Conditional Statements

Programming in Java

Contents

1. The **if** statement

2. The **if-else** statement

3. Relations Operators

4. Logical operators

5. Compound statements

6. Nested **if** statements
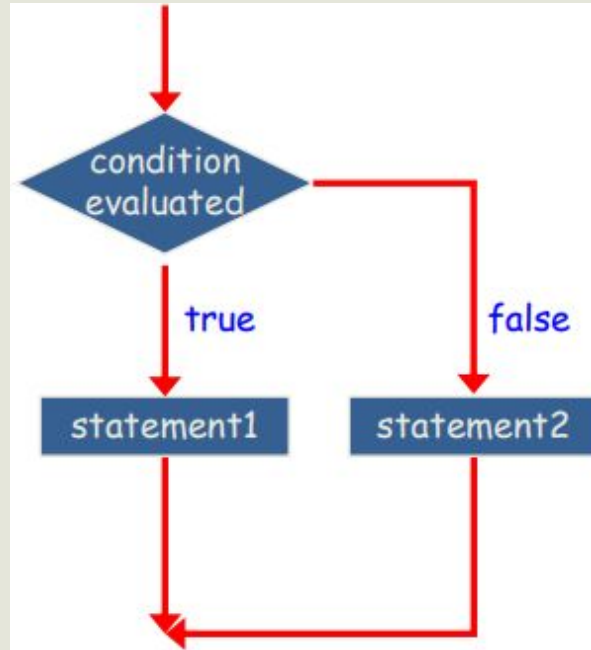
7. The **switch** statement

8. The conditional operator

2- The **if-else** statement

- An else clause can be added to an if statement to make an if-else

    statement

```
if ( condition )
    statement1;
else
    statement2;
```

- - If the condition is true, *statement1* is executed

    - If the condition is false, *statement2* is executed

    - One or the other will be executed, but not both

4

2- The **if-else** statement: Example (Wages.java)

```java
final double RATE = 10.0;   // regular pay rate
final int STANDARD = 40;    // standard hours
double pay = 0;
System.out.print("Number of hours worked: ");
int hours = myKeyboard.nextInt();

// Pay overtime at "time and a half"
if (hours > STANDARD)
    pay = STANDARD*RATE + (hours-STANDARD) * (RATE*1.5);
else
    pay = hours * RATE;
System.out.println("Pay: " + pay);
```

Output

2- The **if-else** statement: Exercise

```
int speed = 55;
if (speed > 50)
   System.out.println("Going too fast - School zone");
if (speed > 30)
   System.out.println("Going at the right speed");
else
   System.out.println("You can go a bit faster");
```

A. Going too fast - School zone

B. Going at the right speed

C. You can go a bit faster

D. Neither of the above choices

2- The **if-else** statement: Exercise

```
int speed = 25;
if (speed > 50)
    System.out.println("Going too fast - School zone");
if (speed > 30)
    System.out.println("Going at the right speed");
else
    System.out.println("You can go a bit faster");
```

Output

```
int num = 4;
if (num > 5)
System.out.println("line A");
else
System.out.println("line B");
if (num < 10)
System.out.println("line C");
System.out.println("line D");
```

See how much harder it is to read if not indented properly ...

A.   line A
      line B
      line C
      line D

B.   line A
      line C
      line D

C.   line B
      line C
      line D

D.   line B
      line C

E.   line B
      line D

8

```
int someInt = 10;
if (someInt > 30)
    System.out.println("Moe ");
    System.out.print("Larry ")
System.out.print("Curly");
```

1. Curly

2. Larry Curly

3. Moe
   Larry Curly

4. no output; there is a compile-time error

5. no output; there is a run-time error

2- The **if-else** statement: Exercise

```
int someInt = 10;
if (someInt > 30)
    System.out.println("Moe ");
    System.out.print("Larry ");
System.out.print("Curly");
```

1. Curly

2. Larry Curly

3. Moe
   Larry Curly

4. no output;
   there is a
   compile-time
   error

5. no output;
   there is a run-
   time error

2- The **if-else** statement: Exercises

- Write a Java program that reads a floating-point number and prints "zero" if the number is zero. Otherwise, print "positive" or "negative". Add "small" if the absolute value of the number is less than 1, or "large" if it exceeds 1,000,000.

- Write a Java program that reads in two floating-point numbers and tests whether they are the same up to three decimal places.

- Write a Java program to find the number of days in a month.