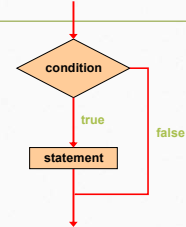


## IF statements

v103

### Logic of an if statement



*if* statement syntax:

*if* is a Java reserved word

The *condition* must be a boolean expression. It must evaluate to either true or false.

```
if ( condition )
    statement;
```

If the *condition* is true, the *statement* is executed.  
If it is false, the *statement* is skipped.

### Boolean Expressions

higher precedence	==	{ equal to
	!=	{ not equal to
	<	less than
	>	greater than
	<=	less than or equal to
	>=	greater than or equal to

Note the difference between the equality operator (==) and the assignment operator (=)

### IF Example

```
max = -999;
if (sum > max)
    max = sum;

System.out.println("The largest number is " + max);
```

### Logical Operators

Comparisons can also use the following *logical operators*:

! Logical NOT  
&& Logical AND  
|| Logical OR

## Precedence

//NOT has higher precedence than logical AND and OR

```
if (index < max && !found)
    System.out.println ("keep going...");
```

All logical operators (ie, && and ||) have lower precedence than the relational operators (eg < > != ==), which have lower precedence than arithmetic operators (eg + \* - /).

## Truth Tables

a	b	a && b	a    b
true	true	true	true
true	false	false	true
false	true	false	true
false	false	false	false

## if else

```
if ( condition )
    statement1; //if the condition is TRUE, then statement1 is executed.
else
    statement2; //otherwise, statement2 is executed
```

## if else if else

```
if (percent >= 90.0)
    letter = "A";
else if (percent >= 80.0)
    letter = "B";
else if (percent >= 70.0)
    letter = "C";
else if (percent >= 50.0)
    letter = "D";
else
    letter = "F";
```

## Comparing Strings

When comparing strings, use the method: `.equals()`

```
if (secret == guess)
if (guess.equals(secret) //returns true or false
```

```
import java.util.Scanner;

/*
 * Comparing String Example
 *
 * Author: Dave
 * Version: v1.0
 */
public class StringCompare
{
    public static void main (String[] args)
    {
        //main

        String secret = "Mohawk";
        String guess = "";
        Scanner keyboard = new Scanner(System.in);

        System.out.print("Try and guess the secret word > ");
        guess = keyboard.nextLine();

        if ( guess.equals(secret) )
            System.out.println("Good guess, you're right!");
        else
            System.out.println("Nope, guess again.");
    }
}
```

