



Conditional Statements

Programming in Java

Flow of Control

1. Sequence:

- Unless specified otherwise, the order of statement execution is linear/sequential
- One statement after the other, in sequence

2. Conditional statements:

- A statement may or may not be executed depending on some condition

3. Repetition statements (loops):

- A statement is executed over and over, repetitively, until some condition becomes true or false
- These decisions are based on a **Boolean expression** (also called a *condition*) that evaluates to true or false
- The order of statement execution is called the **flow of control**

Contents

1. The **if** statement
2. The **if-else** statement
3. Relations Operators
4. Logical operators
5. Compound statements
6. Nested **if** statements
7. The **switch** statement
8. The conditional operator

Conditional statements

- Let us choose which statement will be executed next
- Sometimes called ***selection statements***
- Java has 3 conditional statements:
 - the **if** statement
 - the **if-else** statement
 - the **switch** statement



Flowchart

- A flowchart is a graphical way of representing an algorithm.
- Use the following symbols:



Assignment



Start/end



Input/Output



Flow control



Decision



Connector

1- The **if** statement

- syntax:

if is a Java
reserved word

The **condition** is a Boolean expression.
(evaluates to either true or false)

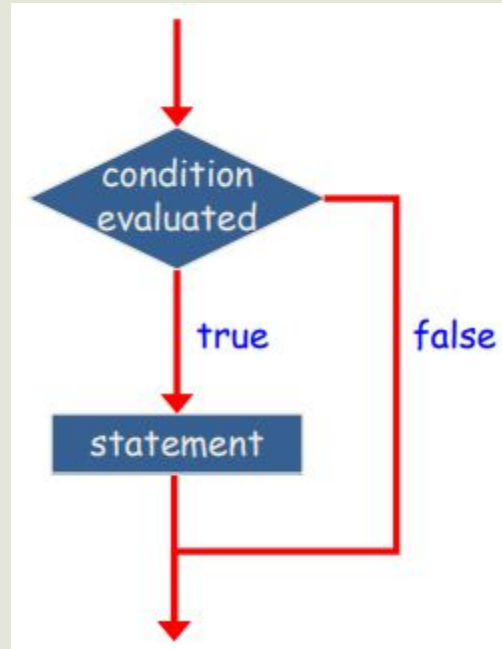


```
if ( condition )  
    statement;
```

The diagram shows the syntax of an if statement enclosed in a red rectangular box. Three red arrows point to the components of the syntax: one from the text 'if is a Java reserved word' to the word 'if', one from the text 'The condition is a Boolean expression...' to the word 'condition', and one from the text 'If the condition is true...' to the word 'statement'.

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

1- The **if** statement: Logic of an if statement



1- The **if** statement: Example (Age.java)

```
System.out.print("Enter the sum: ");  
int sum = myKeyboard.nextInt();  
int delta = 0;  
  
if (sum >= 100)  
    delta = 5;  
  
System.out.println("Delta is " + delta);
```

Output

1- The **if** statement: Example (Age.java)

```
final int MINOR = 18;  
System.out.print("Enter your age: ");  
int age = myKeyboard.nextInt();  
  
if (age < MINOR)  
    System.out.println("wonderful");  
System.out.println("Oh well!");
```

Output

1- The **if** statement: Exercises

- Write a Java program to get a number from the user and print whether it is positive or negative.
- Write a Java program to solve quadratic equations by using if statements.
- Write a Java program that takes three numbers from the user and print the greatest number.