ELEC 4700 Assignment-4 Circuit Modeling

Due: Sunday, Apr. 7, 2019 23:59 By: Narrthanan Seevananthan

```
% Part 1:
% (a) Formulation:

clear;
addpath code;

Part1;

% Part 1:

Part2;
```

G =

  Columns 1 through 7

     1.0000   -1.0000   0   0   0   1.0000   0
    -1.0000   1.5000   0   0   0   0   1.0000
          0   0   0.1000   0   0   0   -1.0000
          0   0   0   10.0000 -10.0000   0   0
          0   0   0   10.0000   10.0010   0   0
     1.0000   0   0   0   0   0   0
          0   1.0000   -1.0000   0   0   0   0
          0   0 -10.0000   1.0000   0   0   0

  Column 8

          0
          0
          0
     1.0000
          0
          0
          0
          0

C =

  Columns 1 through 7

     0.2500   -0.2500   0   0   0   0   0
    -0.2500   0.2500   0   0   0   0   0
          0   0   0   0   0   0   0
          0   0   0   0   0   0   0
          0   0   0   0   0   0   0
          0   0   0   0   0   0   0
          0   0   0   0   0   0   -0.2000
          0   0   0   0   0   0   0

  Column 8

          0
          0
          0
          0
          0
          0
          0
          0

i =

     1

DC Sweep

Voltage at respective nodes(V) vs **Vin sweep from -10 to 10 (V)**

Legend:
- node V3
- node VO

AC Sweep - Gain vs Frequency

Gain (dB) vs Frequency (Hz)

AC Sweep - Output Voltage vs Frequency

Output Voltage (V) vs Frequency (Hz)

AC Sweep - Gain vs Perturbations on Capacitor

AC Sweep with Perturbations - Gain vs Frequency

Vin (V)

Vout (V)