

Installation and Running the Simulator

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Installation requirements:

- Eclipse Java IDE.
- e(fx)clipse downloaded from Eclipse Marketplace.
- JavaFX Scene Builder 2.0.

Installation instructions:

- Extract ProjectSimulator.rar.
- In Eclipse, choose File > Open Projects from File System and open all folders included in the rar file.
- Run package **gui (Run.java)** of the project **Simulator**.

Version management:

https://github.com/deadmanproqn/VGU-Local-Power-Simulation?fbclid=IwAR1J5tRV2p_RS9TesGCBMaD4YQhyIYgKksb72wobHqid9WSw0lpYqlzmWq4

Running the program instructions:

- There are two ways to make input in the first screen appearing to the user: create input manually in Consumer and Generator tabs. For the convenience of testing, user can only generate data according to the scenario by clicking the button **Generate Scenario** in the **General Data** tab, then click the button **Start Simulation** to begin the simulation.
- After clicking **Start Simulation**, the main screen of Simulator will appear. **Next Iteration** button is used to increase the iteration of the simulation. During each iteration, user can try to remove generators and consumers, show full list or show consumers according to his/her interest.
- After 12 iterations, user can click the button **Print Data** to generate reports and clear all data in the simulator, then click the button **Back** to generate different data scenario to simulate again.

Two demonstrations are also included and explained in detail in the report.

Users:

Since we focus mainly on developing new types of consumers, we have several potential users that we think the simulator may be helpful for:

1. Researchers or students who might have interest in power grid simulation. The Simulator of this project can be used as a reference for assisting them in similar projects or it can be improved by other students for this project in the future.

2. Engineers who work in power stations: They might want to generate assumed data and simulate it to predict the power consumption among consumer types so that they can have adjustable power distribution and pricing for each area.
3. Statisticians who work for government: Apart from collecting real data from previous years, they can work on data produced by our Simulator. This helps the government to control and ensure that the power distribution is enough for personal and commercial use as well as production of industrial zones in the country. Furthermore, combining real data from the past and assumed data in new unpopulated areas can help the government to develop more precise plans on expanding new residential, commercial or industrial zones or creating new types of power plants in the future.