



Lecture 7: Introduction to Simulink

3- Wiring techniques

Use the mouse to wire the **inputs** and **outputs** of the different blocks. Inputs are located on the left side of the blocks, while outputs are located on the right side of the blocks. When holding the mouse over input or an output, the mouse changes to the following Symbol (+).

Use the mouse while holding the left or right-click down to drag wires from the input to the output.



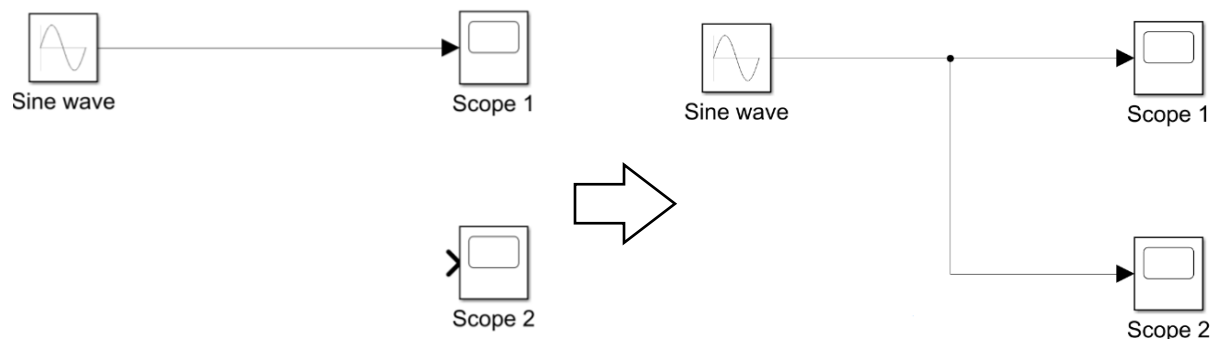
Automatic Block Connection:

Another wiring technique is to select the source block, then place the blocks in front of each other, you get a blue arrow, by clicking on the blue arrow, the blocks will be connected automatically.



Connection from a wire to another block

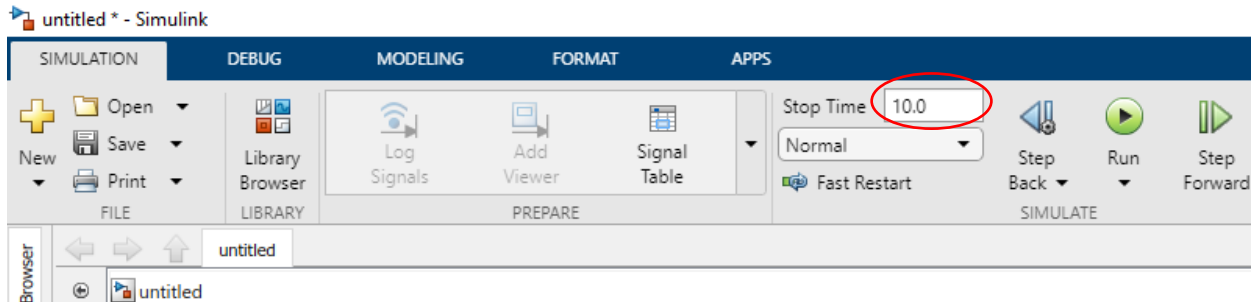
If the wire is connected from one block to another, like in the example below, you need to hold down right click on the wire and then to the input of the desired block.



4- Run Simulation

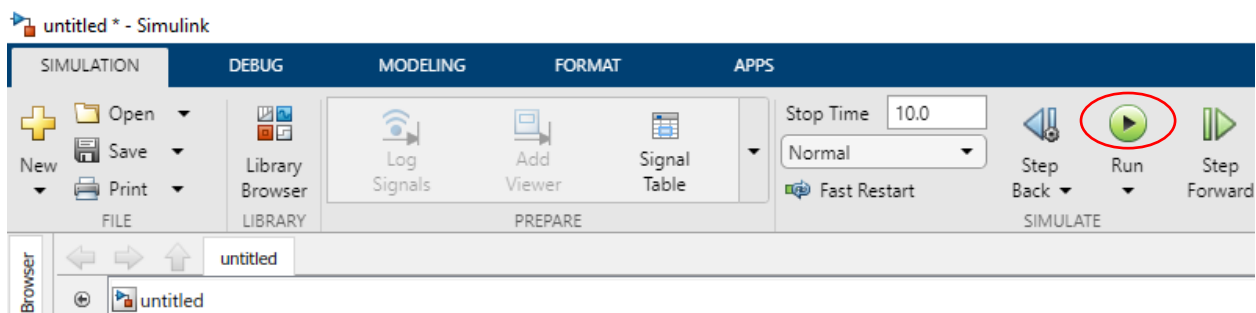
After defining the configuration parameters, the model is ready to be simulated.

1. In the **Simulation** tab, set the simulation stop time by changing the value in the toolbar.

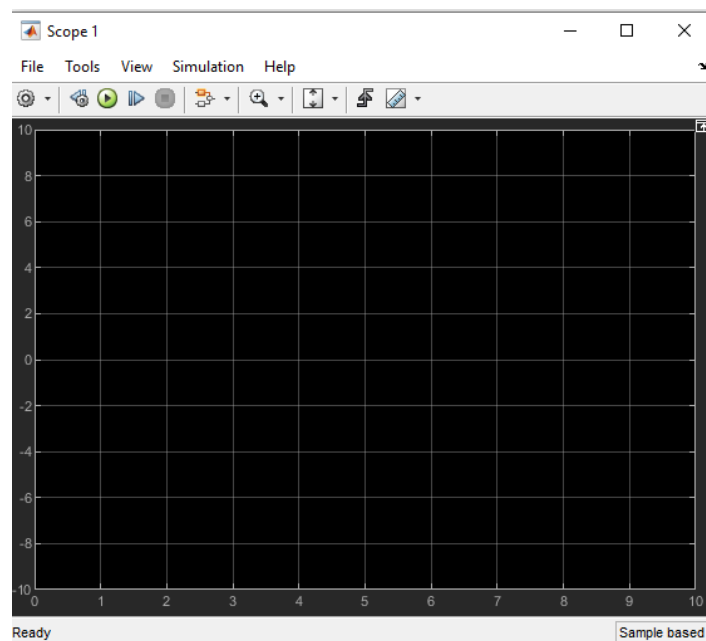


The default stop time of 10.0 is appropriate for this model. This time value has no unit. The time unit in Simulink depends on how the equations are constructed.

To run the simulation, click the Run button.



The simulation runs and produces the output in the scope viewer.

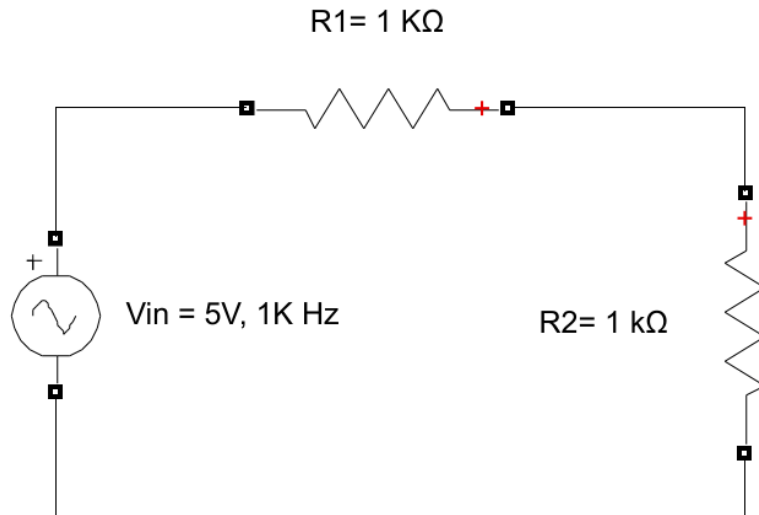


Example1:

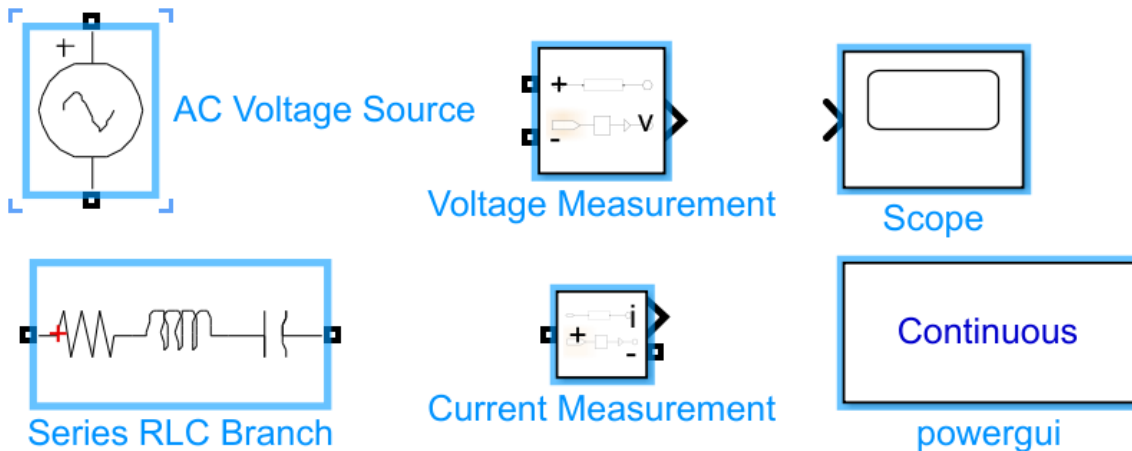
Using Simulink, simulate a simple electrical circuit using an AC power source (5V, 1K Hz) and two 1 KΩ resistors connected in series. Read and draw the voltage and current across/passing through the resistor R₂.

Ans:

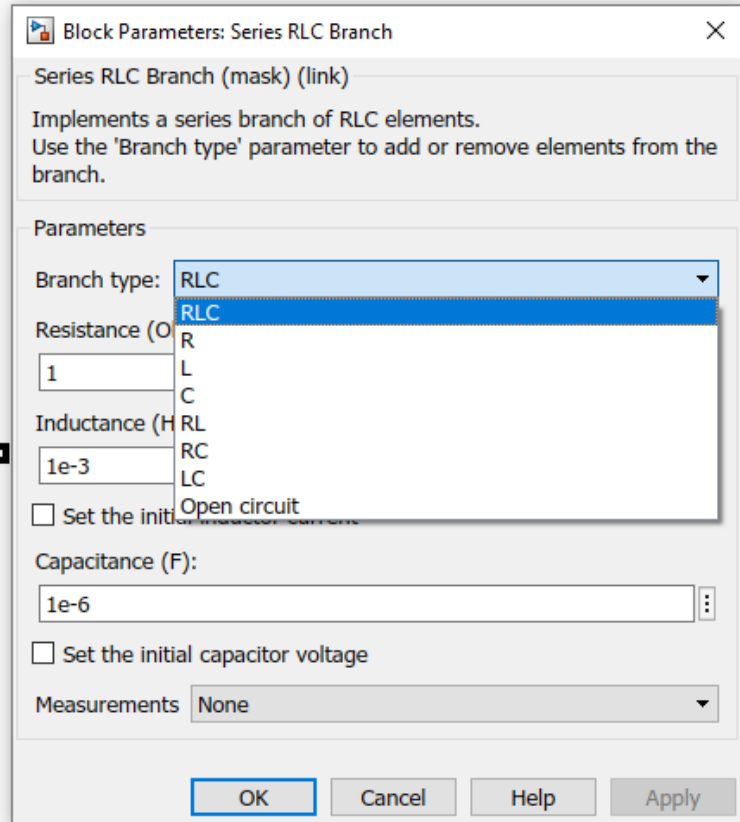
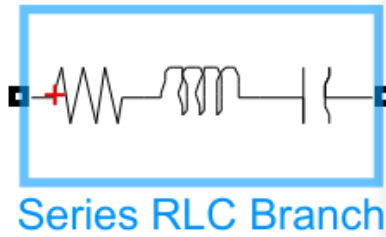
1. We draw our circuit as shown in the equivalent circuit below:



2. In order to simulate the circuit above, we need the blocks shown below to be placed in the blank model.

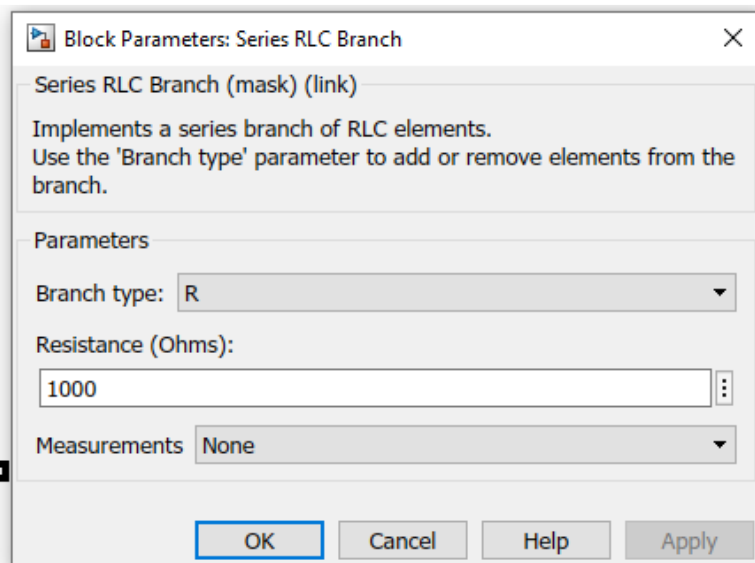
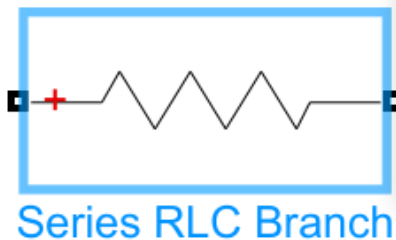


3. Modify the Series RLC Branch to select the required element

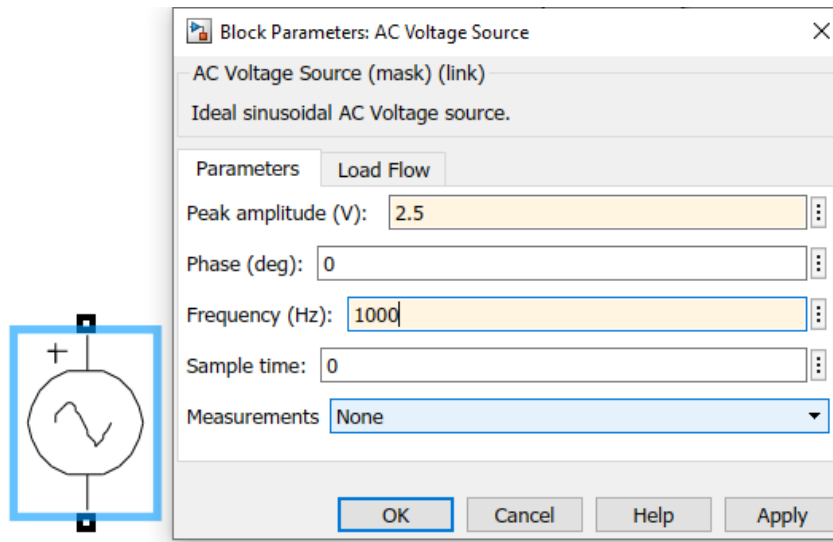


4. Select the required values mentioned in the example above “Press double click.”

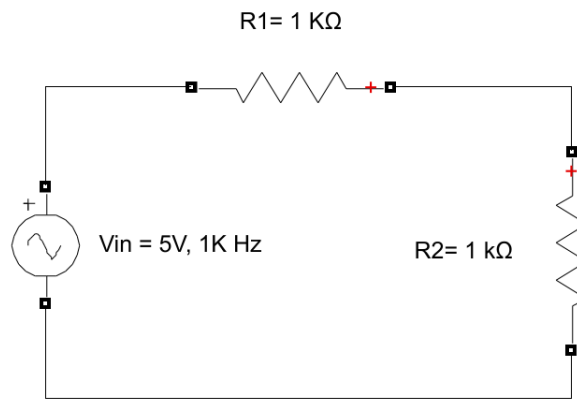
R=1 K Ω



And AC voltage source = 5V and 1 K Hz “Press double click.”



5. Build the circuit similar to the equivalent circuit above “Wiring.”



6. Connect the Scope (Oscilloscope)

