Working with IntelliJ – Part 3

Student Workbook

Version 2.0

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Module 1

Working with JAR files in IntelliJ

Section 1–1

Working with JAR Files

Exporting a Jar File in IntelliJ

- **A Jar file is short for Java Archive. It is merely an enhanced zip or tar file that contains Java class files**

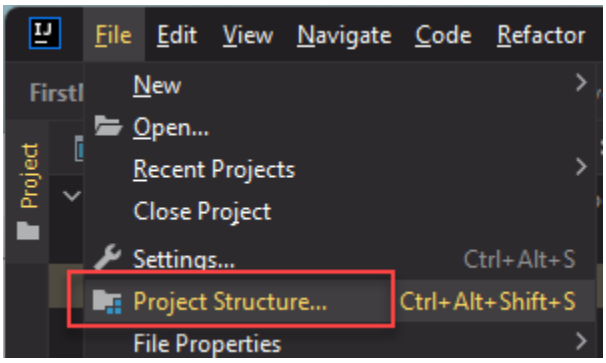
- **Jar files are portable, and can be transferred over the wire and even be included in other projects**
  - They are portable largely because they are a single file, instead of a collection of dozens or more files

- **A special type of jar file is a *Runnable Jar File*. What makes it runnable is a `MANIFEST.MF` that is included in the jar file. The `MANIFEST.MF` file contains an entry called `Main-Class` which will tell the Java Runtime Environment what class's main method to start.**

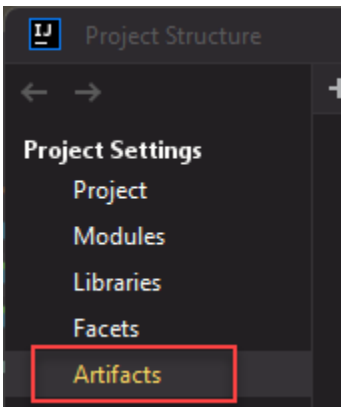
```
Main-Class: com.mycompany.MainApp
```

Creating a Jar File in IntelliJ

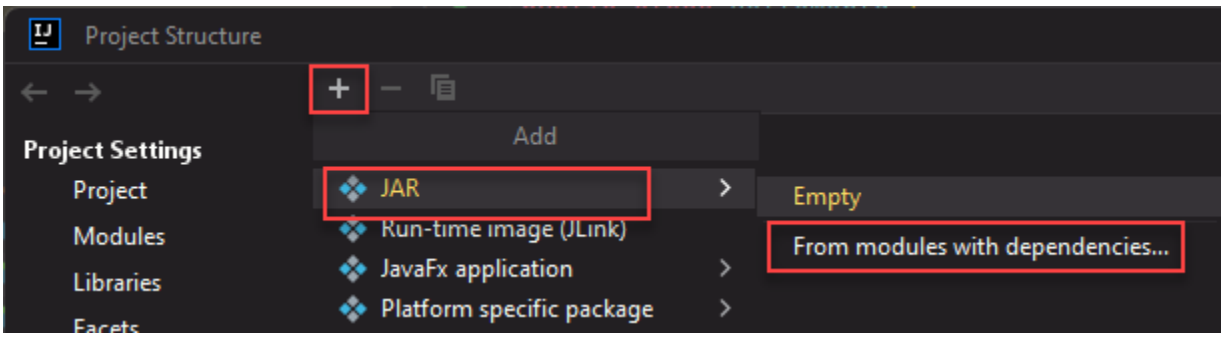
- Click File -> Project Structure



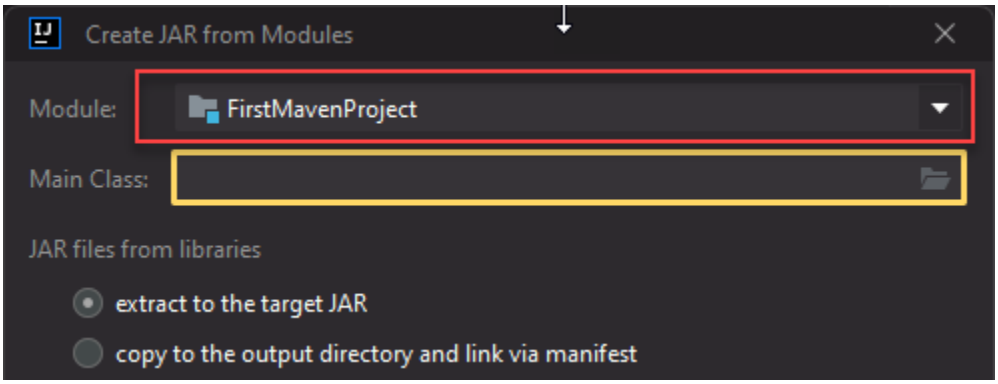
- Select Project Settings -> Artifacts



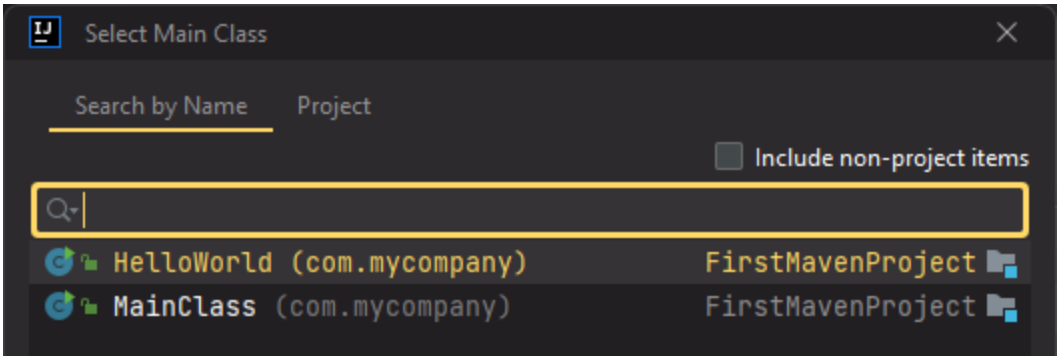
- Click the + to create a new artifact and select **Jar -> From modules with dependencies**



- **Ensure that your Project is selected**

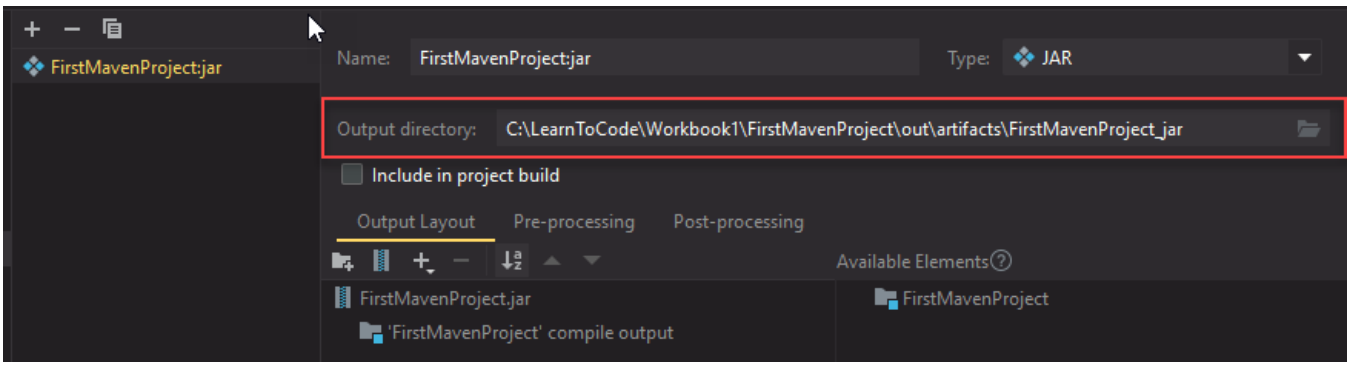


- **Select the Main Class (this is the Entry Point for the Jar)**



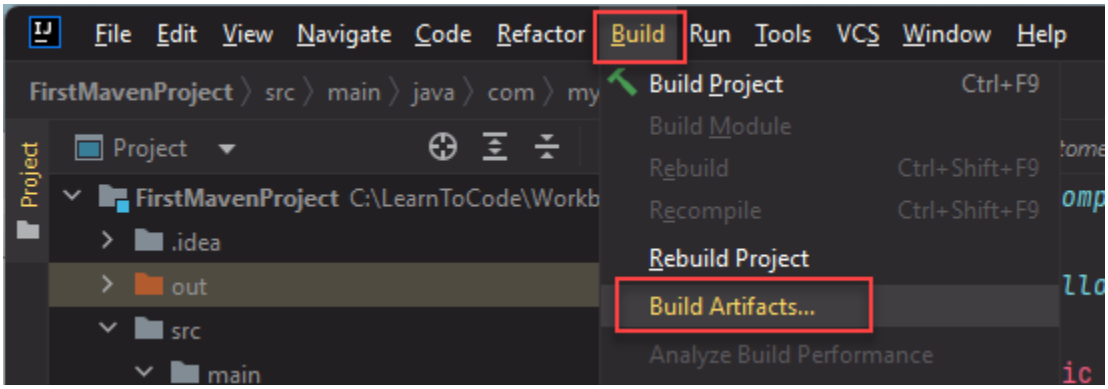
- **Click OK**

- **This does not generate the Jar, but configures where the Jar will be created**



- **Click OK to save the configuration**

- **To generate the Jar go to Build -> Build Artifacts**

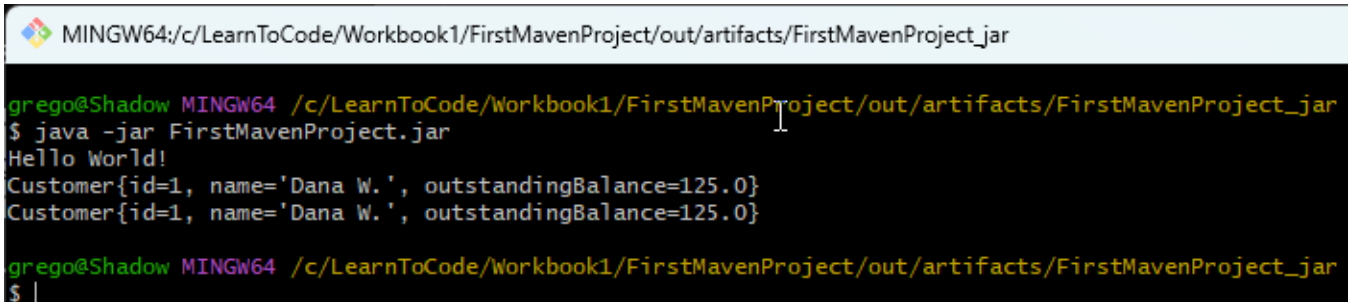


Running a Jar File on the Command Line

- Once you have the Jar file, open a Command Line and run the command

  `java -jar <jar-file>`

  and you should see the same results as you did in IntelliJ.

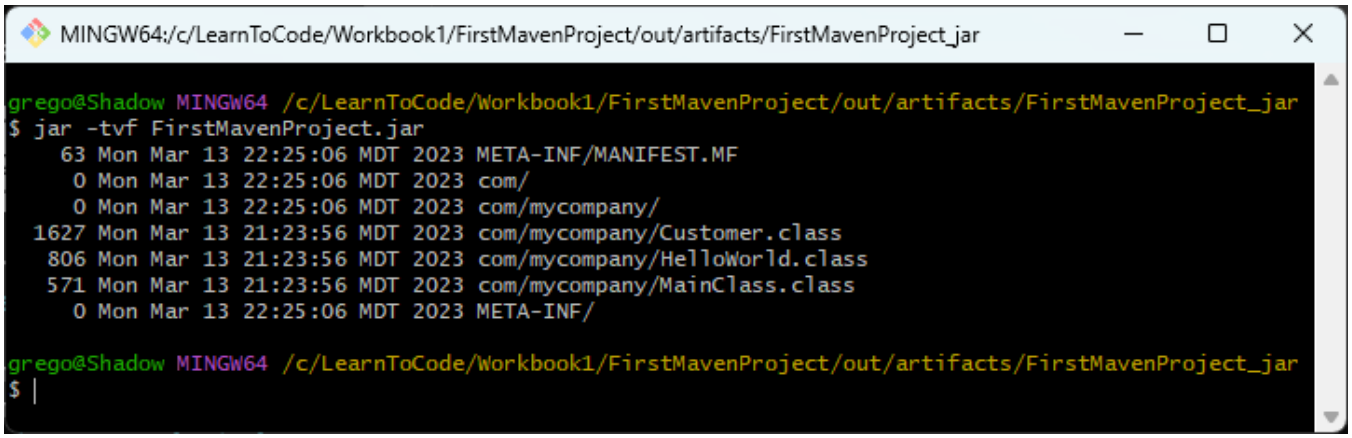


Viewing the Contents of the Jar File

- To view the contents of the jar file, run the command

```
jar -tvf <jar-file>
```

- Here you will see the manifest file that contains the Main-class declaration



- NOTE: You can also extract the .jar file with any Zip software and explore the contents directly

Exercises

EXERCISE 1

Open the TurtleLogo project that you created in the `workbook-6` directory. Create an executable JAR file. To do this follow the workbook instructions to create a MANIFEST.MF in IntelliJ. This is the file that specifies your application's entry point.

Build and generate the JAR file.

Copy the JAR file to a new folder and run the application. You should be able to copy this to any folder on your computer and run the program from the JAR.