Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Parallel Programming
Assignment 1: Introduction to Parallel Programming
Spring Semester 2017

Assigned on: **22.02.2017** Due by: **-**

Overview

The purpose of this exercise is to introduce you to the development environment that you are going to use for this course and to start learning to use the Java programming language.

In particular, in this exercise you will:

- install the Eclipse IDE, a multi purpose development environment that will be used throughout this course;
- create a simple project in the Eclipse IDE;
- learn how the exercise submission system for this course works;
- write a Java class;

This exercise has become quite comprehensive because it also comprises all details required to set-up your development environment and submit exercises. So, don't be scared, it is actually not that bad!

Exercise 1 – Set-up

The Eclipse IDE is one of the most popular integrated development environments (IDEs) for Java programming. It's purpose is to make the development process for a Java programmer as easy as possible. Although the variety of features Eclipse offers might seem overly complex at the beginning, especially for just writing simple programs, you will soon much appreciate the features the IDE has to support you during programming.

In this section we will give several references for getting started with Eclipse and Java. The steps you should follow are the following:

- **Setup Java** The easiest way is to navigate to http://www.oracle.com/technetwork/java/javase/downloads/java-archive-downloads-javase7-521261.html and follow the instructions.
- **Setting up Eclipse** To do this, go to the following link and download the latest version of Eclipse for your operating system:
  http://www.eclipse.org/downloads/packages/eclipse-ide-java-developers/mars2
- **Start Eclipse** At startup, Eclipse asks for the directory where all your data will be stored (workspace).

- **Create an empty Java Project** Your project should be named **assignment1**. A guide which shows how to create a Java project with Eclipse is here:
  http://ait.inf.ethz.ch/teaching/courses/2014-SS-Parallel-Programming/helpFiles/eclipseCreateProject.html
- **Create a Java Class** Your class should be named **HelloWorld**, the package should be named **assignment1**. In order to create a Java class you can follow this guide:
  http://ait.inf.ethz.ch/teaching/courses/2014-SS-Parallel-Programming/helpFiles/eclipseCreateClass.html
- **Hello World Class** Copy/Paste the code below into your new class

  File: HelloWorld.java

```
package assignment1;

/* This is a class */
public class HelloWorld {

    /*
     * This is the main method.
     * This is the entry point for your program.
     */
    public static void main(String[] arguments) {

        /* Output Hello World to the console */
        System.out.println("Hello World");
    }
}
```

- **Running your program** In order to run your new Java Application with Eclipse, right click the "HelloWorld" class from the package explorer, click "Run As" and select "Java Application".

Deliverables: You need to submit this exercise as described in the Submission Section.

Submission

In order for us to grade your exercises and give you feedback, you need to submit your code and reports by using our submission system. This step will be the same for all of the subsequent exercises, but we will explain it in detail here so you can familiarize yourself with the system.

- **Install Subversive:** The submission tool that is used in this project is Subversive plug-in for Eclipse. To install this plug-in please follow these steps *

  Phase 1

  - In Eclipse go to **Help - Eclipse marketplace**. Then, in the **Find** text box write Subversive and click on **Go**.
  - Click on the Install button in the bottom right corner, next to the **Subversive - SVN Team Provider** listing.
  - In the next window select only the parts which are marked as "required" , then continue by clicking the **Confirm** Button.
  - If you get a message box that tells you: The following solutions are not available: Subversive SVN Team Provider, click Yes to proceed with the installation anyways (Eclipse will install a more recent Subversive version).

*The steps are adapted from this link http://www.eclipse.org/subversive/installation-instructions.php

- Then you have to state that you read the License Agreement and start the installation by clicking **Finish**.
- After installation Eclipse will ask you to restart itself. You can confirm that by clicking **Yes**.

Phase 2 Installation of Subversive SVN Connectors

- During the Eclipse restart, it may automatically ask you to install a Subversive connector. Select **SVNKit Version 1.8.14** and install it. Otherwise proceed with the check-in step.
- After installation it asks you to restart Eclipse again.

- **Set-up your project for check-in.**
  - Right click your created project called **assignment1**.
    The name of the subfolder (i.e., your project name in Eclipse) - **assignment1** - is very important for the automatic evaluation of the exercise. In case your project is not called assignment1, right-click on the project, go to Refactor, then click **Rename** and rename it to **assignment1**.
  - In the menu go to **Team**, then click **Share Project**.
  - In the dialog that now appears, select **SVN** as a repository type, then click **Next**.
  - If you have not already installed the Subversive SVN Connector. Eclipse will now ask you to install one. Proceed as described in Phase 2 above and then come back here afterwards.
  - A new dialog appears, now fill in for the URL field:
    https://svn.inf.ethz.ch/svn/vechev/pprog17/students/NETHZ_USERNAME
  - In the username and password fields, fill in your nethz username and password.
  - Click **Finish**. If you get an **svn: E160013** or **svn: E170000** error here, see below on how to handle it!
  - A dialog appears where you commit your project (i.e., upload it to the server) for the first time. You need to enter a comment that describes your work (i.e., Initial commit). Then, click on **Ok**.

- **Commit changes in your project**
  - Now that your project is connected with the SVN server, you need to make sure that every time you change your code or your report, at the end you submit it to the SVN server as well.
  - Right click your project called **assignment1**.
  - In the menu go to **Team**, then click **Commit**.
  - In the Comment field, enter a comment that summarizes your changes.
  - Then, click on **Ok**.

In rare cases, you might get an error like this:

```
svn: E160013: URL <location> non-existent in that revision
```

or

```
svn: E170000: URL <location> doesn't exist
```

or

```
svn: E170001: OPTIONS of <location>: 403 Forbidden
```

It means that no repository was created for your username yet. If that is the case, please contact your TA and let them know. They will be able to create the repository location for you. After that, you should be able to submit your work by following the instructions above.