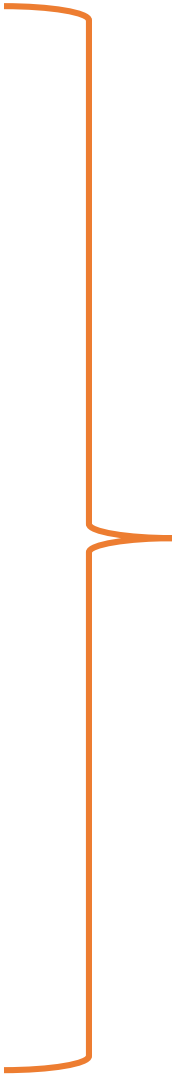


Examples

WEEK 5

The Rounding Methods

```
public class Test {  
    public static void main(String[] args) {  
  
        System.out.println(Math.ceil(2.1));  
        System.out.println(Math.ceil(2.0));  
        System.out.println(Math.ceil(-2.0));  
        System.out.println(Math.ceil(-2.1));  
        System.out.println(Math.floor(2.1));  
        System.out.println(Math.floor(2.0));  
        System.out.println(Math.floor(-2.0));  
        System.out.println(Math.floor(-2.1));  
        System.out.println(Math rint(2.1));  
        System.out.println(Math rint(-2.0));  
        System.out.println(Math rint(-2.1));  
        System.out.println(Math rint(2.5));  
        System.out.println(Math rint(4.5));  
        System.out.println(Math rint(-2.5));  
        System.out.println(Math.round(2.6f));  
        System.out.println(Math.round(2.0));  
        System.out.println(Math.round(-2.0f));  
        System.out.println(Math.round(-2.6));  
        System.out.println(Math.round(-2.4));  
    }  
}
```



3.0
2.0
-2.0
-2.0
2.0
2.0
-2.0
-3.0
2.0
-2.0
-2.0
2.0
4.0
-2.0
3
2
-2
-3
-2

char Data Type

```
public class Test {  
    public static void main(String[] args) {  
        char x = 'a';  
        char y = 'c';  
        System.out.println(++x);  
        System.out.println(y++);  
        System.out.println(x - y);  
    }  
}
```

Output:

b

c

-2

Characters	Code Value in Decimal	Unicode Value
'a' to 'z'	97 to 122	\u0061 to \u007A

char Data Type

```
public class Test {  
    public static void main(String[] args) {  
        System.out.println('a' < 'b');  
        System.out.println('a' <= 'A');  
        System.out.println('a' > 'b');  
        System.out.println('a' >= 'A');  
        System.out.println('a' == 'a');  
        System.out.println('a' != 'b');  
    }  
}
```

Output:
true
false
false
true
true
true

The String Type

```
System.out.println (2 + 3 + "test");
```

Output:
5test

```
System.out.println ("test" + 2 + 3);
```

Output:
test23

```
System.out.println ("test" + 2 * 3);
```

Output:
test6

String Methods

```
public class Test {  
    public static void main(String[] args) {  
  
        String s1 = "Welcome to Java";  
        String s2 = "Programming is fun";  
        String s3 = "Welcome to Java";  
        System.out.println(s1 == s2);  
        System.out.println(s2 == s3);  
        System.out.println(s1.equals(s2));  
        System.out.println(s1.equals(s3));  
        System.out.println(s1.compareTo(s2));  
        System.out.println(s2.compareTo(s3));  
        System.out.println(s1.compareTo(s3));  
        System.out.println(s1.charAt(0));  
        System.out.println(s1.indexOf('j'));  
        System.out.println(s1.indexOf("to"));  
        System.out.println(s1.lastIndexOf('a'));  
        System.out.println(s1.lastIndexOf("o", 15));  
        System.out.println(s1.length());  
        System.out.println(s1.substring(5));  
        System.out.println(s1.substring(5, 11));  
        System.out.println(s1.startsWith("Wel"));  
        System.out.println(s1.endsWith("Java"));  
        System.out.println(s1.toLowerCase());  
        System.out.println(s1.toUpperCase());  
        System.out.println(s1.concat(s2));  
        System.out.println(s1.contains(s2));  
        System.out.println("\t Wel \t".trim());  
    }  
}
```

```
false  
false  
false  
true  
7  
-7  
0  
W  
-1  
8  
14  
9  
15  
me to Java  
me to  
true  
true  
welcome to java  
WELCOME TO JAVA  
Welcome to JavaProgramming is fun  
false  
Wel
```

The String Type

```
public class Test {  
    public static void main(String[] args) {  
  
        System.out.println("1" + 1);  
        System.out.println('1' + 1);  
        System.out.println("1" + 1 + 1);  
        System.out.println("1" + (1 + 1));  
        System.out.println('1' + 1 + 1);  
  
    }  
}
```

Output:

11

50

111

12

51

<i>Characters</i>	<i>Code Value in Decimal</i>	<i>Unicode Value</i>
'0' to '9'	48 to 57	\u0030 to \u0039

while Loop

```
public class test {  
    public static void main(String[] args) {  
        int i = 1;  
        while (i < 10)  
            if (i++ % 2 == 0)  
                System.out.println(i);  
    }  
}
```

Output:

3
5
7
9

```
public class test2 {  
    public static void main(String[] args) {  
        int i = 1;  
        while (i < 10)  
            if (i % 2 == 0)  
                System.out.println(i++);  
    }  
}
```

Output:
Infinite loop

for Loop

- Do the following two loops result in the same value in **sum**?

```
for (int i = 0; i < 10; ++i) {  
    sum += i;  
}
```

(a)

```
for (int i = 0; i < 10; i++) {  
    sum += i;  
}
```

(b)

- Yes, since the last part of for statement executes after each iteration the result doesn't change.

Identify and fix the errors

```
public class Test {  
    public void main(String[] args) {  
  
        for (i = 0; i < 10; i++);  
            sum += i;  
        if (i > j);  
            System.out.println(i)  
        else  
            System.out.println(j);  
  
        while (j < 10);  
        {  
            j++;  
        }  
  
        do {  
            j++;  
        } while (j < 10)  
    }  
}
```

```
public class Test {  
    public static void main(String[] args) {  
        int sum = 0 , i , j=0;  
        for (i = 0; i < 10; i++);  
            sum += i;  
        if (i > j);  
            System.out.println(i);  
        else  
            System.out.println(j);  
        while (j < 10);  
        {  
            j++;  
        }  
        System.out.println(j);  
        do {  
            j++;  
        } while (j < 10);  
        System.out.println(j);  
    }  
}
```

What is the Output?

```
public class Test {  
    public static void main(String[] args) {  
        for (int i = 1; i < 5; i++) {  
            int j = 0;  
            while (j < i) {  
                System.out.print(j + " ");  
                j++;  
            }  
        }  
    }  
}
```

Output:

0 0 1 0 1 2 0 1 2 3

What is the Output?

```
public class Test {  
    public static void main(String[] args) {  
        int i = 0;  
        while (i < 5) {  
            for (int j = i; j > 1; j--)  
                System.out.print(j + " ");  
            System.out.println("*****");  
            i++;  
        }  
    }  
}
```

Output:

2 *****

3 2 *****

4 3 2 *****

What is the Output?

```
public class Test {  
    public static void main(String[] args) {  
        int i = 5;  
        while (i >= 1) {  
            int num = 1;  
            for (int j = 1; j <= i; j++) {  
                System.out.print(num + "xxx");  
                num *= 2;  
            }  
            System.out.println();  
            i--;  
        }  
    }  
}
```

Output:

```
1xxx2xxx4xxx8xxx16xxx  
1xxx2xxx4xxx8xxx  
1xxx2xxx4xxx  
1xxx2xxx  
1xxx
```

Break-Continue

After the **break** statement, which statement is executed? What is the output?

```
public class Test {  
    public static void main(String[] args) {  
        for (int i = 1; i < 4; i++) {  
            for (int j = 1; j < 4; j++) {  
                if (i * j > 2)  
                    break;  
                System.out.println("i * j is: " + i * j);  
            }  
            System.out.println("i is: " + i);  
        }  
    }  
}
```

Output:

```
i * j is: 1  
i * j is: 2  
i is: 1  
i * j is: 2  
i is: 2  
i is: 3
```

Break-Continue

After the **continue** statement, which statement is executed? What is the output?

```
public class Test {  
    public static void main(String[] args) {  
        for (int i = 1; i < 4; i++) {  
            for (int j = 1; j < 4; j++) {  
                if (i * j > 2)  
                    continue;  
                System.out.println("i * j is: " + i * j);  
            }  
            System.out.println("i is: " + i);  
        }  
    }  
}
```

Output:

```
i * j is: 1  
i * j is: 2  
i is: 1  
i * j is: 2  
i is: 2  
i is: 3
```