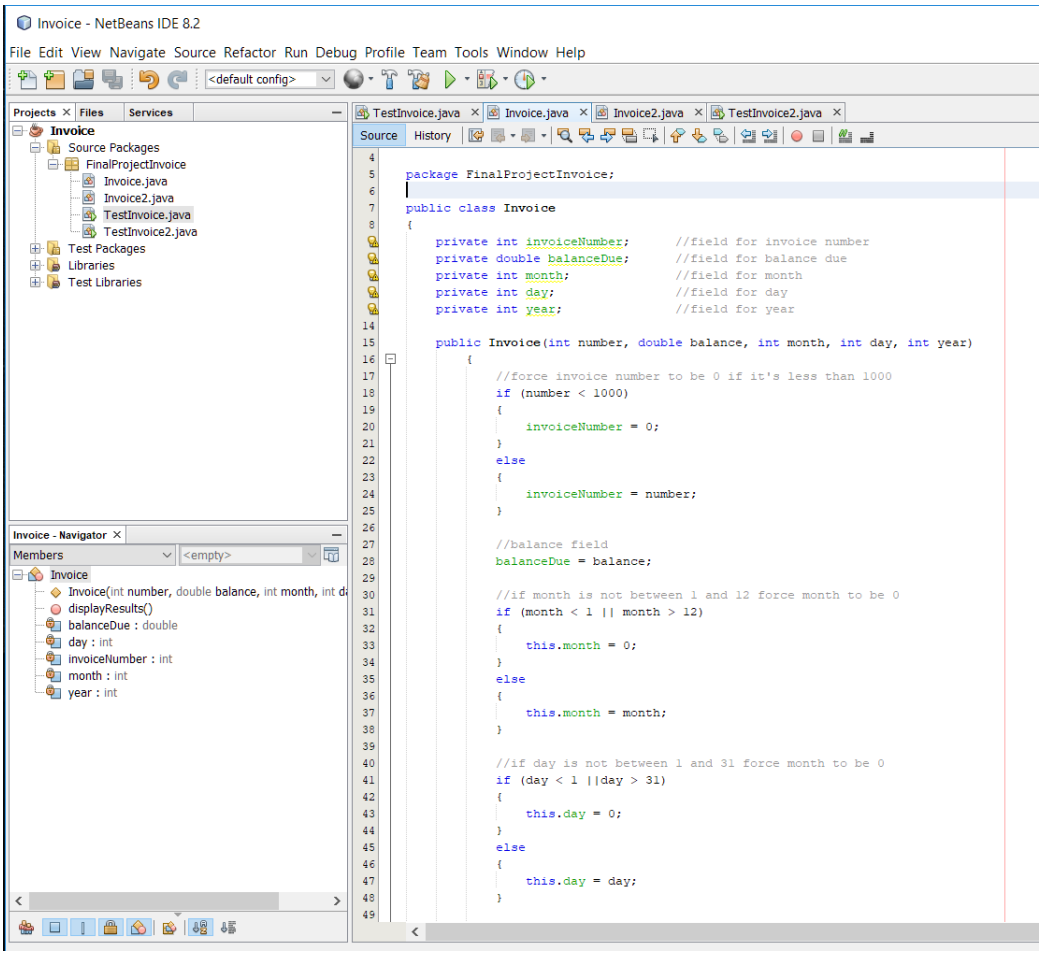
Data to be sent to constructor:

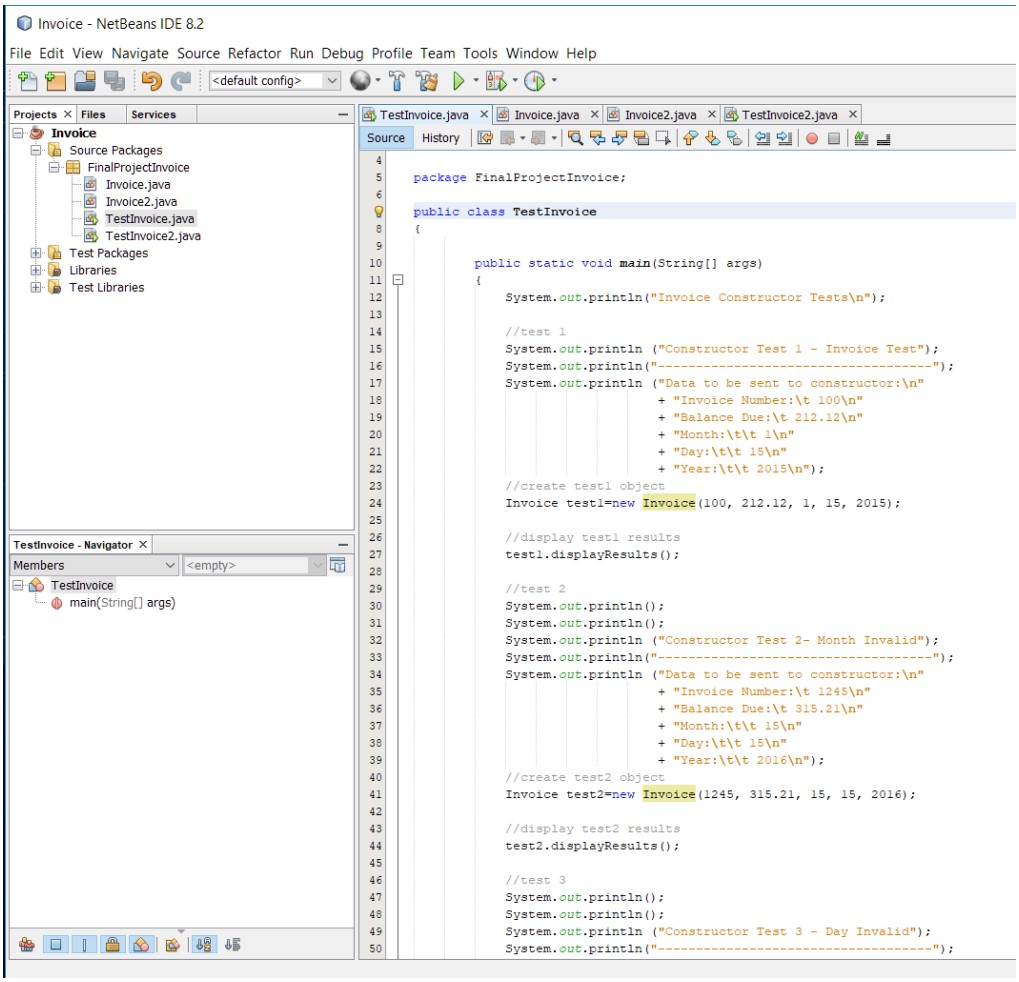
Invoice Number:	3269
Balance Due:	719.33
Month:	9
Day:	28
Year:	2013

Test Results:

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


Invoice - NetBeans IDE 8.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
<default config>
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:
Output


Invoice - NetBeans IDE 8.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
<default config>
Projects
Files
Services
Invoice
Source Packages
FinalProjectInvoice
Invoice.java
Invoice2.java
TestInvoice.java
TestInvoice2.java
Test Packages
Libraries
Test Libraries
Invoice - Navigator
Members
<empty>
Invoice
Invoice(int number, double balance, int month, int da
displayResults()
balanceDue : double
day : int
invoiceNumber : int
month : int
year : int
TestInvoice.java
Invoice.java
Invoice2.java
TestInvoice2.java
Source
History
4
5 package FinalProjectInvoice;
6
7 public class Invoice
8 {
9 private int invoiceNumber; //field for invoice number
10 private double balanceDue; //field for balance due
11 private int month; //field for month
12 private int day; //field for day
13 private int year; //field for year
14
15 public Invoice(int number, double balance, int month, int day, int year)
16 {
17 //force invoice number to be 0 if it's less than 1000
18 if (number < 1000)
19 {
20 invoiceNumber = 0;
21 }
22 else
23 {
24 invoiceNumber = number;
25 }
26
27 //balance field
28 balanceDue = balance;
29
30 //if month is not between 1 and 12 force month to be 0
31 if (month < 1 || month > 12)
32 {
33 this.month = 0;
34 }
35 else
36 {
37 this.month = month;
38 }
39
40 //if day is not between 1 and 31 force month to be 0
41 if (day < 1 ||day > 31)
42 {
43 this.day = 0;
44 }
45 else
46 {
47 this.day = day;
48 }
49




```
//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

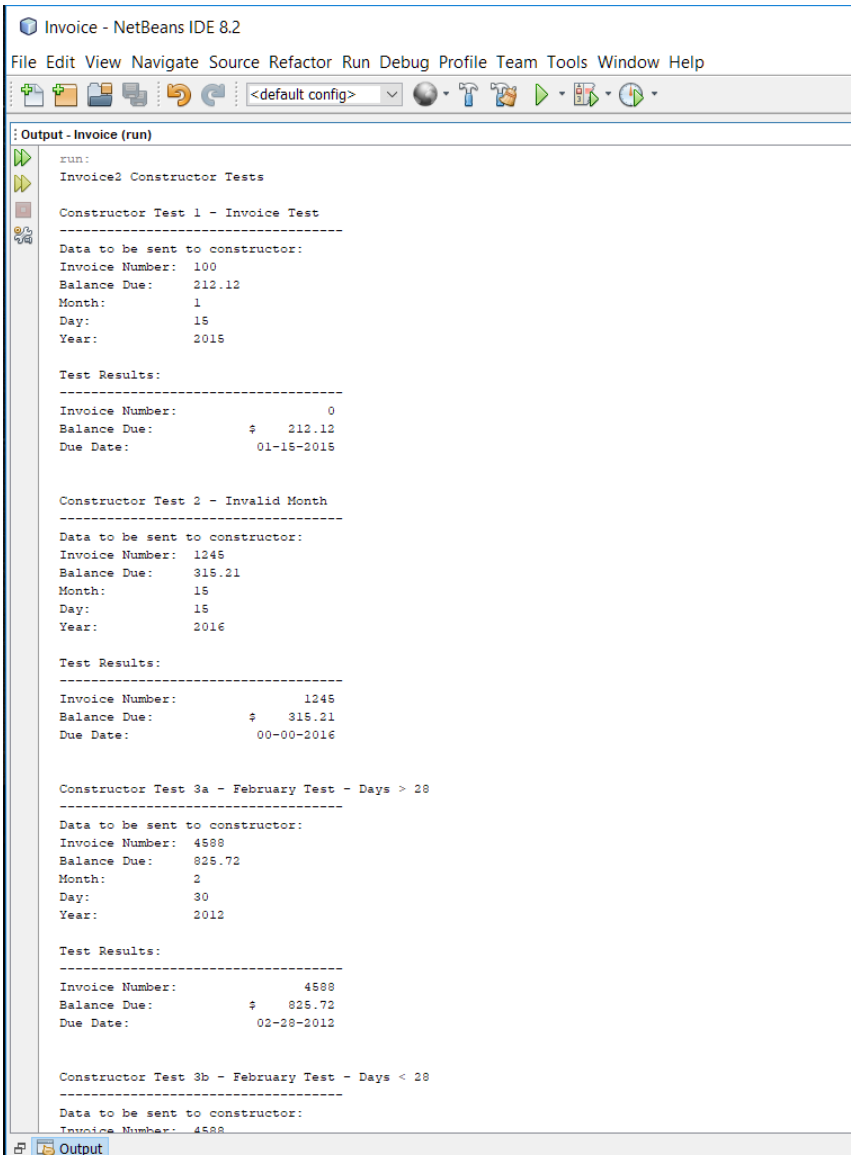
Constructor Test 5b - 30 day Months - Days < 30

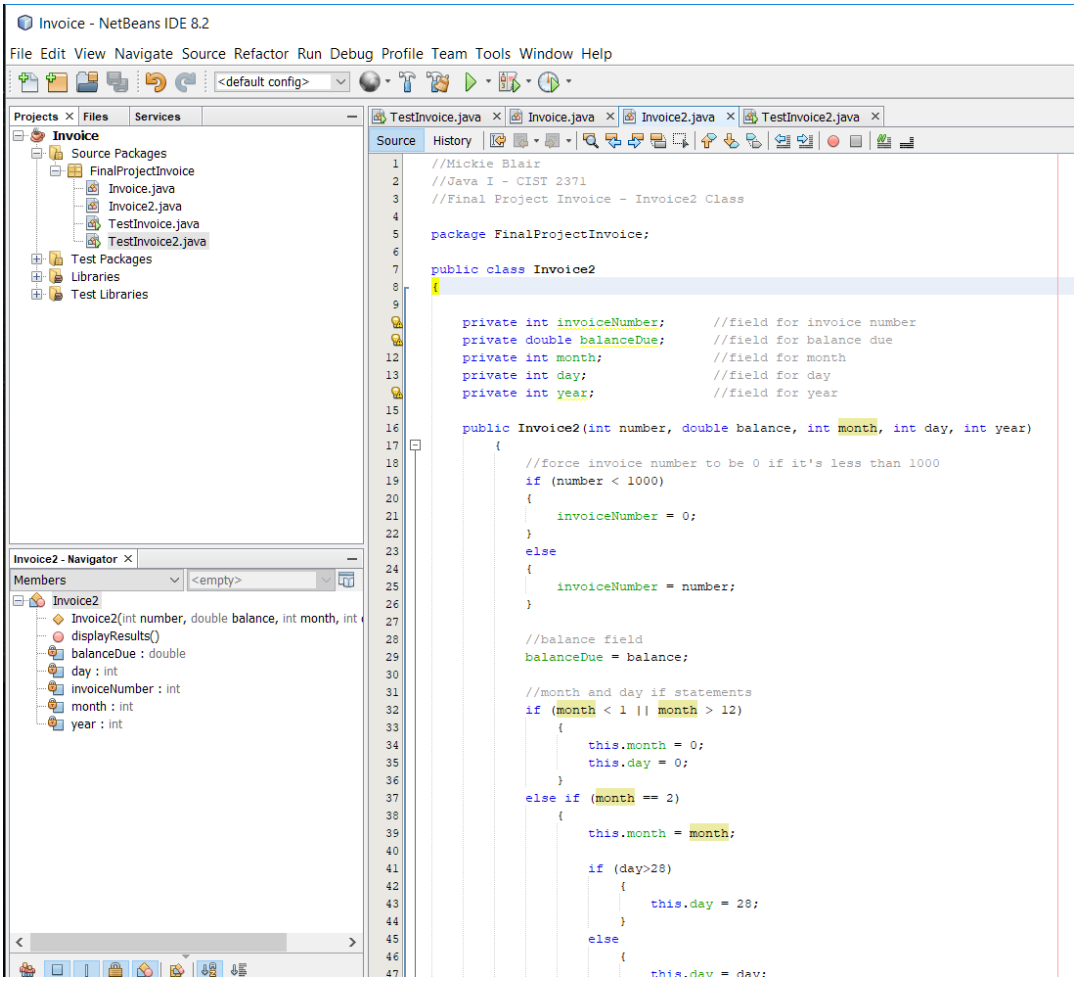
Data to be sent to constructor:

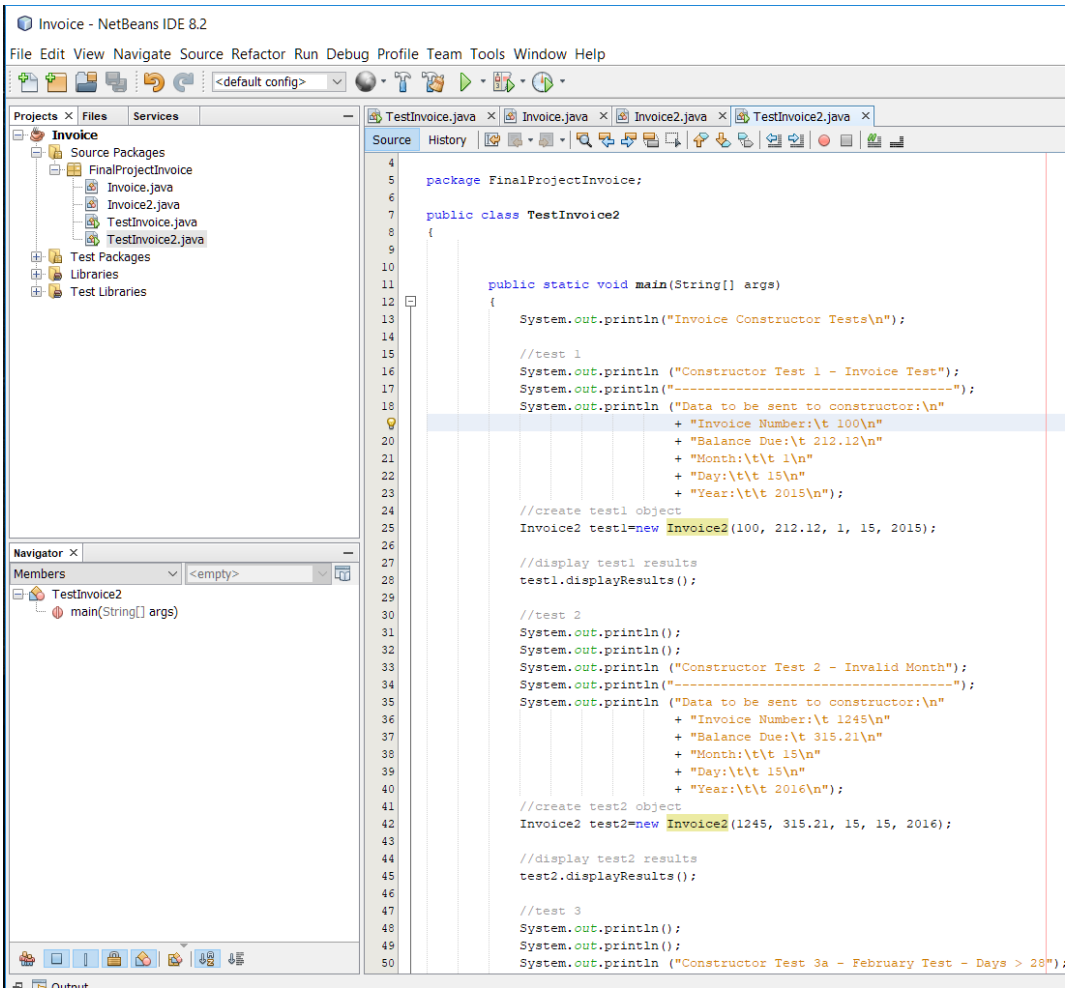
Invoice Number:	3269
Balance Due:	719.33
Month:	9
Day:	27
Year:	2013

Test Results:

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


Invoice - NetBeans IDE 8.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
<default config>
Output - Invoice (run)
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:
Output


Invoice - NetBeans IDE 8.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
<default config>
Projects Files Services
Invoice
Source Packages
FinalProjectInvoice
Invoice.java
Invoice2.java
TestInvoice.java
TestInvoice2.java
Test Packages
Libraries
Test Libraries
Invoice2 - Navigator
Members
<empty>
Invoice2
Invoice2(int number, double balance, int month, int
displayResults()
balanceDue : double
day : int
invoiceNumber : int
month : int
year : int
TestInvoice.java
Invoice.java
Invoice2.java
TestInvoice2.java
Source History
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
12 private int invoiceNumber; //field for invoice number
13 private double balanceDue; //field for balance due
15 private int month; //field for month
16 private int day; //field for day
17 private int year; //field for year
18
19 public Invoice2(int number, double balance, int month, int day, int year)
20 {
21 //force invoice number to be 0 if it's less than 1000
22 if (number < 1000)
23 {
24 invoiceNumber = 0;
25 }
26 else
27 {
28 invoiceNumber = number;
29 }
30
31 //balance field
32 balanceDue = balance;
33
34 //month and day if statements
35 if (month < 1 || month > 12)
36 {
37 this.month = 0;
38 this.day = 0;
39 }
40 else if (month == 2)
41 {
42 this.month = month;
43
44 if (day>28)
45 {
46 this.day = 28;
47 }
48 else
49 {


Invoice - NetBeans IDE 8.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
<default config>
Projects Files Services
Invoice
Source Packages
FinalProjectInvoice
Invoice.java
Invoice2.java
TestInvoice.java
TestInvoice2.java
Test Packages
Libraries
Test Libraries
Navigator
Members
<empty>
TestInvoice2
main(String[] args)
TestInvoice.java
Invoice.java
Invoice2.java
TestInvoice2.java
Source History
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"
+ "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 //create test1 object
25 Invoice2 test1=new Invoice2(100, 212.12, 1, 15, 2015);
26
27 //display test1 results
28 test1.displayResults();
29
30 //test 2
31 System.out.println();
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 //create test2 object
42 Invoice2 test2=new Invoice2(1245, 315.21, 15, 15, 2016);
43
44 //display test2 results
45 test2.displayResults();
46
47 //test 3
48 System.out.println();
49 System.out.println();
50 System.out.println ("Constructor Test 3a - February Test - Days > 28");