**Prerequisite**

* Linux based PC (Ubuntu 16.04 is tested)

**How to Install**

1. Download and install the vehicle dynamics simulator, TORCS, which is torcs.tar.gz file (<http://gofile.me/26V6U/iITfOsohZ>).
   1. Install following packages: freeglut3-dev, libplib-dev, libopenal-dev, libalut-dev, libxi-dev, libxmu-dev, libxrender-dev, libxrandr-dev, zlib1g-dev, libpng-dev (use ‘sudo apt-get install [package\_name]’ command).
   2. Extract ‘torcs.tar.gz’ file at your home directory.
   3. Go into ‘torcs’ directory.
   4. Type ‘./configure’.
   5. Type ‘make’.
   6. Type ‘sudo make install’.
   7. Type ‘sudo make datainstall’.
   8. After installation, you can run TORCS by typing ‘torcs’.
2. Download and install the system configurator (<http://gofile.me/26V6U/4n926x7ET>).
   1. Install the following package: openjdk-8-jdk.
   2. Extract ‘configurator.tar.gz’ file at your home directory.
   3. You can run the system configurator by typing ‘eclipse’ at ‘eclipse’ directory.
3. Copy the real-time simulator.
   1. ‘Simulator’ directory should be located at your home directory.

**How to Start**

1. Run the system configurator

* When you run the system configurator, set workspace as ‘workspace’.

1. Create a new project

* At ‘Design’ menu, select ‘New Project’.
* Type the project name.
* Now, you can see the canvas.

1. Configure a whole system

* In the canvas, you can add objects such as ‘CAN’, ‘CAR’ from the right panel by drag and drop.
* After adding objects, you can connect them.
* Also, you can add program codes for each SWC by clicking doubly each SWC icon on the canvas.
* On each object, by clicking it and selecting ‘Property Settings’, you can set properties of each object. For example, for each SWC, you can set offset, period, WCET, and so on.
* To describe the data dependency between SWCs, use ‘Send to’ property with SWC id.
* Refer to ‘test’ project for details.

1. Run Simulator

* At ‘Simulation’ menu, click ‘Run Simulation’ to start the simulation. Then, TORCS would be started with our simulator. After select a proper course and start the race, you can see the vehicle’s behavior. Also, you can see schedule diagram and some variables with graphs.
* To stop the simulation, at ‘Simulation’ menu, click ‘Stop Simulation’. Then, our simulator would stop.