National Taipei University of Technology

Communication Software Design (Fall, 2013)

Project 5

(Due: 2014/1/13, Monday before PM11:59)

Read the content of this document carefully, or you may miss the hint necessary to complete this project.

(I) Project Descriptions:

You must apply all features constructed in previous projects in this final project and add network modes.

A mode dialog appears in the beginning, and three modes can be chosen in the combo box.

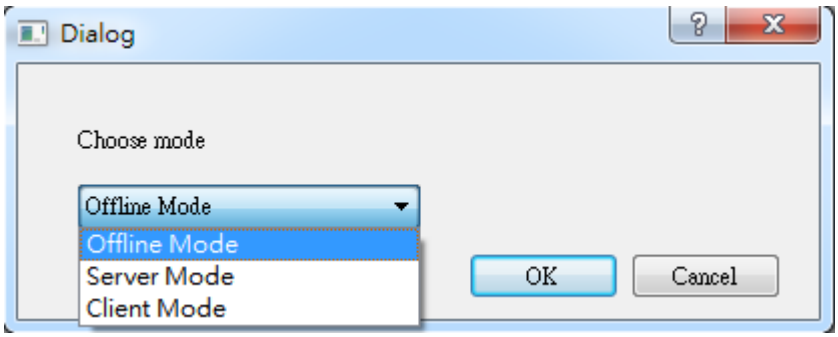


Figure 1.

Choose mode and click OK to start or click Cancel to exit.

(1) Offline Mode

Most functions will be introduced in this section,. The offline mode works without a network.

View

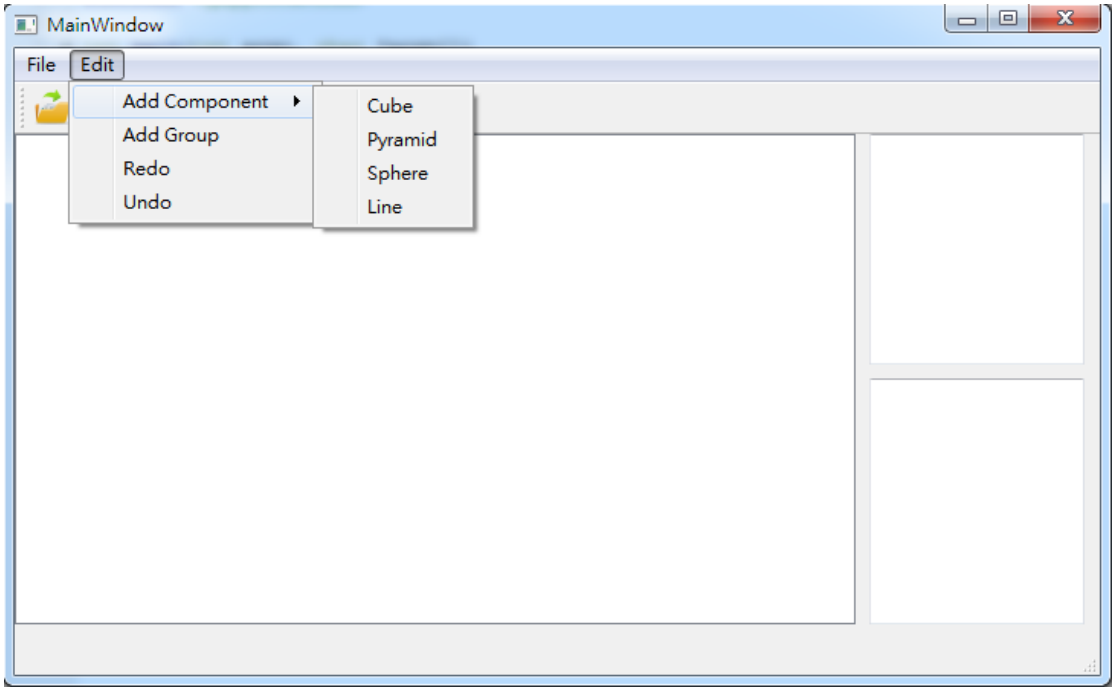
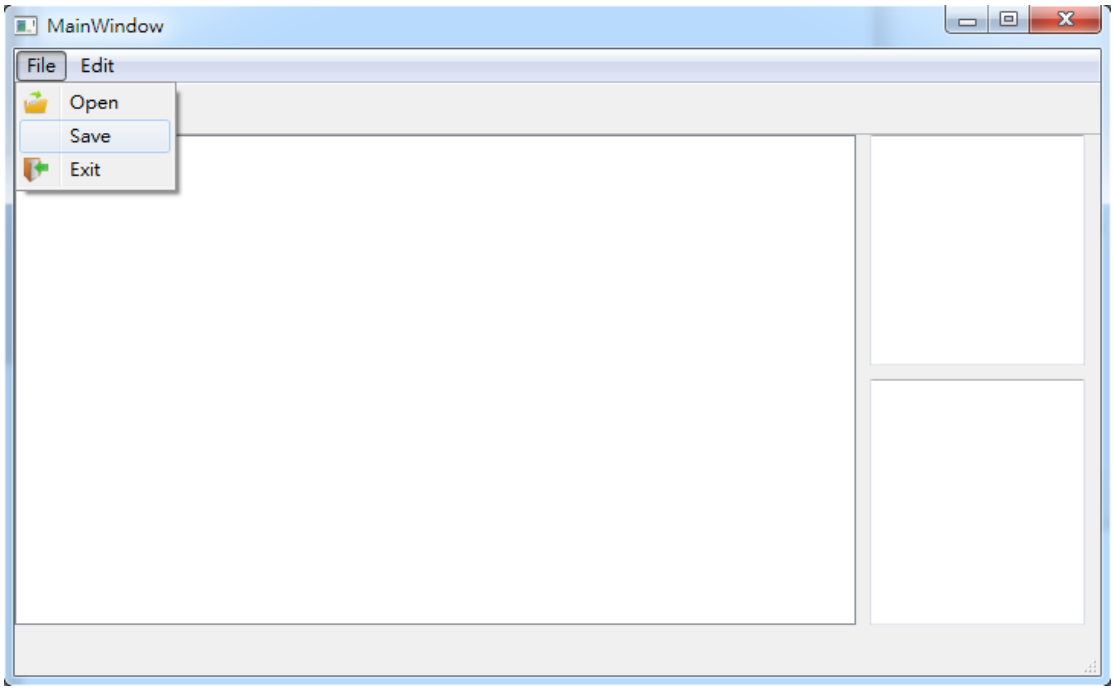


Figure 2.

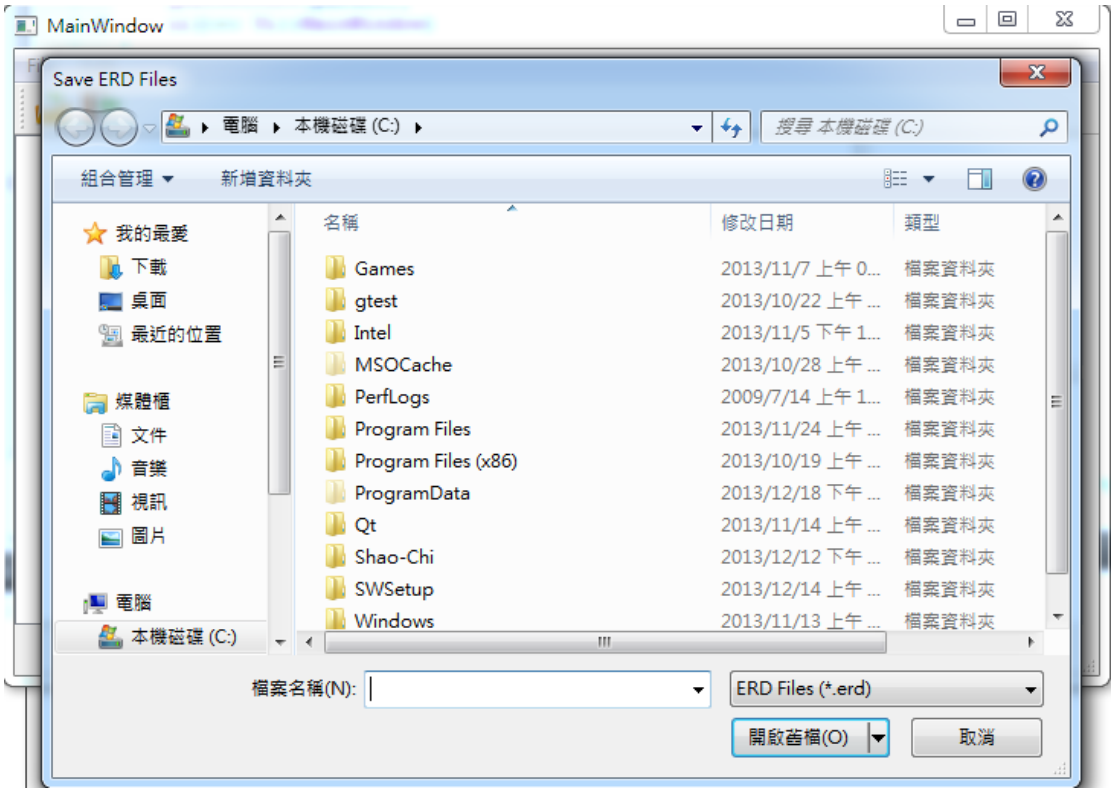
The new features are shown in figure 2. The new window in the upper right presents groups, and the one in the bottom right presents components.

(a) Save

The save button is in File option.



Open a dialog to save record.



(b) Add Component

Four sub-items will create components corresponding to your previous work. If you choose Cube, a dialog will appear and ask you to name the component.

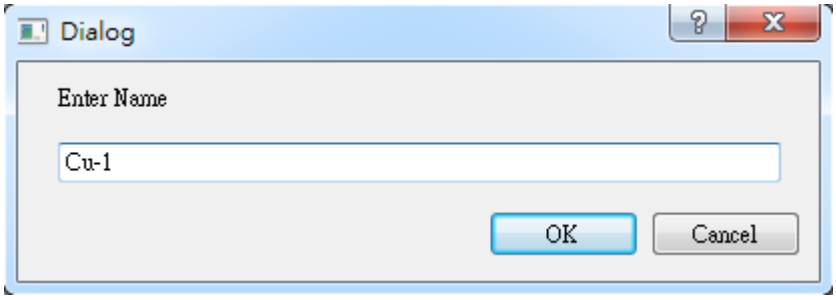


Figure 3.

Click OK and a new component will appear in your graph.

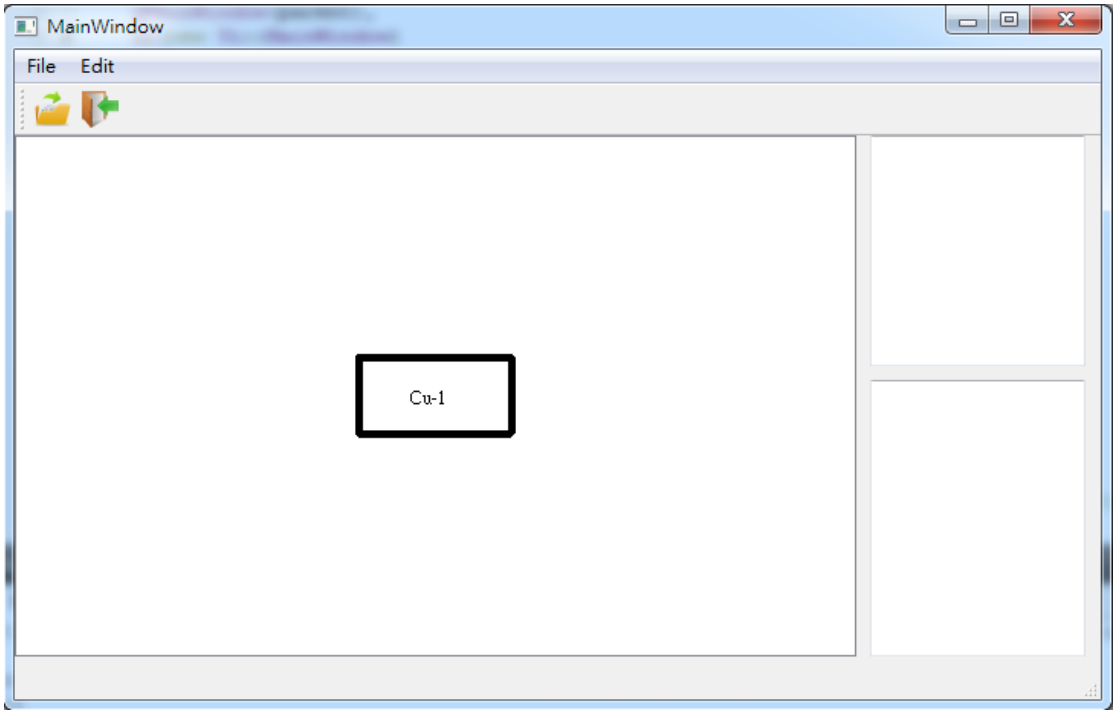


Figure 4.

Create Line is not the same process. You will click point 1 of this line and click again on point 2 to create this line.
(IMPORTANT: your line should be able to create in any degree, not only horizontal.)

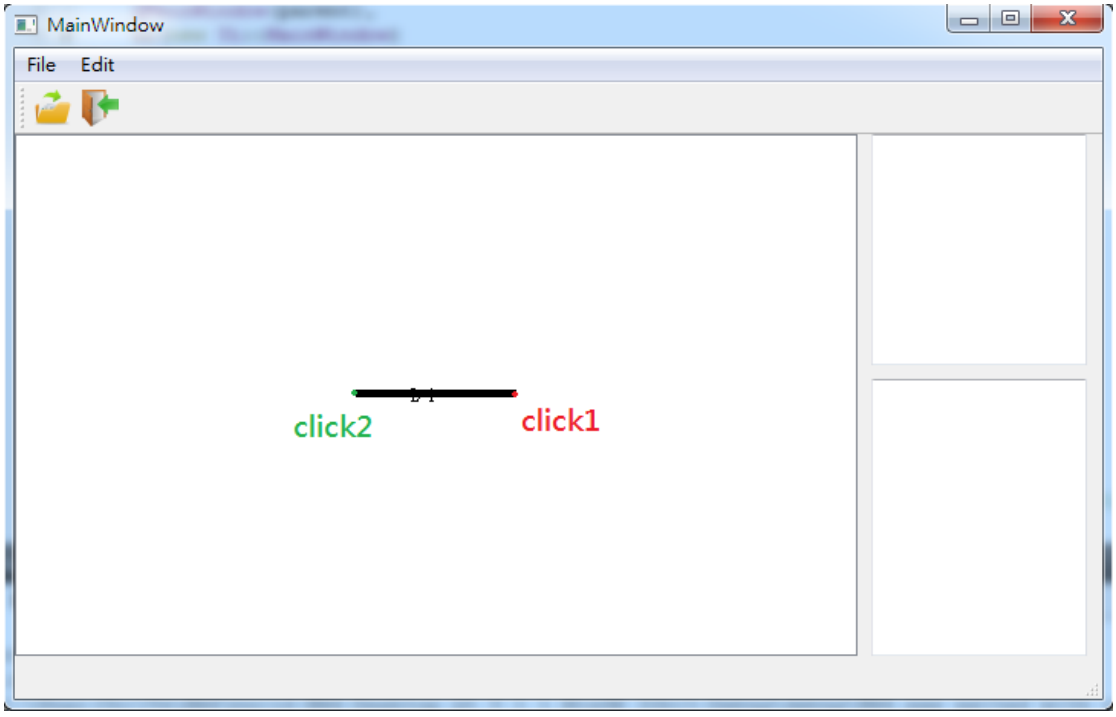


Figure 5.

(c) Add Group

There are three components in this graph, now we add a group containing members with ID 1 and 3.

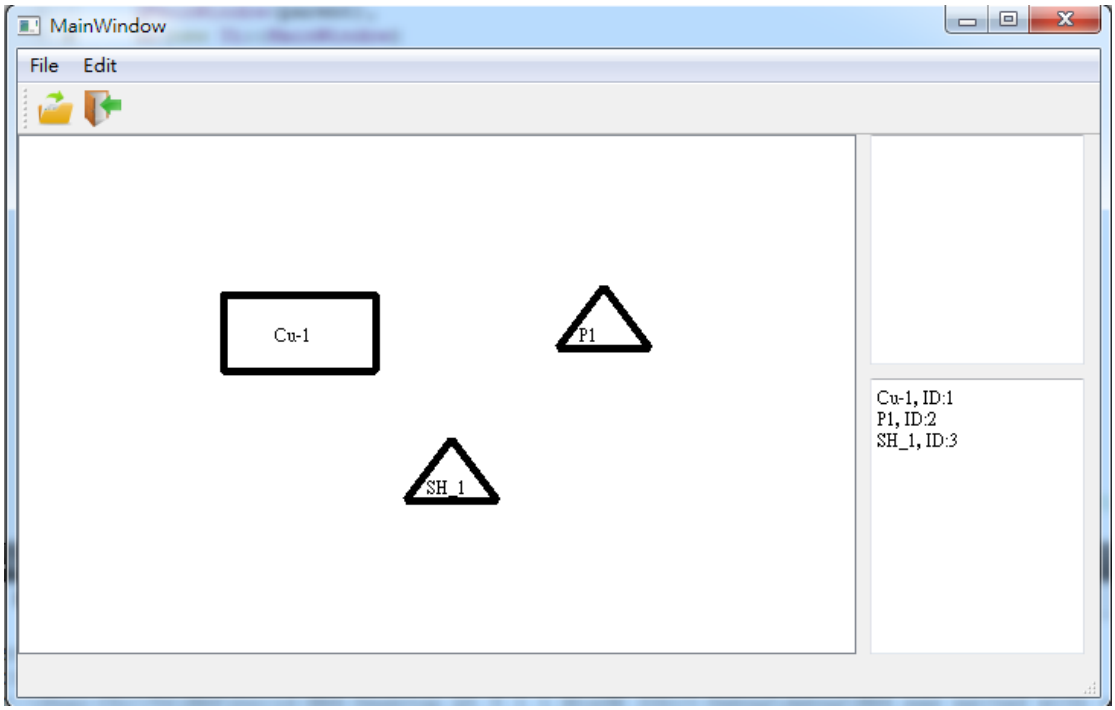


Figure 6.

Click Add Group in Edit, then enter the name and members in the question dialog.

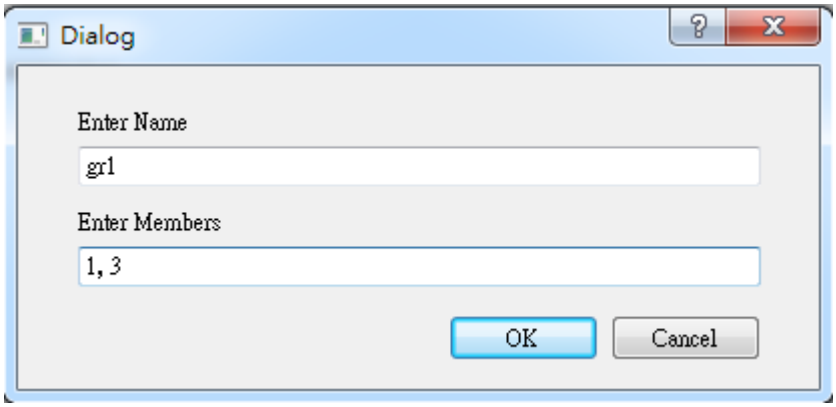


Figure 7

Click OK and a new group appears in the group window.

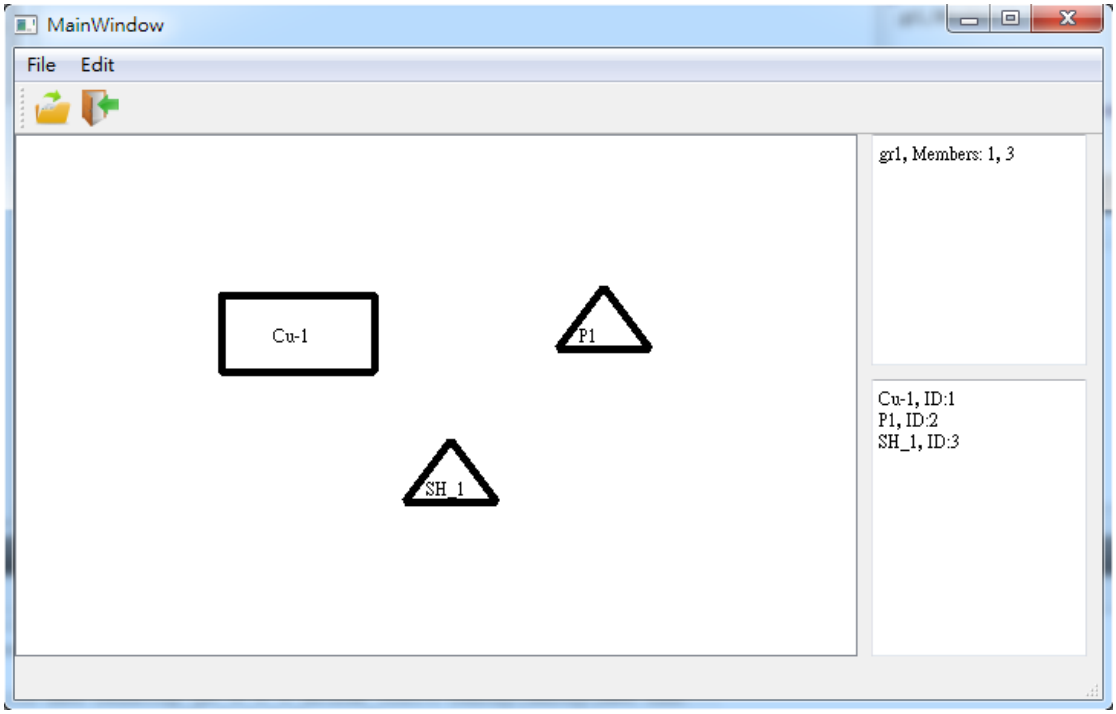


Figure 8

(d) Edit Component

Your program must allow the user to edit a component by double clicking on it. A dialog box (figure 9) appears.

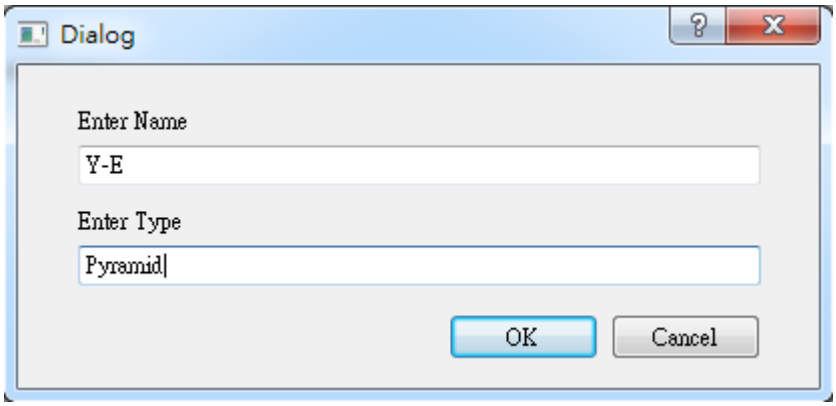


Figure 9

Besides information, the shape should also change to its new type.

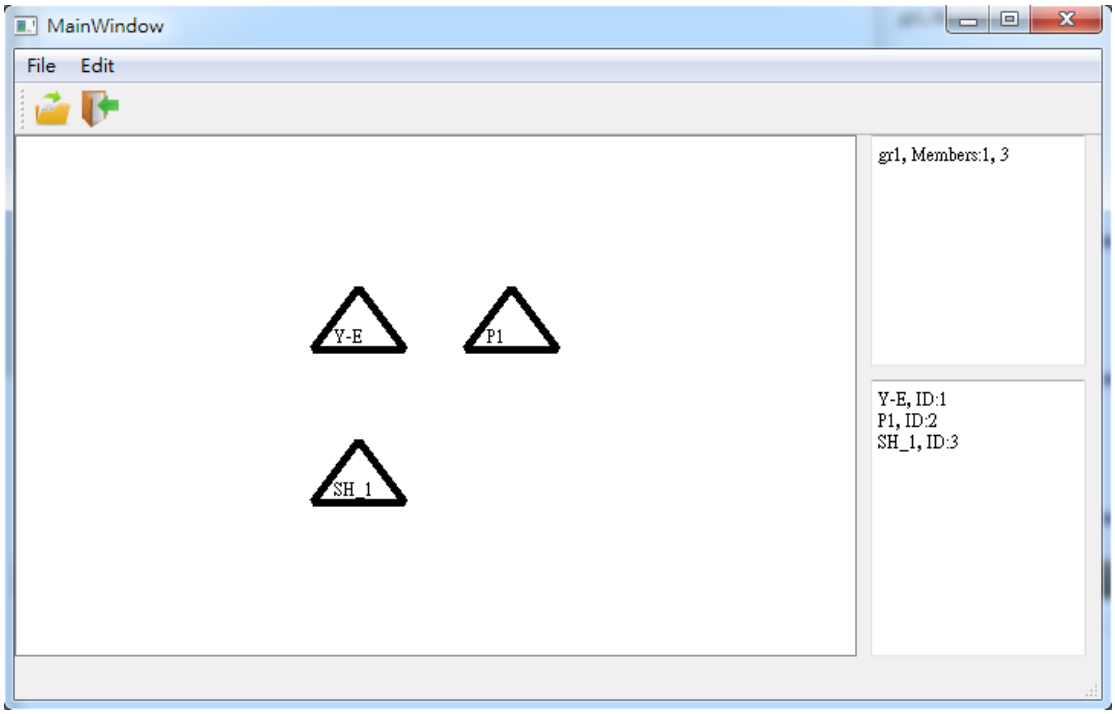


Figure 10

(e) Redo, Undo

This is the same as previous projects. For example, if you click undo after figure 10, the component with ID 1 will return to the cube type and has text ”Cu-1”.

(2) Server Mode

Most features of server and clients are the same as offline mode, but the server will be a host and open a host for multiple users to edit a single graph.

Important: Load record should be only available in server mode, and refresh all the client screens after load. These two button should be unavailable (can't press) in client mode.

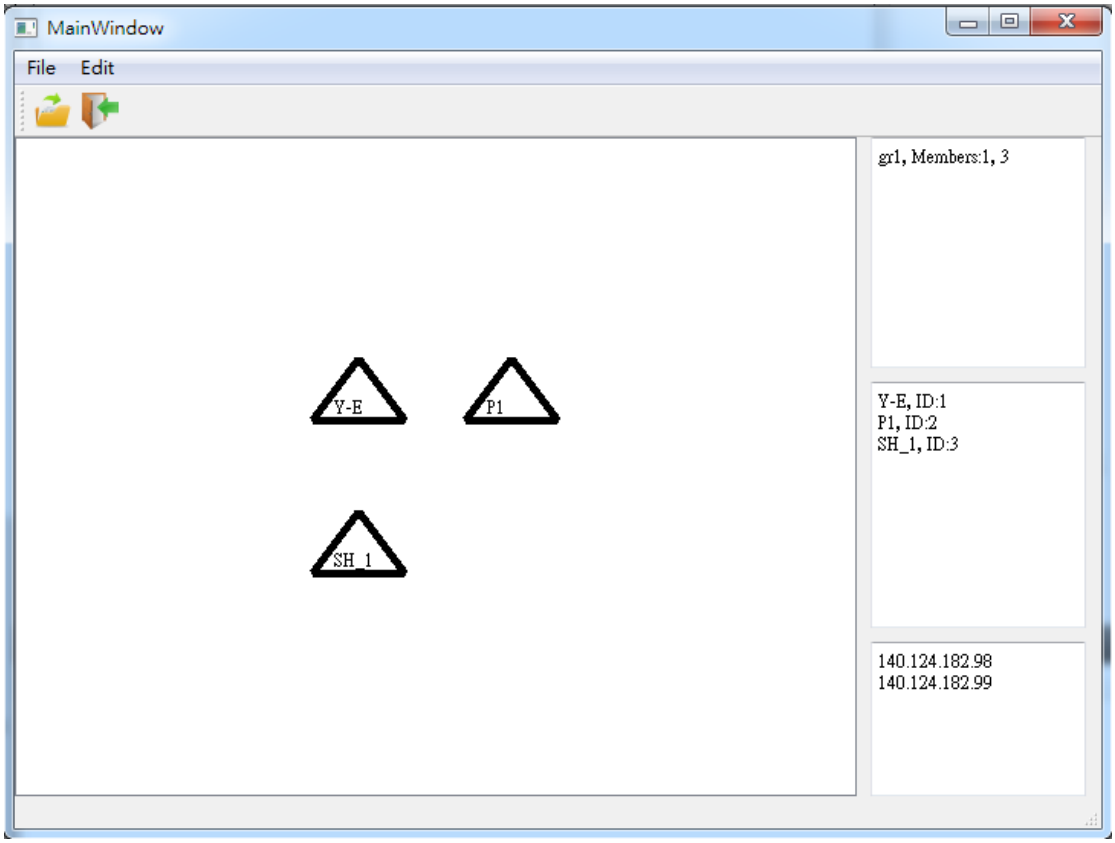


Figure 11

The third window on the right side shows the client IPs connected to this server, and the information on their screens is synchronized.

If a client edits ID 1's text from "Y-E" to "SU", then this change will synchronize to the server and other clients.

The server should maintains the ability of edit the graph.

(3) Client Mode

To open a client (ex: IP 140.124.182.97), choose client mode in the starting dialog. An IP address dialog can get the IP of the server you want to connect to, ex: 140.124.182.100.

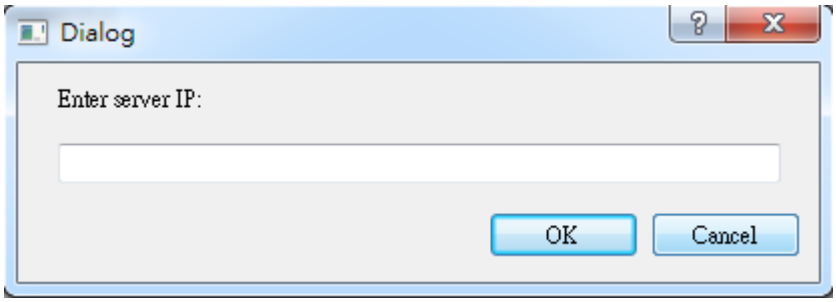


Figure 12

Figure 13 is the view of the client. The difference from the server is the server IP appears in the bottom right window instead of the client IP.

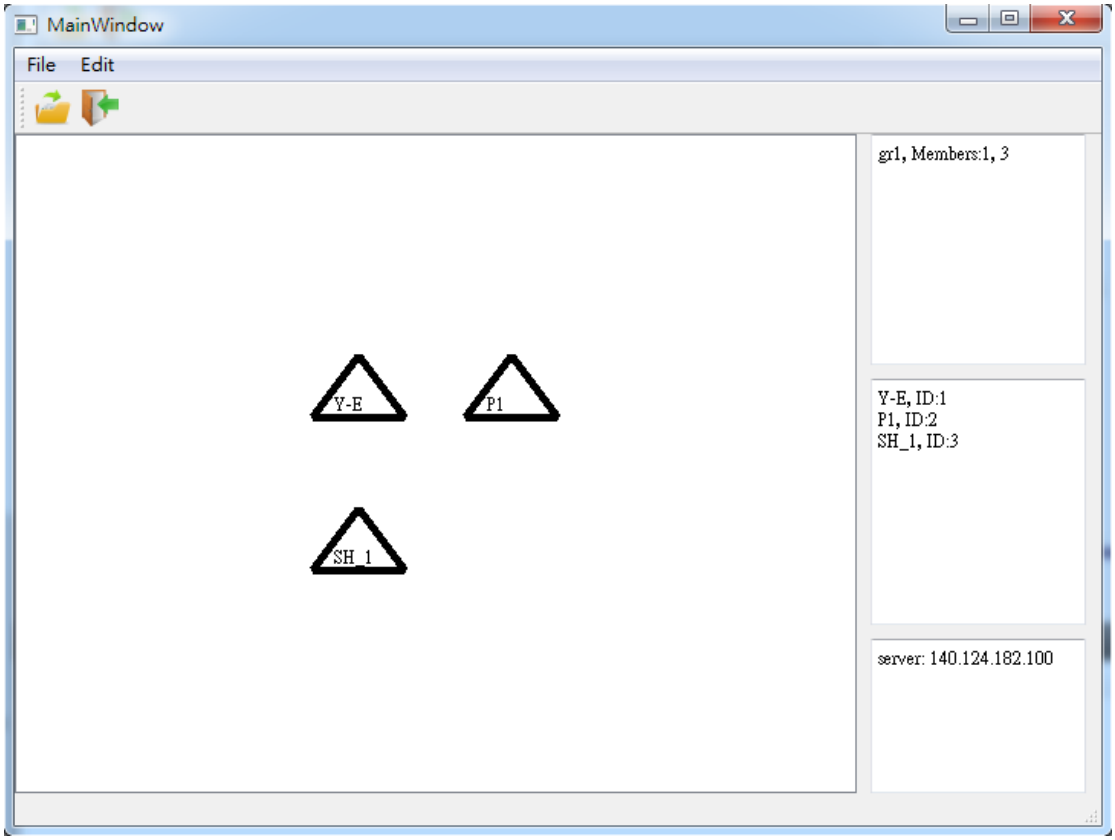


Figure 13

A new IP will appear in server 140.124.182.100’s client IP window.

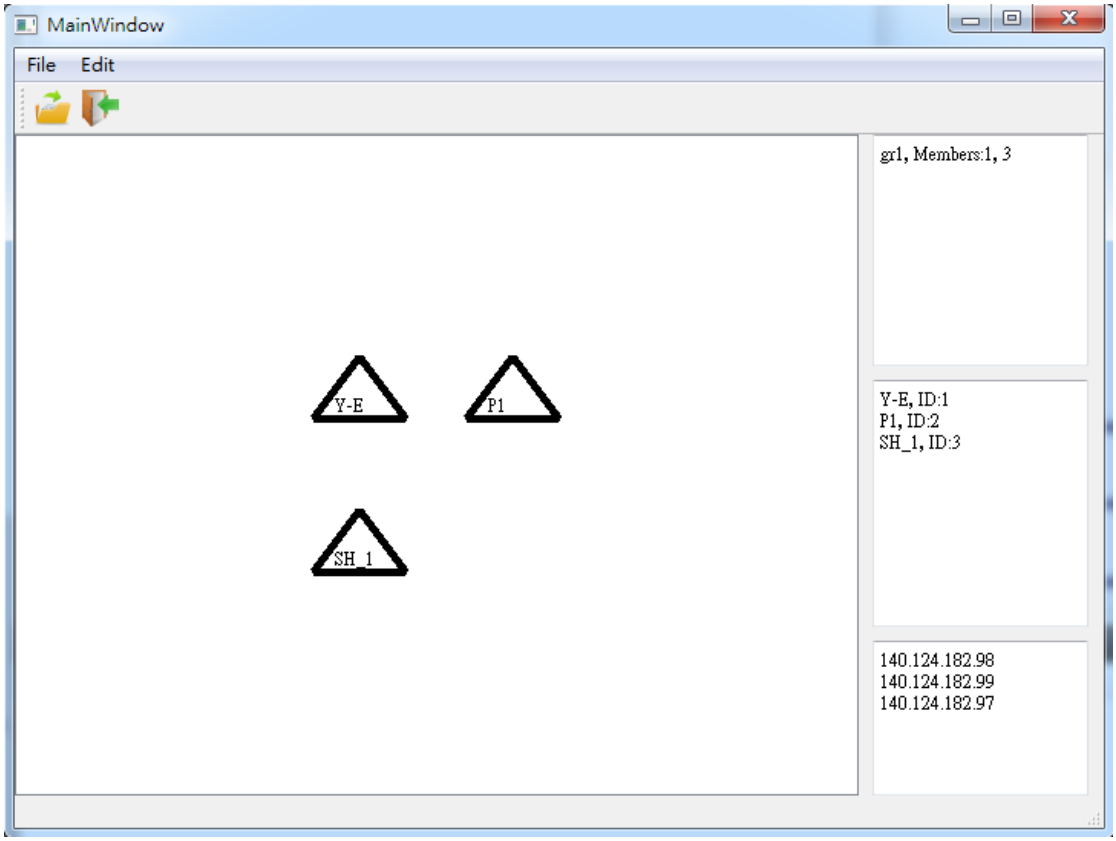


Figure 14

(II) Homework Report:

You have to write a report for this homework that includes the following items:

(1) The features that you finished in this homework.
(2) Write a comment for each function. (Just be concise.)
(3) Snapshots of program execution.
(4) Measure the time that you spent on this homework. Please record the time precisely in the following table.

homework#1(total: 18 hours)			
Date	Start	Stop	Comment
20131001	19:30	22:00	New / Load a XML record
20131002	19:00	21:45	Display current components
20131004	13:10	15:25	New / Load a XML record
20131007	14:55	17:30	Add component

Total hours: 10

(III) Homework Grading:

(1) Save (10%)
(2) Add Component (20%)
(3) Add Group (10%)
(4) Redo (15%)
(5) Undo (15%)
(6) View (20%)
(7) Server Mode (15%)
(8) Client Mode (10%)
(9) Class diagram (10%)
(10) Coding style and code quality (20%)
(11) Report (5%)

Total: 150%

You should avoid using QT functions. The objective of this course is to teach you C++ and not QT. If it is necessary to use QT functions (Ex. Qt GUI program will need to use QT function), just do it.

(IV) Homework Submission:

Please zip your homework before upload to e-learning.
And you must include:
(1) Your source code (the entire project)
(2) Report (both word and PDF)
If you failed to finish and upload your homework before limit, submit it to the late homework folder or email it to me. There will be a discount for late work, and no score for late work after three days.

TA's email: t8820310@ntut.org.tw