

# Java Language

## Engi- 5895 Lab 1

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## What's Eclipse?

- It is a free software / open source platform-independent software framework for delivering what the project calls "rich-client applications". Eclipse is also a community of users, constantly extending the covered application areas.
- Eclipse was originally developed by IBM as the successor of its VisualAge family of tools.
- Eclipse is now managed by the Eclipse Foundation, an independent not-for-profit consortium of software industry vendors.

## Installing Eclipse

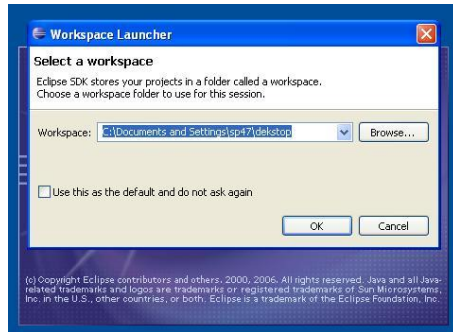
- Download free of charge from [www.eclipse.org](http://www.eclipse.org)
- Eclipse is installed by default in all of the on-campus computers.

## Installing eclipse

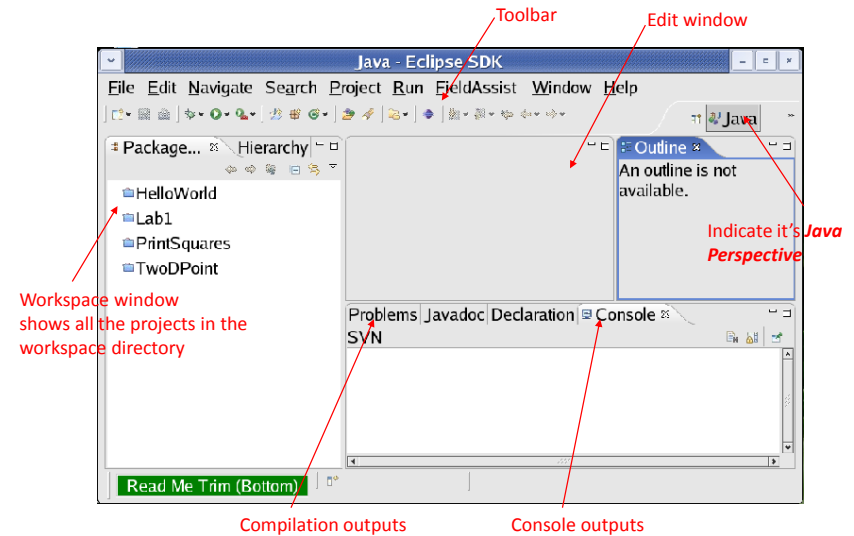
- Note: You can skip this step on the school computer, since Java and eclipse are already installed on it
- Prerequisite for eclipse: You need the Java Runtime Environment (JRE) in order to use eclipse
  - More than likely the JRE is already installed on your computer
  - If not, click on this link and follow the instructions: [Download JRE](#)

# Eclipse start

- Step 1: Open Eclipse, choose your workspace

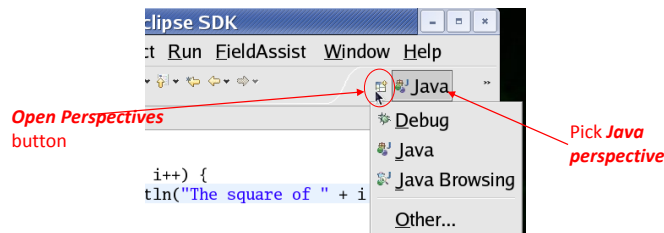


## Overview of Eclipse Java Perspective



- Choose a perspective (the layout of Eclipse user interface).

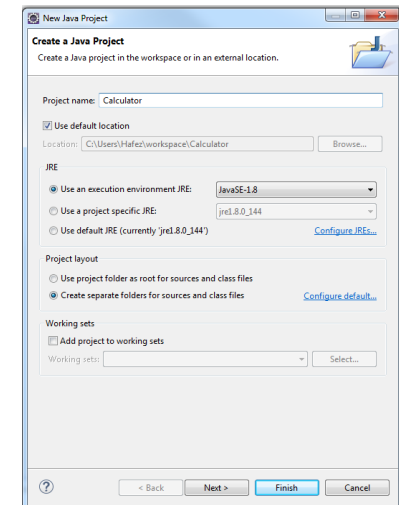
– Open **Java perspective** ( an interface for editing java source code): click **Open Perspective** button > click **Java**.



– **Debug Perspective** (an interface for debugging the program).

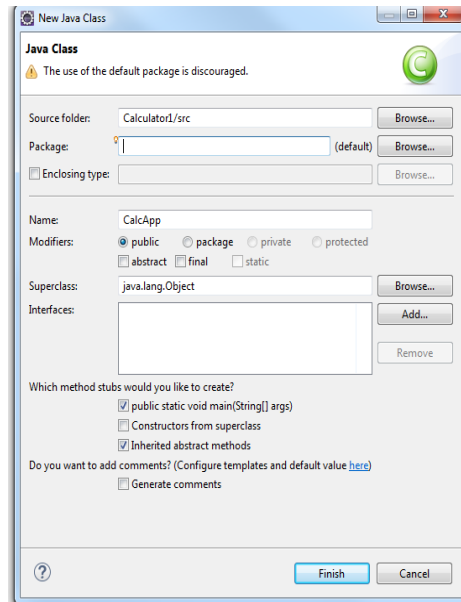
## Create project

- On the Menu select “File / New / Project ...”.
- Select “Java Project” and click “Next”.
- Set “Project Name” to “Calculator”
- Set the execution environment to JavaSE-1.8.
- Click Finish.



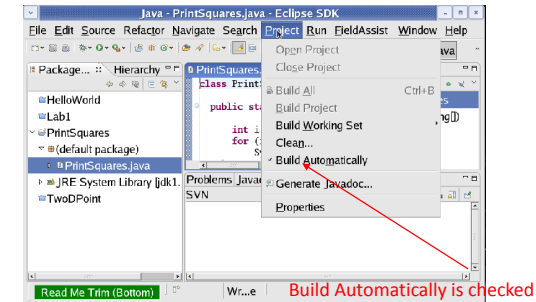
## Create a class

- Right-click on the Calculator project
- On the context menu select “New / Class
- Set name “CalcApp”
- Select public static void main



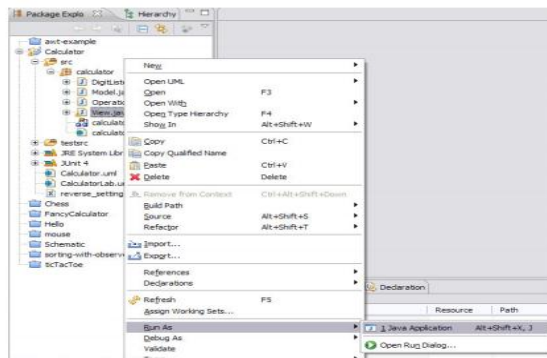
## Compile the program

- If **Build Automatically** is checked, the program will be automatically compiled whenever you save the program.



## Run the program

- In the Package Explorer, right click on the file that has the main function.
- On the popup context menu, select ‘Run As / Java Application’



## Try your first java program

### • Simple-command-line-calculator

- **Arithmetic functions:** +, -, /, \*.
- Ask user to enter two number
- Ask user to enter the operation
- Display the result for the user
- After you finish, improve your code by separating the main function from the model code (create “Operation” class that has (add, sub, multiply, sum) methods).

## More to try

- **Simple-command-line-calculator**

- **Arithmetic functions:** add, sub, mult, div, each taking two arbitrary expressions as arguments.
- For example

Input	Output
<code>add(1, 2)</code>	3
<code>add(1, mult(2, 3))</code>	7
<code>mult(add(2, 2), div(9, 3))</code>	12