

## Installing Java and Eclipse (Quick Overview):

For this class, we will primarily be using Java 13+ and the Eclipse IDE to do the homeworks and implement techniques discussed in the lectures.

If you don't have Java 13 installed, you can find it here:

<https://www.oracle.com/technetwork/java/javase/downloads/jdk13-downloads-5672538.html>  
<https://jdk.java.net/13/>

If you don't have Eclipse installed, you can find the latest version here: <https://www.eclipse.org/>

We are planning to mostly be using features introduced by Java 8 (where streams were introduced), but we strongly recommend you update to Java 13 as this is the version the TAs will be using to run your homework and will help us address issues during office hours.

You will also need to link Java 13 to your version of Eclipse so it knows what version to build with. Once you've started Eclipse, you can select Java 13 as your version:

1. Navigate to "Eclipse -> Preferences" menu
2. Open the "Java" tab and select "Installed JREs"
3. If you see Java 13 in the list, select it to make it your default Java installation.
4. Otherwise, click "Add..." and select "Standard VM" and in the pop-up enter the directory where Java 13 is installed (for example on my Mac it is `/Library/Java/JavaVirtualMachines/jdk-13.jdk/Contents/Home`). To see the locations where of all your Java versions are installed you can run the following commands:
  - a. (Linux) `update-alternatives --config java`
  - b. (Mac) `/usr/libexec/java_home -V`

We will be covering some of the features of Java classes and interfaces in the discussion section, but you can find additional information in many online tutorials and guides, of which I've included a few examples:

<https://docs.oracle.com/javase/tutorial/>  
<https://www.tutorialspoint.com/java/index.htm>  
<https://www.geeksforgeeks.org/java-tutorials/>

Note that the Oracle guide is from Java 8, and Oracle hasn't added to these guides as it shifted to a faster release cycle after Java 8. There aren't many new features in Java with a large impact on what we will cover in this class (some additions to Streams), but I've included links to summaries of the new features in each version since 8.

Java 9: <https://www.journaldev.com/13121/java-9-features-with-examples>

Java 10: <https://www.journaldev.com/20395/java-10-features>

Java 11: <https://www.journaldev.com/24601/java-11-features>

Java 12: <https://www.journaldev.com/28666/java-12-features>

Java 13: <https://jaxenter.com/java-13-jdk-deep-dive-new-features-162272.html>