1   Hello Java

The objective of this exercise is to become acquainted with the development environment Eclipse and with the autograder DOM Judge used in subsequent assignments.

Any updated information regarding exercises or the lecture will always be aviable via the website http://lec.inf.ethz.ch/baug/informatik2/2016/, make sure to check it regularly.

1.1   Installation

You roughly need 250MB of free space on your hard drive. Below you will find the information on how to install the Eclipse IDE for different operating systems.

Debian Linux:

1. Open a Terminal

   ```
   su
   apt-get update
   apt-get install eclipse
   exit
   eclipse
   ```

Ubuntu Linux:

1. Open a Terminal *(Ctrl+Alt+T)*

   ```
   sudo apt-get update
   sudo apt-get install eclipse
   eclipse
   ```

Mac OS-X: You can find a nice and detailed description here:
www.cs.dartmouth.edu/~cs5/install/eclipse-osx/

Windows: You can find a nice and detailed description here:
www.cs.dartmouth.edu/~cs5/install/eclipse-win/

1.2   Eclipse

1. You can use the default settings for your workspace folder.

2. Close the tab "Welcome to Eclipse".

3. Create a new java project:

   - `File; New; Java-Project.`
   - Project name: `HelloWorld` (z. B.)
   - `Finish.`

4. If your java perspective hasn't been opened yet, eclipse will ask you if you would like to open this perspective. **Answer this question with "Yes"**!

5. Now your new project appears in the project explorer.

6. The next step is to add a java class to the project:

   - Right click on the project (HelloWorld): `New; Class`
   - Name: `Test` (z. B.)
   - Check the following settings:
     - ☑ `public static void main(String[] args)`
     - ☑ `Generate comments`
   - `Finish`

1.3   Hello World

Add the following line to your program:

```
System.out.println("Hello World!");
```

The program now looks like this:

```
class Main{
    public static void main(String[] args)
    {
        System.out.println("Hello World!");
    }
}
```

You can run it using Ctrl+F11 or the big green play button. Below in the tab "Console" the output "Hello World!" should appear.

Explanations:

- `public class HelloWorld`
  Java is organized in classes. Public classes are always stored in their dedicated file. The file is named the same as the class.

- `public static void main(String[] args)`
  A java program comprises at least one public class. Somewhere execution needs to start. This starting point is defined as the public static method main.

- `System.out.println(...)`
  Use this command whenever you wish to make any console output.

1.4 Submitting the Homework

For this lecture we use an automated grading system called "Judge" provided by ETH. To use it follow the step listed below.

- Open https://challenge.inf.ethz.ch/team/?cid=8 in a Web Browser and login with your student account.

- On the next site you will be asked for an "Enrollment Key" - enter "informatik" as the key.

- Once you subscribed to the lecture you can open the following submission page link for Hello World program:
https://challenge.inf.ethz.ch/team/websubmit.php?problem=IB16010

- On the submission web page you can either upload your HelloWorld.java File that you created or write the program text directly.

- Note that the judge only accepts programs containing a main class named "Main" which may not be declared public.

- After submission the judge will take short time (several seconds) to run your program and will soon report if the program run was successful.

- Check the end of this document to see a small walk through through the submission process.

- Be aware that he result has to be exactly what is expected - e.g. if your program prints to many spaces in the output you will get the "wrong answer" result - this might particularly happen if you just copy paste from the pdf. This might introduce additional spaces in your copied text.

1.5 Your own Hello

Your next task is to modify the given program to read a String from the input and print it to the Screen. To do so edit your program to look as follows:

```java
import java.util.Scanner;

class Main{

    public static void main(String[] args)
    {
        Scanner input = new Scanner(System.in);
        String name = input.next();
        System.out.println( ? );
    }
}
```

We import the Scanner library to allow us to read a string that a user could provide to the program. This input string is saved in the variable "name" and it is your task to **replace the question mark in the code above, such that the output of the program is "Hello " followed by the input string, followed by an exclamation mark.**

For example the input "Fritz" should yield "Hello Fritz!".

Submitting: Use the following link: https://challenge.inf.ethz.ch/team/websubmit.php?problem=IB16011 to submit and check your hello program.

Figure 1: The submission screen.

Figure 2: Waiting for the judge to grade (takes up to a minute) - refresh the page to see when it is done

Figure 3: Once you get your result you can klick on the status to get further details

Figure 4: In case the compilation failed you can see the error message in the details. (in this case I forgot a letter in the println command)

Submission details

Problem: Hello World [IB1500]
Time limit: 10s
Submitted: 23:34
Language: Java

Result: COMPILER-ERROR

Results for each test-set

Name	Result	Points	CPU Time
1 HelloWorld0	COMPILER-ERROR	0	0s

Compilation output

```
source.java:4: cannot find symbol
symbol  : method printl(java.lang.String)
location: class java.io.PrintStream
System .out. printl (" Hello   World !");
                ^
1 error
```

Compilation failed

Figure 5: If the program compiles, but does not compute the right thing, you will get the "wrong result" message. Be aware that that might happen if you just copy and paste from the pdf - as this might introduce additional spaces in the text. It needs to be exactly "Hello World!")

submissions   scoreboard   problem overview   logout

Submission details

Problem: Hello World [IB1500]
Time limit: 10s
Submitted: 23:37
Language: Java

Result: WRONG-ANSWER

Results for each test-set

Name	Result	Points	CPU Time
1 HelloWorld0	WRONG-ANSWER	0	0.021s

Compilation output

```
adding: Main.class (deflated 31%)
```

Compilation successful