

Java

Controll Statements and Functions

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Java Kurs

16. Mai 2018



Overview

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1. Recalling last session

2. Control Statements

- if
- for
- while

Conclusion

Datatypes

- int, long
- float, double
- String

Hello World example Switch variables example

Control Statements

- if, else, else if
- for
- while

If Then Else

```
1 if(condition) {  
2     // do something if condition is true  
3 } else if(another condition){  
4     // do if "else if" condition is true  
5 } else {  
6     // otherwise do this  
7 }
```

If Then Else example

```
1 public class IteExample {  
2  
3     public static void main(String[] args) {  
4         int myNumber = 5;  
5  
6         if(myNumber == 3) {  
7             System.out.println("Strange number");  
8         } else if(myNumber == 2) {  
9             System.out.println("Unreachable code");  
10        } else {  
11            System.out.println("Will be printed");  
12        }  
13    }  
14  
15 }
```

Conditions?

How to compare things:

- `==` Equal
- `!=` Not Equal
- `>` Greater Than
- `>=` Greater or Equal than

Note #1: Those statements return an boolean value

Note #2: You can concatenate multiple conditions with `&&` (AND) or `||` (OR)

for

```
1 for(initial value, condition, change) {  
2     // do code while condition is true  
3 }
```


for example

```
1 public class ForExample {  
2  
3     public static void main(String[] args) {  
4         for(int i = 0; i <= 10; i++) {  
5             System.out.print("na ");  
6         }  
7         System.out.println("BATMAN!");  
8     }  
9  
10 }
```

Another for example

```
1 public class AnotherForExample {  
2  
3     public static void main(String[] args) {  
4         for(int i = 0; i <= 10; i++) {  
5             System.out.println(i);  
6         }  
7     }  
8 }  
9
```

while

```
1 while(condition) {  
2     // do code while condition is true  
3 }
```

while example

```
1 public class WhileExample {  
2  
3     public static void main(String[] args) {  
4         int a = 0;  
5         while(a <= 10) {  
6             System.out.println(a);  
7             a++; // Otherwise you would get an endless loop  
8         }  
9     }  
10  
11 }
```

Functions

```
1 Type func_name (type parameters, ...) {  
2     function statements;  
3     ...  
4     return value;  
5 }  
6
```

Functions example

```
1 int add(int a, int b) {  
2     int c = a + b;  
3     System.out.println(c);  
4     return c;  
5 }  
6
```

Functions example

```
1 int add(int a, int b) {  
2     return a+b;  
3 }  
4
```

Well known functions example

You all have written that before:

```
1 public static void main(String[] args) {  
2     ...  
3 }  
4
```


Exercises

1. Display the n terms of odd natural number.

Example

Input: 10, Output: 1, 3, 5, 7, 9

2. Find the sum and average of 3 numbers.

Example

Input: 6, 4, 3 Output: 13 and 4,3

3. Find the smallest number among three numbers.

Example

Input: 6, 4, 3 Output: 3

Adv. Exercises

4. Display the pattern like a diamond.

Example

```
      *
     ***
    *****
   ********
  **********
 **********
 **********
 **********
  **********
   ********
    *****
     ***
      *
```

Adv. Exercise

5. Find all primes up to n.

Example

Input: 11 Output: 2, 3, 5, 7, 11