

# SM213 Simple Machine Simulator Eclipse Installation Instructions

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To load the simple machine into Eclipse from the course distribution, you have two choices. The straightforward way is to use the pre-made Eclipse projects (options 1A, 2, 3A).

Or, if you want to learn more about how everything works (Eclipse, the SM213 simulator infrastructure, and running the reference implementation yourself), you can do it the more complex way. You'll create your own Eclipse project, and add the jar and zip files to it yourself, be able to browse the full source code of the simulator, and can run the reference implementation from outside of Eclipse (options 1B, 2, 3B).

## 1A: Download and load Pre-Packaged Simple Machine Project into Eclipse

These steps load up Eclipse with two pre-packaged Eclipse projects, 213 and sm213\_ref.

1. Download the file `sm213-eclipse.zip`.
2. Select "Import ..." from the Eclipse menu. In the "Import" popup dialog, in the "Select an import source:" section, expand the "General" folder and select the "Existing Projects into Workspace" option that appears, then click the "Next >" button at the bottom.
3. Click the "Select archive file:" radio button, click the "Browse" button on this line, navigate in your filesystem to the distribution file called `sm213-eclipse.zip` that you downloaded from the course website, select this file and click the "Open" button.
4. Ensure that both projects have their checkboxes selected in the "Projects:" pane and click the "Finish" button.

## 2: Build and Run the Simple Machine in Eclipse

1. Right-click (Control-click on the Mac) on the 213 project and select "Run As" → "Java Application" from the Eclipse menu.
2. Click on the line labeled "SimpleMachine\$Sm213Student" in the "Matching Items:" pane to select it and click on "OK".
3. Subsequently, you can just select "Run" from the Eclipse menu to build and start the simulator.

## 3A: Run the Reference Simple Machine Implementation In Eclipse

1. Same as step 2, but use project sm213\_ref and select "SimpleMachine\$Sm213".

This section is an alternative to the previous page. Follow these steps only if you want to create the full simulator Eclipse project yourself.

## 1B: Add the Simple Machine to your own Eclipse Project

### 1B.1: Load the Simple Machine Project into Eclipse

1. Unpack Simple Machine distribution zip file called `sm-student-213.zip` to reveal the following contents in the directory named `sm-student-213`:
  - `SimpleMachine213.jar` a stand-alone executable jar fully implements the sm213 ISA. The classes in this jar have been obfuscated so that you can not decompile them to get the solution.
  - `SimpleMachineStudent.jar` a jar file that contains all but the solution classes. These classes are not obfuscated. This is the jar file that you include in the classpath for your solution.
  - `SimpleMachineStudentDoc213.zip` java doc.
  - `SimpleMachineSrc.zip` full source for all classes but the solution, you will ignore virtually all of these, paying attention only to the Memory and CPU classes.
2. Select "New → Java Project" from the Eclipse menu.
3. Enter a name for the project (e.g., 213) and click the "Next >" button.
4. On the "Java Settings" dialogue that is now displaying, click the "Libraries" tab.
5. Click the "Add External JARS..." button.
6. Navigate to the file `SimpleMachineStudent.jar` in the directory `sm-student-213` and select it.
7. In the "JARs and class folders on build path:" list, click the triangle next to the line listing "SimpleMachineStudent.jar ..." to expand it.
8. Double click "Source attachment", click "External File...", navigate to the file `SimpleMachineStudentSrc.zip` in the directory `sm-student-213`, select it and click "OK".
9. Double click "Javadoc location", click the "Javadoc in archive" radio button, click "Browse..." next to "Archive path:", navigate to `SimpleMachineStudentDoc213.zip` in the directory `sm-student-213`, select it, and click "OK".
10. Click the "Finish" button.

### 1B.2: Add Simple Machine Source files to Eclipse

1. Select your project's "src" folder.
2. Select "Import" from the Eclipse menu to display the Import dialogue.
3. Expand the "General" line in the "Select an import source:" area, click "Archive File", and click the "Next >" button.
4. Click the "Browse" button, navigate to the file `SimpleMachineStudentSrc.zip` in the directory `sm-student-213`, and click "Open".
5. Clicking recursively on expansion triangles, reveal the directory `arch/sm213/machine/student`.
6. Click the "Deselect All" button to uncheck all boxes in the directory pane.

7. Check the single box next to `student` and click on the "Finish" button to import this source package into your `src` folder.
8. The two files you will edit, `CPU.java` and `MainMemory.java`, are now in the `arch.sm213.machine.student` package in the `src` folder of your project.

## **2: Build and Run the Simple Machine in Eclipse**

1. Click on your project and select "Run As" → "Java Application" from the Eclipse menu.
2. Click on the line labeled "SimpleMachine\$Sm213Student" in the "Matching Items:" pane to select it and click on "OK".
3. Subsequently, you can just select "Run" from the Eclipse menu to build and start the simulator.

## **3B: Run the Reference Simple Machine Implementation Yourself**

1. At the command line navigate to the directory where you unpacked the file `sm-student-213.zip` and type `java -jar SimpleMachine213.jar`. On some systems, you can just navigate to the folder containing this file and double click it.