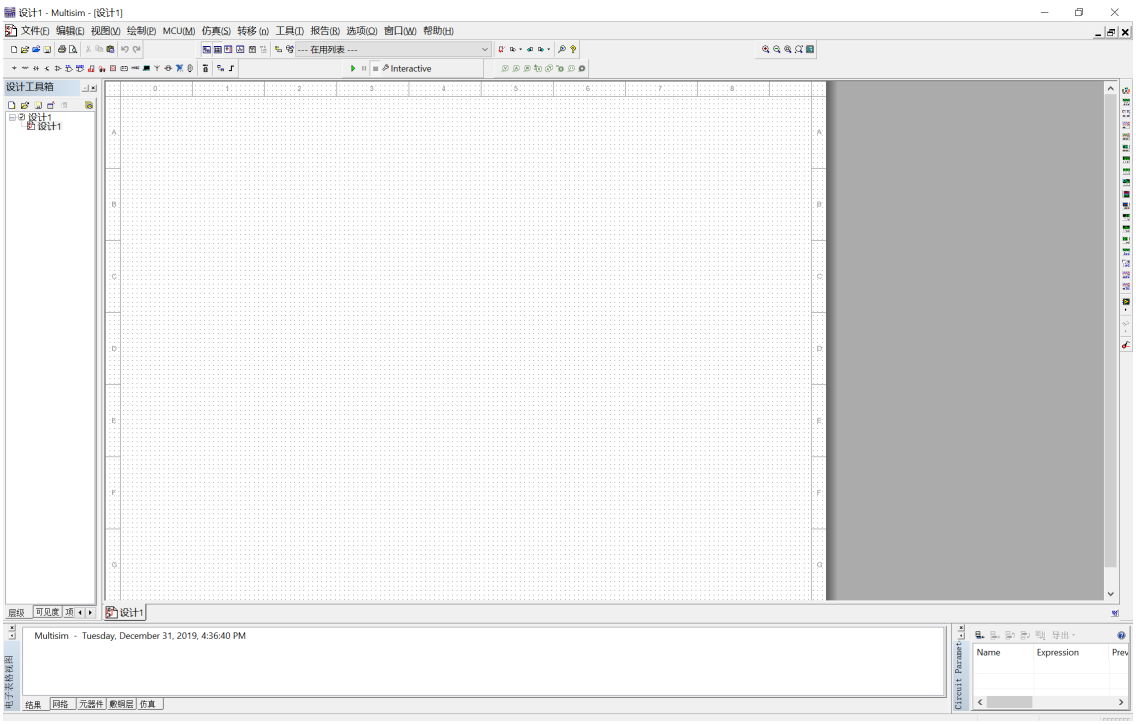
Multisim

Start the First Project

After installing the software, double click the icon to run the program.

The window looks like this.

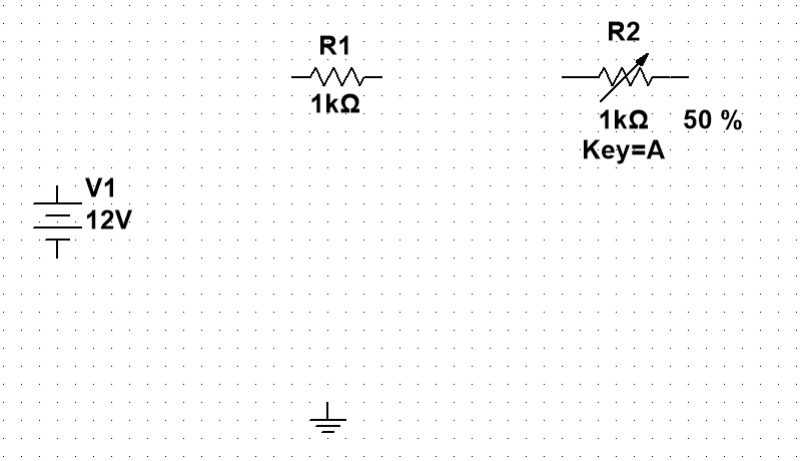


On the top-left corner, there will be multiple electronic components. Click one of them, you can enter the window to select which component to use in your design.

Common components will be displayed in the next section. We will first perform a simple circuit to be familiar with this software.

Select these components:

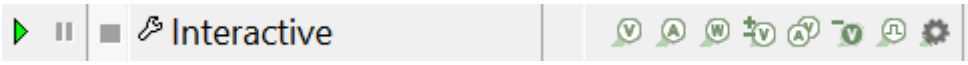
- Sources -> POWER_SOURCES -> DC_POWER
- Sources -> POWER_SOURCES -> GROUND
- Basic -> RESISTOR -> 1k
- Basic -> VARIABLE_RESISTOR -> 1k



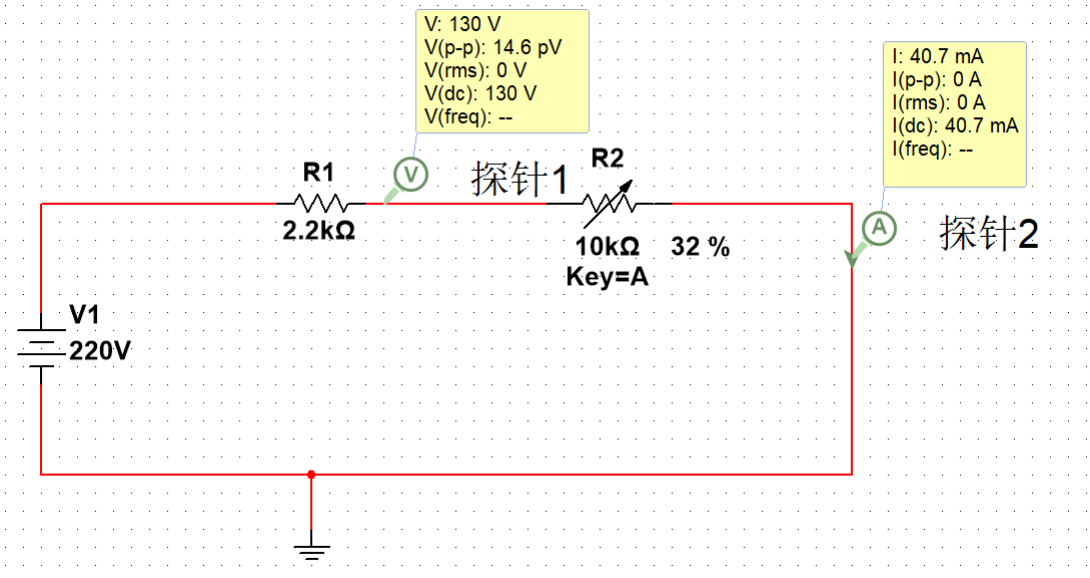
Then double click the components, you can set or change their attributes. In this example, I **change all of them.** You can perform your own circuits.

⚠ Please remember that every circuit need a GROUND.

After we will connect them, and add some probe to the circuit. The probe and the simulation button is on the top of the window.

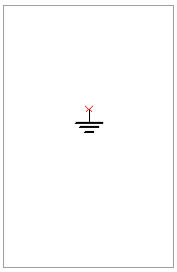


Then you will get the ultimate result.



Common Components

Ground

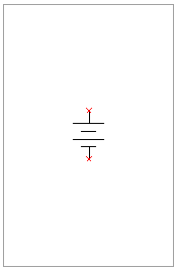


location: `Sources` -> `POWER_SOURCES` -> `GROUND`

Every circuit need a GROUND.

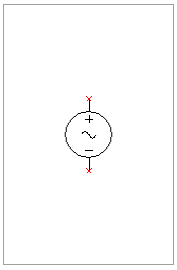
Independent source

DC voltage power



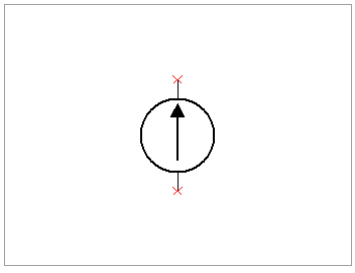
location: `Sources` -> `POWER_SOURCES` -> `DC_POWER`

AC voltage power



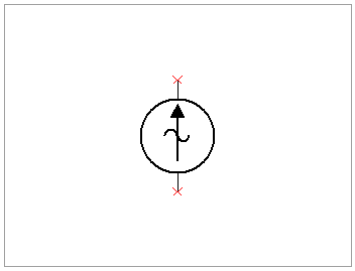
location: `Sources` -> `POWER_SOURCES` -> `AC_POWER`

DC current source



location: `Sources` -> `SIGNAL_CURRENT_SOURCES` -> `DC_CURRENT`

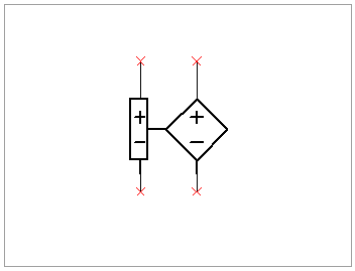
AC current source



location: `Sources` -> `SIGNAL_CURRENT_SOURCES` -> `AC_CURRENT`

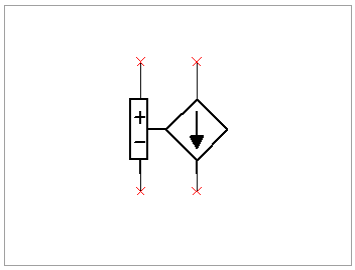
Dependent source

Voltage-controlled voltage source



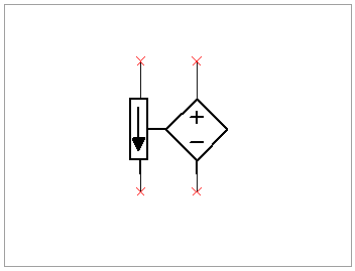
location: `Sources` -> `CONTROLLED_VOLTAGE_SOURCES` -> `VOLTAGE_CONTROLLED_VOLTAGE_SOURCE`

Voltage-controlled current source



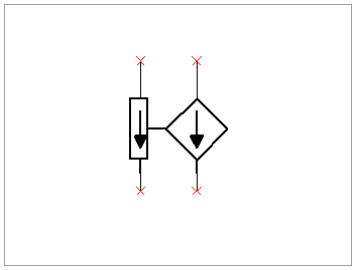
location: `Sources` -> `CONTROLLED_VOLTAGE_SOURCES` -> `CURRENT_CONTROLLED_VOLTAGE_SOURCE`

Current-controlled voltage source



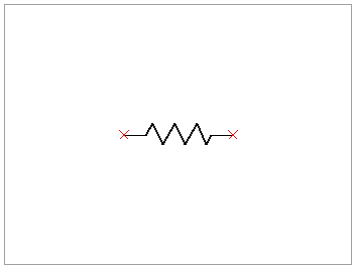
location: `Sources` -> `CONTROLLED_CURRENT_SOURCES` -> `VOLTAGE_CONTROLLED_CURRENT_SOURCE`

Current-controlled current source



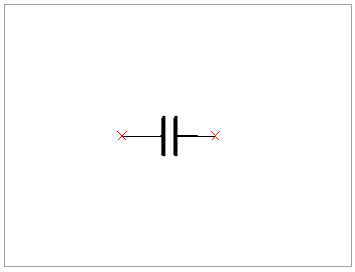
location: `Sources` -> `CONTROLLED_CURRENT_SOURCES` -> `CURRENT_CONTROLLED_CURRENT_SOURCE`

Resistor



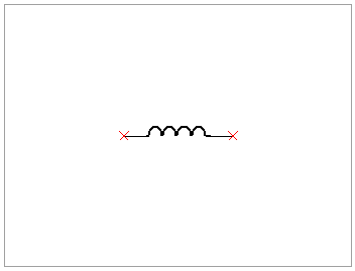
location: `Basic` -> `RESISTOR`

Capacitor



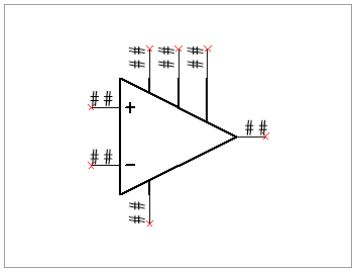
location: `Basic` -> `CAPACITOR`

Inductor



location: `Basic` -> `INDUCTOR`

Operational amplifier



location: `Analog` -> `OPAMP` -> `LM741H`

Simulation Method

Interactive simulation

The most common choice when simulating circuits. It will not supply any diagrams, but only gives you the answer of the steady-state circuit.

DC sweep

Choose this simulation when you want to get a plot of a parameter with the change of DC voltage source.

AC sweep

Choose this simulation when you want to get a plot of a parameter with the change of the frequency of the AC voltage source.

Single frequency AC

Choose this simulation when you want to get a plot of a parameter with the change of the value of the AC voltage source.

Warning

- Every circuit need a GROUND.
- Since the value of resistor, capacitor, inductor can be changed, so the initial value doesn't matter. You can choose any one of them and change its value.
- You need to print both the circuit drawing and the result to finish your assignment in VE215.
- If you need some components which are not included in the previous sections, like coupled inductors, switch, square-wave voltage source··· and so forth, you'd better carefully find them in `Sources` and `Basic` modules instead of other modules.
- When using `Single Frequency AV` simulation, you need to set the start value and the end value in the attribute windows before simulation.