eclipse- Quick Reference

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Install eclipse

1. Go to `https://www.eclipse.org/downloads/packages/`
2. Download "**Eclipse IDE for Enterprise Java and Web Developers**". **Warning.** Make sure that you select the right version for your machine. For example: Select AArch64 for M1 Macs.
3. Install eclipse.

Create a Java project

1. Start eclipse.
2. In the `File` menu select `New > Java Project`. If `Java Project` is not visible, select `New > Other` then type `java` in search field, search for `Java Project`.
3. Enter `Sxxx` for `Project name`. We use convention `Sxxx`, where `xxx` is your student number.
4. **Warning.** Make sure that `Create module-info.java file` is *not* selected.

Create a package

1. Select `src` or any package `x`.
2. Right click to open context menu.
3. Select `New > package`.
4. Type the name of the package and click `finish`.

Create a class

1. In the `File` menu select `New > Class`.
2. Enter `MyVeryFirstProgram` for `Name`.
3. Make sure that `public static void main(String[] args)` is *selected*.
4. Click `Finish`.
5. The new window opens with

```Java
public class MyVeryFirstProgram {

    public static void main(String[] args) {
        // TODO Auto-generated method stub

    }

}
```

Perspective and Views

Views

eclipse has views, such as `Package Exlorer`, `Console`, `Olutline`, `JavaDoc`. Some time some views become not visible. You can reopen them:

1. Select `Window > Show view`.
2. Select the view that you want.

Perspective

We use two perspectives: `Java` and `Debug`

1. Select `Window > Perspective > Open perspective`.
2. Select the perspective that you want.

Editing

Contex sensitive help

1. Type `syso` in the empty line.
2. Use eclipe help key combination `cntr` + `space`. It expands `syso` to `System.out.println();`.

Try `if` and `for` and `cntr` + `space`.

Format

In order to prettify the code use `cntr` + `shift` + `F`. It will properly indent yor code, insert empty lines to separate blocks, inserts space around operators and does some more.

Comment in/out

Toggle a block of code comment or not comment: 1. Select a block of code. 1. `cntr` + `7`.

Making a copy of a file

1. Select the file to be copied.
2. To copy the file `cntr` + `C`.
3. Select the destination folder.
4. To paste `cntr` + `V`.

jUnit

Add jUnit library

A brand-new Java project does not have jUnit library included. You hae to manually include jUnit library as follows.

1. Select project root
2. Right click to open context menu.
3. Click `Build Path` > `Configure Build path`. `Java Build Path` window opens.
4. Select `Libraries` tab.
5. Select `Classpath`.
6. Click `Add Library`.
7. Select `jUnit`.
8. Click `Next` and `jUnit Library` window opens. Make sure that jUnit version is 5.
9. Click `Finish`.

Running

There are two types of file that can run. Once they are configured by means of

- "run as application" or
- "run as jUnit"

it can run by the key combination:

Key shortcut: `cntr` + `shift` + `F11` .

Run Java application

A class with `public static void main(String[] args)` method is an application.

1. Run your application
   - select `Run` > `Run` in menu.
   - right click to open context menu, select `Run as` > `Application`

Run jUnit test

A class importing `org.junit.jupiter.api` is a jUnit test.

1. Run your jUnit test by
   - Selecting `Run` in `Run` menu.
   - Right click to open context menu, select `Run as` > `jUnit`

Debugging

Breakpoint

1. Move cursor the left of line numbers
2. Right click to open context sensitive menu
3. Select `toggle breakpoint` to put a brakepoint at that line.
4. Do the same to remove the breakpoint.

Key shortcut: `cntr` + `shift` + `B` .

Running in debug mode

1. Set breakpoints.
2. Select `Run` > `Debug` . eclipse switches to `Debug perspective` .

Key shortcut: `cntr` + `F11` .

Step-by-step execution

1. Select `Run` > `Step over` .

   Key shortcut: `cntr` + `F6` .

2. Select `Run` > `Step into` .

   Key shortcut: `cntr` + `F5` .

JavaDoc

ToDo

In operating system

From eclipse to system explorer
You can access files in eclipse with system explorer.

1. Select a file or a directory.
2. Right click to get context menu.
3. Select `Show in` > `System Explorer`.

Back up

1. Select the files or directories.
2. Compress then as usual.
3. Sent the compress file to yourself via email.

How to open

html file

1. Select `.html` file.
2. Right click to get context menu.
3. Select `Open With` > `Web Browser`.

pdf file

1. Select `.pdf` file.
2. Right click to get context menu.
3. Select `Open With` > `Web Browser`.

From YULearn to eclipse

1. Download the compressed file, say `cis111-week01.zip`, from YULearn. Note that the extension is `.zip`.
2. Uncompress `cis111-week01.zip` to obtaing directory `cis111-week01`
3. Copy directory `cis111-week01` into `src` of eclipse.
4. Usually you need to download `cis000_common.zip`, and copy `cis000_common` into `src`, too.

Importing a compressed project

1. Select `src`
2. Right click to get context menu
3. Select `import`
4. Select `General` > `Archive File`
5. Click `Next`
6. Click `Browse`

7. Select the zip file
8. Click `Open`
9. Click `Finish`
10. If necessary rename the package names

Importing a compressed package

1. Uncompress the compressed file.
   1. Select the compressed file.
   2. Right click to open context menu.
   3. Select `Expend All`.
2. Select the directory corresponding to package.
3. Drag and drop on `src` in the eclipse `Package Explorer` window. eclipse will copy the files into workspace.

adding jUnit library

1. Select `src`
2. Right click to get menu
3. Select `Built Path` › `Configure Built Path`
4. Select `Libraries` tab
5. Select `Classpath`
6. Click `Add Library`
7. Select `JUnit` in the list
8. Click `Next`
9. Make sure `JUnit 5` is selected
10. Click `Finish`
11. Click `Apply and Close`

Resources

- [Getting Started](#) in [6.005 — Software Construction](#) on MIT OpenCourseWare, 2016.
- [Eclipse FAQ](#) by MIT, 2016.
- [Java Debugging with Eclipse - Tutorial](#) by Vogel, 2016.