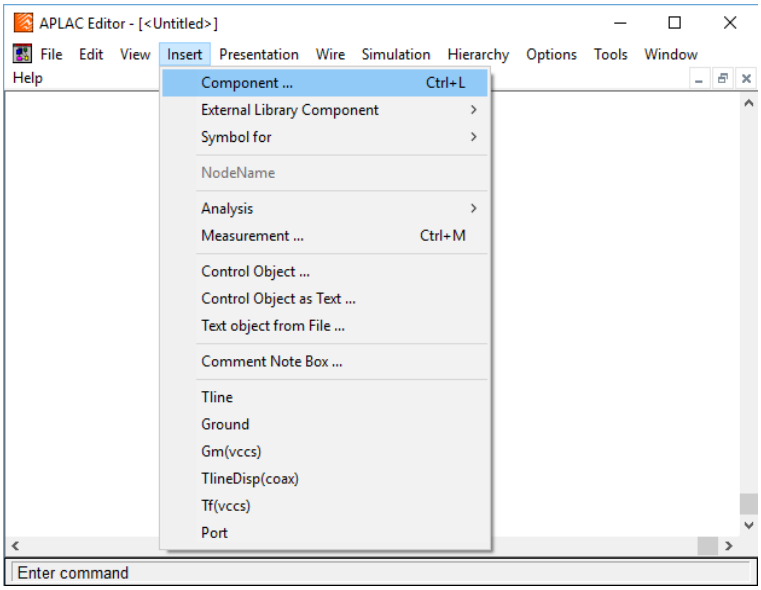
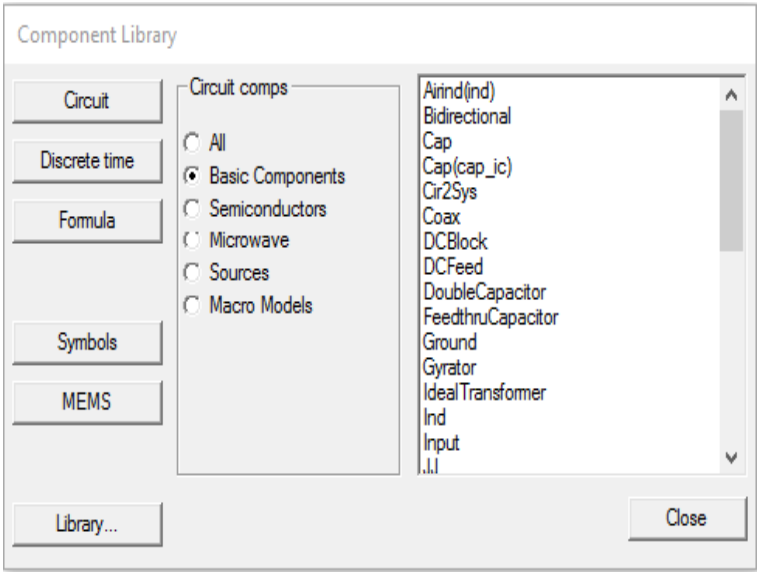
Procedure:

1. Design the circuit as per the specifications given. Open APLAC software.
2. From File menu select New Circuit (Ctrl+N).
3. How to draw the circuit into the drawing space provided : Insert > Now Select Circuit > Basic Components. Components > Select the component of your choice and drop it in drawing space.

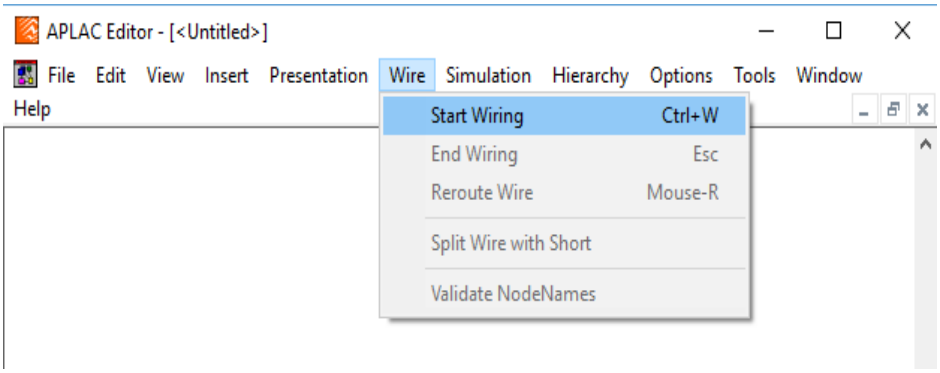




Or Right click anywhere in the open space > Select Basic > Select the component Ind and Cap.

Or Right click anywhere > Select Basic > Select the component of your choice. First insert 'Tline' (for transmission line). Then insert two 'Port' (one for source and other for load).

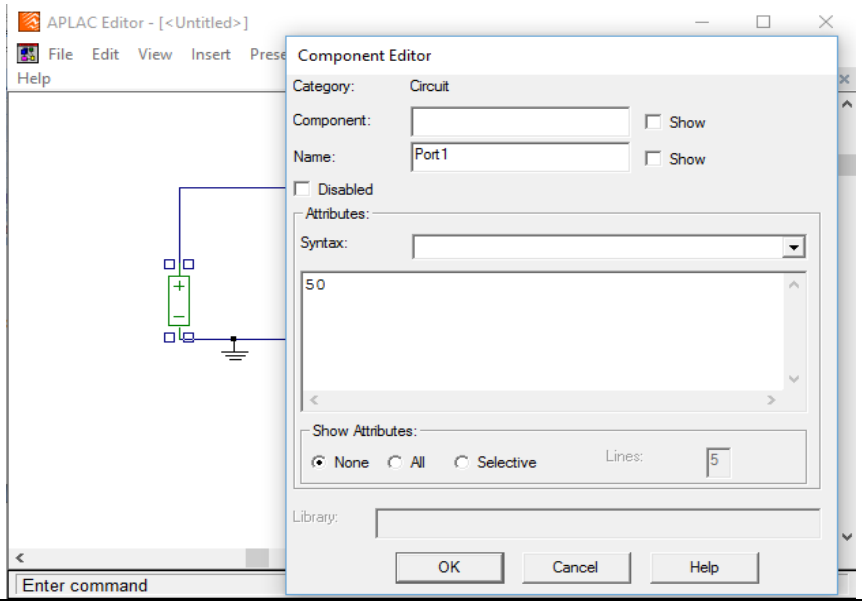
5. To wire the components click on Wire menu > Start Wiring (Ctrl+W). Join the terminals of the components using wires accordingly. Press Esc to stop wiring. Add the Ground at the load resistance.



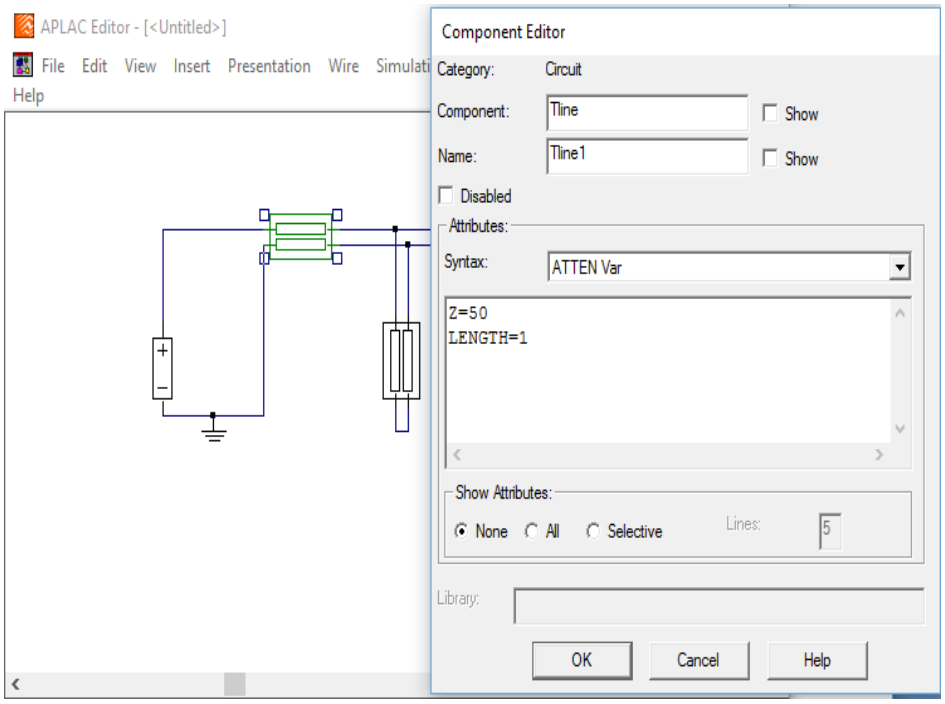
6. Assign specifications of components: Double click on the component to change its values.

   a. For Input/Output port:

   Input port impedance default value is 50 Ohms (No need to state the units). You can change this source impedance value.



Similarly, double click on output port and enter impedance value (eg 75+150*j).



b. For Transmission Lines:

Here we need to specify the characteristic impedance and length of each transmission line. For the transmission line joining the source and the circuit, enter arbitrary length. Usually 1 meter.

Eg. Z=50

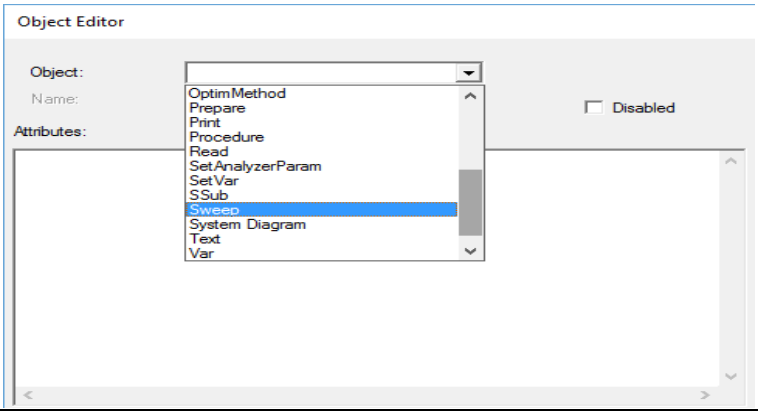
LENGTH=1 (The length is in meters)

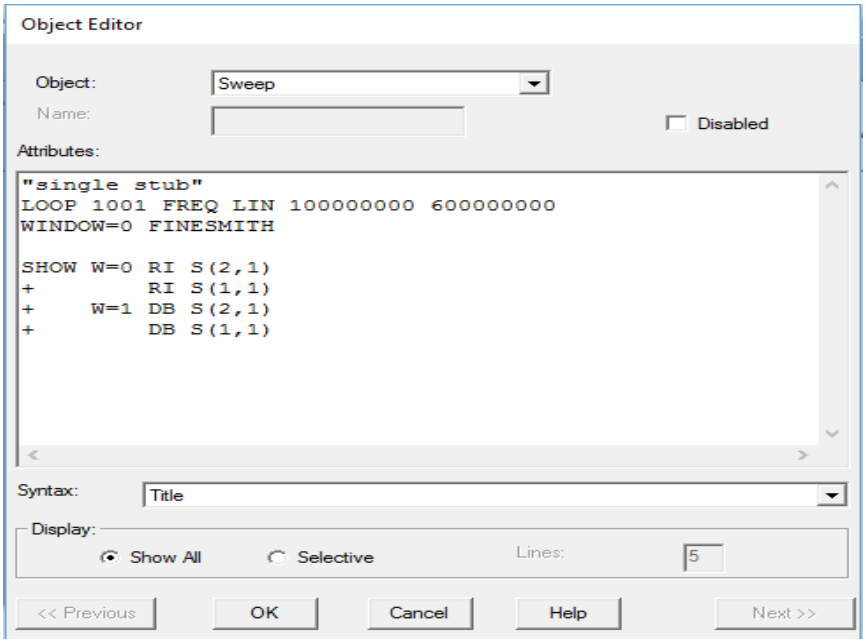
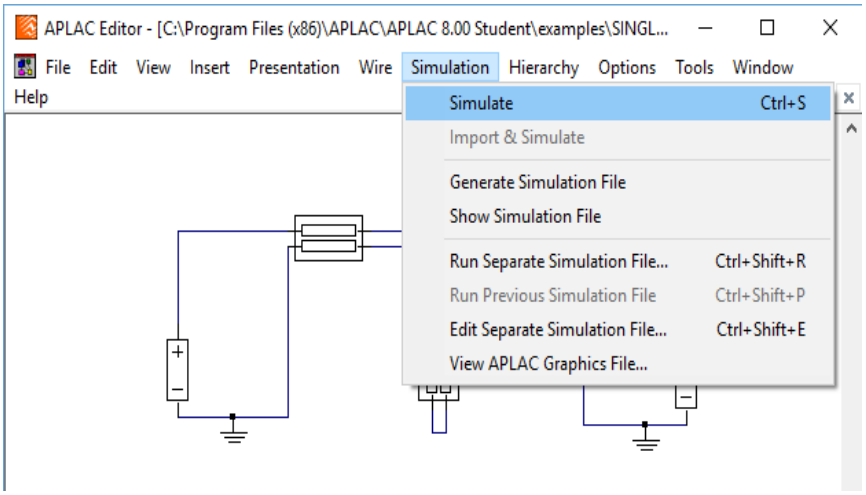
Similarly calculate and enter impedance and length of other transmission lines.

7. To assign the working conditions of the circuit:

Select Insert menu > Control object

In the Object Editor window select Sweep mode for the Object.



	In the text space provided type the following code:  
Observations:	S_{11} = -15db and S_{21} = 0db at 240 MHz
Conclusion:	
Post Experiment quiz	Explain the advantages of double stub over the single stub.