

## CET 325 - Week 1 – Tutorial A & B

In this tutorial, you should familiarise with Java. Use an editor of your choice (Notepad++, Atom, ...) to write your code, and the command line of your OS to compile and run your programs.

Create a folder “CET325” in your drive H:

Inside “CET325” create a subfolder “WK1” (every week you will create a new folder WK<sub>n</sub>, where n is the week number)

If you need to create subfolders in WK<sub>n</sub>, DO NOT USE ANY SPACE. Some tools hate spaces in paths!

The source code (Only ONE ZIP file) should be uploaded on SunSPACE before the first lecture of next week. (4<sup>th</sup> October)

On SunSpace: Tutorial DropBox -> Tutorial - Week 1

Java Documentation: <https://docs.oracle.com/javase/tutorial/java/>

### Exercise 1

Compile and run the HelloWorld program. Answer few short questions on SunSpace (Tutorial DropBox -> Quiz Week 1)

Hints:

- <https://docs.oracle.com/javase/tutorial/getStarted/cupojava/win32.html>
- <https://docs.oracle.com/javase/tutorial/getStarted/problems/index.html>

### Exercise 2

Write a Java program Wk1Ex2 that reads three input arguments.

The arguments are passed from the command line to the main method - main (String args[])

Example: Wk1Ex2 e 3 hello

- 1) arg1: the lowercase letter “e” or “d”
- 2) arg2: an integer number between 1 and 26
- 3) arg3: a not null string. Only lowercase letters “a-z” are allowed. No spaces too.

Invalid parameters should be rejected and the program must terminate with an error message as soon as a parameter is invalid

The error message should be:

argX + “ is not a valid ” + {first, second, third} + “ parameter” + newline ++ “valid parameters are: ” + ...)

If all parameter are valid, the program print a message “Thank you. All parameters are valid: ” + arg 1 + “ ” + arg2 + “ ” + arg3

### Exercise 3

Copy the program you just developed in Exercise 2 to Wk1Ex3.

Extend the program in the following way

Define a class C with a member "s" and two methods "d" and "e"

The constructor of C initializes s with the value of arg2

The method d is called if arg1 is "d"

The method e is called if arg1 is "e"

The methods d and e have one parameter of type String and return a String

The d method shifts the input string arg3 of arg2 position right.

Es. Par3 "abc" arg2=3 -> "def"

Es. Par3 "xyz" arg2=3 -> "abc"

The d method shifts the input string arg3 of arg2 position left.

Es. Par3 "def" arg2=3 -> "abc"

Es. Par3 "abc" arg2=3 -> "xyz"

#### Exercise 4

Write a program Wk1Ex4 that implements the following Class diagram. The program should demonstrate the usage of all classes and their methods and output accordingly (use the toString() method)

