

Experiment - 2

Aim: Use OMNET++ to create a network with 2 Nodes, creation and passing of a packet back and forth between both nodes. Implementation of Tic-Toc example to get familiar with OMNeT++ Simulation IDE.

Procedure:

Step 1: Open the OMNET++ IDE by typing omnetpp in terminal.

Step 2: Create a new project which will be an empty project.

Step 3: OMNET++ uses NED files to define components and to assemble them into larger units like networks. To add the file to the project, right-click the project directory in the Project Explorer panel on the left, and choose New -> Network Description File (NED) from the menu.

Step 4: OMNeT++ IDE's NED editor has two modes, *Design* and *Source*; one can switch between them using the tabs at the bottom of the editor. In *Design* mode, the topology can be edited graphically, using the mouse and the palette on the right. In *Source* mode, the NED source code can be directly edited as text. Changes done in one mode will be immediately reflected in the other, so you can freely switch between modes during editing, and do each change in whichever mode it is more convenient.

In the source mode of the .ned file, enter the code as in figure 1.

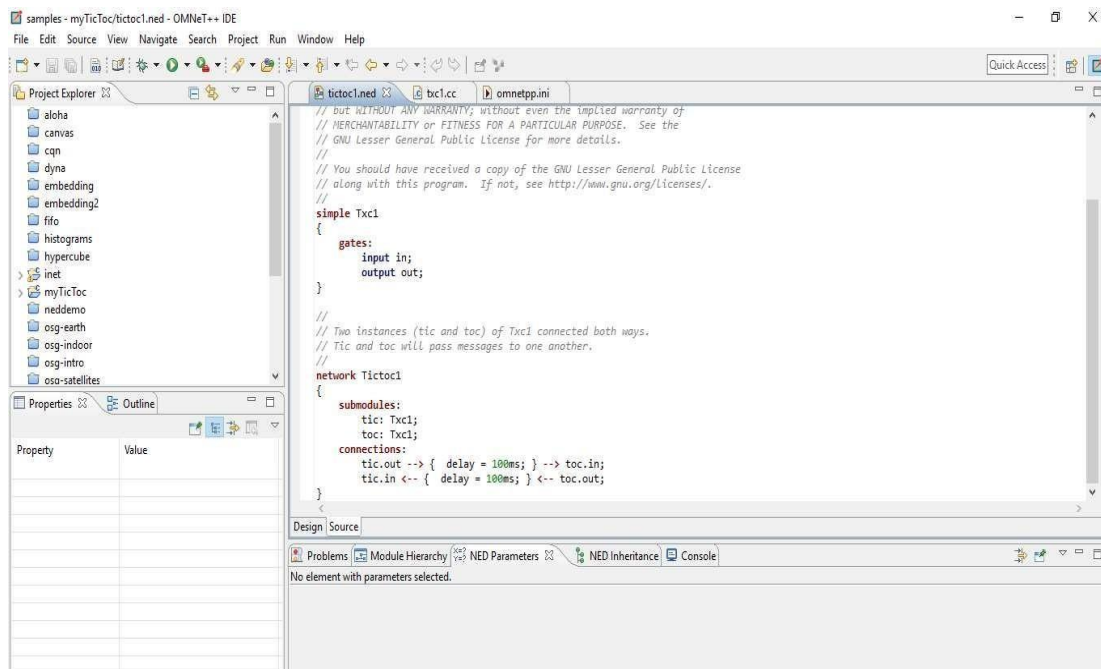


Fig 1

Step 5: We now need to implement the functionality of the Txc1 module in C++. Create a file by choosing New -> Source File from the project's context menu and give name as per choice.

Step 6: In the C++ source file (.cc extension), enter the code as in figure 2.

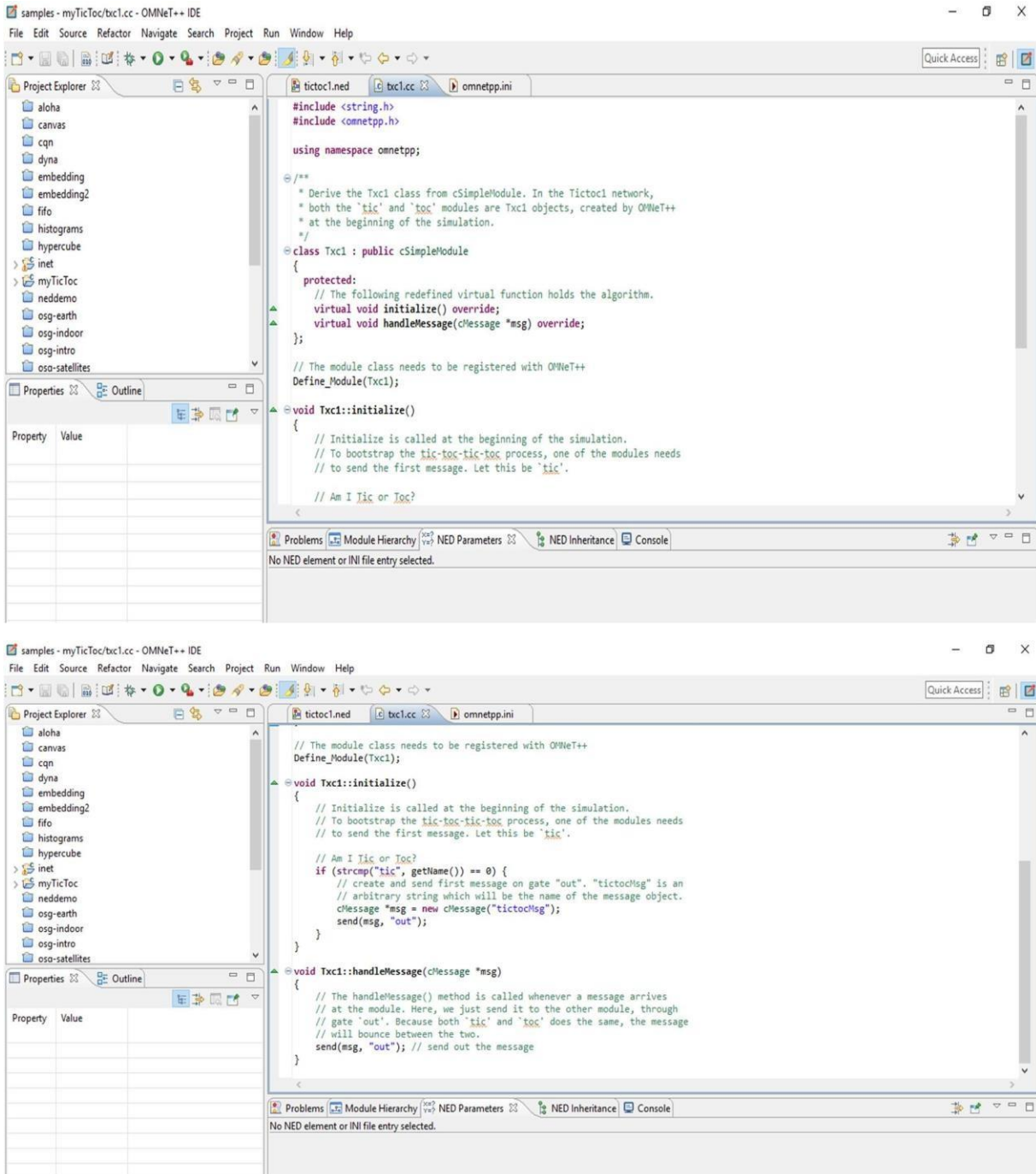


Fig 2

Step 7: To be able to run the simulation, we need to create an `omnetpp.ini` file. `omnetpp.ini` tells the simulation program which network you want to simulate. Create an `omnetpp.ini` file using the File -> New -> Initialization file (INI) menuitem.

Step 8: The Inifile Editor also has two modes, Form and Source, which edit the same content. The former is more suitable for configuring the simulation kernel, and the latter for entering module parameters.

In the source mode of `omnetpp.ini` file enter the code as in figure 3.

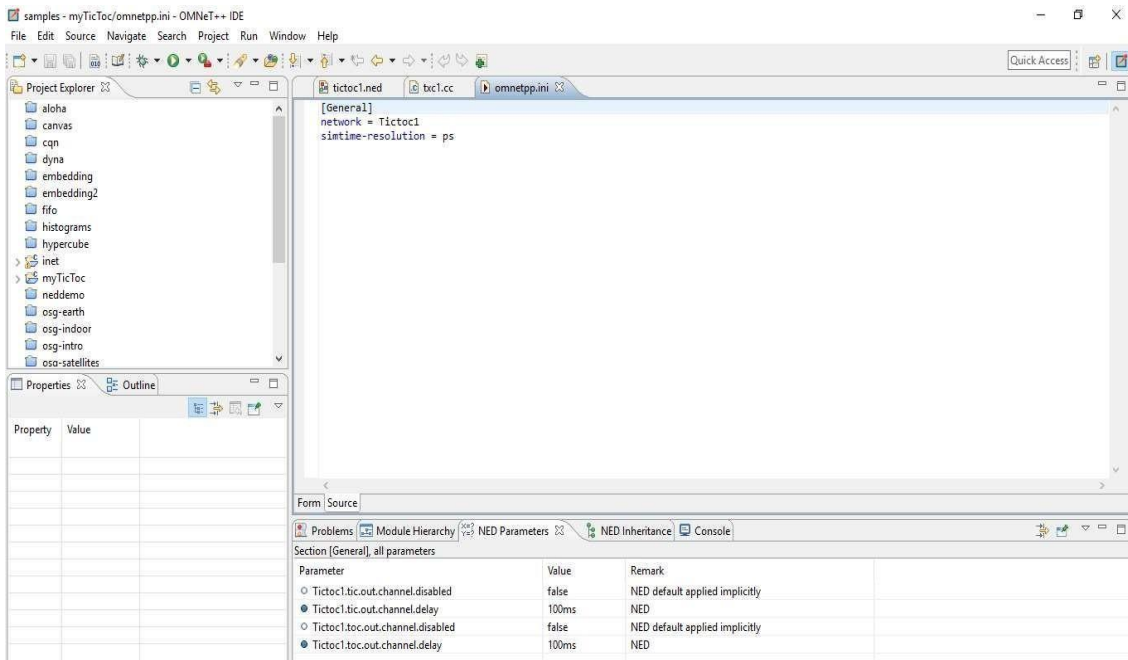


Fig 3

Step 9: Now the code is complete so click on run button to run the simulator.

Step 10: Press the Run button on the toolbar to start the simulation in new GUI window that appears on successful compilation and building of the project.

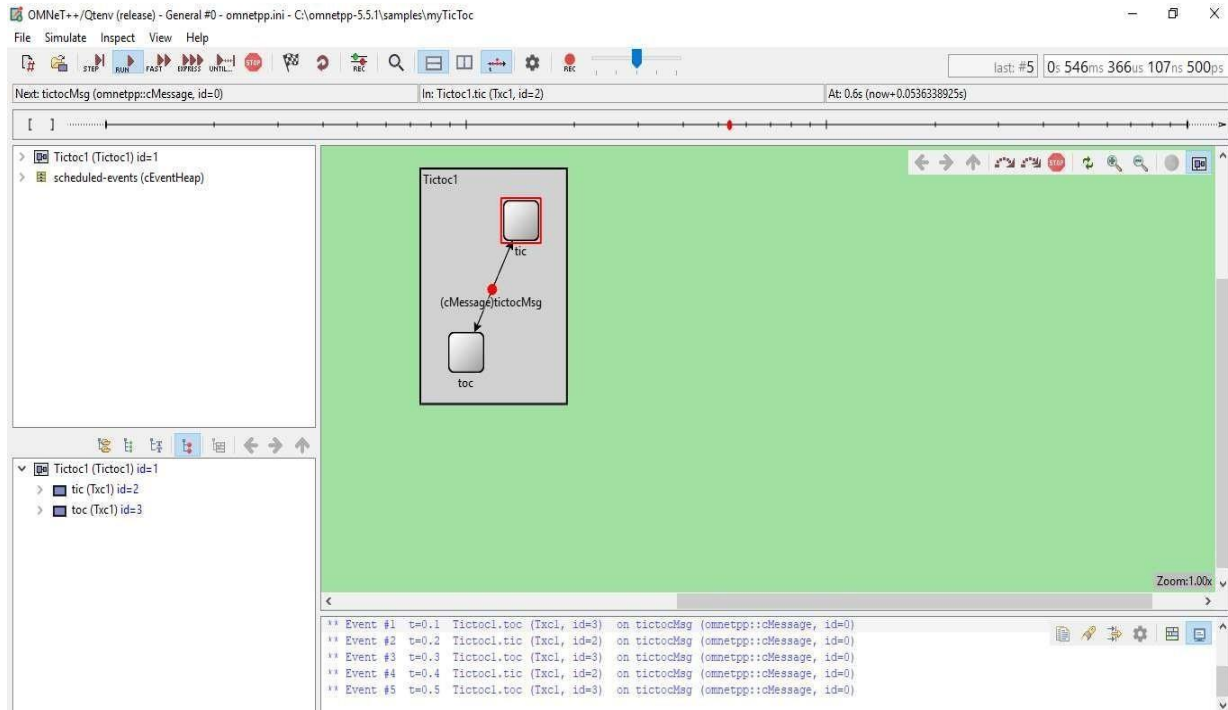


Fig 4

Step 11: Implementation of the model is successfully completed.