National Instruments Multisim
Part III

Building a circuit
Original schematic

The diagram shows a circuit with a 10V voltage source connected to a series of resistors:
- $R_1 = 10k\Omega$
- $R_2 = 22k\Omega$
- $R_3 = 47k\Omega$

The circuit is labeled with nodes A, B, and C connected through these resistors.
Start with Multisim

• All projects start on a blank page
Choose components

• If you hover the mouse over the toolbox, it will show you what group is where...
  – The next several slides show the process of selecting components and sources, as well as just generally placing them on the workspace.
Component: AC_POWER
Symbol (ANSI):
Function: AC Power Source
Model manufacturer/ID: Generic / VACP
Footprint manufacturer/type: 
Hyperlink: 
Select a Component

Database:
Master Database

Group:
Sources

Family:
Select all families
POWER_SOURCES
SIGNAL_VOLTAGE_SOURCES
SIGNAL_CURRENT_SOURCES
CONTROLLED_VOLTAGE_SOURCES
CONTROLLED_CURRENT_SOURCES
CONTROL_FUNCTION_BLOCKS
DIGITAL_SOURCES

Component:
DC_POWER
AC_POWER
DGND
GROUND
NON_IDEAL_BATTERY
THREE_PHASE_DELTA
THREE_PHASE_WYE
VCC
VDD
VEE
VSS

Function:
DC Voltage Source

Model manufacturer/ID:
Generic / VDCP

Footprint manufacturer/type:

Hyperlink:
Select a Component

Database:
- Master Database

Group:
- Sources

Family:
- All
- POWER_SOURCES
- SIGNAL_VOLTAGE_SOURCES
- SIGNAL_CURRENT_SOURCES
- CONTROLLED_VOLTAGE_SOURCES
- CONTROLLED_CURRENT_SOURCES
- CONTROL_FUNCTION_BLOCKS
- DIGITAL_SOURCES

Component:
- DC_POWER
- AC_POWER
- DGND
- GROUND
- NON_IDEAL_BATTERY
- THREE_PHASE_DELTA
- THREE_PHASE_WYE
- VCC
- VDD
- VEE
- VSS

Symbol (ANSI):

Function:
- DC Voltage Source

Model manufacturer/ID:
- Generic / VDCP

Footprint manufacturer/type:

Hyperlink:
How to stop placing components

• When the last component is placed, click on the close button.
• Rough placement of components before rotating and dragging
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• Start placing lines by locating mouse on one (getting crosshairs), then click/hold the left mouse button until you reach the destination
• Once there, release mouse button and go to next component to continue the process
A circuit diagram with a voltage source $V_1$ of 10 V connected to three resistors $R_1$, $R_2$, and $R_3$ with resistances of 10 kΩ, 22 kΩ, and 47 kΩ respectively.
• Place the multimeter from the instruments on the right hand side of the window
• This is what you see when you double click on the meter
• Simulate the circuit (in essence, turn on the power...)
• Switch the meter to measure current
  – To make any changes, remember to turn off the simulation first (this does NOT mean to close the window but to use the switch that started the simulation to stop the simulation)
• Current is **always** measured through a component, so the meter has to go in series with the component.

  – To remove a wire, click on it to get the blue boxes like the next slide, and then simply press the delete key on your keyboard