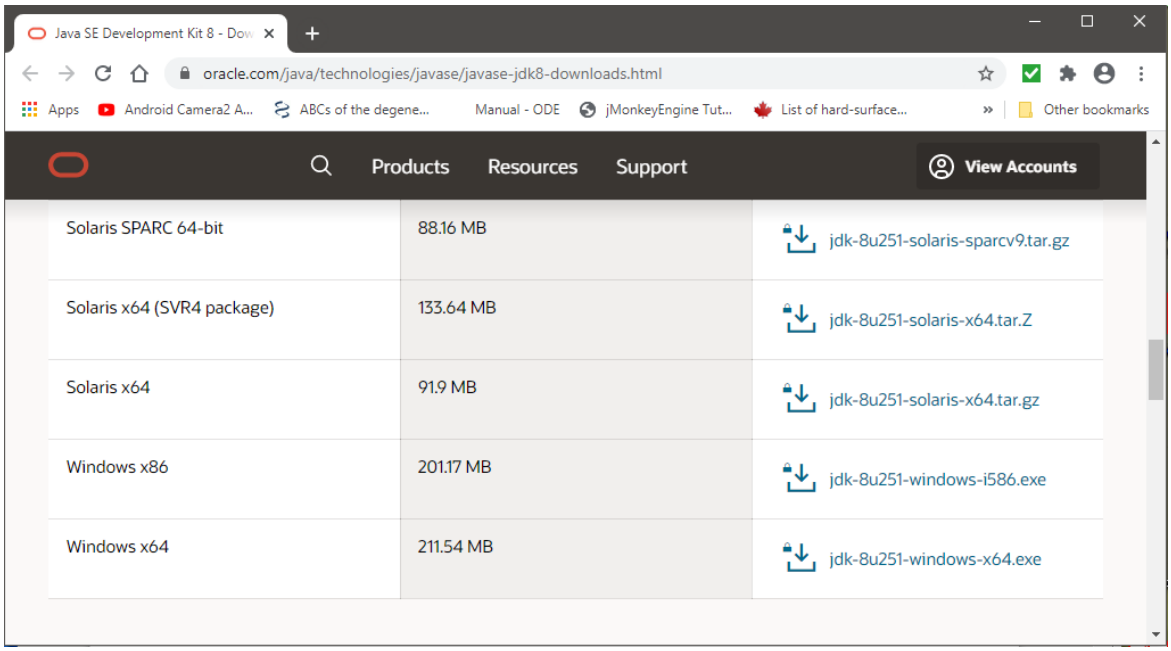
# Virtual Robot – Detailed Installation Instructions

**I. If you don't already have Java Development Kit Version 8 (JDK 8) installed on your system, you need it. You can get this from Oracle OR use Amazon Corretto 8 instead.**

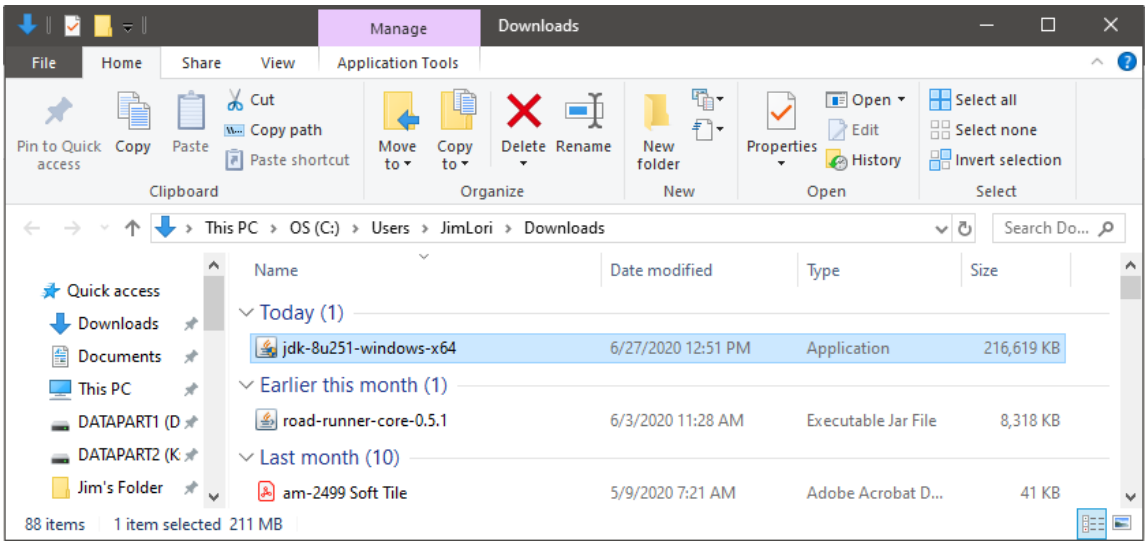
**A. To get from Oracle (requires free account):** Open a browser and navigate to:

https://www.oracle.com/java/technologies/javase/javase-jdk8-downloads.html



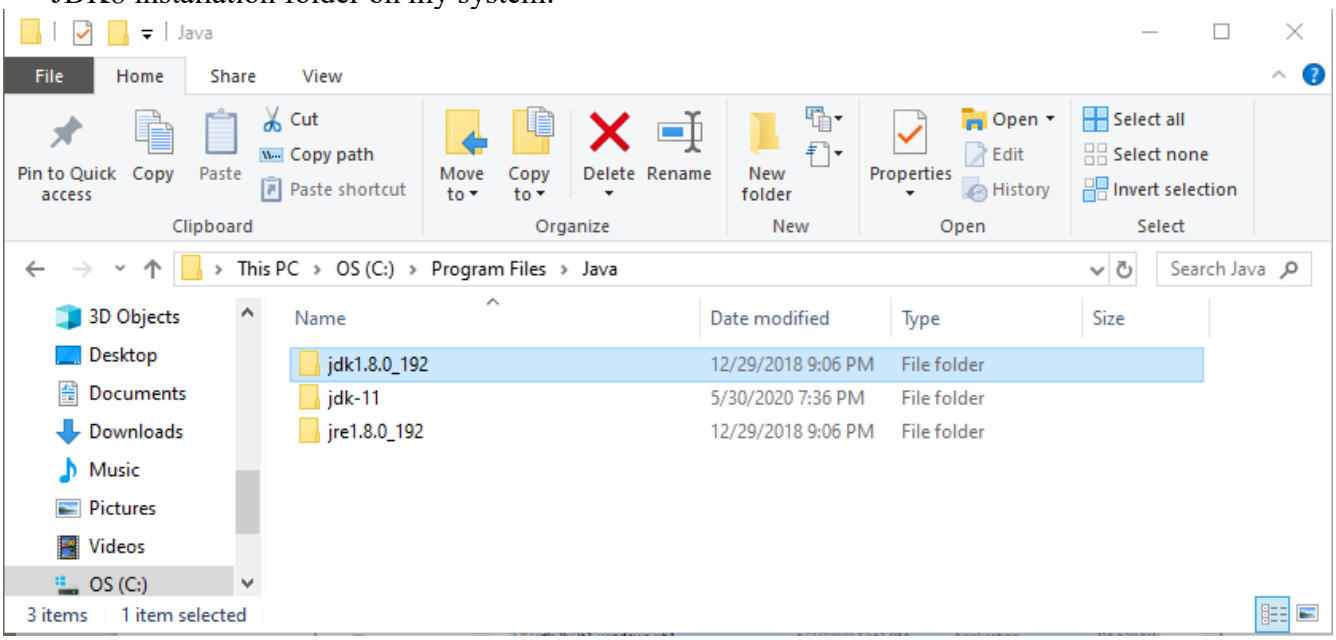

Download the appropriate JDK8 installer for your system (e.g., Windows x64). Unfortunately, Oracle now requires that you create an account for this (you will be prompted to do so), but it is free. (Note: an account is NOT needed if you use Amazon Corretto instead of Oracle JDK8)

JDK8 installer file in my Downloads folder:



Run the installer (e.g., jdk-8u251-windows-x64.exe) that you have downloaded. This will install JDK8 on your system. You'll be prompted for the location that you want this installed to. By accepting the default, the path to the JDK8 on my system is:  C:\Program Files\Java\jdk1.8.0_192. You should find something similar.

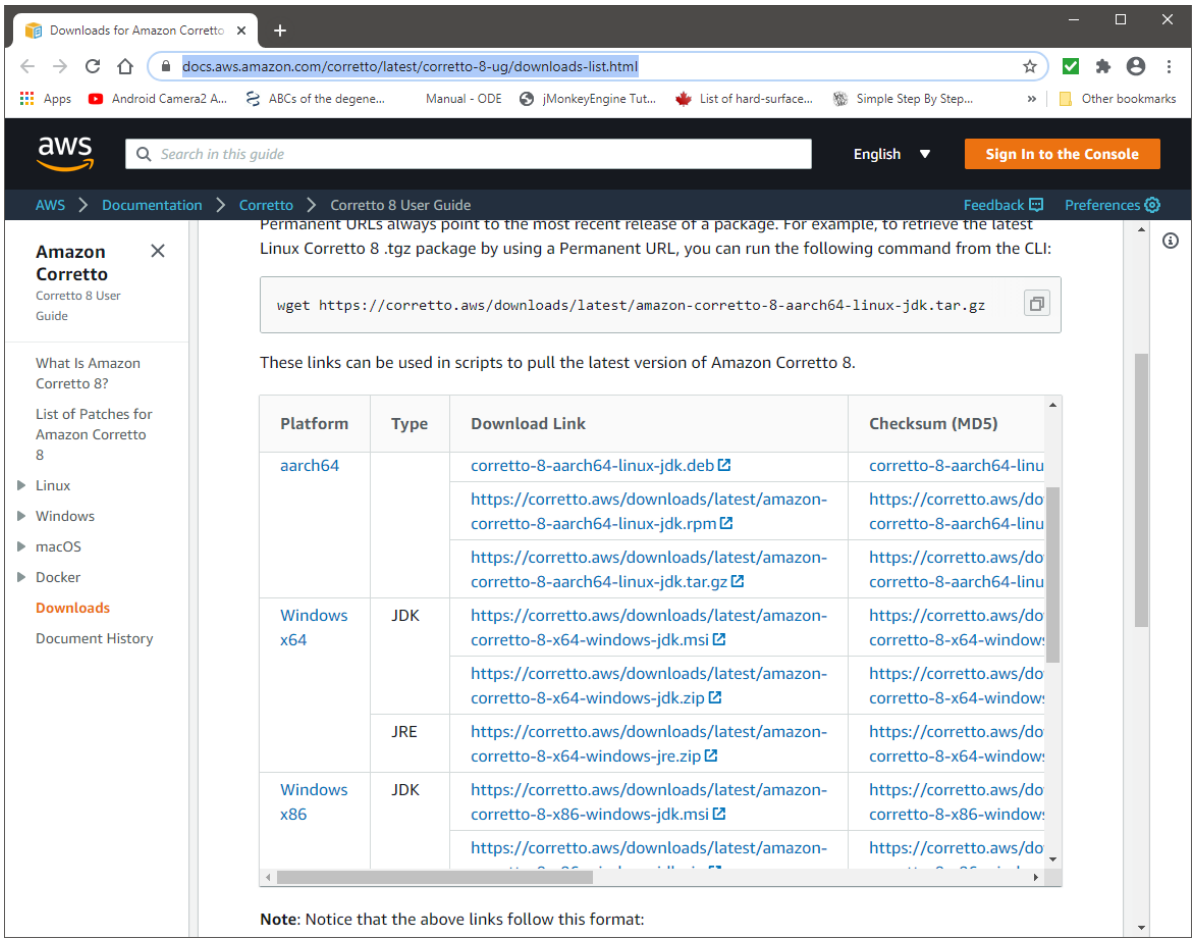
JDK8 installation folder on my system:



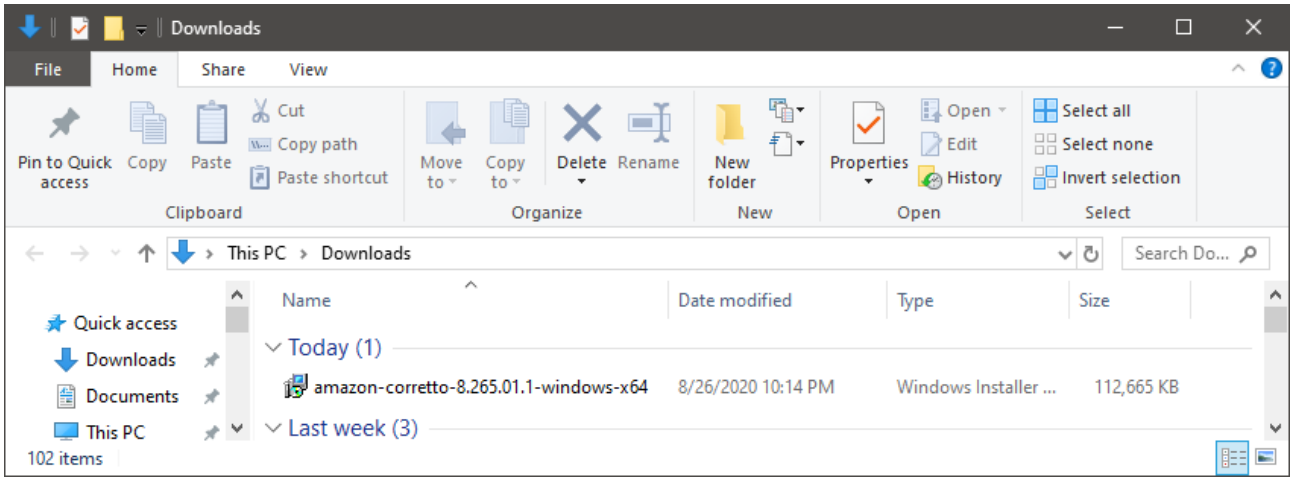
**B. To get Amazon Corretto 8 as your JDK (free, with no account required):**

Open a browser and navigate to:

https://docs.aws.amazon.com/corretto/latest/corretto-8-ug/downloads-list.html



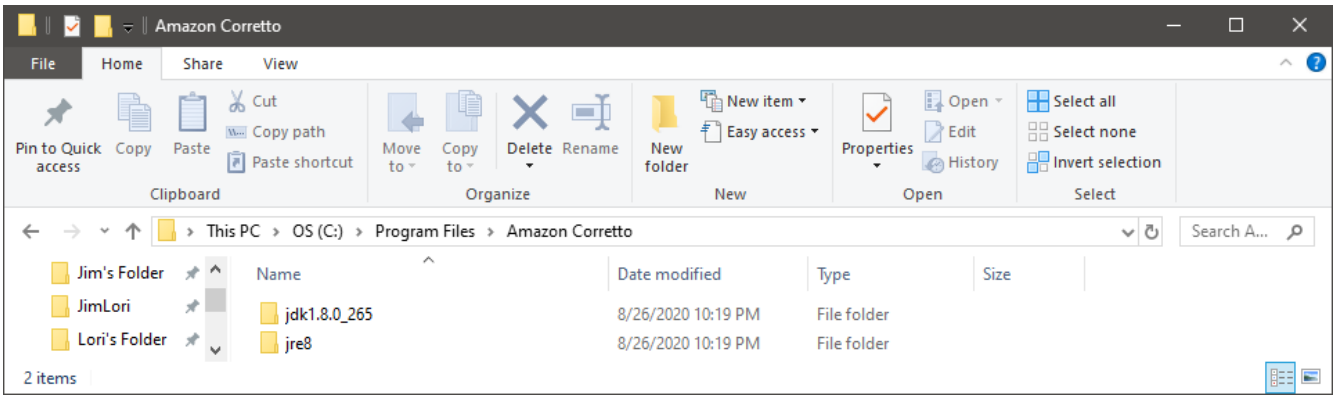

Download the JDK for your operating system.
Here's the installer file in my Downloads folder:



Run the installer file. On my system, it installed the Amazon Corretto JDK8 to:

C:\Program Files\Amazon Corretto\jdk1.8.0_265

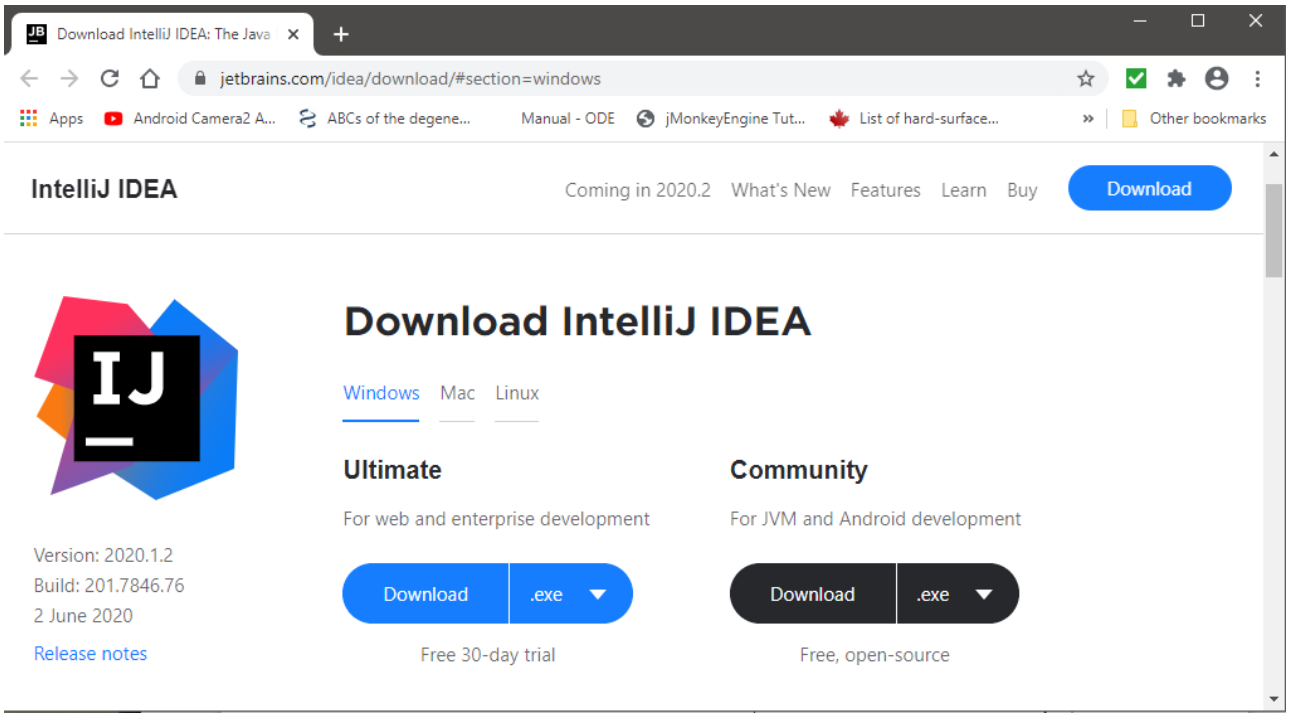
as shown here:



**II. If you don't already have IntelliJ IDEA on your system, you'll need to install it.**

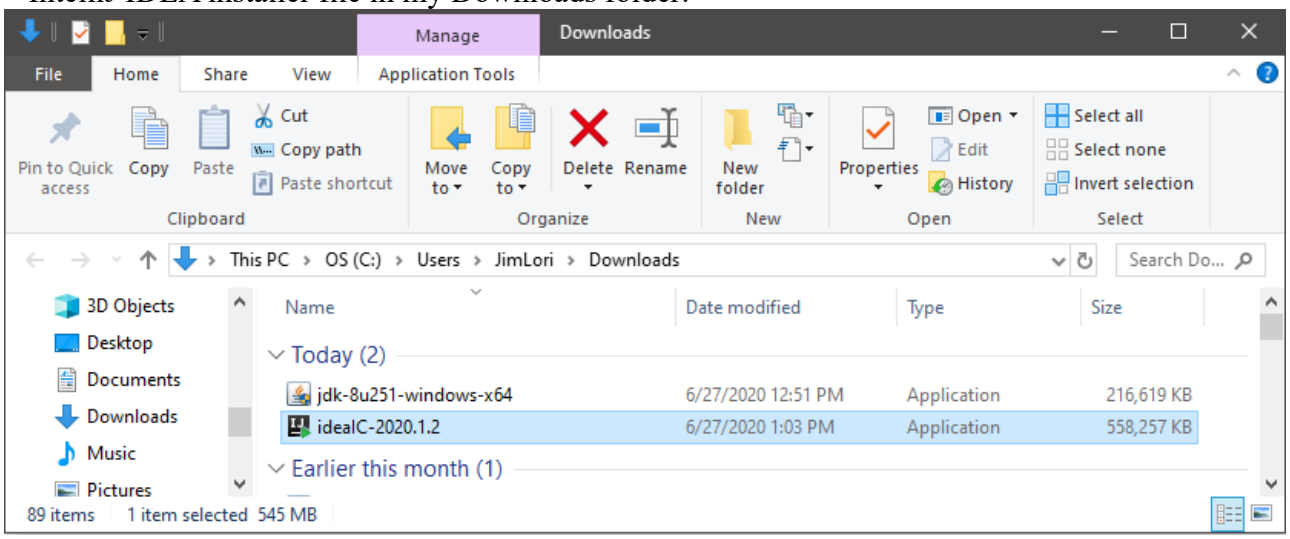
Open a browser and navigate to:

https://www.jetbrains.com/idea/download/#section=windows




Click to download the .exe for the free Community edition of IntelliJ IDEA. For example, this might be named idealC-2020.1.2.exe.

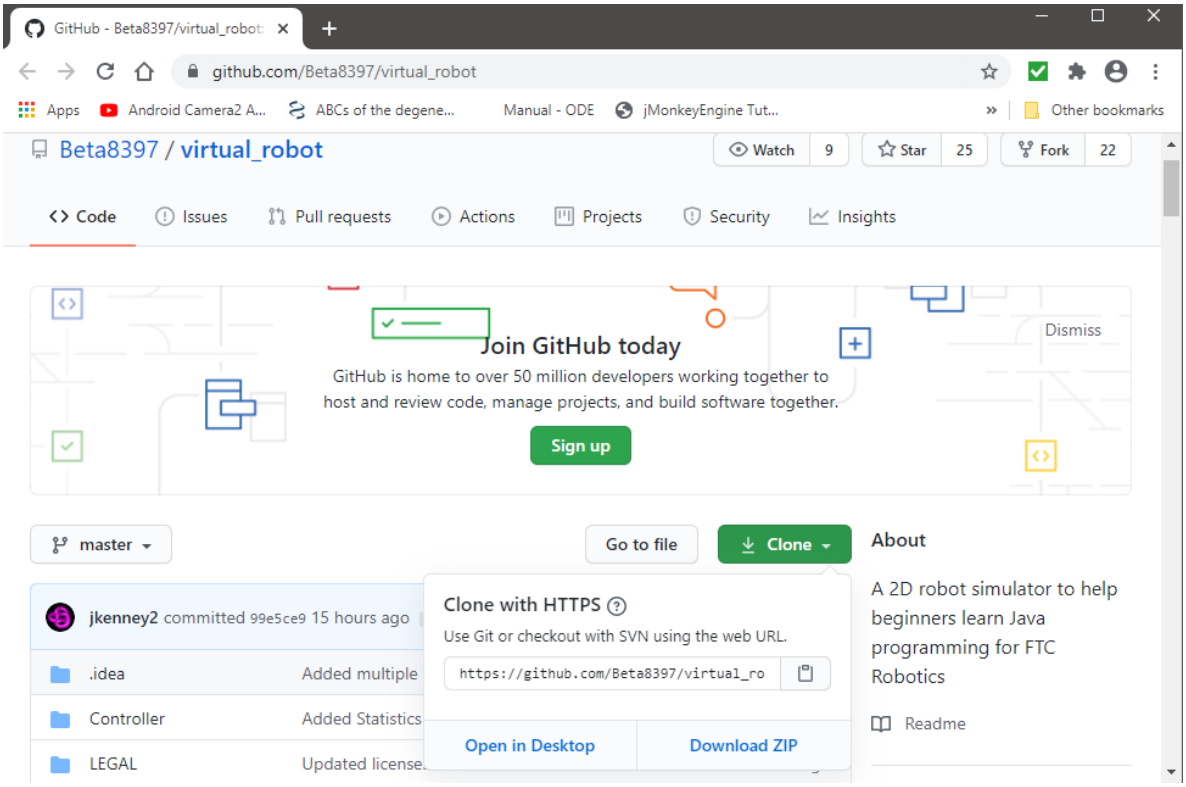
IntelliJ IDEA installer file in my Downloads folder:




Run this .exe file to install IntelliJ IDEA.

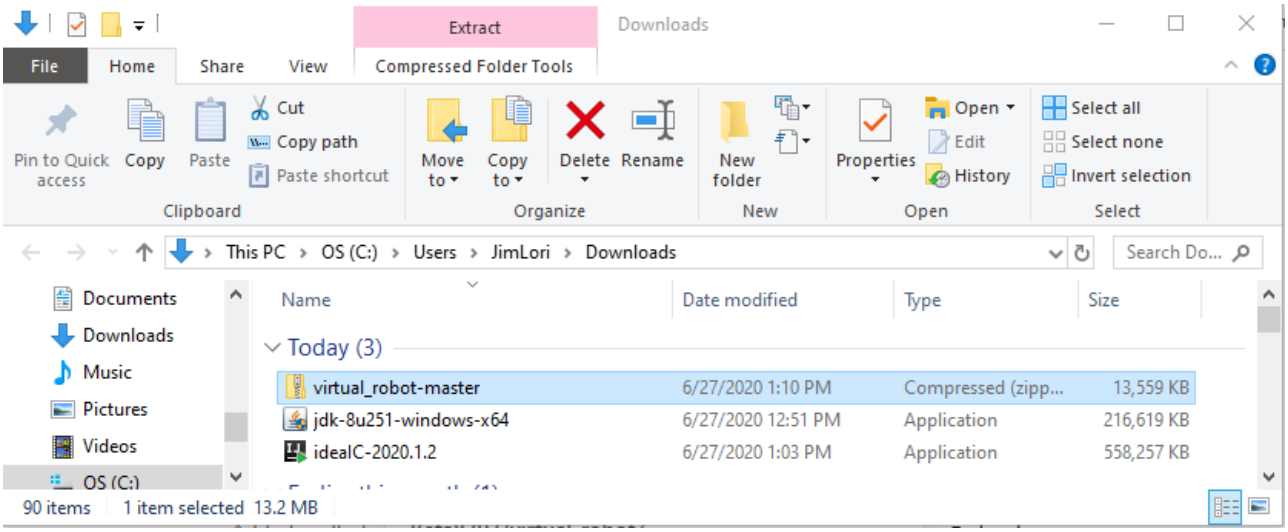
## III. Download the Virtual Robot application.

Open a browser and navigate to: https://github.com/Beta8397/virtual_robot




Click the green button ("Clone") on the right and select the "Download Zip" option. You'll find the .zip folder in your downloads directory: virtual_robot-master.zip.

virtual_robot-master.zip file in my Downloads folder:



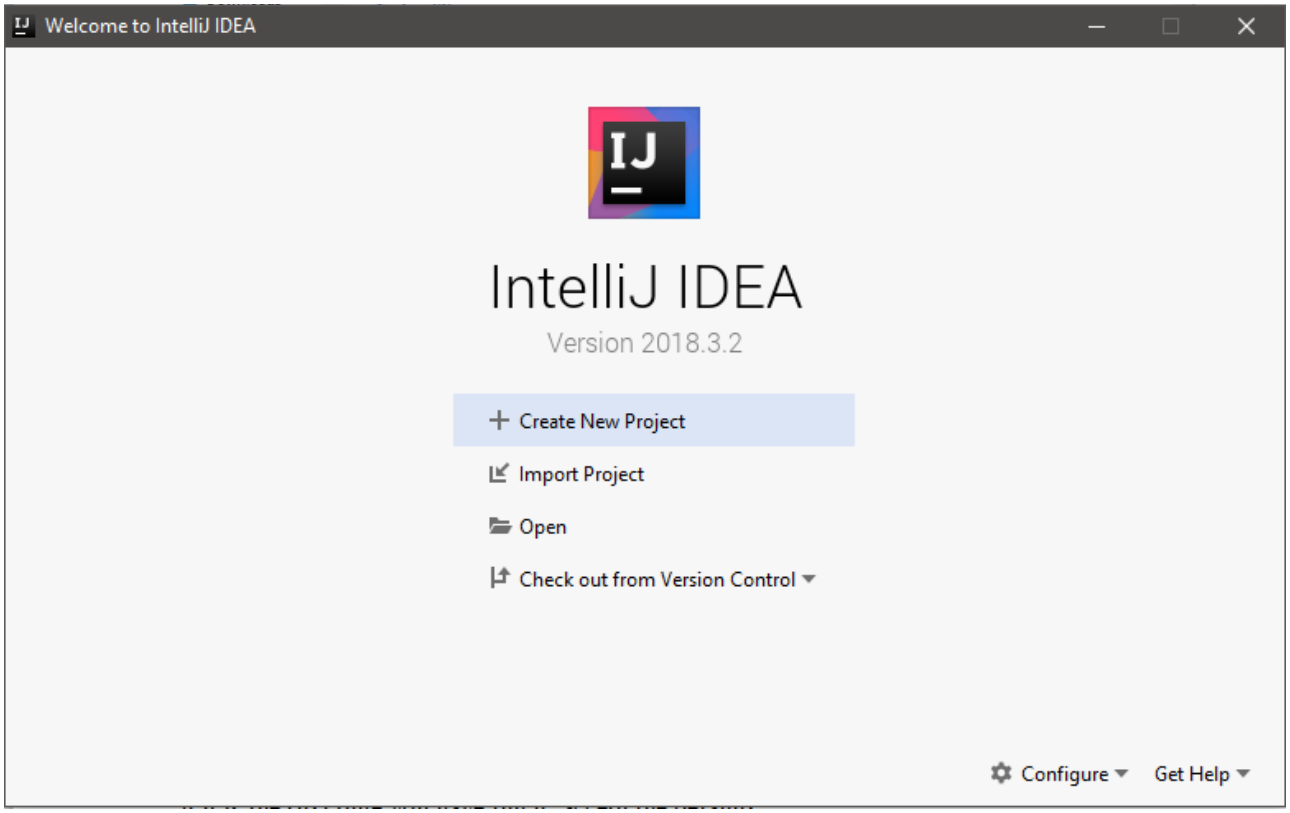

Right-click the zip folder and select "Extract all...". Extract to the folder of your choice. You'll wind up with an unzipped folder, for example: C:\Users\Me\Downloads\virtual_robot-master.

Within this folder, you should find a single directory: virtual_robot-master. That is the project folder. So for example, the path to the project folder might be:

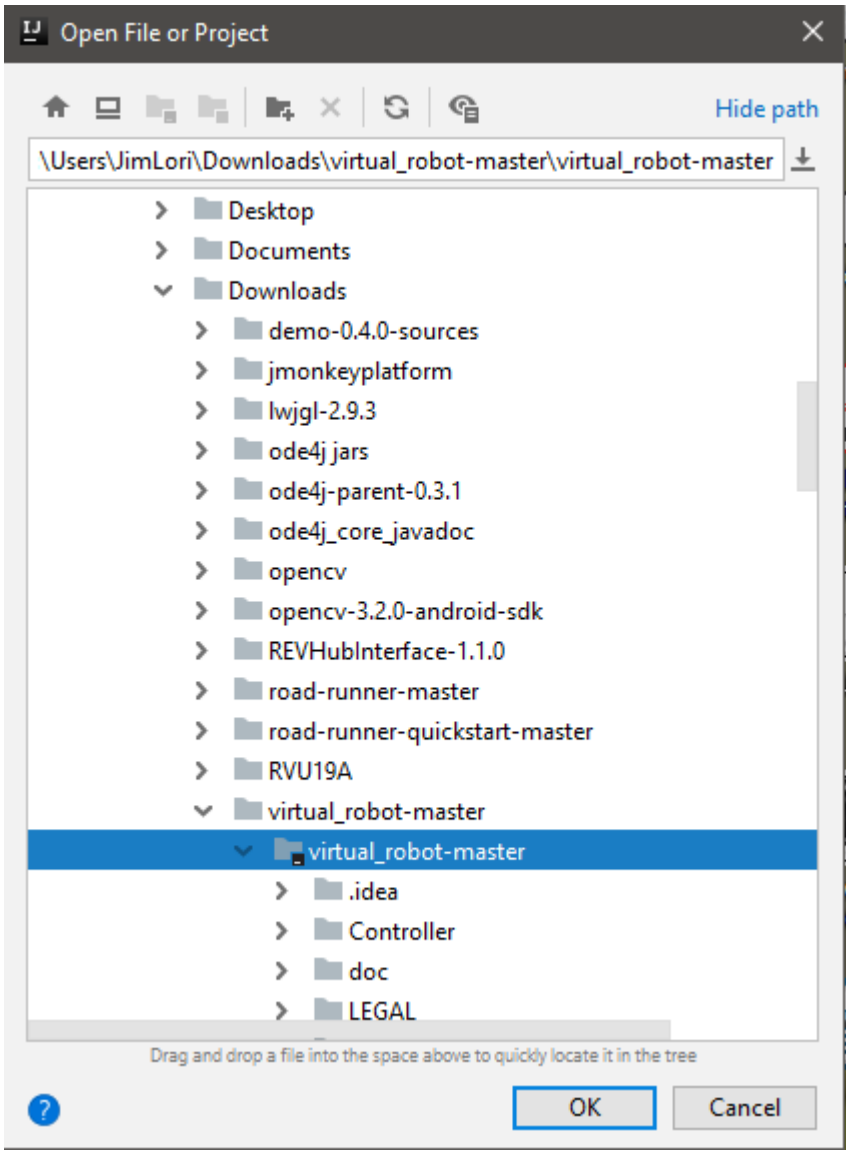
C:\Users\Me\Downloads\virtual_robot-master\virtual_robot-master

**IV. Run the IntelliJ IDEA application.**

If it is the first time you have run it, accept the defaults.

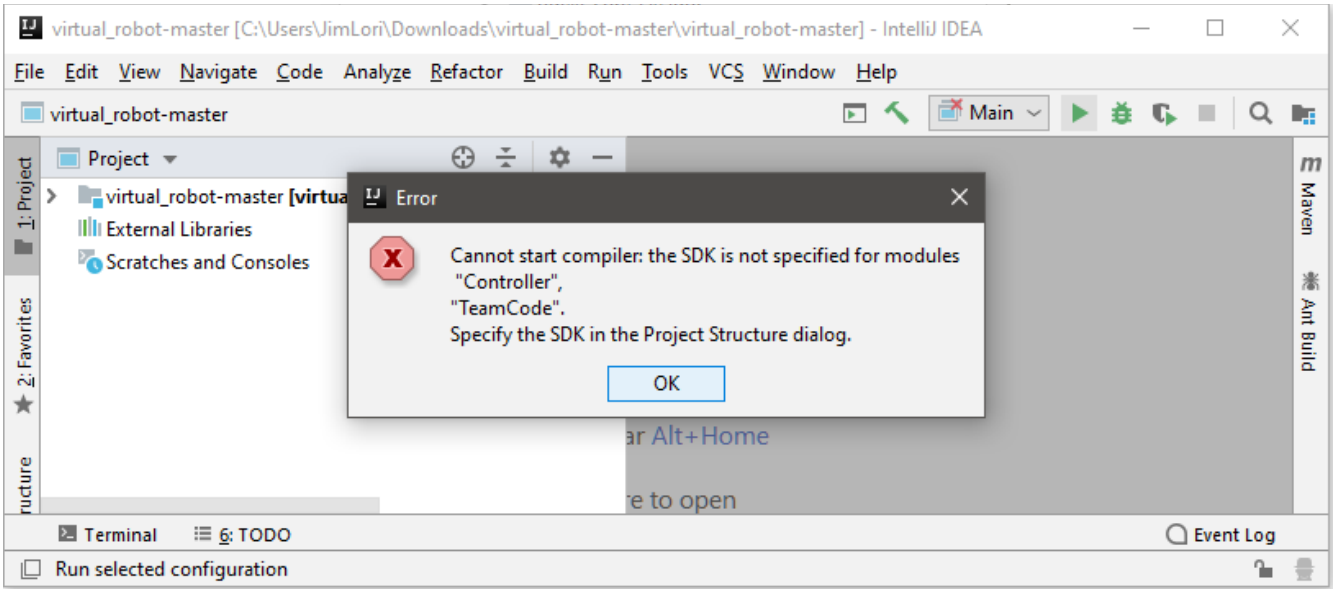


Click "Open", and navigate to your project folder, virtual_robot-master. Note that if you have unzipped into a folder named virtual_robot-master, then you will have another folder named virtual_robot-master nested within it. The project folder is the inner one.




Click "OK", and the project will open.

**V. Click the green arrowhead to run the virtual_robot app.**



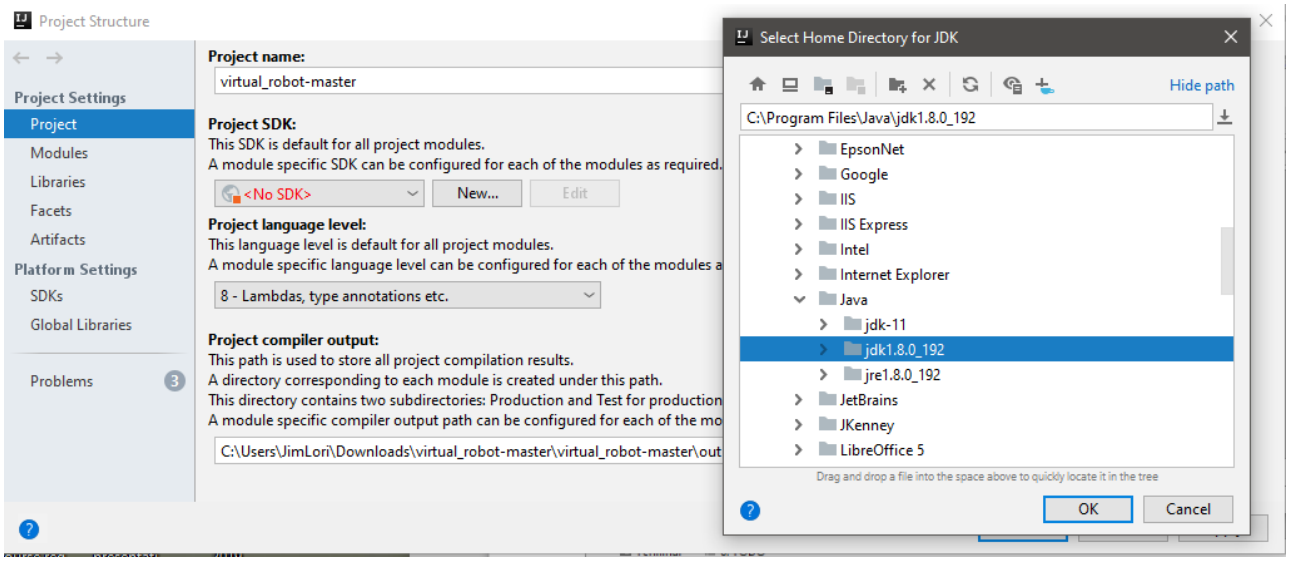

You may get an error that says you need to "specify the SDK" (meaning the JDK). If so, go to

File --> Project Structure

and select "Project".

Under "Project SDK" select "New...", then "JDK". This opens the "Select Home Directory for JDK" dialog. In this dialog, navigate to the location of your JDK8, for example

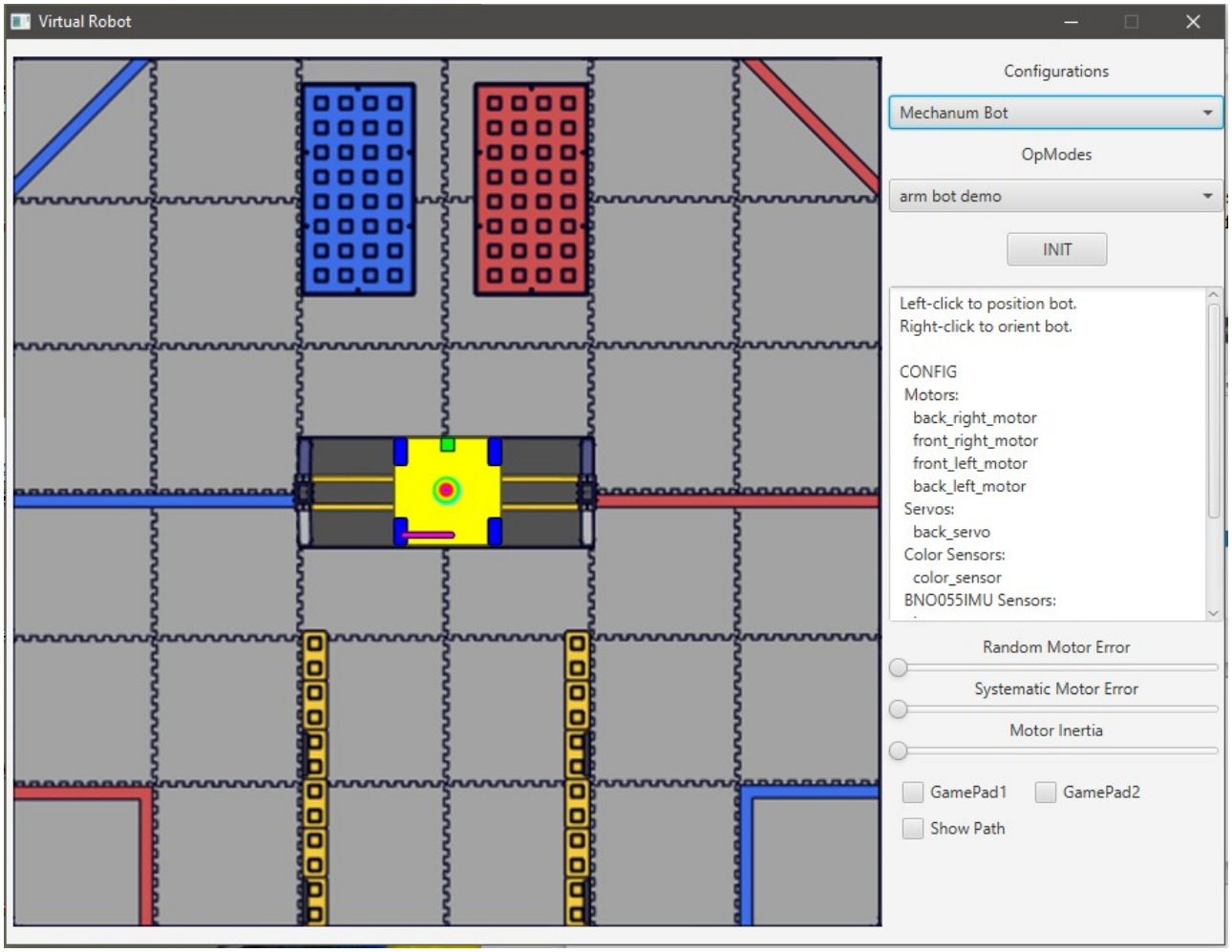
C:\Program Files\Java\jdk1.8.0_192 (or , C:\Program Files\Amazon Corretto\jdk1.8.0_265)




Select the appropriate directory and click OK.

Now, in the "Project Structure" dialog, click "Apply", then "OK".

Now you should be able run the app by clicking the green arrowhead.




**VI. Now you are ready to write and test your own op modes.**

**VII. NOTE: If you don't want to install IntelliJ, it is possible to use Android Studio instead.**

But, you won't be able to use the JDK that comes bundled with Android Studio. Instead, you'll have to download JDK8 from Oracle or Amazon Corretto (step I above).

Then download the virtual_robot.zip and extract it as described in section III above.

Then open the virtual_robot-master project in Android Studio (which is just like opening it in IntelliJ as described in section IV above).

Then set the JDK for the project using "File --> Project Structure", as described in section V above.

A video from FTC 16072 demonstrates this: https://www.youtube.com/watch?v=pmaT9Twbmao

It should now be possible to run the app by clicking the green arrowhead.
I have confirmed that this works, to the point of running the virtual_robot app on Android Studio. I haven't tested to determine whether it works ***as well*** with Android Studio as it works with IntelliJ. It's really not that hard to install and use IntelliJ, and you can use it for all kinds of other Java development and testing, too.