Flow Diagram for Dowhileloop
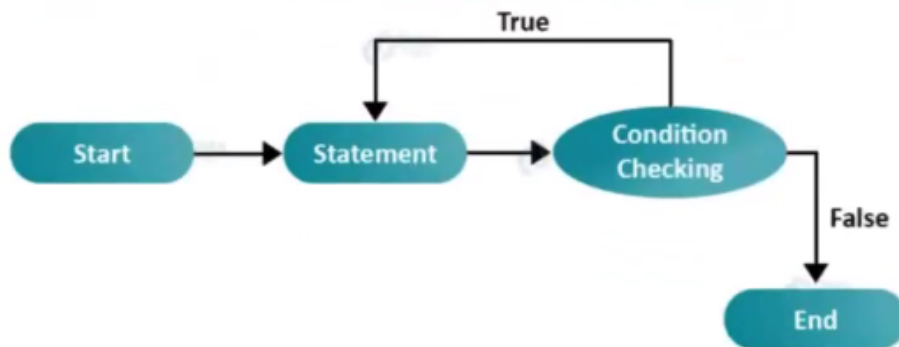

Infinite loop-

```java
package javasessions;

public class DoWhileLoop {

    public static void main(String[] args) {

        //1 to 10:
        int i = 1;
        do {
            System.out.println(i);
        }
        while(i<=10);
```

Prints 1 infinite times.

Prints 1 to 10-

```
LoopsConcept.java      *DoWhileLoop.java
 1 package javasessions;
 2
 3 public class DoWhileLoop {
 4
 5°     public static void main(String[] args) {
 6
 7          //1 to 10:
 8          int i = 1;
 9          do {
10              System.out.println(i);|
11              i++;//11
12          }
13          while(i<=10);
14
```

Prints 1 and stops.

```
LoopsConcept.java      DoWhileLoop.java
 1 package javasessions;
 2
 3 public class DoWhileLoop {
 4
 5°     public static void main(String[] args) {
 6
 7          //1 to 10:
 8          int i = 1;
 9          do {
10              System.out.println(i);//1
11              i++;//2
12          }
13          while(i>=10);
14
15
```
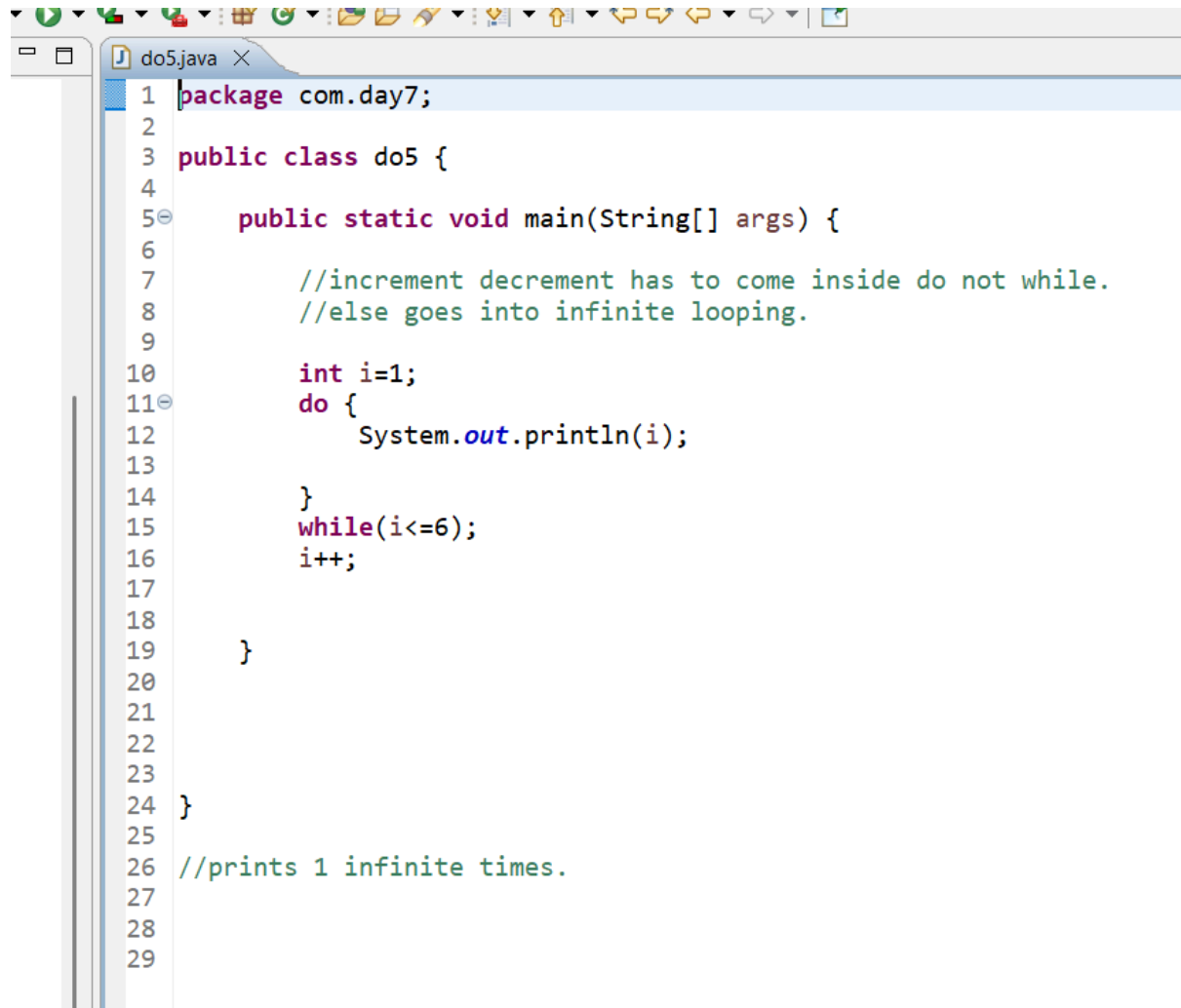
Prints 1,2.

```
LoopsConcept.java    DoWhileLoop.java
 1 package javasessions;
 2
 3 public class DoWhileLoop {
 4
 5     public static void main(String[] args) {
 6
 7         //1 to 10:
 8         int i = 1;
 9         do {
10             System.out.println(i);//1
11             i++;//2
12         }
13         while(i>=10);
14
15
16         System.out.println(i);//1
17
18
19     }
20
```
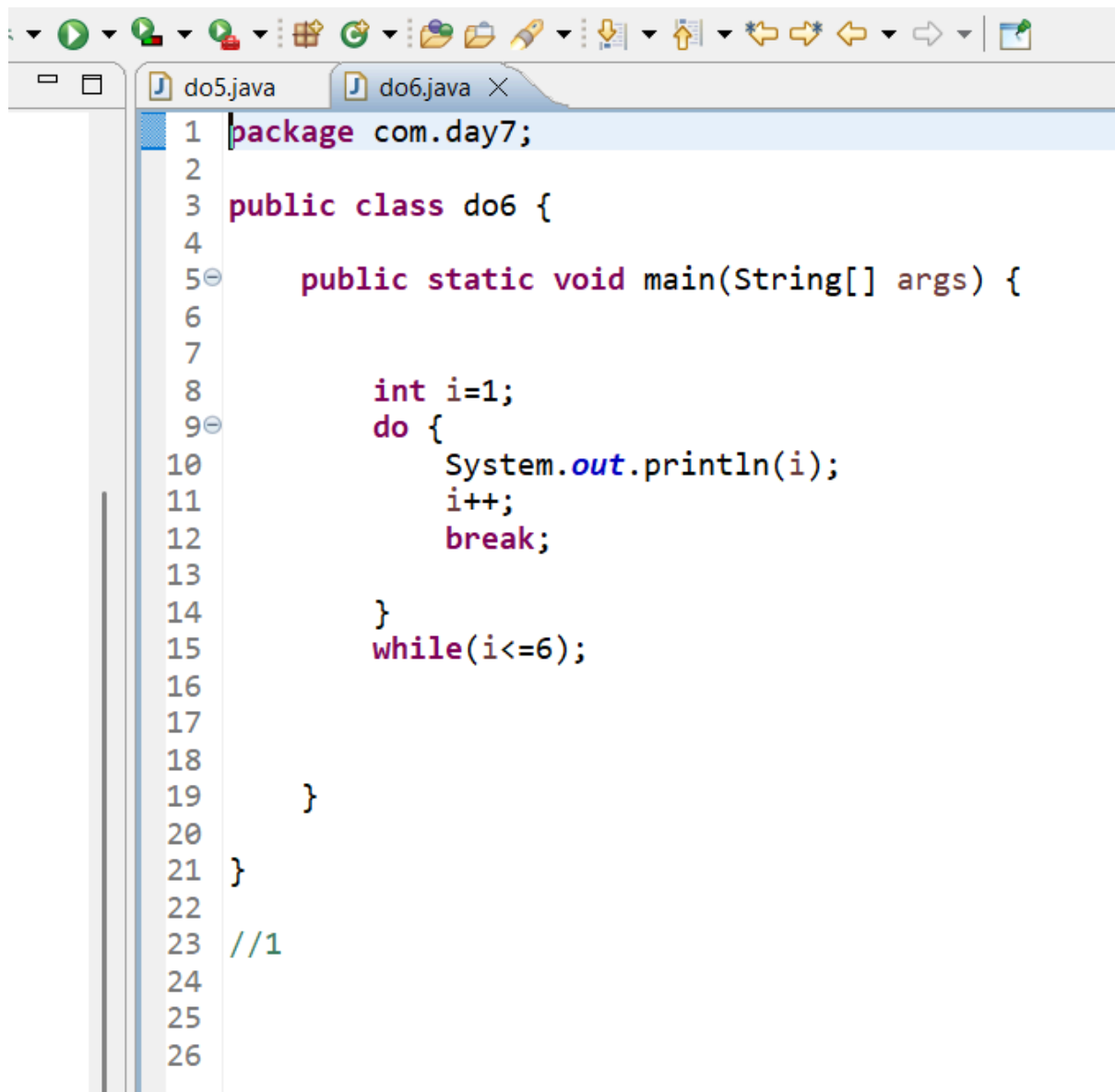
paste do5

```java
package com.day7;

public class do5 {

    public static void main(String[] args) {

        //increment decrement has to come inside do not while.
        //else goes into infinite looping.

        int i=1;
        do {
            System.out.println(i);

        }
        while(i<=6);
        i++;


    }




}

//prints 1 infinite times.
```

Prints 1.

```
LoopsConcept.java      DoWhileLoop.java

1 package javasessions;
2
3 public class DoWhileLoop {
4
5     public static void main(String[] args) {
6
7         //1 to 10:
8         int i = 1;
9         do {
10             System.out.println(i);//1
11             i++;//2
12             break;
13         }
14         while(i>=10);
15
```
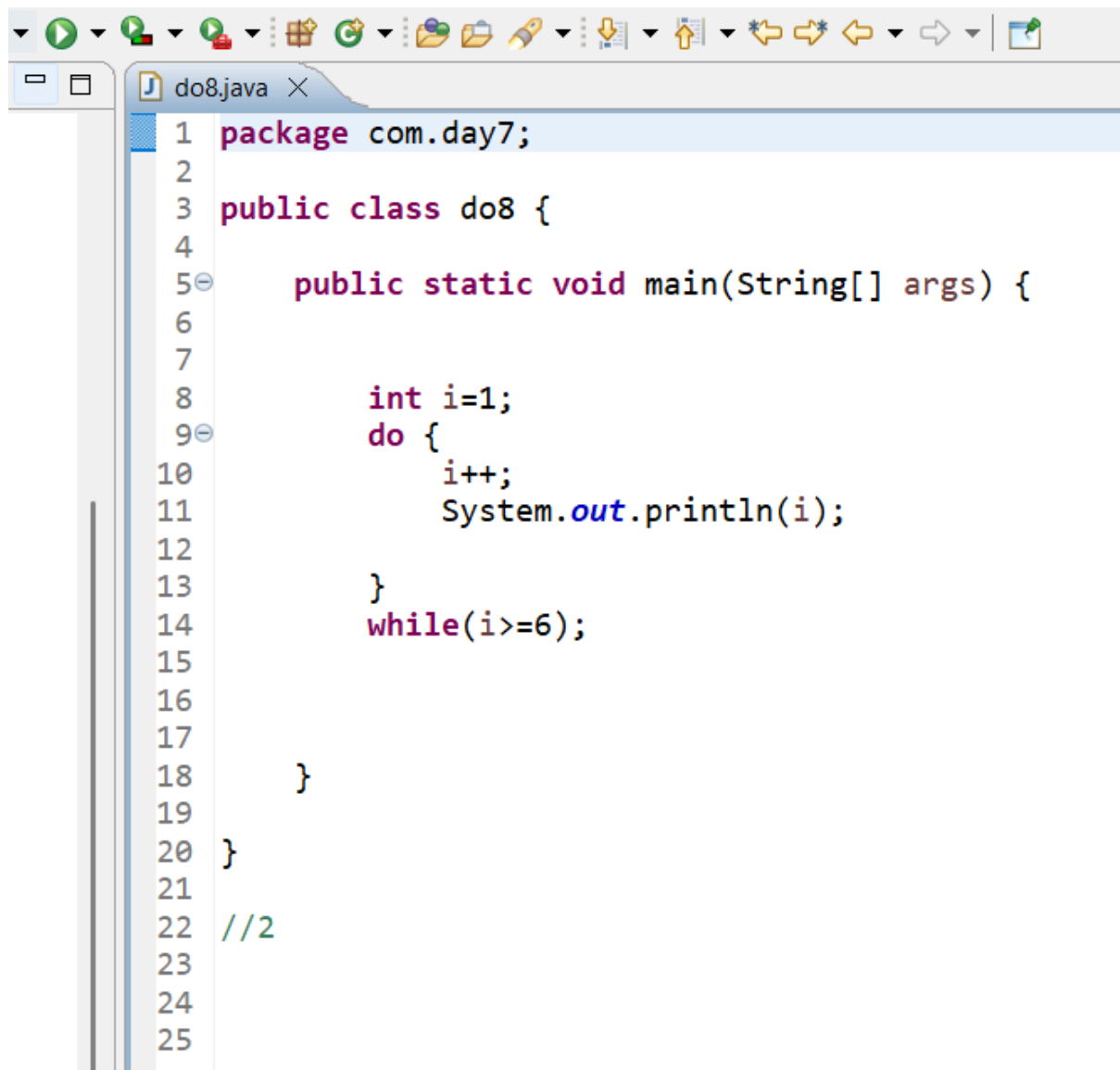
paste do6

```java
package com.day7;

public class do6 {

    public static void main(String[] args) {


        int i=1;
        do {
            System.out.println(i);
            i++;
            break;

        }
        while(i<=6);




    }
}
//1



```

Prints 2 to 11.

```
  LoopsConcept.java     DoWhileLoop.java
 1 package javasessions;
 2
 3 public class DoWhileLoop {
 4
 5    public static void main(String[] args) {
 6
 7        //1 to 10:
 8        int i = 1;
 9        do {
10            i++;//11
11            System.out.println(i);//234567891011
12
13            //break;
14        }
15        while(i<=10);
```
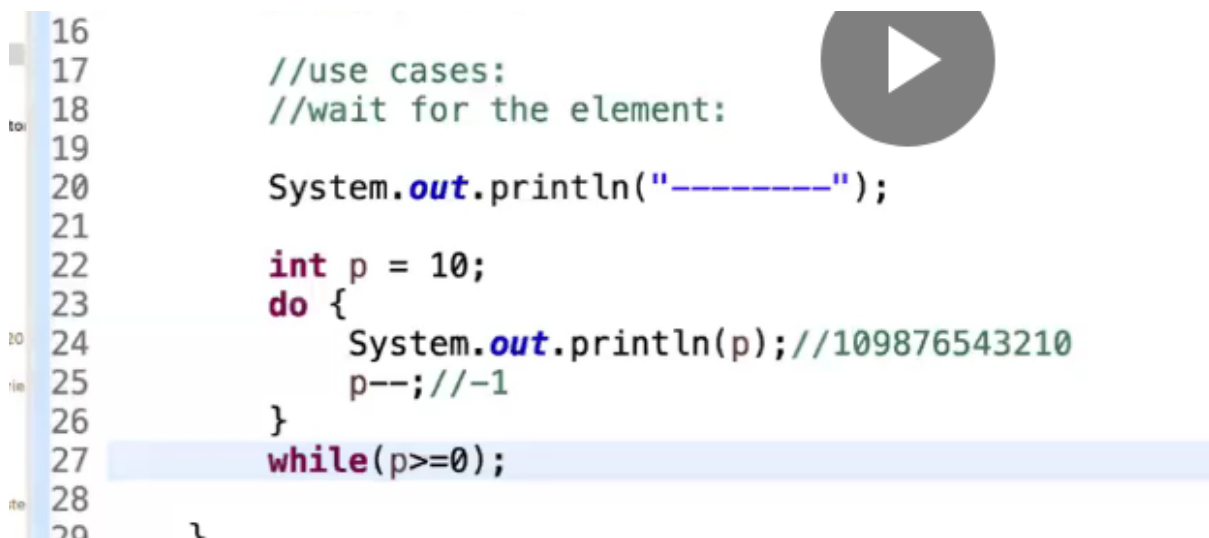
paste do8

```java
package com.day7;

public class do8 {

    public static void main(String[] args) {


        int i=1;
        do {
            i++;
            System.out.println(i);

        }
        while(i>=6);




    }

}
//2


```
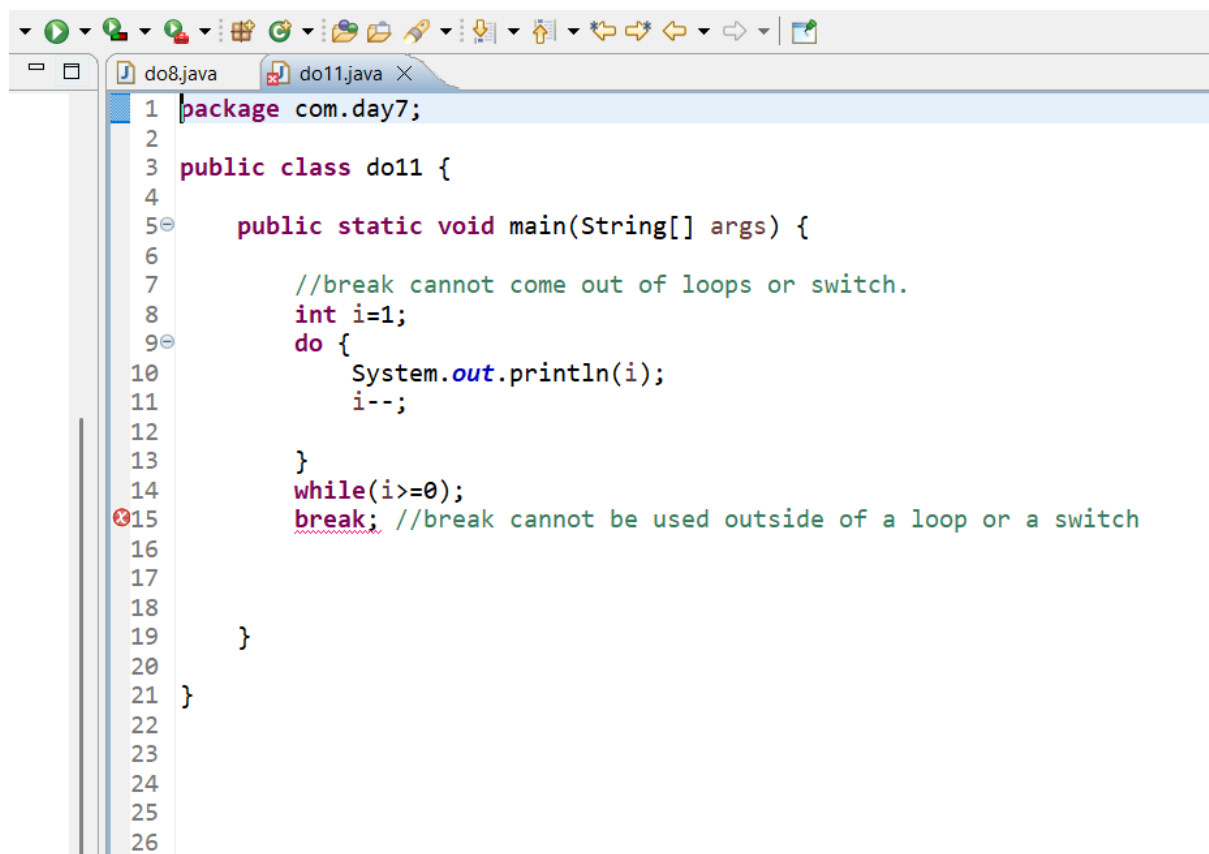
```java
        //use cases:
        //wait for the element:

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

        int p = 10;
        do {
            System.out.println(p);//109876543210
            p--;//-1
        }
        while(p>=0);

    }
```

Prints 10 to 0.
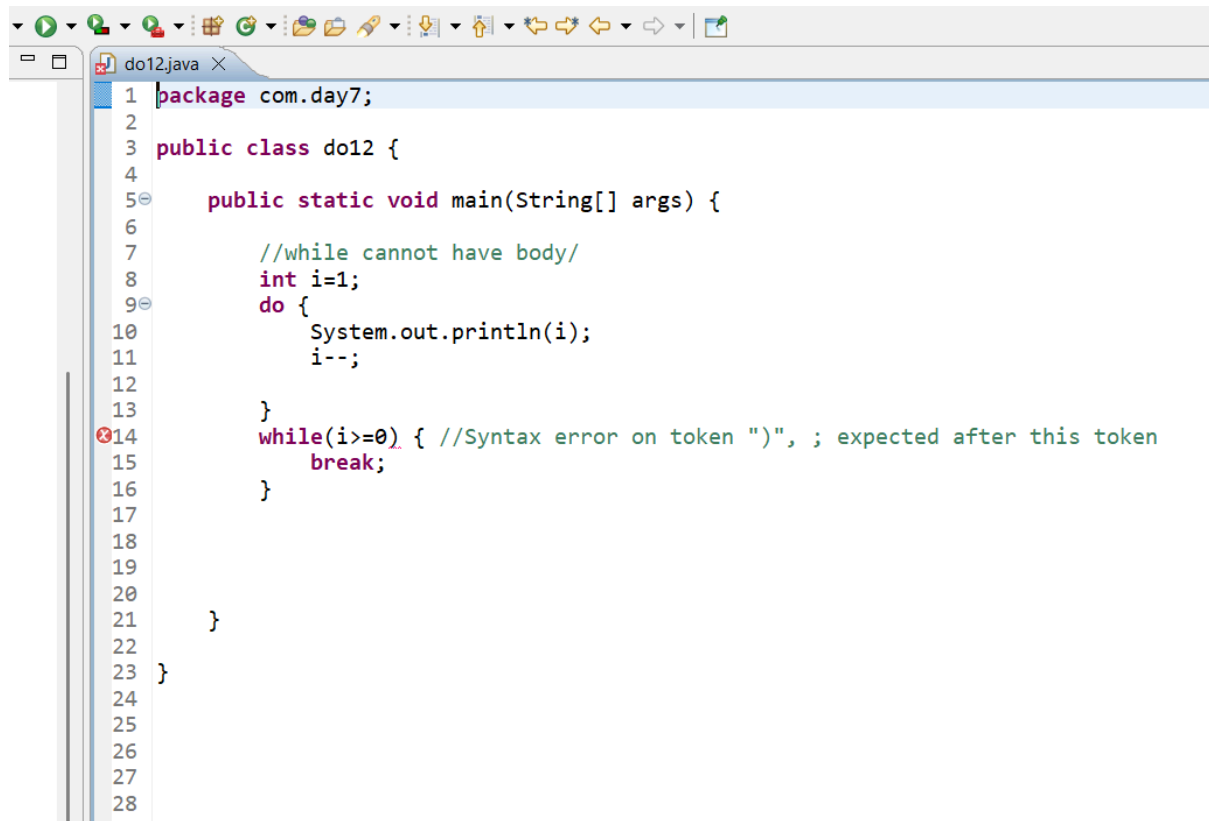
Break cannot be written outside loop-

paste do11

```java
package com.day7;

public class do11 {

    public static void main(String[] args) {

        //break cannot come out of loops or switch.
        int i=1;
        do {
            System.out.println(i);
            i--;

        }
        while(i>=0);
        break; //break cannot be used outside of a loop or a switch

    }
}
```

This is not allowed-

No while body.
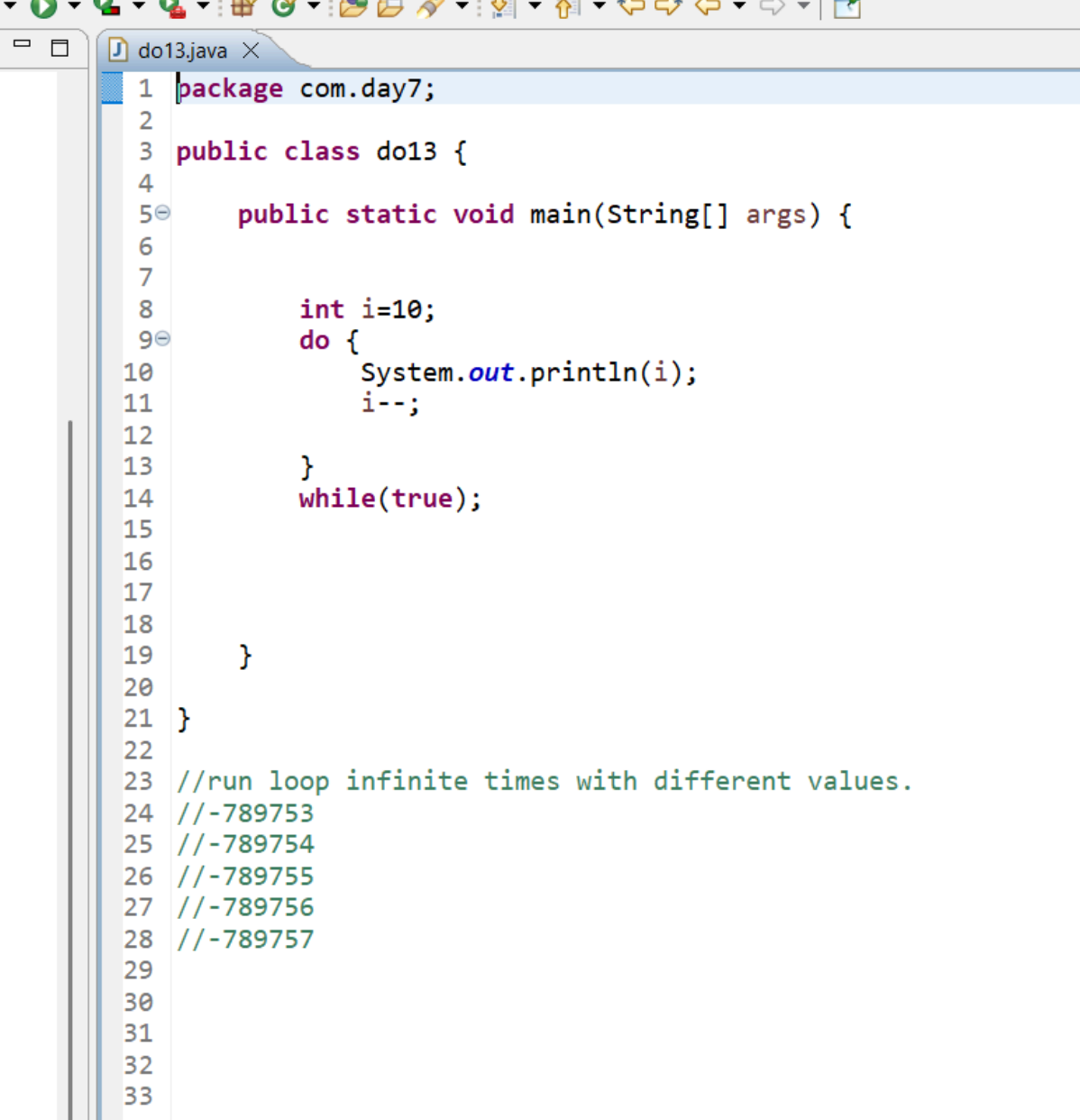
paste do12

```java
package com.day7;

public class do12 {

    public static void main(String[] args) {

        //while cannot have body/
        int i=1;
        do {
            System.out.println(i);
            i--;

        }
        while(i>=0) { //Syntax error on token ")", ; expected after this token
            break;
        }



    }
}
```

Keep running the loop with different values-

paste do13-

```java
package com.day7;

public class do13 {

    public static void main(String[] args) {


        int i=10;
        do {
            System.out.println(i);
            i--;

        }
        while(true);




    }
}

//run loop infinite times with different values.
//-789753
//-789754
//-789755
//-789756
//-789757
```

Can write any condition-

```java
LoopsConcept.java    DoWhileLoop.java

 1 package javasessions;
 2
 3 public class DoWhileLoop {
 4
 5     public static void main(String[] args) {
 6
 7         //1 to 10:
 8         int i = 1;
 9         do {
10             i++;//11
11             System.out.println(i);//234567891011
12
13             if(i==7) {
14                 System.out.println("hello");
15             }
16
17             //break;
18         }
19         while(i<=10);
```

Print even numbers from 2 to 100-

```java
35
36         //
37         for(int k=1; k<=100; k++) {
38             if(k % 2 ==0 ) {
39                 System.out.println(k);//2
40             }
41
42         }
```

Print odd numbers between 1 to 100-

```java
35         System.out.println(          );
36         //
37         for(int k=1; k<=100; k++) {
38             if(k % 2 ==1) {
39                 System.out.println(k);//2
40             }
41
```
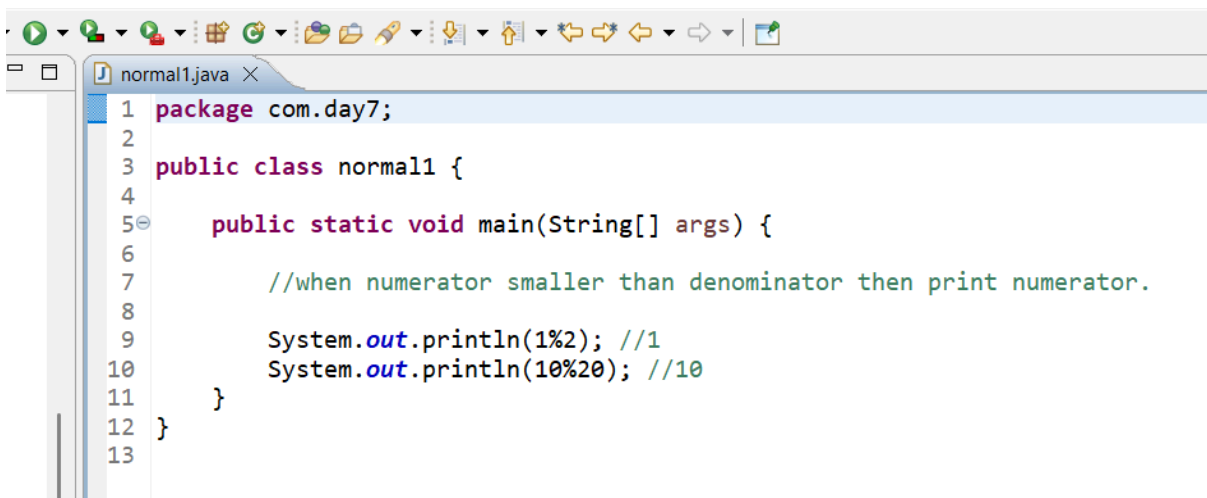
Prints 1.

```
 7
 8        System.out.println(1 % 2);
 9
10
```

paste normal1

```
normal1.java
 1  package com.day7;
 2
 3  public class normal1 {
 4
 5⊝      public static void main(String[] args) {
 6
 7              //when numerator smaller than denominator then print numerator.
 8
 9              System.out.println(1%2); //1
10              System.out.println(10%20); //10
11          }
12  }
13
```

Print even numbers between 2 to 10-

```
46          ʃ
47
48          System.out.println("--------");
49
50          for(int e=2; e<=10; e=e+2) {
51              System.out.println(e);//
52          }
53
```

Print even numbers between 0 to 10-

```
47        }
48        System.out.println("--------");
49
50        for(int e=0; e<=10; e=e+2) {
51            System.out.println(e);//
52        }
53
54
```
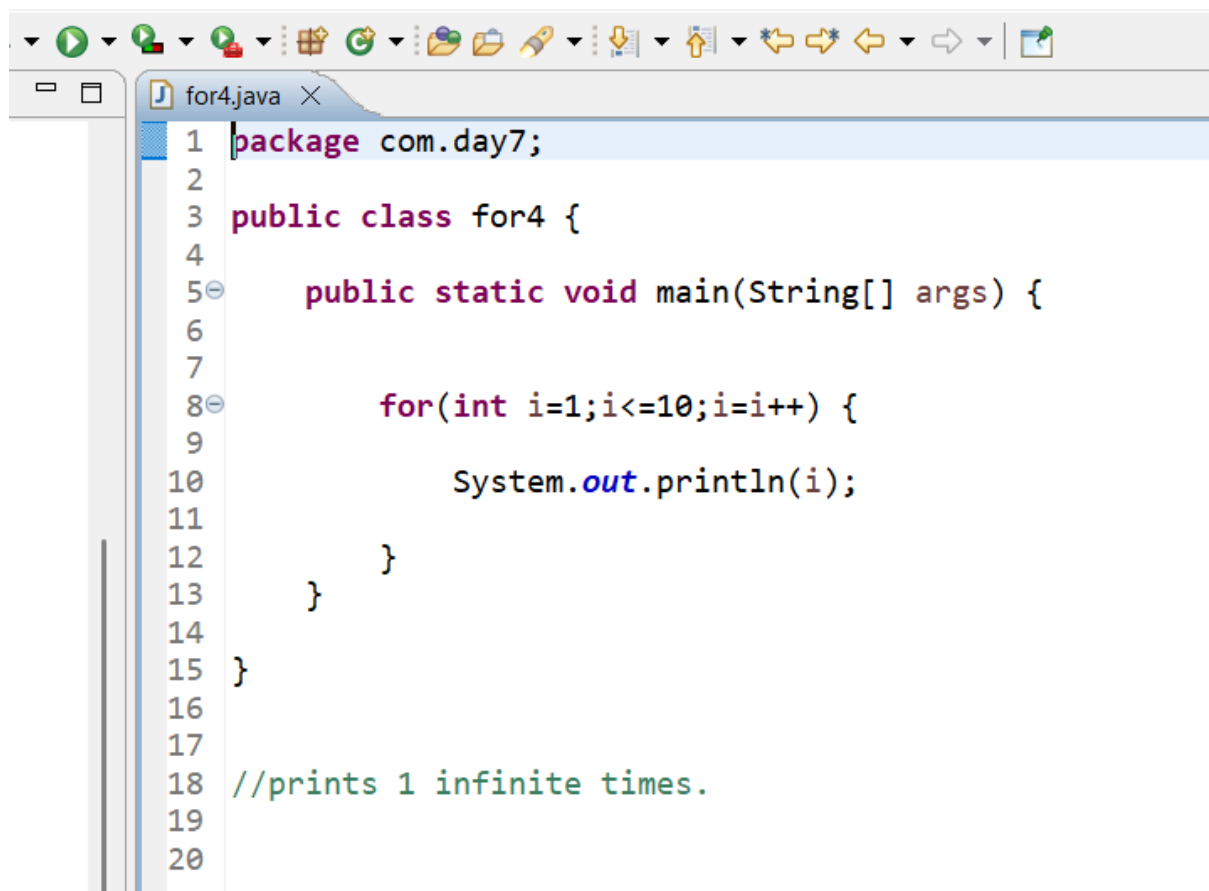
Print even numbers between 2 to 10-

```
49
50        for(int e=1; e<=10; e++) {
51            e++;
52            System.out.println(e);//
53        }
54
```

paste for 4

```java
1  package com.day7;
2
3  public class for4 {
4
5      public static void main(String[] args) {
6
7
8          for(int i=1;i<=10;i=i++) {
9
10             System.out.println(i);
11
12         }
13     }
14
15 }
16
17
18 //prints 1 infinite times.
19
20
```
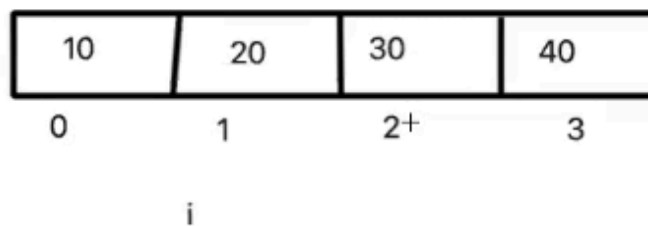
Print odd numbers between 1 to 10-

```
49
50          for(int e=1; e<=10; e++) {
51              System.out.println(e);//
52              e++;
53
54          }
```

10	20	30	40
0	1	2+	3

i
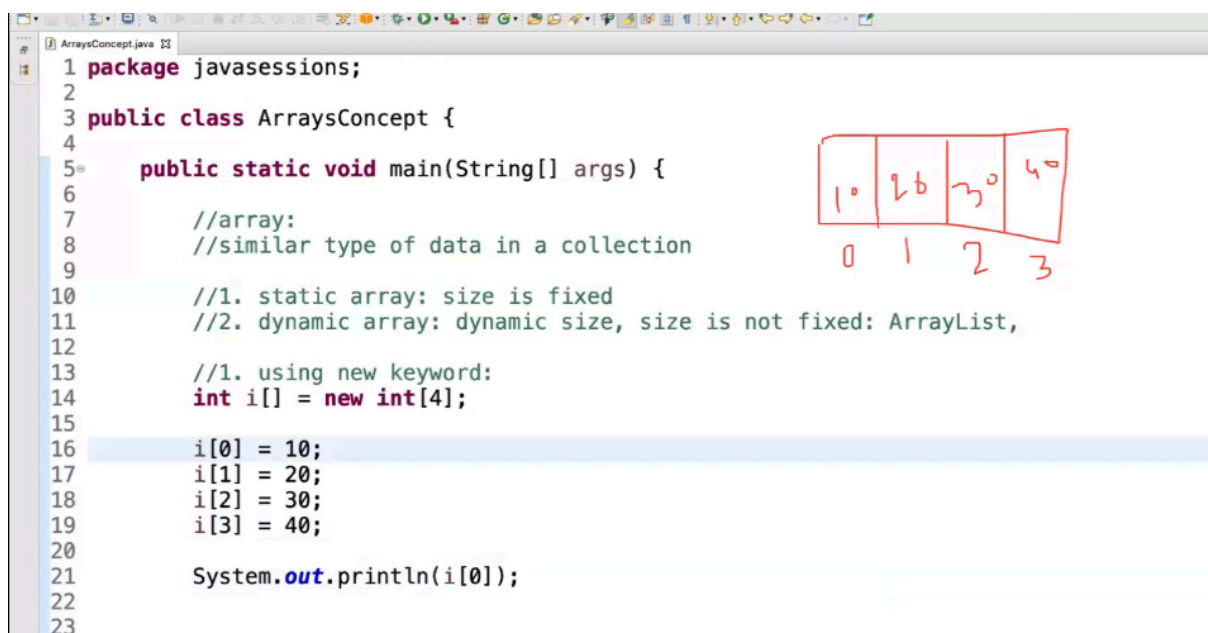
Li = 0
length = 4
Hi = 3
_____

Li=0
length = Hi+1
Hi=length-1

```
1 package javasessions;
2
3 public class ArraysConcept {
4
5      public static void main(String[] args) {
6
7          //array:
8          //similar type of data in a collection
9
10         //1. static array: size is fixed
11         //2. dynamic array: dynamic size, size is not fixed: ArrayList,
12
13         //1. using new keyword:
14         int i[] = new int[4];
15
16         i[0] = 10;
17         i[1] = 20;
18         i[2] = 30;
19         i[3] = 40;
20
21         System.out.println(i[0]);
22
23
```

10.

Negative index not allowed-

```
23
24        System.out.println(i[-1]);
```

see the error.

//Exception in thread "main" java.lang.ArrayIndexOutOfBoundsException: Index -1
out of bounds for length 5
//at com.day7.array2.main(array2.java:16)

Array index out of bounds exception.

```
25
26        System.out.println(i[4]);//AIOB
27
```

similar exception we get -

Exception in thread "main" java.lang.ArrayIndexOutOfBoundsException: Index 14
out of bounds for length 5
        at com.day7.array3.main(array3.java:16)

Before assigning values print it-

```
11      //2. dynamic array: dynamic size;
12
13          //1. using new keyword:
14          int i[] = new int[4];
15          System.out.println(i[0]);//0
16
17
18          i[0] = 10;
19          i[1] = 20;
20          i[2] = 30;
21          i[3] = 40;
22
```

Zero.

```
29      //to print all the value of array: use for loop
30
31          System.out.println("Li = " + 0);
32          int len = i.length;//4
33          System.out.println("length = " + len);
34          System.out.println("Hi = " + (len-1));
35
```

0,4,3.

Print all array values-

```
35
36          System.out.println("------");
37          //0-3
38          for(int k=0; k<=3; Ik++) {
39              System.out.println(i[k]);//10 20 30 40
40          }
41
```

```
37          //0-3
38          for(int k=0; k<=len-1; k++) {
39              System.out.println(i[k]);//10 20 30 40
40          }
41
```

```
37       //0-3
38       for(int k=0; k<=i.length-1; k++) {
39           System.out.println(i[k]);//10 20 30 40
40       }
41
```

```
36       System.out.println("------");
37       //0-3
38       for(int k=0; k<=i.length; k++) {
39           System.out.println(i[k]);//10 20 30 40
40       }
```

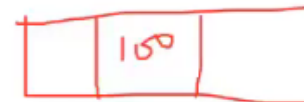10,20,30,40, array index out of bounds.

```
38       for(int k=0; k<i.length; k++) {
39           System.out.println(i[k]);//10 20 30 40
40       }
41
```

```
43
44       //without for loop, want to print the values of array:
45
46       System.out.println(Arrays.toString(i));
47
48
49       //
50
```

[10,20,30,40]

<u>**paste array11**</u>

```java
package com.day7;

import java.lang.reflect.Array;
import java.util.Arrays;

public class array11 {

    public static void main(String[] args) {

        int[] arr = new int[4];
        arr[0] = 10;
        arr[1] = 20;
        arr[2] = 30;
        arr[3] = 40;

        //without for loop print array values.
        //use to string method.
        //prints array memory address.

        String s1;
        try {
            s1 = Arrays.toString(); //Cannot make a static reference to the non-static method
            //toString() from the type Object
        } catch (Exception e) {
            // TODO Auto-generated catch block
            e.printStackTrace();
        }
        System.out.println(s1);

        System.out.println(Arrays.toString()); //Cannot make a static reference to the non-static method
        //toString() from the type Object
    }
}
```

Skip values and fill values-

```java
        System.out.println(Arrays.to


        //

        int p[] = new int[3];

        p[1] = 100;
        System.out.println(p[1]);
        System.out.println(p[0]);
        System.out.println(p[2]);
```
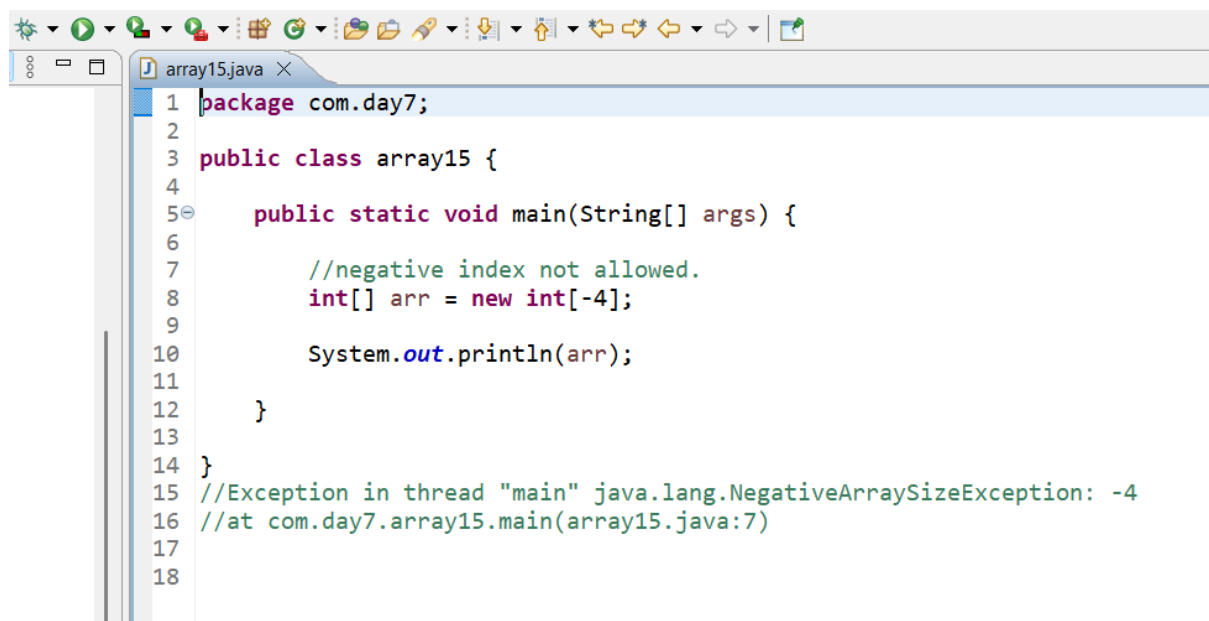
100, 0, 0.

```
48
49          //
50
51          int p[] = new int[3];
52
53          p[4] = 50;//AIOB
54          System.out.println(p[4]);
```

at run time we get index issue error.

Negative index not allowed-

paste array15

```
array15.java ×
1  package com.day7;
2
3  public class array15 {
4
5⊖     public static void main(String[] args) {
6
7          //negative index not allowed.
8          int[] arr = new int[-4];
9
10         System.out.println(arr);
11
12     }
13
14 }
15 //Exception in thread "main" java.lang.NegativeArraySizeException: -4
16 //at com.day7.array15.main(array15.java:7)
17
18
```

Character with int-

```
      System.out.println(Arrays.toString
47
48
49            //
50            int p[] = new int[4];
51            p[0] = 100;
52            p[1] = 'a';
53
54  //        p[3] = 50;//AIOB
55            System.out.println(p[1]);
56
```

Prints 97.

Int stores char, we print in char form-

```
46            System.out.println(Arrays.toString
47
48
49            //
50            int p[] = new int[4];
51            p[0] = 100;
52            p[1] = 'a';
53
54  //        p[3] = 50;//AIOB
55            System.out.println((char)p[1]);
56
```

Prints a.