



## Computer Science 2A

### Practical Assignment 00

Assignment date:

2020-02-04

Deadline

2020-02-04 16h30

Marks: 30

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This practical assignment must be uploaded to [eve.uj.ac.za](http://eve.uj.ac.za) **before** 2020-02-04 16h30. Late or incorrect submissions **will not be accepted**, and will therefore not be marked. You are **not allowed to collaborate** with any other student.

Good coding practices include a [proper coding convention](#) and a good use of [documentation](#). Marks will be deducted if these are not present. Every submission **must** include a batch file.

The reminder page includes details for submission. Please ensure that **ALL** submissions follow the guidelines. The reminder page can be found on the last page of this practical.

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This practical aims to familiarise you basic setup and usage of the Java Development Kit (JDK).

In order to use the Java tools from the command line you will need to alter the following system environmental variable:

- **PATH** - enables the operating system to find Java (and other) executables.

All practical submissions must follow submission guidelines. Refer to the reminder page to create the necessary folder structure. Create a *Hello World* Java class with a **main** method and place the class into the src folder. Complete the following tasks (*which must be placed in a batch file*):

1. Create command line variables for the required folders (relative to the main project folder).
2. Add the JDK bin folder to the **PATH**.
3. Use *javac* to compile the code found in the **src** folder and output to the **bin** folder. *Hint: use the variables you created.*
4. Use *java* to run the code in the **bin** folder.
5. Use *javap* to decompile the class file in the **bin** folder and save the output to a file called *ByteCode.txt*. The *ByteCode.txt* file should be placed in the **docs** folder.

## Bonus

Create a *separate project* and place your *Hello World* program into the `acsse.csc2a` package. Submit the bonus project as a separate zipfile with the practical number as `P00_B`.

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## Marksheet

- |                              |              |
|------------------------------|--------------|
| 1. Submission                |              |
| (a) Correct naming           | [01]         |
| (b) Correct folders          | [01]         |
| (c) Correct files in folders | [01]         |
| 2. Batch file                |              |
| (a) Variables                | [03]         |
| (b) JDK in PATH              | [03]         |
| (c) Compilation command      | [02]         |
| (d) Execution command        | [02]         |
| (e) Bytecode command         | [02]         |
| 3. Correct execution         | [15]         |
| 4. Packages                  | [05 (bonus)] |
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## NB

Submissions which **do not compile** will be capped at 40%!

Practical marks are awarded subject to the student's ability to explain the concepts and decisions made in preparing the practical assignment solution. (Inability to explain code = inability to be given marks.)

Execution marks are awarded for a correctly functioning application and not for having related code.

# Reminder

Your submission must follow the naming convention below.

SURNAME\_INITIALS\_STUDENTNUMBER\_SUBJECTCODE\_YEAR\_PRACTICALNUMBER

## Example

<b>Surname</b>	Berners-Lee	<b>Module Code</b>	CSC02A2
<b>Initials</b>	TJ	<b>Current Year</b>	2020
<b>Student number</b>	209912345	<b>Practical number</b>	P00

Berners-Lee\_TJ\_209912345\_CSC02A2\_2020\_P00

Your submission must include the following folders:

Folder	State	Purpose
bin	<i>Required</i>	Should be empty at submission but will contain runnable binaries when your submission is compiled.
docs	<i>Required</i>	Contains the batch file to compile your solution, UML diagrams, and any additional documentation files. Do not include generated JavaDoc. All files must be in <b>PDF</b> format. Your details must be included at the top of any <b>PDF</b> files submitted.
src	<i>Required</i>	Contains all relevant source code. Source code must be placed in relevant sub-packages! Your details must be included at the top of the source code.
data	<i>Optional</i>	Contains all data files needed to run your solution.
lib	<i>Optional</i>	Contains all libraries needed to compile and run your solution.

## NB

Every submission **must** include a batch file that contains commands which will:

- compile your Java application source code.
- compile the associated application JavaDoc.
- run the application.

**Do not** include generated JavaDoc in your submission. All of the classes/methods which were created/updated need to have JavaDoc comments.