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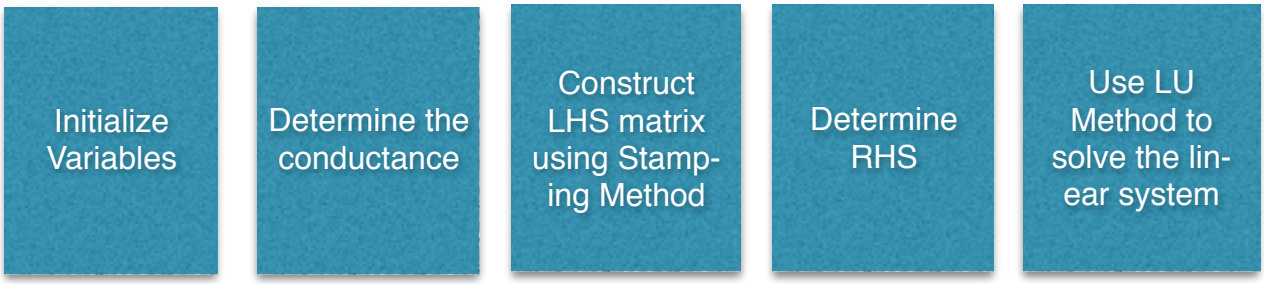
HW04 Resistor Networks

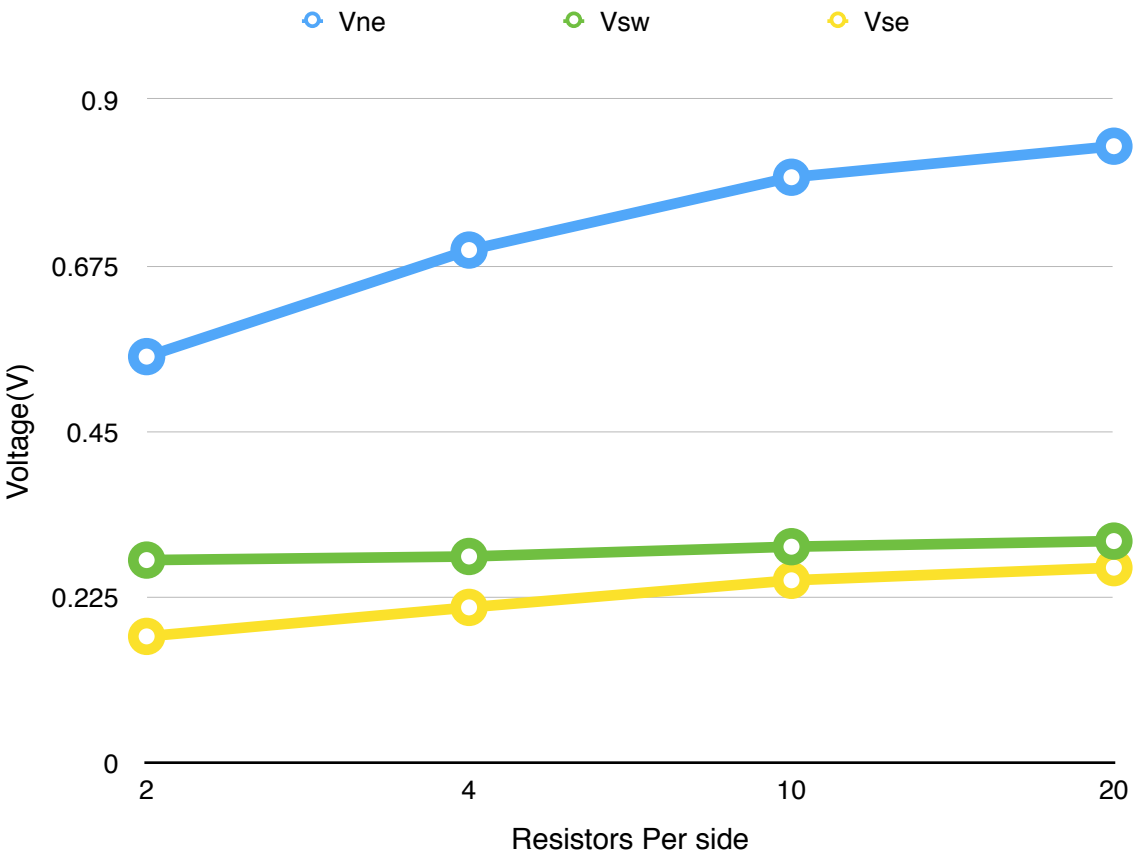
Resistors Per Side(R)	Vne(V)	Vsw(V)	Vse(V)	Req(Ohm)
2(1k Ohms)	0.551724	0.275862	0.172414	1208.33
4(500 Ohms)	0.696179	0.280752	0.211722	850.53
10(200 Ohms)	0.794917	0.294016	0.248441	491.2
20(100 Ohms)	0.837007	0.301625	0.265600	307.39

Workflow(start from left to right):



Usage: [.out file] [number of resistors per side] e.g. >> a.out 20

As the number of resistors per side grows, the equivalent resistance tends to decline massively and the voltage of each measured node inclines to ascend slightly. Since we reduce the the resistance of each resistor as the size expands, the voltage values which we want to know remain rather stable. But the equivalent resistance of the systems drop for they can be viewed as many resistors in parallel. Therefore, the more resistors we have, the lesser the equivalent resistance we will get.


Vne
Vsw
Vse
0.9
0.675
0.45
0.225
0
Voltage(V)
2
4
10
20
Resistors Per side