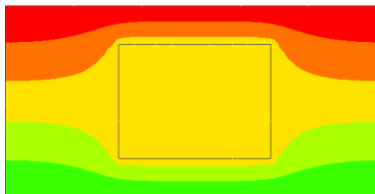# Question 7

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Q: How to analyze the model including both dielectric and conductive materials?

A: If a model includes both dielectric and conductive materials, the electric-harmonic analysis will be performed. To analyze the model, conductivity is expressed in complex numbers as $\alpha+j\omega\varepsilon$. Higher frequencies allow conductivity in complex numbers to behave like conductive materials and lower frequencies to behave like dielectric materials.
The calculation in the electric-harmonic analysis will give the capacitance and resistance between the electrodes simultaneously.
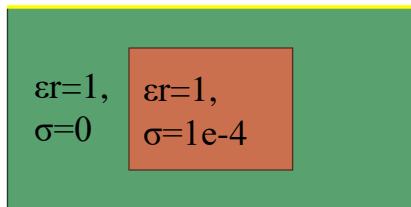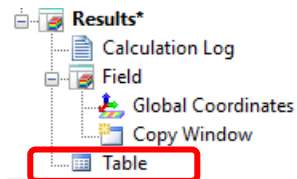
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Electric Potential Contour10kHz   Electric Potential Contour10MHz

1 [V]

εr=1, σ=0   εr=1, σ=1e-4

0[V]

Results*
- Calculation Log
- Field
  - Global Coordinates
  - Copy Window
- **Table**

Table

| Capacitance [F] | Resistance [ohm] | Admittance [S] | FEM Info |

	Frequency [...	Electrode 1	Electrode 2	C1-2
0: 1.000e+04[Hz]	1e+4	V0	V1	2.844e-14
1: 1.000e+07[Hz]	1e+7	V0	V1	2.844e-14