Installation of IoTSim Edge

IoTSim Edge is a simulator that allows one to simulate IoT devices and end devices of their own preference in an environment virtually governed by the user. IoTSim-Edge is built on the top of CloudSim simulation tool which provides the underlying mechanisms for handling communication. IoT resources layer contains different types of IoT devices (e.g. car sensor, motion sensor) where each one has their own features and behaviours along with performing different operations of sensing and actuation. Sensors in the IoT device seamlessly generates data while actuators are responsible for generating the response. Traditionally, cloud resources are used for processing IoT data. But in Edge-IoT approach, sensor data is processed in the edge datacenter for faster processing time. Edge data center consists of heterogeneous processing devices.

IoTSim Edge by DN Jha is unique in its own way but it doesn't really have the easiest installation process. Hope this manual helps.

IoTSim Edge by DN Jha - https://github.com/DNJha/IoTSim-Edge

Prerequisites to installation of IoTSim Edge:

- Java JDK
- Apache Maven
- IntelliJ IDEA

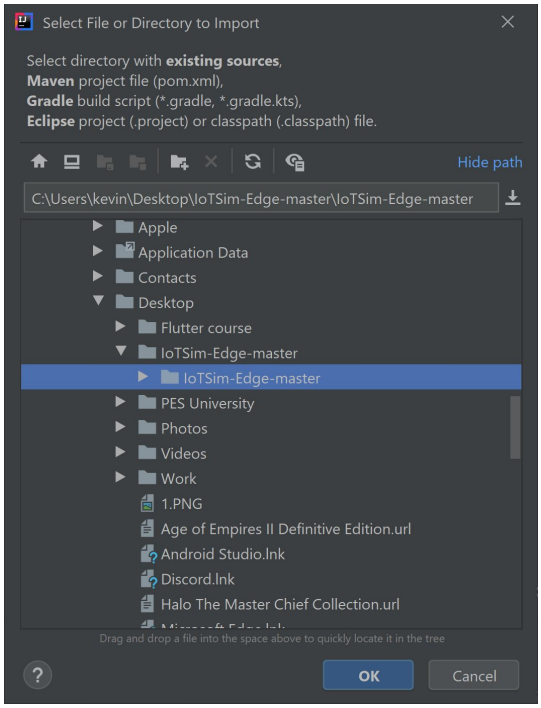
Note: If your JDK version is >= 11, the GUI will not be available directly as the JavaFX runtime library has been removed from the main JDK. Thus, for later versions of the JDK, JavaFX must be separately installed and included in the project. (https://openjfx.io/)

Steps:

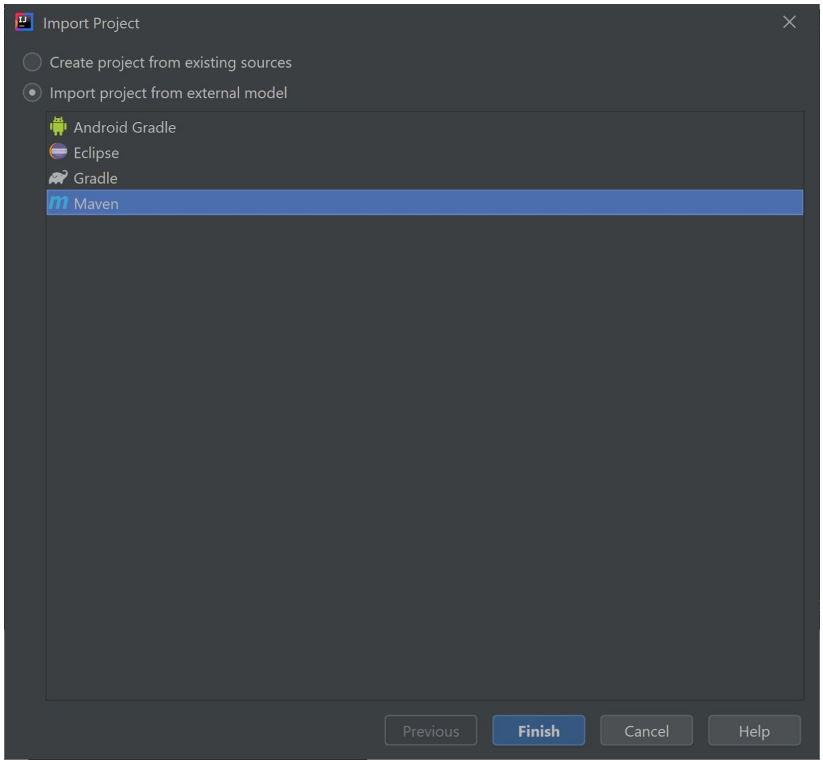
1. Download IoTSim Edge from GitHub.

2. Open IntelliJ IDEA and click '**Import Project**'

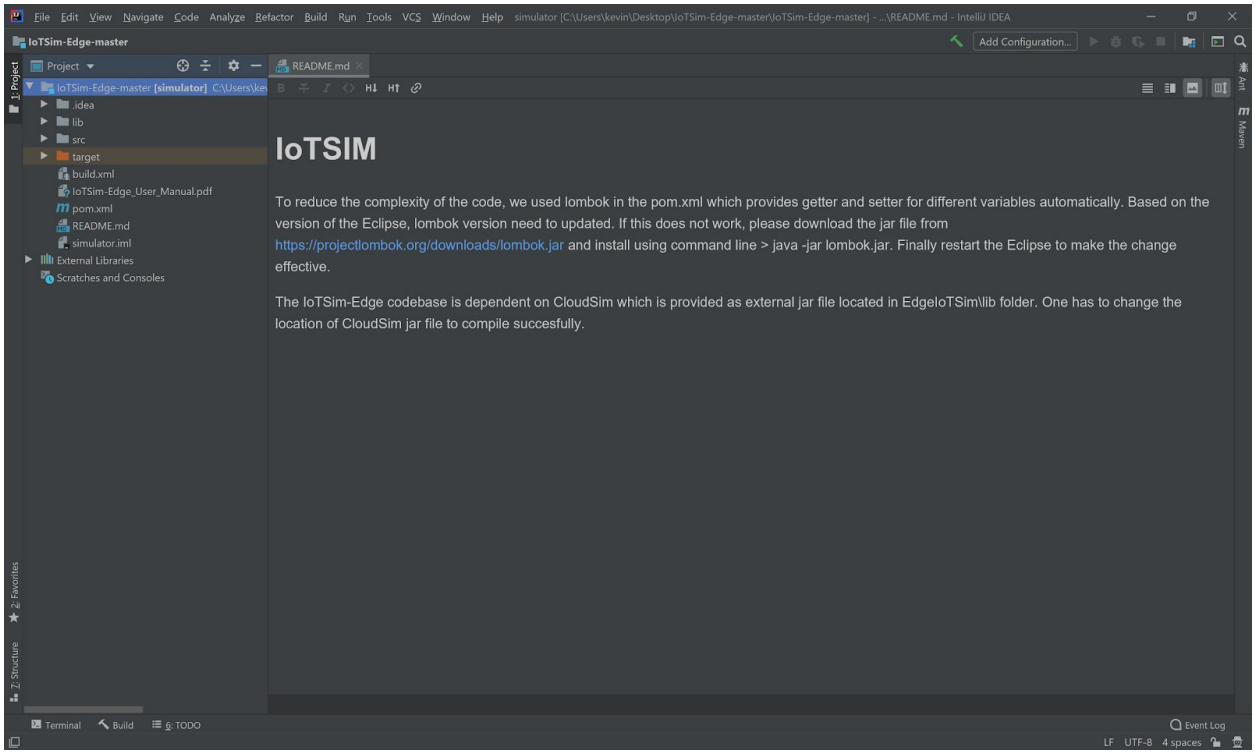
And look for the IoTSim Edge downloaded file from Github and select the **master directory**.



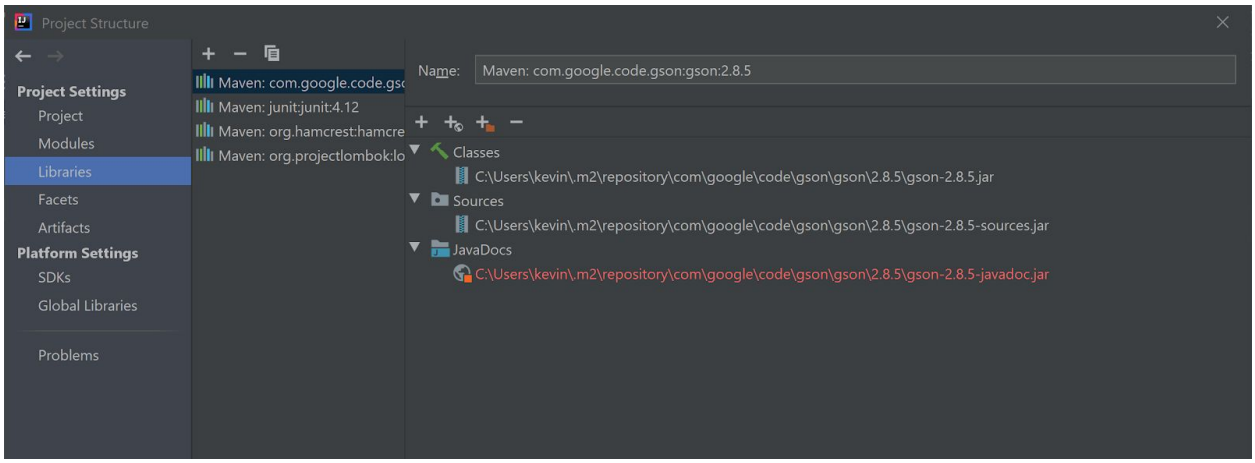
After which, select ‘Import Project from external model’ and select **Maven**.



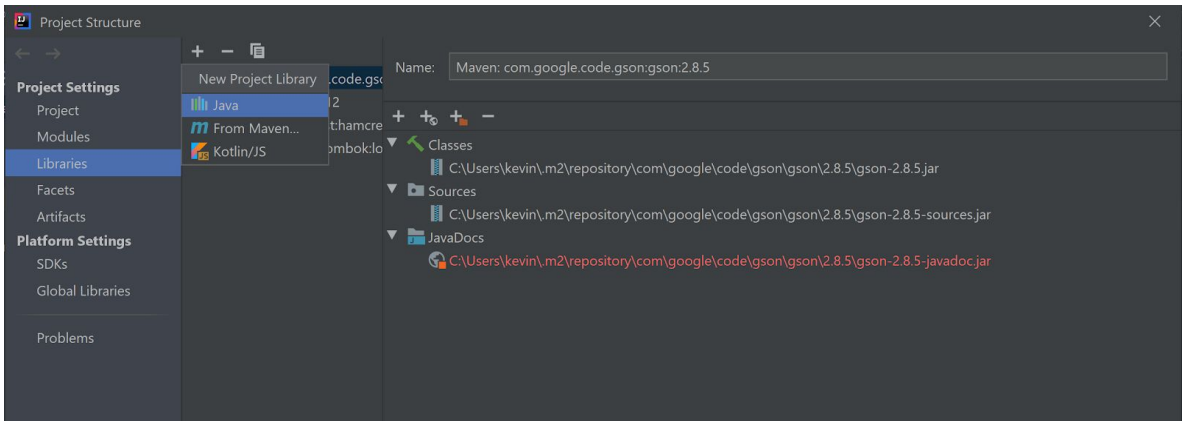
If you see the **README file** on your screen, you’ve done well so far!



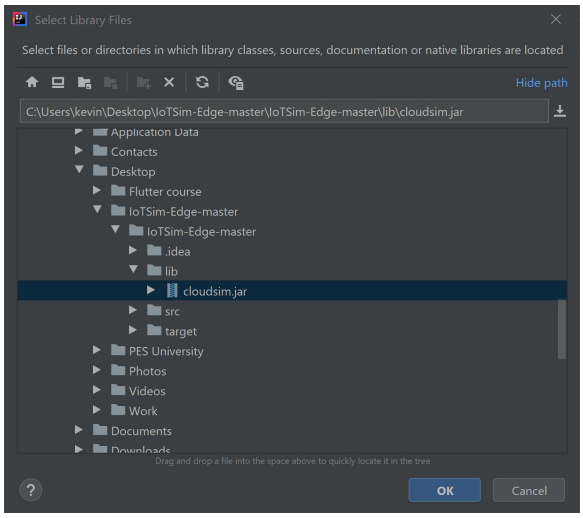
3. Click on File → **Project Structure**. And select **Libraries** under Project Settings.



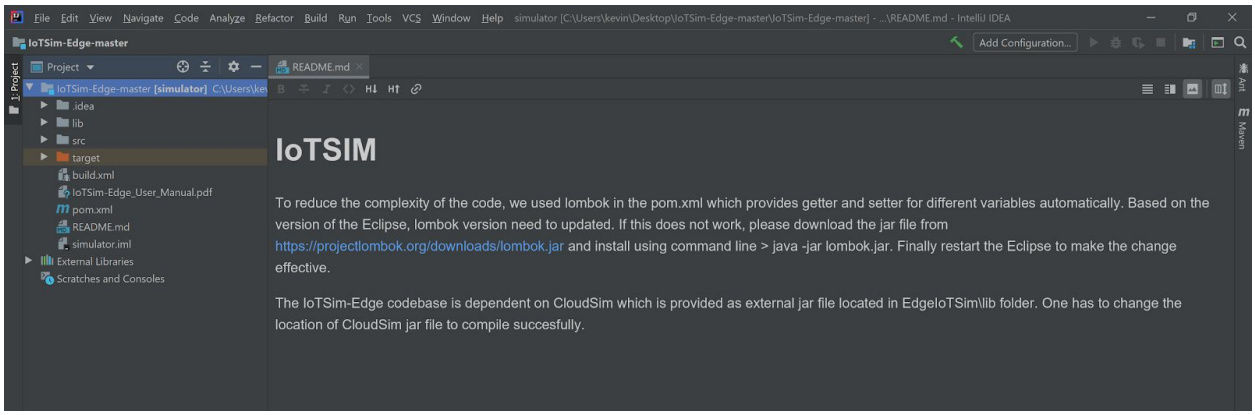
Following which, click the **+** button and select **Java**



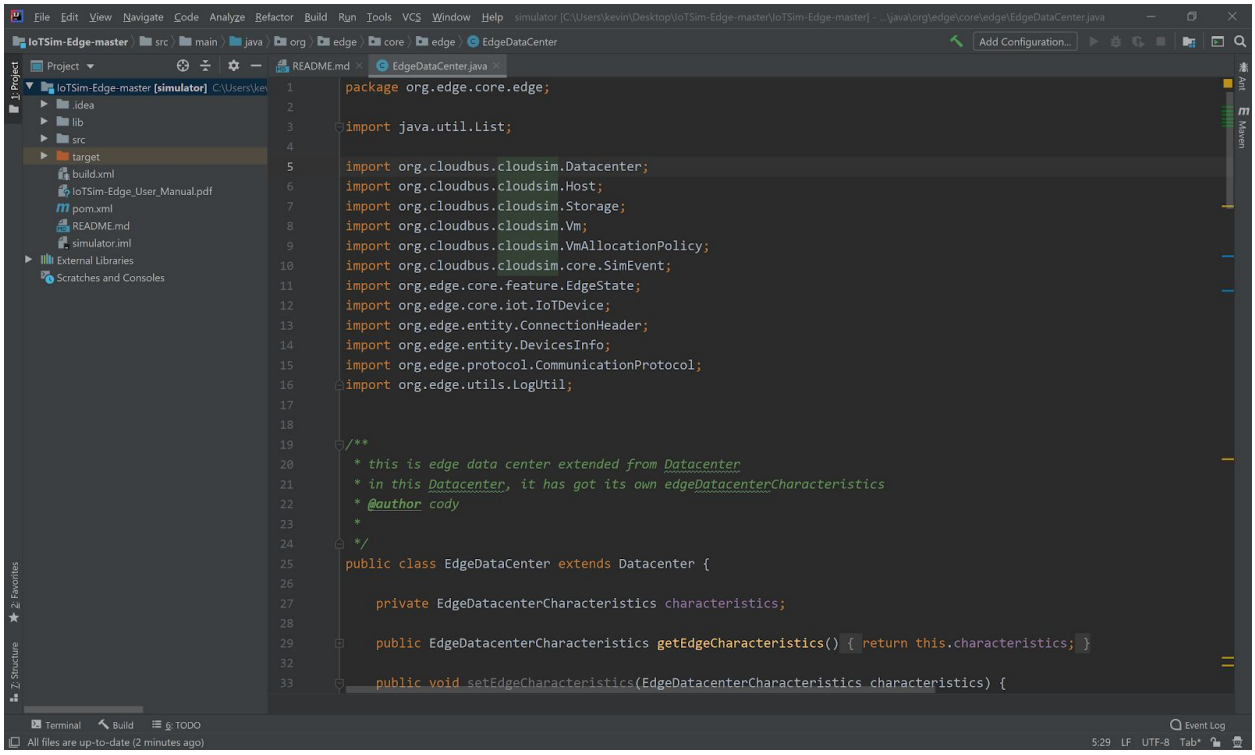
Select **cloudsim.jar** file inside the lib folder and apply the changes.



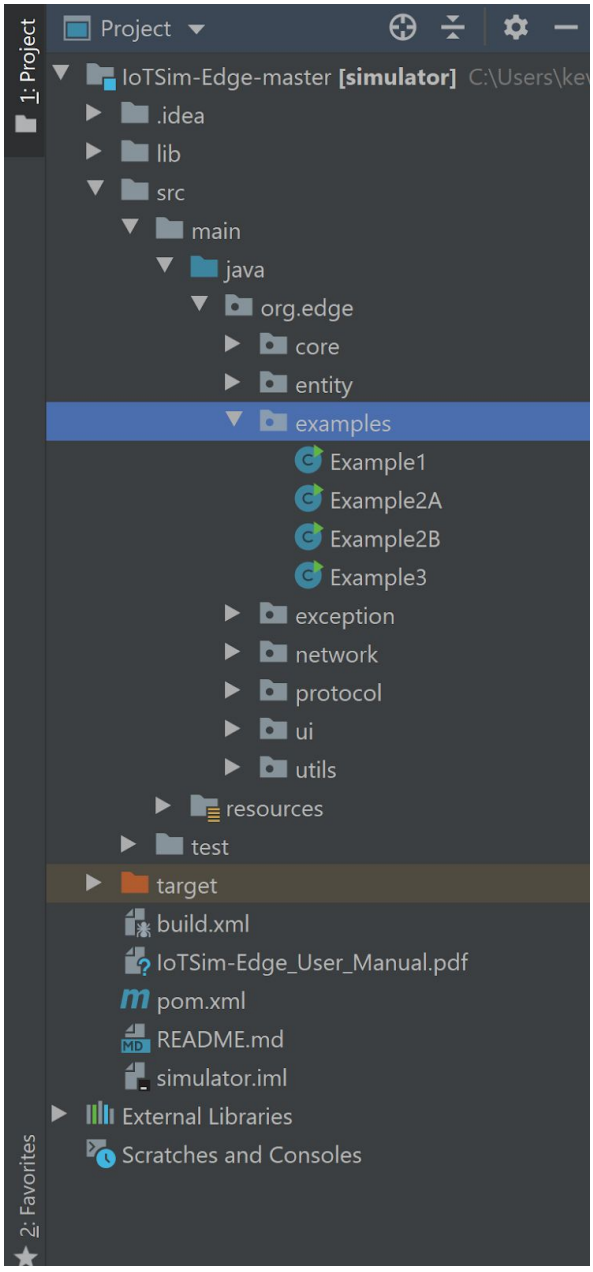
4. Click on the **green hammer** (Build) on the top right part of the screen near ‘Add Configuration…’



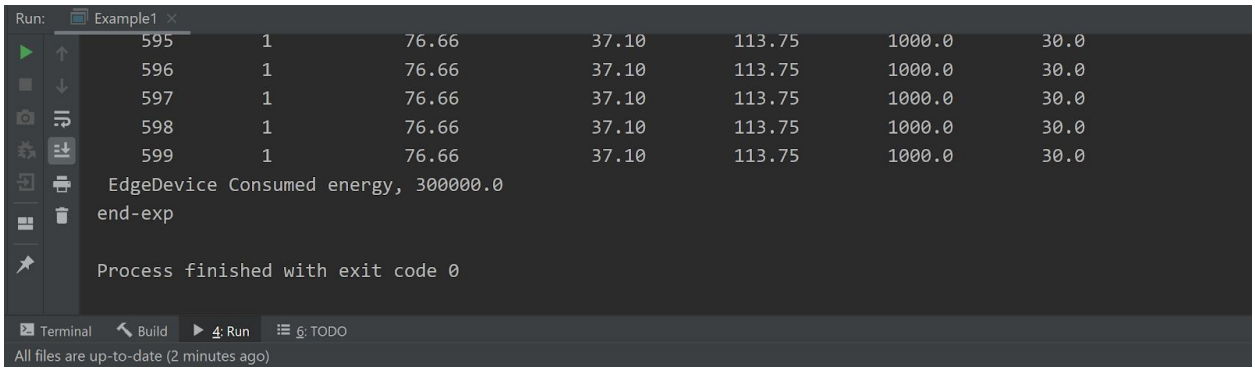
It builds the program and opens the **EdgeDataCenter.java** file



5. Head to **Project** section of the project on the left side of IDE. Navigate to **src** → **main** → **java** → **org.edge** → **examples**. The examples folder contains 4 test cases for IoTSim Edge Under examples, double click on **Example1**

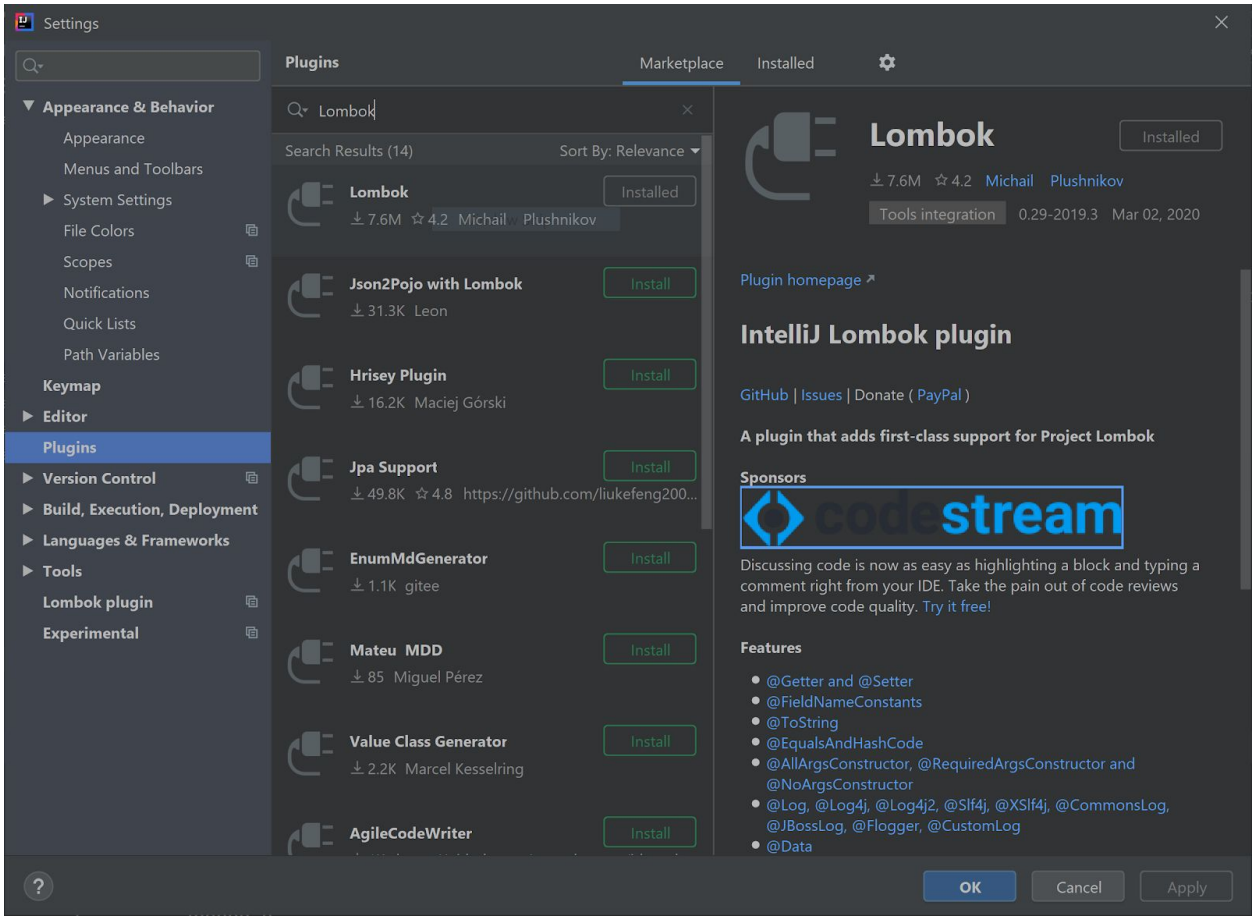


Run Example1, and most probably will be see a '**Process finished with exit code 0**' message

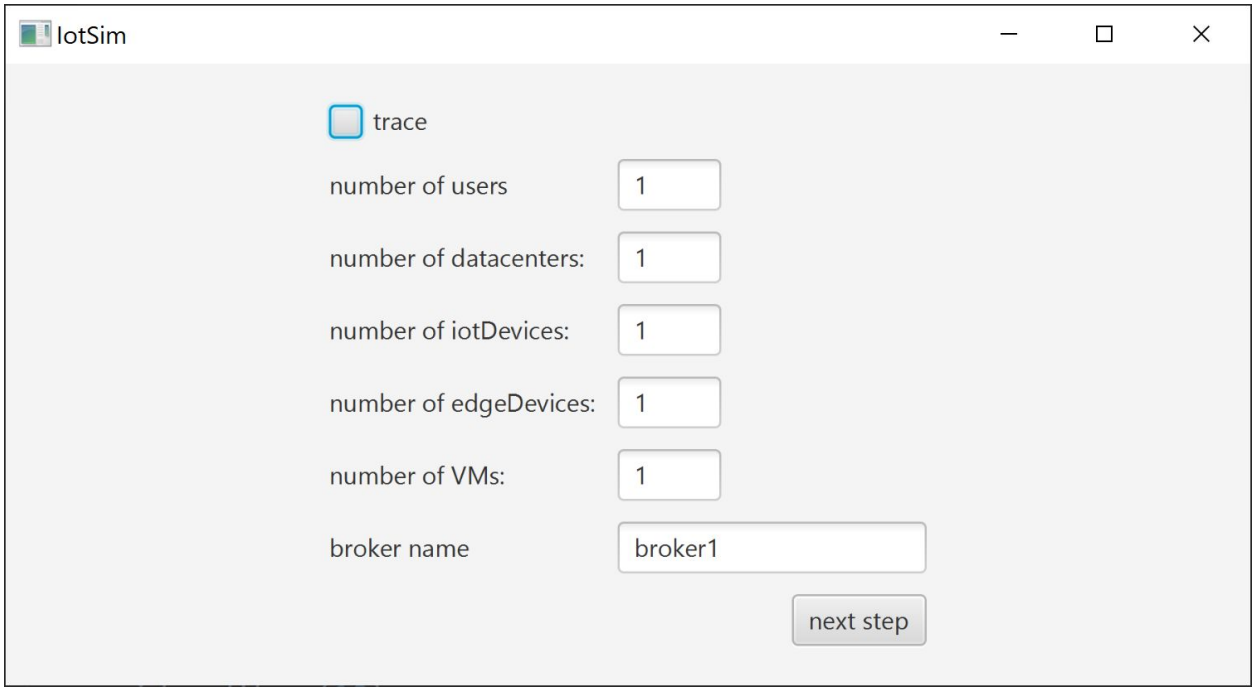


Do the same for the other 3 example programs.

6. Go to File → Settings → **Plugins** and look for the '**Lombok Plugin**' and install it. And restart the IDE.



7. For our final step, head to **src → main → java → org.edge → ui → Main**. Run '**Main.java**', we are then greeted by a GUI that looks something like this:



Congratulations! You have successfully installed IoTSim Edge!