This assignment was locked Jun 6 at 11:59pm.

In this homework problem we will learn to stamp components from a circuit into a matrix describing that circuit using the methods from nodal analysis in Circuits 1. Then we will apply this to a simple problem.

When running with a voltage source, the only output from your program must be the resulting voltage vector. Remember that the last element in the vector is actually the current through the voltage source when a voltage source is included.

When running with the current source, the only output from your program must be the voltage vector.

You should submit hw3.py. Do not submit any of the below files (other than your significantly enhanced hw3.py).

NOTE: This means you MUST NOT change the constants you use!

In the schematic is a source. You are to be able to run your script twice on two netlists. The only difference will be the source:

1. Run with this voltage source: VSa 1 0 5.

2. Run with this current source: ISa 0 1 1.21794872.

The value of each resister in the network is 1 Ohm EXCEPT for R6 and R12, which are both 5 Ohm resistors.

NOTE: The circuit you have been given contains a **SINGLE** source! We will be using **ADDITIONAL** circuits to test your design, **INCLUDING** circuits with **MULTIPLE** sources.

Suggestions

Start with a smaller circuit that you create, such as a simple voltage divider, to ensure your code works properly.

Include print statements, which are commented out when you turn in your homework, to verify that your arrays are the right size and have the correct contents.

Remember that entries are not made for node 0, so that all the rows and columns move down one spot.

Test your circuit with multiple sources!

Attachments

pyramid2.pdf

Actions

comp_constants.py
read_netlist.py
hw3partial.py

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