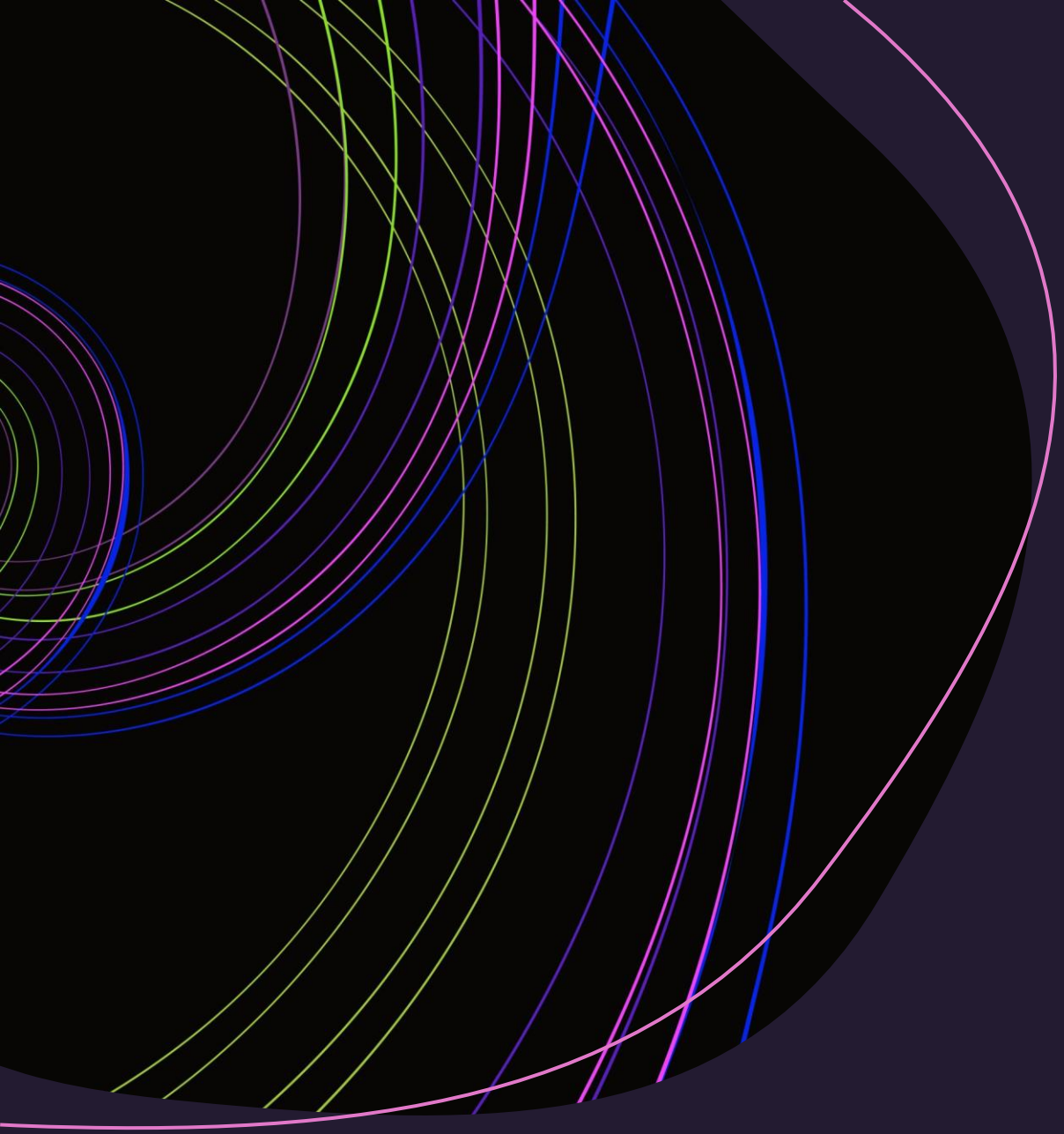
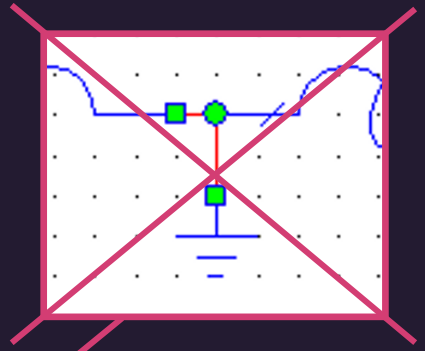


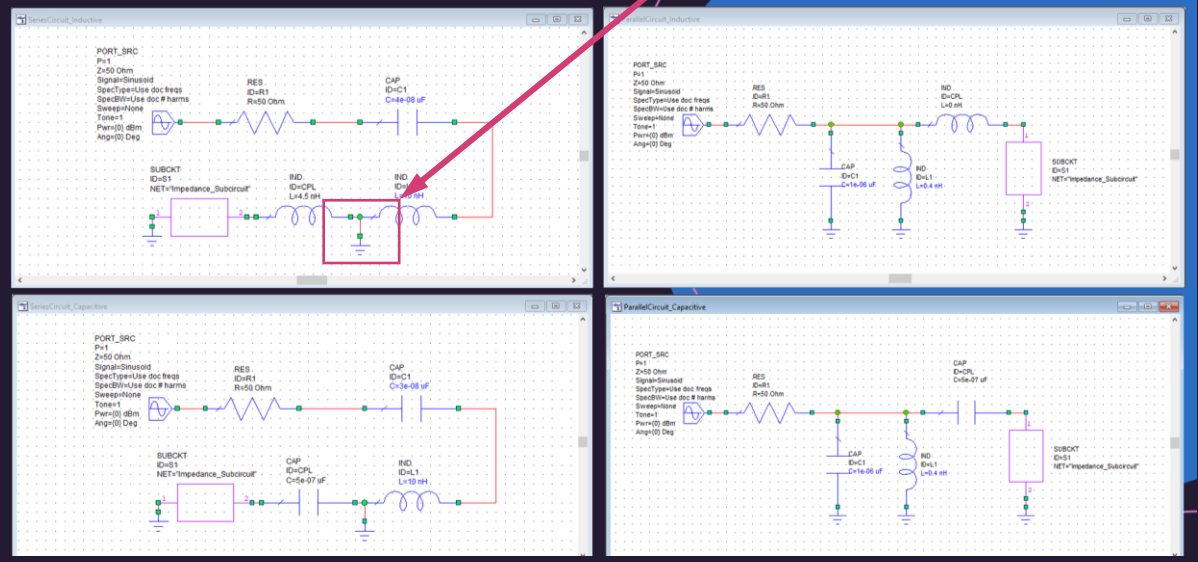
LC Circuit:

Maximizing sensitivity of the circuit, deluxe edition

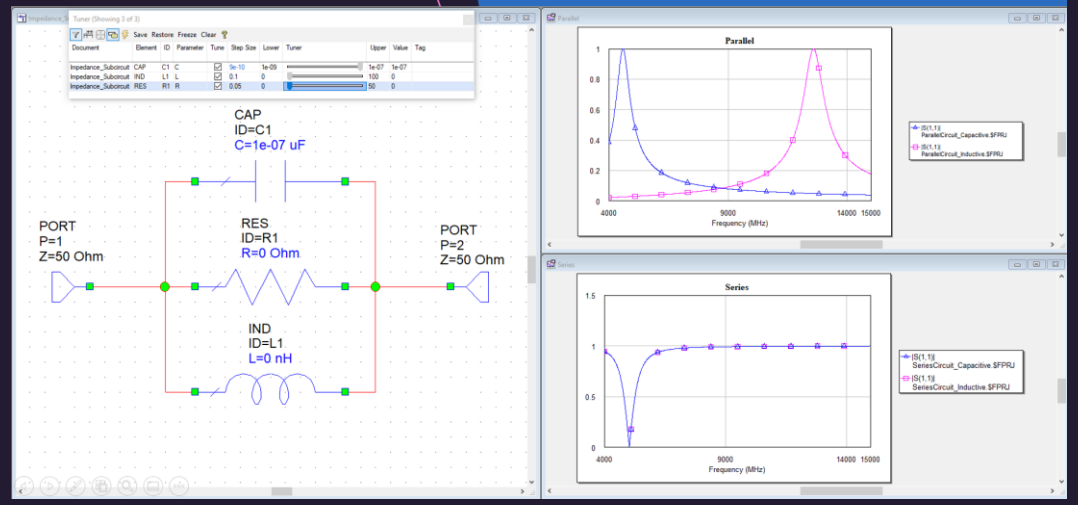
Last Time



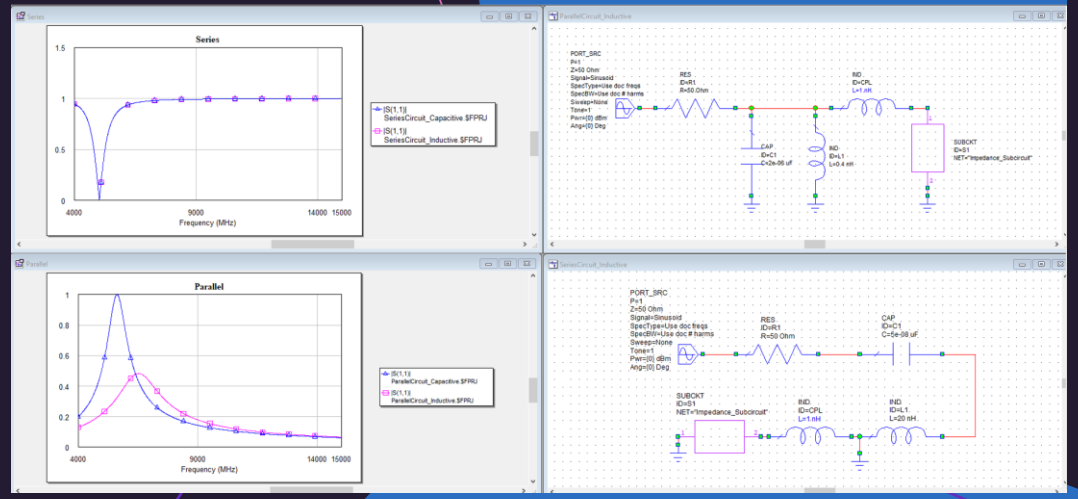
Some Changes



Let's mess with the impedance: Low resistance



Let's adjust coupling strength: inductance



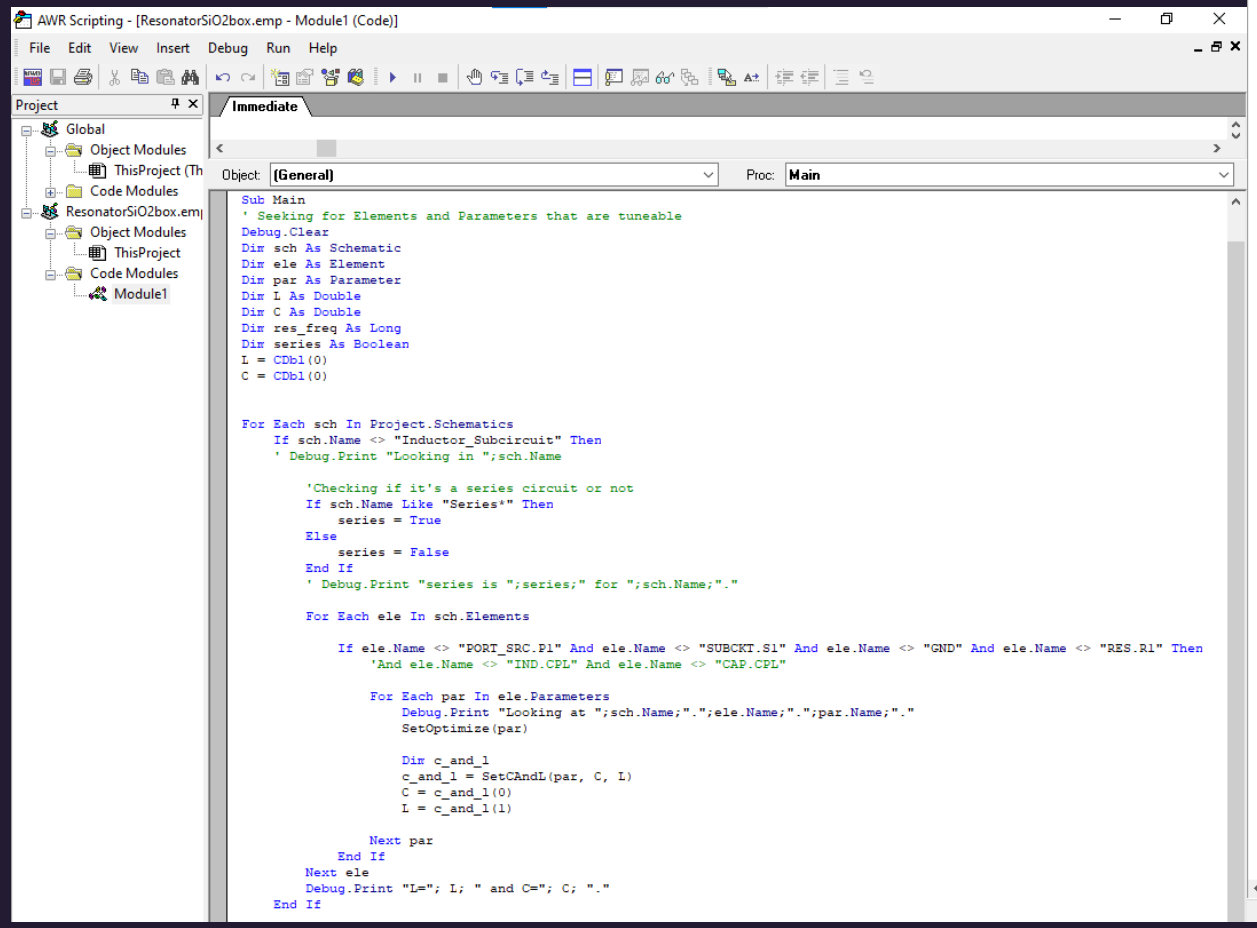
This time...

Decisions, Decisions...

Python? COM API <-> C++?

~~Scripting in AWR (VBA)?~~

MWR SDE (VBA Scripting)




```
    If L <> CDbl(0) And C <> CDbl(0) Then
        res_freq = GetResFreq(L, C)
    End If
Next sch
End Sub

Function SetOptimize(par As Parameter)
'Sets Optimize boolean for each parameter we want to change
' Debug.Print "Looking at "; ele.Name

    If par.Name = "C" Or par.Name = "L" Then
        Debug.Print "Setting Optimize to true."
        par.Optimize = True

    Else
        par.Optimize = False
    End If
End Function

Function SetCAndL(par As Parameter, C, L)
    Dim cap As Double
    cap = CDbl(0)
    Dim ind As Double
    ind = CDbl(0)

        If par.Name = "C" Then
            Debug.Print par.Name; ".ValueAsDouble="; par.ValueAsDouble
            cap = par.ValueAsDouble + C
        End If

        If par.Name = "L" And L <> CDbl(0) Then
            Debug.Print par.Name; ".ValueAsDouble="; par.ValueAsDouble
            ind = 1.0/((1.0/par.ValueAsDouble) + (1.0/L))

        ElseIf par.Name = "L" Then
            Debug.Print par.Name; ".ValueAsDouble="; par.ValueAsDouble
            ind = par.ValueAsDouble
        End If
    SetCAndL = Array(CDbl(cap), CDbl(ind))
End Function

Function SetL(par As Parameter, L)
    Dim ind As Double
    ind = CDbl(0)

        If par.Name = "L" And L <> CDbl(0) Then
            Debug.Print par.Name; ".ValueAsDouble="; par.ValueAsDouble
            ind = 1.0/((1.0/par.ValueAsDouble) + (1.0/L))

        ElseIf par.Name = "L" Then
            Debug.Print par.Name; ".ValueAsDouble="; par.ValueAsDouble
            ind = par.ValueAsDouble
        End If
    SetL = CDbl(ind)
End Function


Function GetResFreq(ind As Double, cap As Double)
'Calculates the resonant frequency of the circuit, neglecting the contribution of the subcircuit inductance and capacitance
    Debug.Print "Calculating resonant frequency"
    GetResFreq = (1 / (Sqr(ind * cap)))
End Function



' $Menu=Graphs
Sub Derivative
    Dim gs As Graphs
    Set gs = Project.Graphs
    Debug.Print "Hello World!"
End Sub
```

This time...

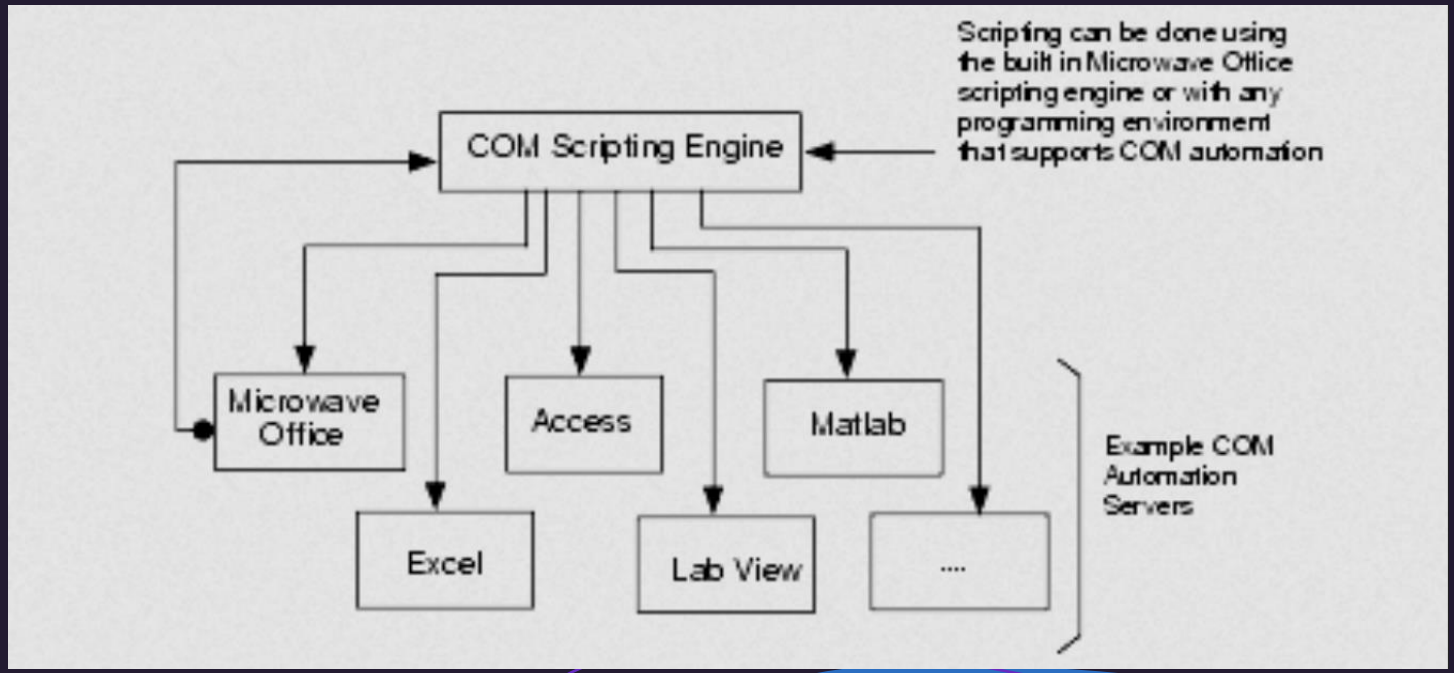
Decisions, Decisions...

Python? COM API <-> C++?

C++ through COM API

- This is a good option, but there's a big overhead.
- I would need to invest a good amount of time to write efficient and memory-safe C++.
- It's probably not worth investing time into* *right now*

Component Object Model (**COM**) is a binary-interface standard for software components introduced by Microsoft in 1993. It is used to enable inter-process communication object creation in a large range of programming languages.



This time...

Decision, Decision

Python…?