

# Java - If-Else

William Bombardelli

Schweizerschule Mexiko, Ciudad de México, Mexico  
<https://github.com/wbombardellis/java-unterricht>

30 October 2019

# Organization

1 If-Else

2 Summary

# If

- Write a program that reads a double value and prints if it is positive.

# If

- Write a program that reads a double value and prints if it is positive.

```
if (a > 0) {  
    System.out.println(a + " is positive.");  
}
```

# If-Else

- Write a program that reads a double value and tells whether it is positive or not.

```
if (a > 0) {  
    System.out.println(a + " is positive.");  
} else {  
    System.out.println(a + " is not positive.");  
}
```

# If-Else-Else

- Write a program that reads a double value and tells whether it is positive, negative or zero.

```
if (a > 0) {  
    System.out.println(a + " is positive.");  
} else if (a < 0) {  
    System.out.println(a + " is negative.");  
} else {  
    System.out.println(a + " is zero.");  
}
```

# Exercises

- 1 Write a program that greets the user correctly according to the current time. The rule is the following:
  - If current time is before 12a.m., then greet him/her with “good morning”.
  - If current time is between 12a.m. and 16p.m., then greet him/her with “good afternoon”.
  - If current time is after 16p.m, then greet him/her with “good evening”.

# Exercises

- 2 Extend your assignment's program further using If or If-Else.



# If-Else-Else Grammar Rules

```
if (⟨Boolean condition⟩) {  
    ...  
} [else if (⟨Boolean condition⟩) {  
    ...  
}] [else {  
    ...  
}]
```

# Exercises

- 1 Implement the following algorithm for finding real solutions of a quadratic polynomial  $ax^2 + bx + c$  in Java.<sup>1</sup>
- Read  $a$ ,  $b$  and  $c$ .
  - Calculate  $\Delta := b^2 - 4ac$
  - If  $\Delta \geq 0$  then print solutions  $x_1$  and  $x_2$ 
    - $x_1 = \frac{-b+\sqrt{\Delta}}{2a}$ ,  $x_2 = \frac{-b-\sqrt{\Delta}}{2a}$
  - Otherwise print that there is no real solutions for this polynomial.

---

<sup>1</sup>Assume  $a$  is not zero.

# Exercises

- 2 Write a program that gets a positive integer number as input and writes whether that number is even or odd.
- Tip 1: An number  $n \in \mathbb{N}$  is even if, and only if,  $n$  divided by 2 gives remainder 0.
  - Tip 2: In Java  $a \% b$  results in the remainder of the whole division of  $a$  by  $b$ .
  - Also: Ensure that the input is positive. If it is not, then reject user's input.

# Exercises

- 3 Write a program that reads two numbers and a character representing the operation to perform over those numbers, and print the result accordingly. Example for an execution:

Please provide the first number:

2

Please provide the operation:

+

Please provide the second number:

3

The result of 2 + 3 is 5

# Summary

- IF-Else allows you to control the flow of your program.
- Next Lesson: Boolean Algebra

# References

- W3C Tutorial:
  - [https://www.w3schools.com/java/java\\_conditions.asp](https://www.w3schools.com/java/java_conditions.asp)
- Exercises:
  - <https://www.w3schools.com/java/exercise.asp>
  - Java If...Else