

JavaFX 11

The official and short get-started documentation can be found at: <https://openjfx.io/openjfx-docs/#install-javafx>

Download and Install the JavaFX library

1. **Download:** You'll need to download an SDK file from <https://gluonhq.com/products/javafx/>.
[Pick version 11.0.2](#)

Product	Public version	LTS version	Platform	Download
JavaFX Windows SDK	11.0.2	11.0.6 More info	Windows	Download [SHA256]
JavaFX Windows jmods	11.0.2	11.0.6 More info	Windows	Download [SHA256]
JavaFX Mac OS X SDK	11.0.2	11.0.6 More info	Mac	Download [SHA256]
JavaFX Mac OS X jmods	11.0.2	11.0.6 More info	Mac	Download [SHA256]

The download will come either as `openjfx-11.0.2_windows-x64_bin-sdk.zip` file (Windows) or `openjfx-11.0.2_osx-x64_bin-sdk.zip` (Mac).

2. **Extraction:**

For Mac, extracting the inner files is as easy as double clicking on the zip folder. Inside, you should find another (not zipped) folder titled `javafx-sdk-11.0.2`.

For Windows, you will need to extract the files from the zip file to properly install them. Find your downloaded file using File Explorer or Finder (it's probably in your Downloads folder) and right-click (or 2-finger click) it – look for the option **Extract...** or **Extract Here** (or use **7Zip** -> **Extract Here**). The result should be a folder titled `javafx-sdk-11.0.2`.

3. **Installation:** Now, we need to find a good place to put the extracted folder.

This can technically be anywhere, but a good choice is somewhere near where we installed Java. When you installed Java, you probably set up an environment variable called **JAVA_HOME** that has the “path” (aka location) of your installed version of Java. You also probably added that path to your **PATH** variable. (Both were so Terminal/Powershell/VSCode could easily find and run Java.) *Most likely, for Windows, it's stored at C:/Program Files/AdoptOpenJDK/*

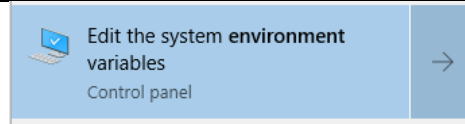
We will start by looking up our environment variables to locate our Java install, then move our files into a good spot near that Java install.

Then, we will create another environment variable called **PATH_TO_FX** that stores our JavaFX location, so Java can easily find where those files are.

Using the more detailed instructions below for either Window or Mac for step 4. (Testing instructions at the bottom)

Accessing/Editing Environment Variables, “Installing” JavaFX in Windows:

1. Search in your search bar for “environment variable” and choose **Edit the system environment variables**.

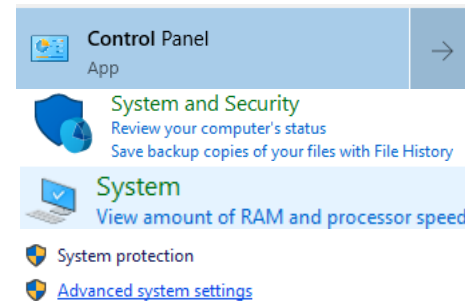


(Alternatively, search for and open **Control Panel**.

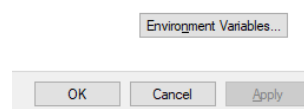
Click **System and Security**,

then **System**,

then (on the left) **Advanced system settings**)

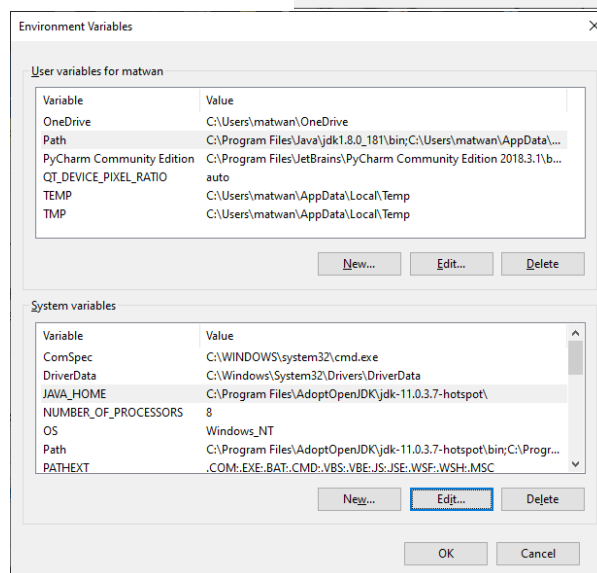
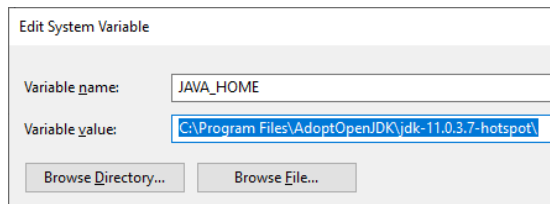


2. With the **System Properties** window that has opened, click the **Environment Variables...** button at the bottom.



3. In the **Environment Variables** window, you'll see both the User variables at the top and the System variables at the bottom.

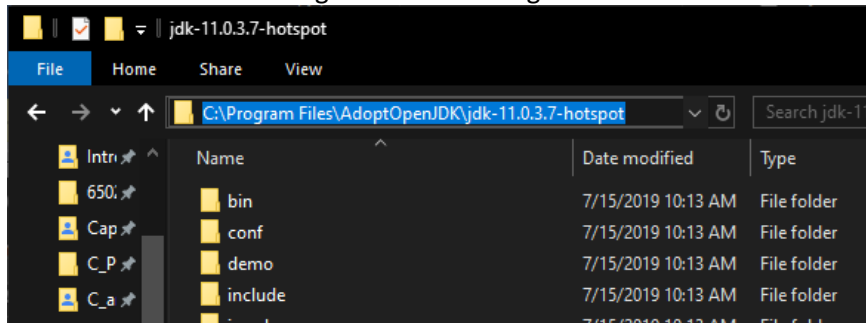
You can read the variables partially from this window, but it may be easier if you select and **Edit...** (be careful)



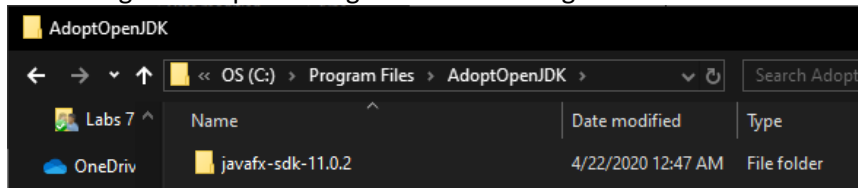
4. **Finding a good place to put the JavaFX files:**

- a. To find the path (aka location) of your Java install, look for **JAVA_HOME** in User. If it's not there, then look in System.
If you can't find **JAVA_HOME** in either, find **PATH** or **Path** and check for a path that has **jdk** in it.

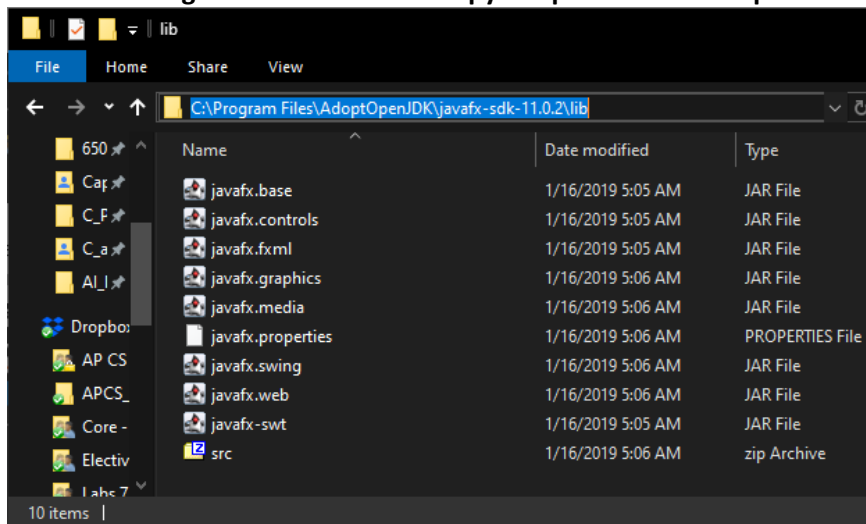
- b. Copy that path and open **File Explorer**. Paste the path into the top and hit **Enter**. You should then see something like the following:



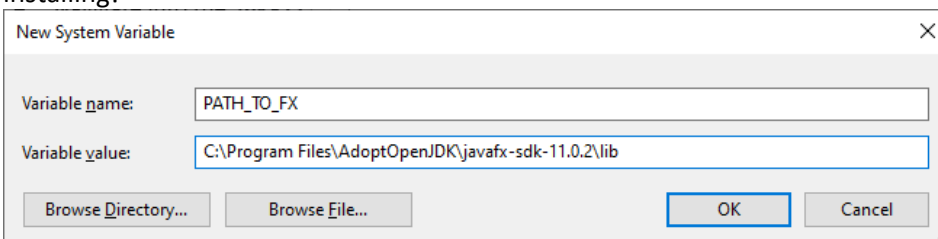
- c. Press the “Up Arrow” to the left of the path, or change the path, so you have the containing folder open. It might look something like:



- d. Move (cut-paste or drag over) your extracted **javafx-sdk-11.0.2** folder into this folder (this might require Administrator privileges).
- e. Navigate into the **javafx-sdk-11.0.2** folder, then navigate into the **lib** folder. **It should look something like what’s below. Copy the path from the top.**



5. Return to the Environment Variables window. **Create** a new System variable (if you don’t have adequate permission, do a User variable instead) and give it the name **PATH_TO_FX**. Paste the path of the javafx lib folder you copied before as the “Variable value”. Hit OK. You’re done installing!



6. Before attempting to run any JavaFX code, restart VSCode and open a terminal. Check that:
- ```
echo $env:PATH_TO_FX
```
- prints out the path above.

## Accessing/Editing Environment Variables, “Installing” JavaFX in MacOS:

1. **Finding a good place to put the JavaFX files:**
  - a. Open a **Terminal**. To check the **JAVA\_HOME** or **PATH** variables, type:  

```
echo $JAVA_HOME
echo $PATH
```

If it prints a path that has **jdk** in it, copy it. Open Finder and use the **Go to...** option to find that path, then go one folder “up” from the **jdk** folder (the containing folder).
  - b. Alternatively (if you can’t find the Java install), use Finder to go to your User folder. That would be in Users/[USERNAME]
2. Move (cut-paste or drag over) your extracted **javafx-sdk-11.0.2** folder into the chosen destination folder (this might require Administrator privileges).
3. Navigate into the newly moved **javafx-sdk-11.0.2** folder, then navigate into the **lib** folder. Copy the path from Finder.  
(If you put it in your root folder, it’ll be Users/[USERNAME]/javafx-sdk-11.0.2/lib)
4. Mac uses bash shell, so environment variables are set up whenever a Terminal is opened via the **.bash\_profile** file. The path to this file is **~/bash\_profile**, since it is stored at the Users/[USERNAME] location.
5. Opening this file using a text editor. An easy choice is nano — a terminal based text editor — because you can open it for editing with the command:  

```
nano ~/.bash_profile
```
6. Move to the end of the file and go to the next line. Type the following command:  

```
export PATH_TO_FX= _____
```

where **\_\_** is the path copied from step 3. (possibly **Users/[USERNAME]/javafx-sdk-11.0.2/lib**)
7. Press **ctrl+X** to exit the nano editor. Press ‘Y’ for saving the buffer, (possibly also Enter to confirm the filename), and you will return back to the terminal screen.
8. Restart (close and open) the Terminal. . (Reopening the terminal loads the updated **.bash\_profile** file.) Run  

```
echo $PATH_TO_FX
```

to see the value of your just saved environment variable.

## Compiling and Running a JavaFX program

As an example, download the **HelloFX.java** file to test JavaFX. Then open it in VSCode and navigate the terminal to the containing folder.

To compile and then a JavaFX program, we must specify the usage of the library (“module”) in our **javac** command:

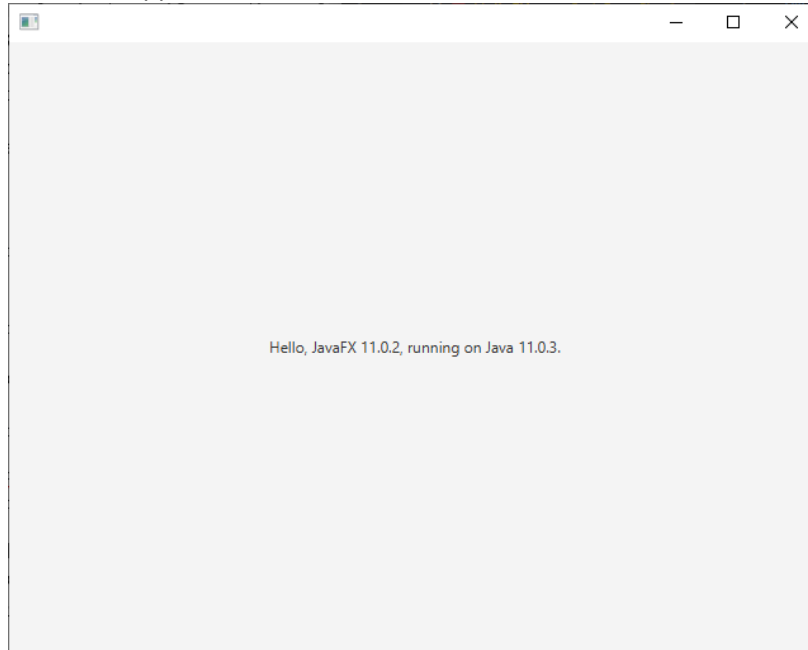
For Mac:

```
javac --module-path $PATH_TO_FX --add-modules javafx.controls HelloFX.java
then
java --module-path $PATH_TO_FX --add-modules javafx.controls HelloFX
```

For Windows (using Powershell):

```
javac --module-path $env:PATH_TO_FX --add-modules javafx.controls HelloFX.java
then
java --module-path $env:PATH_TO_FX --add-modules javafx.controls HelloFX
```

You should see this window appear:



Note that `$PATH_TO_FX` or `$env:PATH_TO_FX` represents the path to the `javafx` folder we installed earlier. You could merely copy the path and use it in the above commands instead, but the variable makes it easy to use often.