

Homework: Introduction to Java

This document defines homework assignments from the ["Java Basics" Course @ Software University](#). Please submit as homework a single **zip / rar / 7z** archive holding the solutions (source code) of all below described problems.

Problem 1. Play with IntelliJ IDEA

Install **Java 8** and **IntelliJ IDEA**. Start IntelliJ and play with it. Try to write some Java code. You do not have to submit anything in your homework for this problem.

Problem 2. Empty Java Project in IntelliJ

Create a new **Java project in IntelliJ** called "**Intro-Java-Homework**". This project will hold all your homework files (Java source code). For each problem (exercise), add a separate Java class with self-descriptive name like "**AssignVariables.java**" or "**PrintCharacters.java**". You do not have to submit anything in your homework for this problem.

Problem 3. Assign Variables

Find suitable types for variables. You are given the following **types**: **byte**, **short**, **int**, **long**, **char**, **boolean**, **float**, **double**, and **String**. Assign the following values to them **false**, "**Palo Alto, CA**", **32767**, **2000000000**, **0.1234567891011**, **0.5f**, **919827112351L**, **127**, '**c**'. Try to assign **32768** to short and see what happens.

Problem 4. Print Characters

Print the characters from 'a' to 'z' on the console on a single line, separated by a space. Use a for-loop. **Note**: you can directly declare and increment **char** in the for-loop. **for (char c = 'a'; ...)**

| Output |
|---|
| a b c d e f g h i j k l m n o p q r s t u v w x y z |

Problem 5. * Print a Character Triangle

Create a triangle of characters, based on input. Learn about **java.util.Scanner** and **Integer.parseInt ()**. Test your program with integers up to **26**. Think why.

| Input | Ouput |
|-------|---|
| 5 | a a b a b c a b c d a b c d e a b c d a b c a b a |

| Input | Ouput |
|-------|-------------------------------|
| 3 | a a b a b c a b a |

Problem 6. Sum numbers from 1 to N

Create a Java program that reads a number **N** from the console and calculates the sum of all numbers from 1 to **N** (inclusive).

| Input | Output | Input | Output | Input | Output |
|-------|--------|-------|--------|-------|--------|
| 12 | 78 | 1 | 1 | 5 | 15 |

Problem 7. *Ghetto Numeral System

Write a program that converts the decimal number system to the ghetto numeral system. In the ghetto, numbers are represented as following:

- 0 – Gee
- 1 – Bro
- 2 – Zuz
- 3 – Ma
- 4 – Duh
- 5 - Yo
- 6 – Dis
- 7 – Hood
- 8 – Jam
- 9 – Mack

| Input | Output |
|-------|---------------|
| 6781 | DisHoodJamBro |
| 9374 | MackMaHoodDuh |
| 533 | YoMaMa |
| 102 | BroGeeZuz |

Problem 8. **Get Average

Create a method that finds the average of three numbers. Read in internet about java methods. Check the naming conventions. Invoke your method and test it. Format the output to two digits after the decimal separator. The placeholder is **%2f**

| a | b | c | Average |
|-------|-----|------|---------|
| 1.5 | 2.5 | 3.8 | 2.60 |
| 12 | 13 | 25 | 16.67 |
| 0.005 | 0.5 | 0.55 | 0.35 |
| 0 | 0 | 2 | 0.67 |