

Tutorial 1

Introduction

The first tutorial introduces students basic Java programs. During this tutorial, students will know how to:

- Download and Install **Eclipse**
- Create, compile and execute simple Java programs (example ...)
- Work with array and generate random numbers in Java.
- Work with conditional statements.
- Use the function `System.currentTimeMillis()` to estimate the running time of a program.

Examples

1. Example 01

Write a Java program that asks user to input two floating-point numbers, then round them to three decimal places and checks whether they are the same.

2. Example 02

This example demonstrates how to work with array and `java.util.Random`

(<http://docs.oracle.com/javase/7/docs/api/java/util/Random.html>). The program asks user to input an integer N using the keyboard, then the program will generate N random integers, and stores them using an array. The list of integers will be displayed in the console interface. The program code of this example is Ex02 class.

3. Example 03

This example implements four different algorithms for the Maximum Subsequence Sum problem that is introduced in the lecture section. The function `System.currentTimeMillis()` ([http://docs.oracle.com/javase/7/docs/api/java/lang/System.html#currentTimeMillis\(\)](http://docs.oracle.com/javase/7/docs/api/java/lang/System.html#currentTimeMillis())) is used to estimate the running time of each algorithm. The program code of this example is MaxSubSum class.

Exercises

1. Exercise 1

Write a program that asks user to input a name (a string may contains characters and spaces) using the keyboard. Then the program should print out how many characters that the name has (exclusive the spaces).

2. Exercise 2

Write a program that asks user to input a list of N integers using the keyboard. Then the program should print out the maximum integer of the list.

3. Exercise 3

Write a program that asks user to input a list of N integers using the keyboard. Then the program

should sort the list in ascending order, and print out the result.

4. Exercise 4

Write a program that asks user to input a list of N names using the keyboard, then user continues inputting a name for searching. The program should print out the position of this name in the list. In case the name doesn't appear in the list, the program should print out value -1.