

Time.javaTimeTest.javaInvoice.javaInvoiceTest.java

```
1 package lab6;
2 import java.util.*;
3 public class TimeTest {
4     static Scanner sc = new Scanner(System.in);
5     public static void main(String[] args) {
6         // TODO Auto-generated method stub
7         Time t1 = new Time();
8         while(true) {
9             try {
10                 System.out.println("Enter the hours:");
11                 t1.setHour(sc.nextInt());
12             }
13             catch(IllegalArgumentException e) {
14                 System.out.println("Please enter the value >=0");
15                 System.out.println("Re-enter the time");
16                 continue;
17             }
18             try {
19                 System.out.println("Enter the minutes:");
20                 t1.setMinute(sc.nextInt());
21             }
22             catch(IllegalArgumentException e) {
23                 System.out.println("Please enter the value >=0 and <60");
24                 System.out.println("Re-enter the time");
25                 continue;
26             }
27             try {
28                 System.out.println("Enter the seconds:");
29                 t1.setSecond(sc.nextInt());
30             }
31             catch(IllegalArgumentException e) {
32                 System.out.println("Please enter the value >=0 and <60");
33                 System.out.println("Re-enter the time");
34                 continue;
35             }
36             System.out.println("The time is "+t1.toString());
37             break;
38         }
39     }
}
```

ProblemsJavadocDeclarationConsole

<terminated> TimeTest (1) [Java Application] C:\Program Files\Java

Enter the hours:  
-1  
Please enter the value >=0  
Re-enter the time  
Enter the hours:  
12  
Enter the minutes:  
61  
Please enter the value >=0 and <60  
Re-enter the time  
Enter the hours:  
3  
Enter the minutes:  
55  
Enter the seconds:  
90  
Please enter the value >=0 and <60  
Re-enter the time  
Enter the hours:  
3  
Enter the minutes:  
55  
Enter the seconds:  
21  
The time is 3hrs 55mts 21sec

## Question-1 Time Class

```
Time.java TimeTest.java Invoice.java InvoiceTest.java
1 package lab6;
2 import java.util.*;
3 public class Time {
4     private int seconds, minutes, hours;
5
6     Time(){
7         seconds = 0;
8         minutes = 0;
9         hours = 0;
10    }
11
12    public void setSecond(int ss) throws IllegalArgumentException {
13        if(ss < 0 || ss > 59)
14            throw new IllegalArgumentException();
15        else
16            seconds = ss;
17    }
18    public void setMinute(int mm) throws IllegalArgumentException {
19        if(mm < 0 || mm > 59)
20            throw new IllegalArgumentException();
21        else
22            minutes = mm;
23    }
24    public void setHour(int hh) throws IllegalArgumentException{
25        if(hh < 0)
26            throw new IllegalArgumentException();
27        else
28            hours = hh;
29    }
30    public String toString() {
31        return hours+"hrs "+minutes+"mts "+seconds+"sec ";
32    }
33
34    public static void main(String[] args) {
35        // TODO Auto-generated method stub
36
37    }
38
39 }
```



## Question-2 Invoice Class

```
Time.java  TimeTest.java  Invoice.java  InvoiceTest.java

1 package lab6;
2 import java.util.*;
3 public class Invoice {
4     static Scanner sc = new Scanner(System.in);
5     private int partNo;
6     private String description;
7     private int quantity;
8     private double price;
9
10 Invoice(int partNo, String desc, double price, int quantity){
11     this.partNo = partNo;
12     description = desc;
13     this.price = price;
14     this.quantity = quantity;
15 }
16 public String getDesc(){return description;}
17 public int getPartNo(){return partNo;}
18 public int getQuantity(){return quantity;}
19 public double getPrice(){return price;}
20
21 public void displayDetails(String header) {
22     System.out.println(header);
23     System.out.println("PartNo: "+this.getPartNo());
24     System.out.println("Description: "+this.getDesc());
25     System.out.println("Quantity: "+this.getQuantity());
26     System.out.println("Price: "+this.getPrice());
27 }
28
29 public static void main(String[] args) {
30     // TODO Auto-generated method stub
31
32 }
33
34 }
35
```

## Question-2 Tester Class and Output

Time.javaTimeTest.javaInvoice.javaInvoiceTest.java

```
1 package lab6;
2 import java.util.*;
3 public class InvoiceTest {
4     static Scanner sc = new Scanner(System.in);
5
6     private static int initPartNo() {
7         int no;
8         while(true) {
9             try {
10                 System.out.println("Enter the part number");
11                 no = sc.nextInt();
12                 if(no <= 0)
13                     throw new InputMismatchException();
14                 else
15                     return no;
16             }
17             catch(InputMismatchException e) {
18                 System.out.println("Please enter a valid integer partNo.");
19                 sc.nextLine();
20             }
21         }
22     }
23     private static int initQuantity() {
24         int qty;
25         while(true) {
26             try {
27                 System.out.println("Enter the quantity");
28                 qty = sc.nextInt();
29                 if(qty <= 0)
30                     throw new InputMismatchException();
31                 else
32                     return qty;
33             }
34             catch(InputMismatchException e) {
35                 System.out.println("Please enter a valid quantity");
36                 sc.nextLine();
37             }
38         }
39     }
40 }
```

ProblemsJavadocDeclarationConsole

```
<terminated> InvoiceTest (1) [Java Application] C:\Program Files\Java\jdk
Enter the part number
0
Please enter a valid integer partNo.
Enter the part number
1
Enter the description
Please enter a valid description
Enter the description
useful
Enter the quantity
-1
Please enter a valid quantity
Enter the quantity
2
Enter the cost
0
Please enter a valid cost
Enter the cost
12
Object Created
PartNo: 1
Description: useful
Quantity: 2
Price: 12.0
```

## Question-2 Tester Class Continuation

```
Time.java TimeTest.java Invoice.java InvoiceTest.java
40 private static String initDescription() {
41     String des=null;
42     while(true) {
43         try {
44             System.out.println("Enter the description");
45             | sc.nextLine();
46             des = sc.nextLine();
47             if(des.equals(""))
48                 throw new InputMismatchException();
49             else
50                 return des;
51         }
52         catch(InputMismatchException e) {
53             System.out.println("Please enter a valid description");
54             //sc.nextLine();
55         }
56     }
57 }
58 private static double initPrice() {
59     double price;
60     while(true) {
61         try {
62             System.out.println("Enter the cost");
63             price = sc.nextDouble();
64             if(price <= 0)
65                 throw new InputMismatchException();
66             else
67                 return price;
68         }
69         catch(InputMismatchException e) {
70             System.out.println("Please enter a valid cost");
71             sc.nextLine();
72         }
73     }
74 }
75 public static void main(String[] args) {
76     // TODO Auto-generated method stub
77     int partNo,qty;
78     String desc;
```



```
}  
public static void main(String[] args) {  
    // TODO Auto-generated method stub  
    int partNo,qty;  
    String desc;  
    double cost;  
  
    //System.out.println("Enter the partNo:");  
    partNo = initPartNo();  
  
    //System.out.println("Enter the description:");  
    desc = initDescription();  
  
    //System.out.println("Enter the Quantity:");  
    qty = initQuantity();  
  
    //System.out.println("Enter the price:");  
    cost = initPrice();  
  
    Invoice obj1 = new Invoice(partNo,desc,cost,qty);  
    obj1.displayDetails("Object Created");  
}  
}
```

### Question-3 TesterClass and Output

```
Time.java TimeTest.java Invoice.java InvoiceTest.java
73     }
74 }
75 public static void main(String[] args) {
76     // TODO Auto-generated method stub
77     int partNo,qty;
78     String desc;
79     double cost;
80
81     //System.out.println("Enter the partNo:");
82     partNo = initPartNo();
83
84     //System.out.println("Enter the description:");
85     desc = initDescription();
86
87     //System.out.println("Enter the Quantity:");
88     qty = initQuantity();
89
90     //System.out.println("Enter the price:");
91     cost = initPrice();
92
93
94     Invoice obj1 = new Invoice(partNo,desc,cost,qty);
95     obj1.displayDetails("Object Created");
96     Invoice arr[] = new Invoice[2];
97     for(int i=0;i<5;i++) {
98         try {
99             arr[i] = new Invoice(partNo,desc,cost,qty);
100            System.out.println(arr[i].toString());
101        }
102        catch (ArrayIndexOutOfBoundsException e){
103            System.out.println("Accesssing an element out of"
104                + " the created array\nPlease try again");
105            break;
106        }
107    }
108 }
109 }
110 }
```

Problems Javadoc Declaration Console

<terminated> InvoiceTest (1) [Java Application] C:\Program Files\Java\jc

Enter the part number  
4  
Enter the description  
1  
Enter the quantity  
5  
Enter the cost  
7  
Object Created  
PartNo: 4  
Description: 1  
Quantity: 5  
Price: 7.0

PartNo: 4  
Description: 1  
Quantity: 5  
Price: 7.0

PartNo: 4  
Description: 1  
Quantity: 5  
Price: 7.0  
Accesssing an element out of the created array  
Please try again

## Question-4 Tester Class and Output

Time.java Invoice.java InvoiceTest... CustomExcep... »1

```
1 package lab6;
2 import java.util.*;
3 public class InvoiceTest {
4     static Scanner sc = new Scanner(System.in);
5
6     private static int initPartNo() {
7         int no;
8         while(true) {
9             try {
10                 System.out.println("Enter the part number");
11                 no = sc.nextInt();
12                 if(no <= 0) {
13                     throw new CustomException("Part number not found ");
14                 }
15                 else if(no <= 0)
16                     throw new InputMismatchException();
17                 else
18                     return no;
19             }
20             catch(InputMismatchException e) {
21                 System.out.println("Please enter a valid integer partNo.");
22                 sc.nextLine();
23             }
24             catch(CustomException e) {
25                 System.out.println("Error: "+e.getMessage());
26             }
27         }
28     }
29     private static int initQuantity() {
30         int qty;
31         while(true) {
32             try {
33                 System.out.println("Enter the quantity");
34                 qty = sc.nextInt();
35                 if(qty <= 0)
36                     throw new InputMismatchException();
37                 else
38                     return qty;
39             }
```

Problems @ Javadoc Declaration Console

<terminated> InvoiceTest (1) [Java Application] C:\Program Files\Ja

Enter the part number  
-4  
Error: Part number not found  
Enter the part number  
6  
Enter the description  
good product  
Enter the quantity  
3  
Enter the cost  
5  
Object Created  
PartNo: 6  
Description: good product  
Quantity: 3  
Price: 5.0  
  
PartNo: 6  
Description: good product  
Quantity: 3  
Price: 5.0  
  
PartNo: 6  
Description: good product  
Quantity: 3  
Price: 5.0  
Accesssing an element out of the created array  
Please try again



#### Question-4 Custom Exception

Time.java Invoice.java InvoiceTest.... CustomExcep...

```
1 package lab6;
2
3 public class CustomException extends Exception{
4     CustomException(String message){
5         super(message);
6     }
7
8 }
9
```