SWEN20003
Object Oriented Software Development
Workshop 1

Introduction

Welcome to Object Oriented Software Development! These workshops contain practical problems that will give you hands-on experience designing and implementing programs in Java. Participation **is assessed**. Each workshop is worth 1 mark: to be eligible for this mark you must

1. attempt the pre-workshop questions on Ed Lessons
2. attend your enrolled workshop
3. make a reasonable attempt at the given workshop questions

We highly encourage you to also attempt the other problems for each workshop. By consulting with your demonstrator and getting feedback on your solutions, you will be in a much stronger position for the subject's assessment.

If you cannot attend

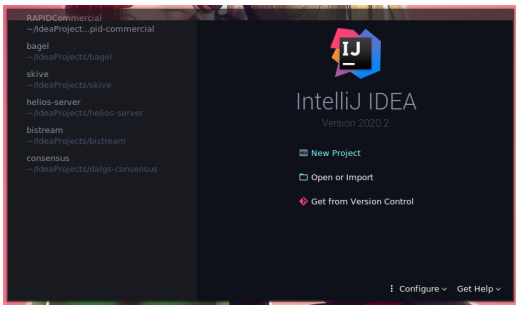
If for some reason you cannot attend your enrolled workshop in a particular week, please use the Alternative Workshop Request form to let us know (as explained in Andrew's announcement). **Do not attend an alternative class without approval from Bach or Andrew (via the form).** Please try to submit as early as you can so there is sufficient time to check and approve the request.

Workshop

The focus of this workshop is getting set up with the Java development environment we will use, IntelliJ IDEA. To download IntelliJ (for Windows, MacOS, or Linux) head to `https://www.jetbrains.com/idea/download/` and click the Download button **under Community**. Install the software after downloading; the default settings are fine.

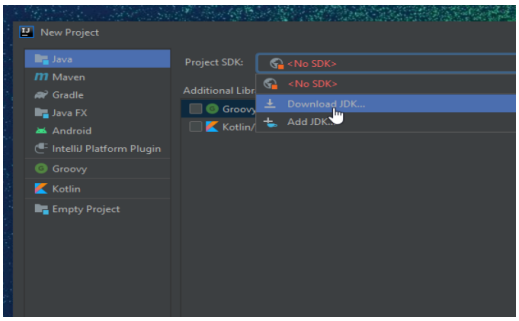
To get started with IntelliJ, try compiling a Hello World program following the below steps.

1. When you first open IntelliJ, you'll see the below screen. Click `New Project`.

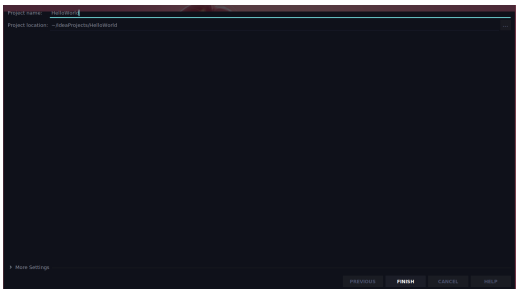


2. Click `<No SDK>` and select `Download JDK...`. The default option is fine; wait for it to download and install, then click `Next`.

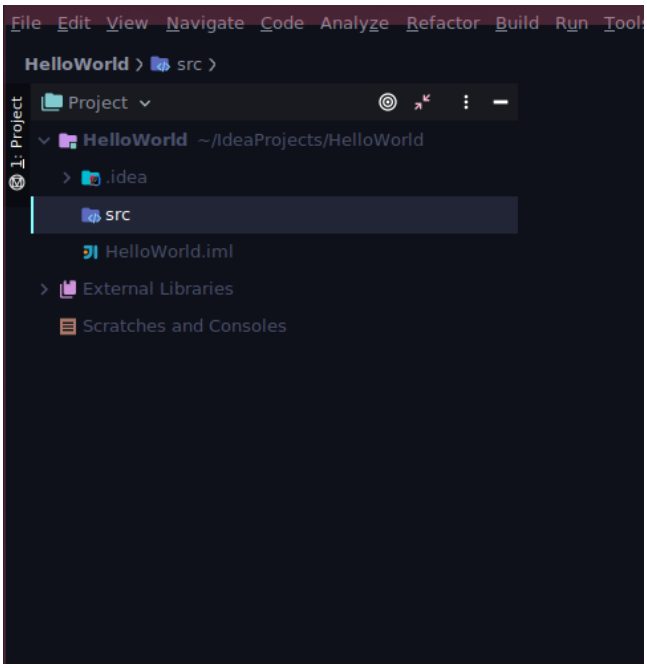
   Note: If you have IntelliJ installed on your computer make sure that you are using the Java SDK version 11 or higher.



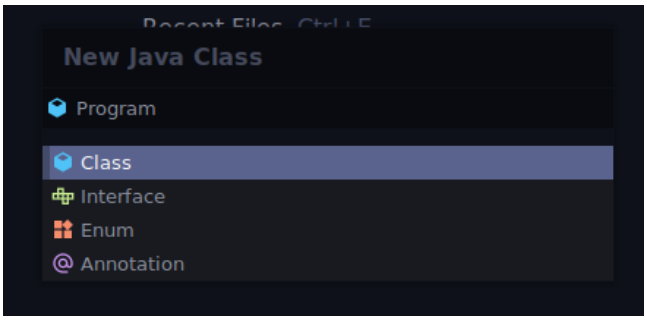
3. Give your project a name, e.g. `HelloWorld`.



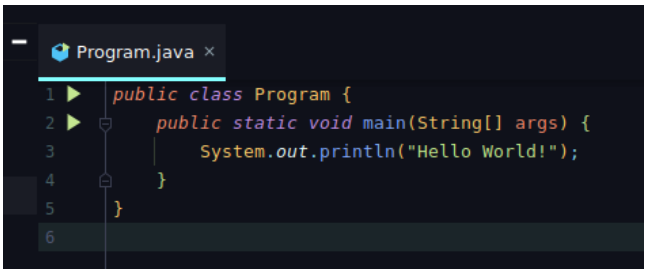
4. Your Java code should go in the `src` folder of your project. Right-click this folder, and click `New` → `Java Class`.



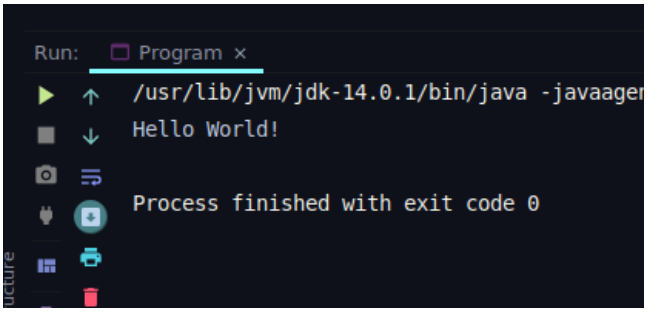
5. Give your class a name, e.g. `Program`. Remember the file name needs to match the name of the class in the code, and class names must start with a capital letter.



6. Add this Hello World code, and press the `Play` button next to the class name (here the button is green). Then click `Run 'Program.main'`. **Note:** the button may take a minute or two to appear the first time you run IntelliJ, since it needs to finish setting up the JDK.



7. Your program's output will appear at the bottom of the screen.



Make sure you have set up IntelliJ before continuing with the other problems.

Problems

1. Write a program to print a triangle of some constant size. For example, a triangle of size 5 should look like this:

```
#
##
###
####
#####
```

2. Write a program to print a diamond of some constant **odd** size. For example, a diamond of size 5 should look like this:

```
  #
 ###
#####
 ###
  #
```

3. Try compiling and running the example code from lectures using IntelliJ.
4. Continue working through the Grok worksheets.