Lab 3 Analog

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Section:16

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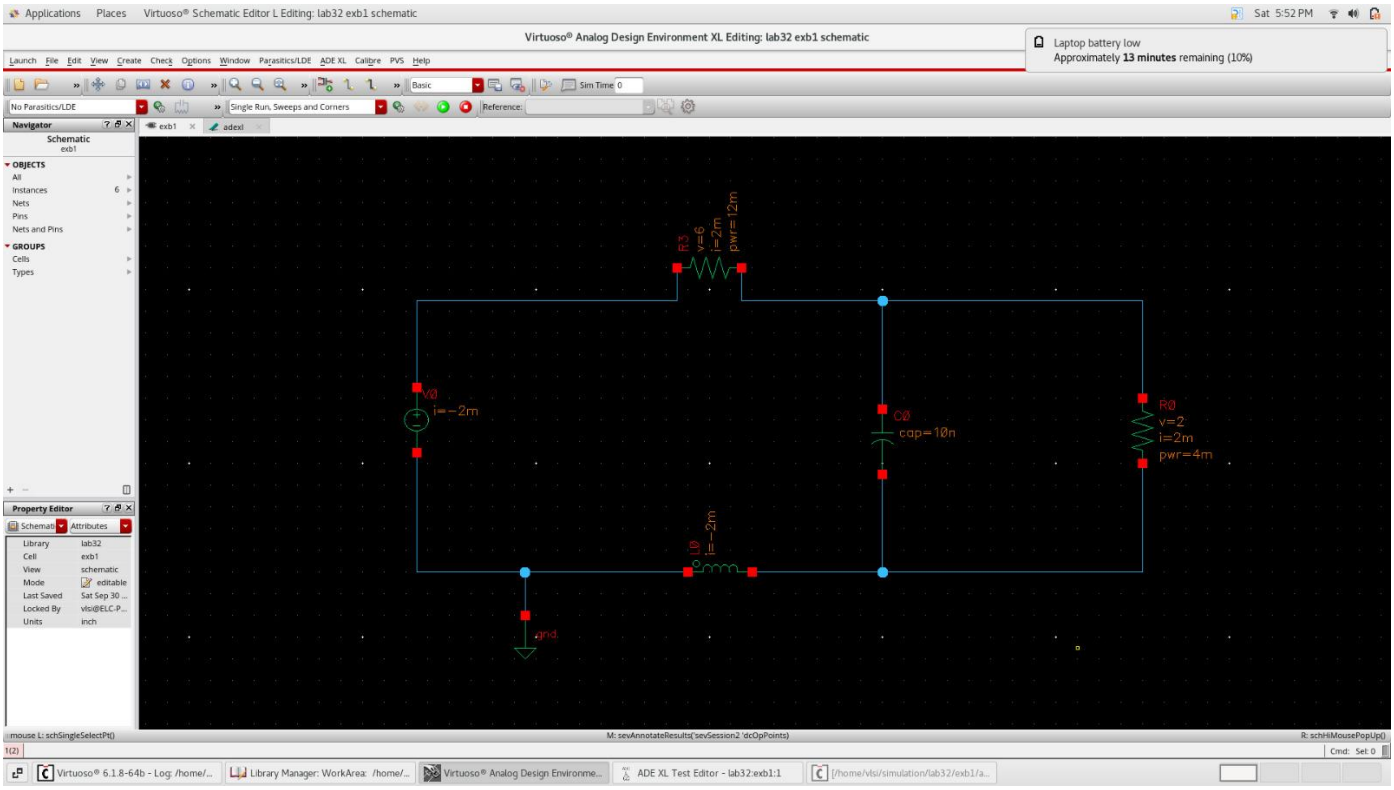
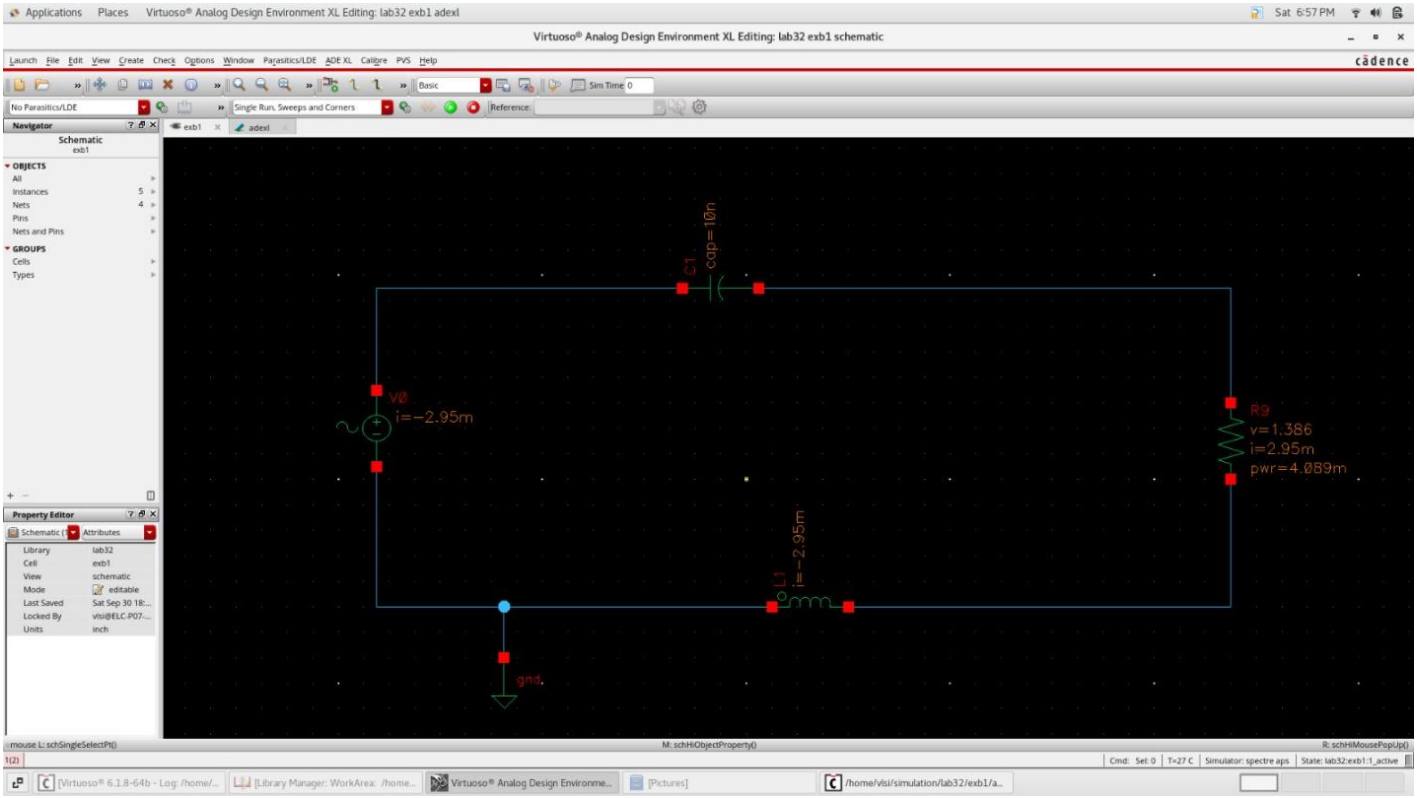
A- DC Analysis Passive components:

I. Experiment:

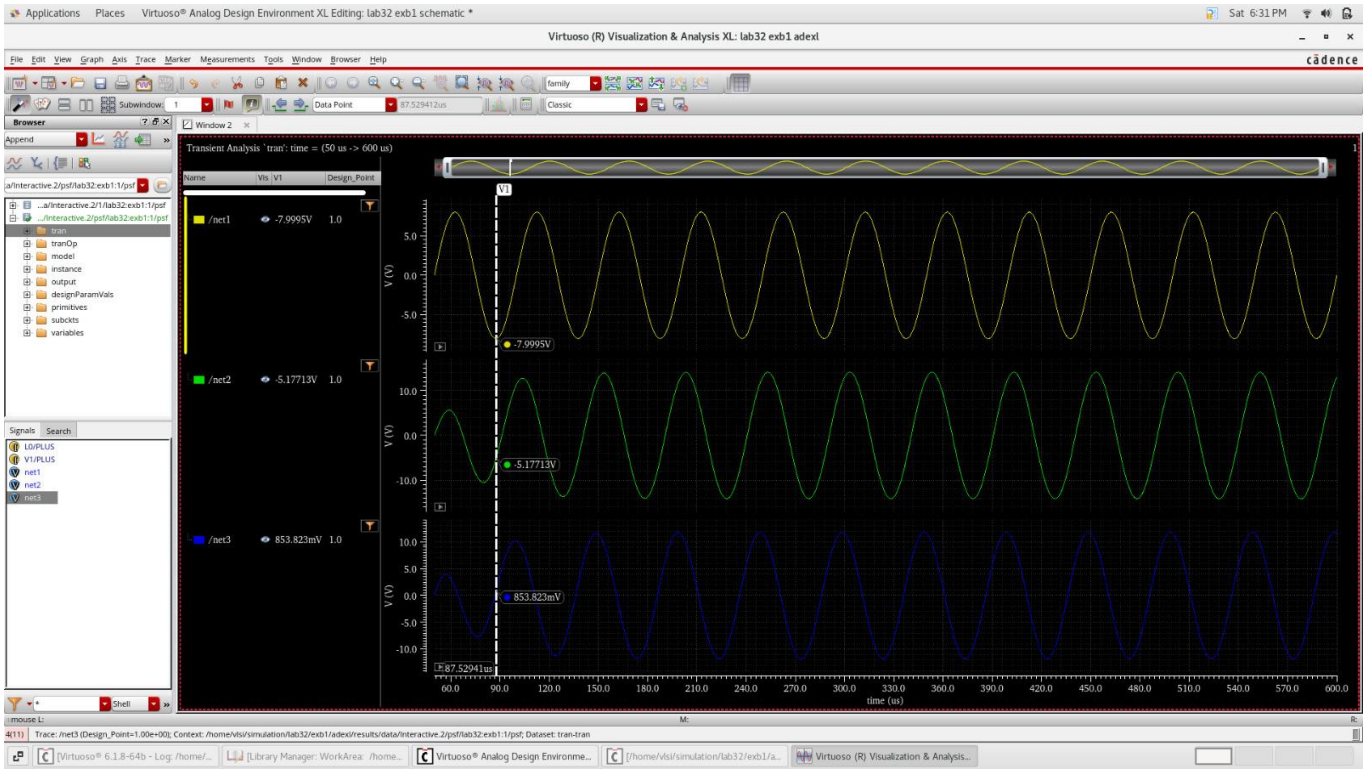
	$VC1$	$VR1$ (right)	$VR2$(top)	$VL1$
Value	**2v**	**2v**	**6v**	**0v**
	$IC1$	$IR1$(right)	$IR2$(top)	$IL1$
Value	**0**	**2m**	**2m**	**-2m**



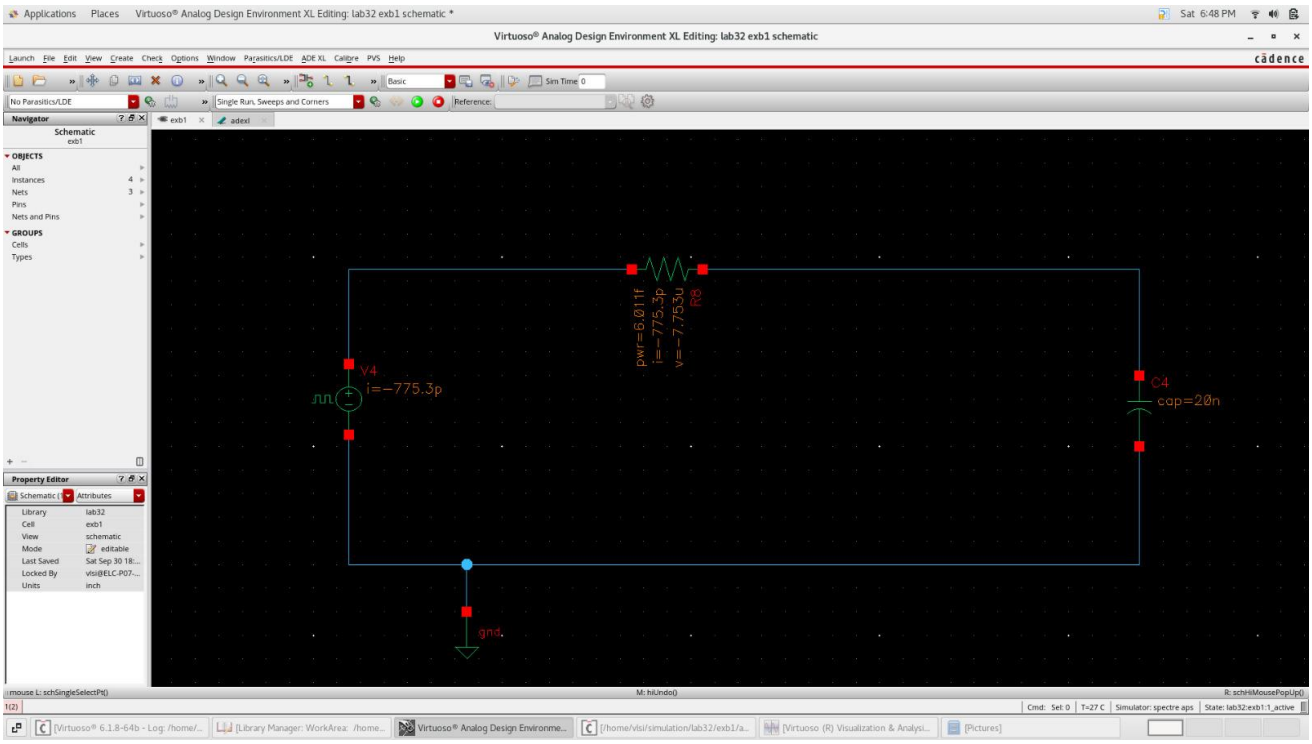
B- Transient RLC analysis:



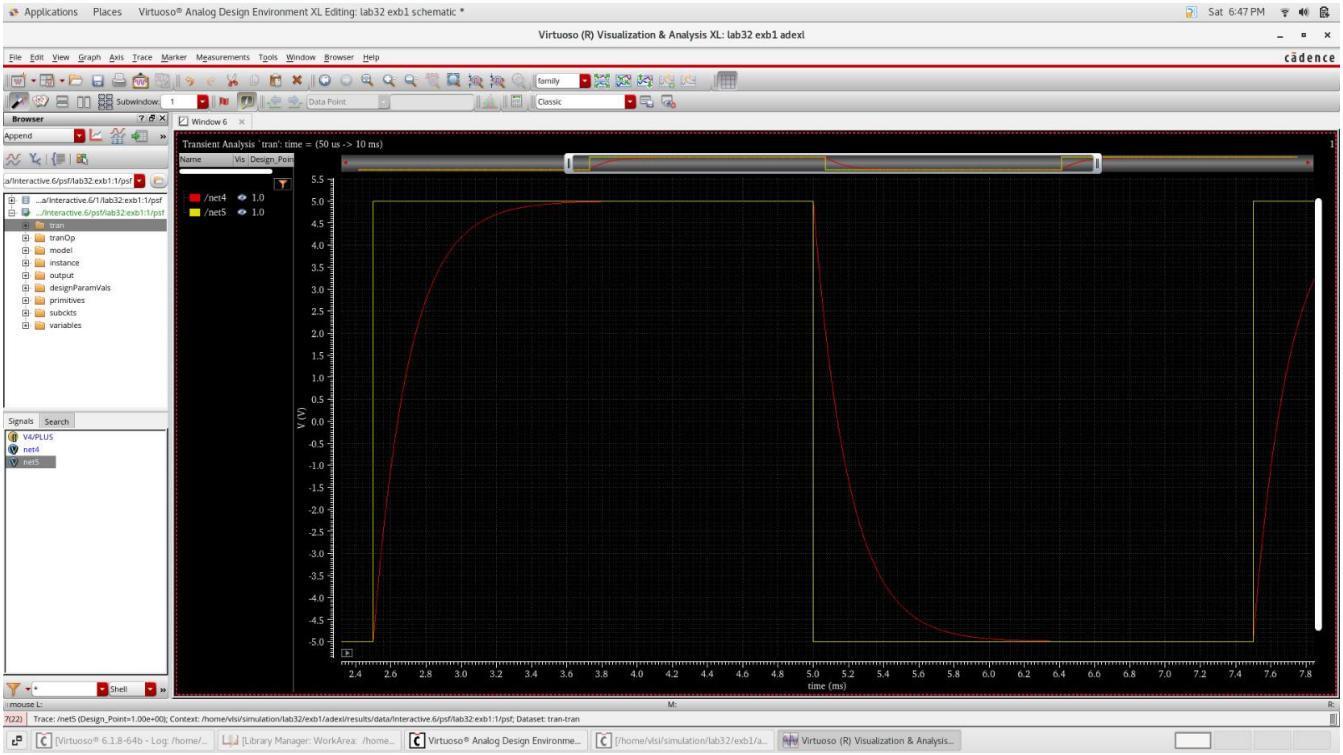
We can see that signals of V1 and V2 are phase-shifted from the input signal.



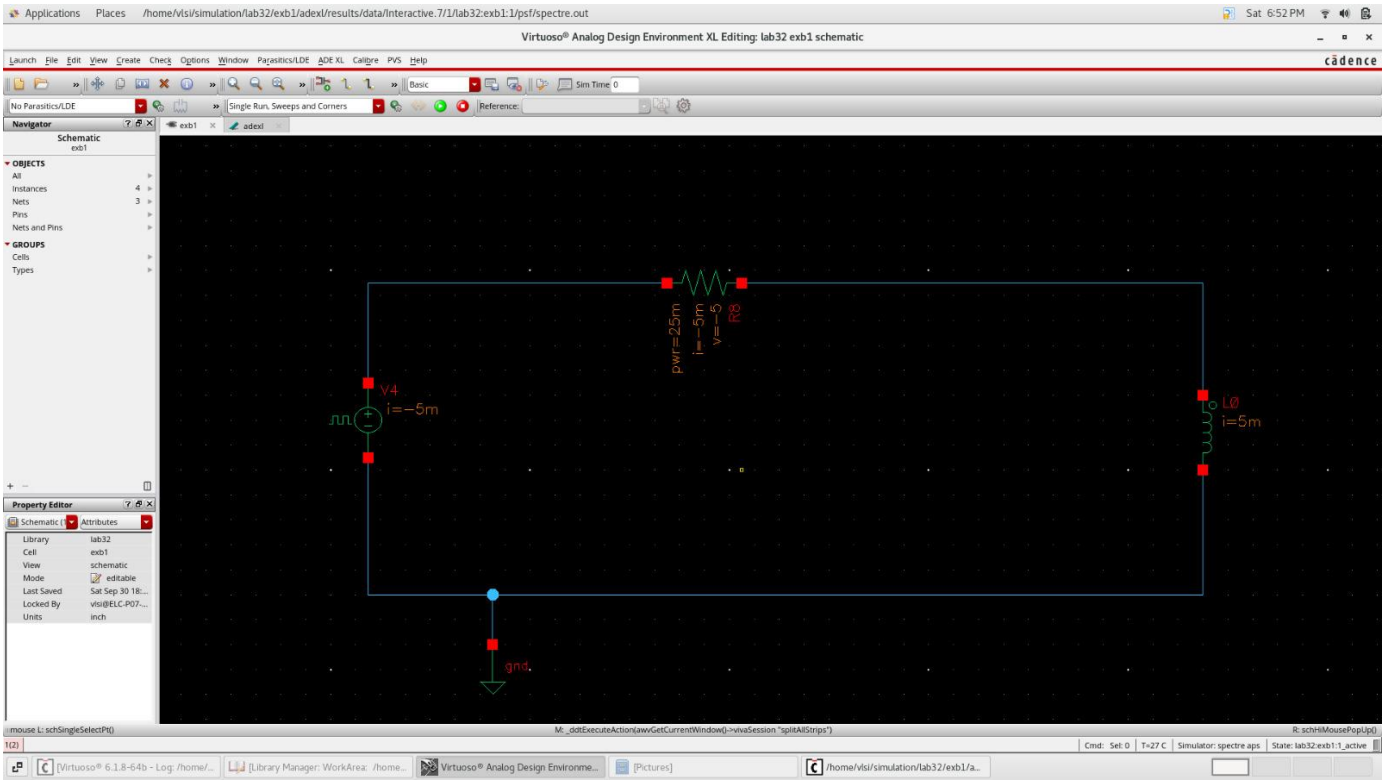
C- Transients in RC circuit:



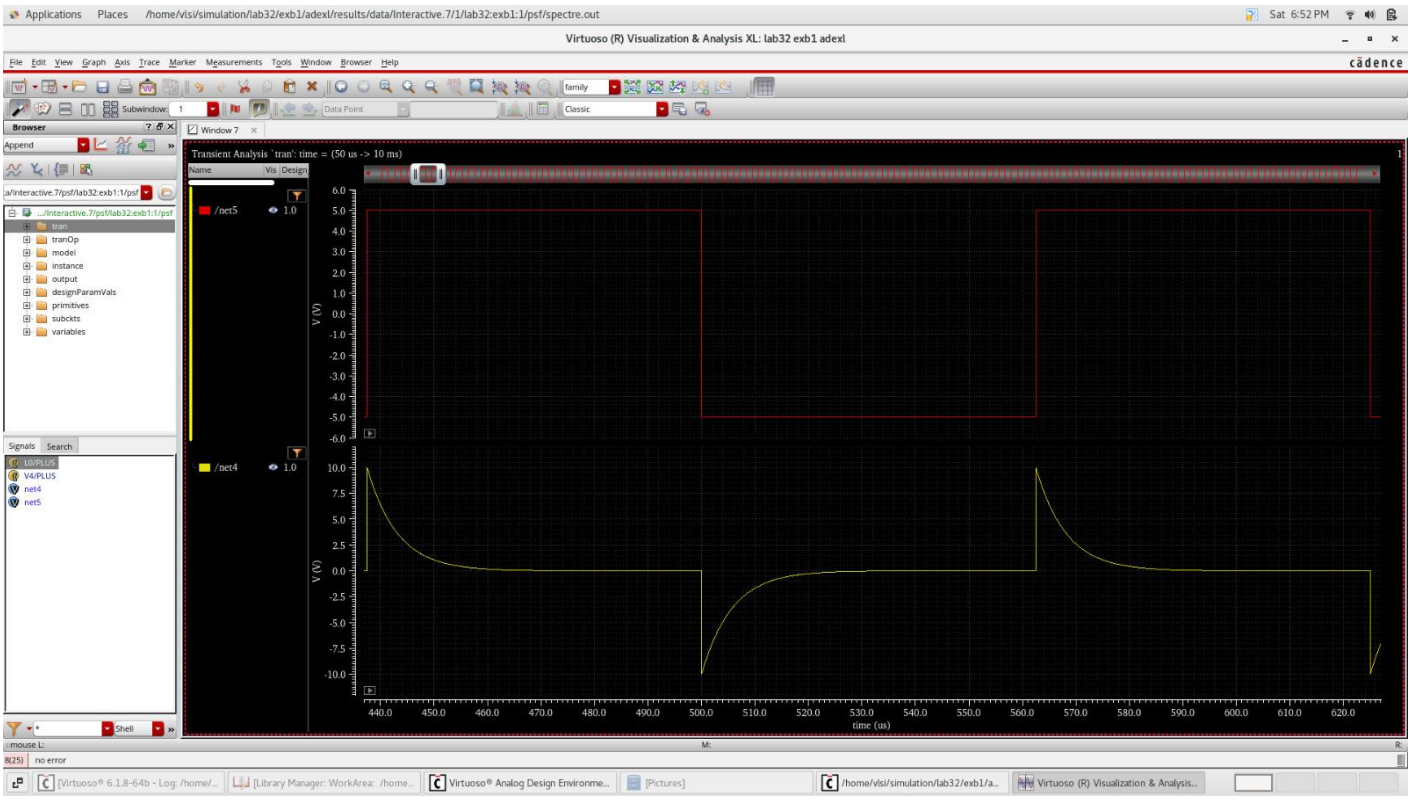
You can expect the time required analytically(R*C).



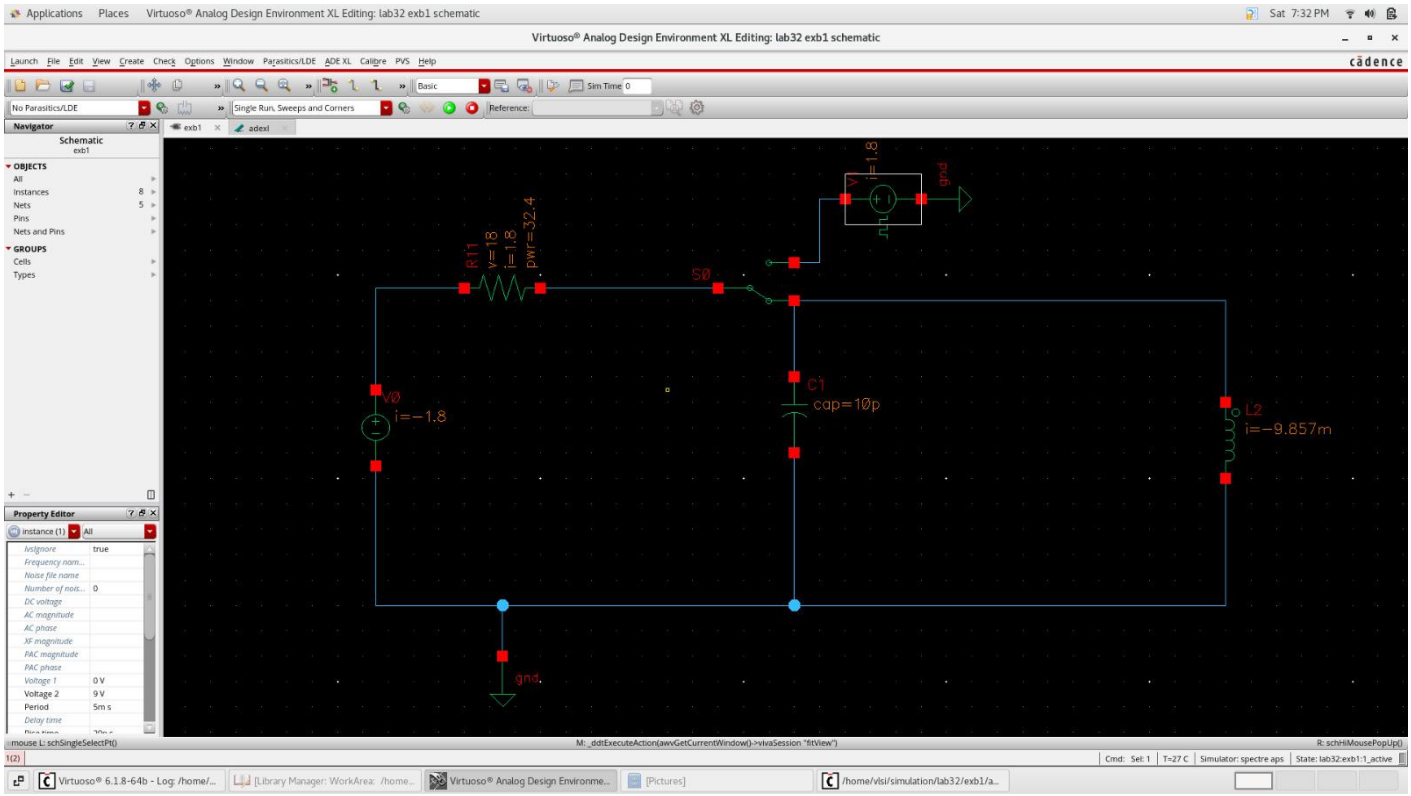
D- Transients Analysis in RL circuit:



L/R = 5.5856 micro and theoretical=5.6 micro

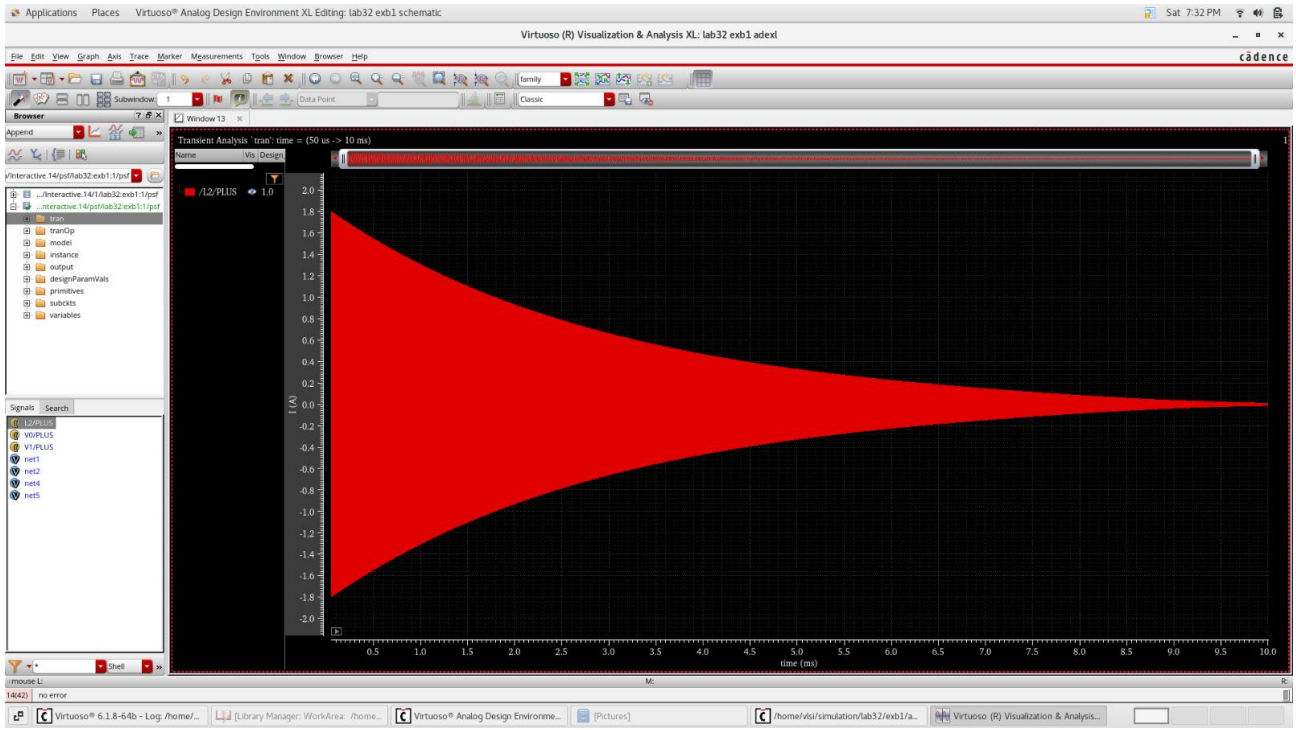


Assignment 3

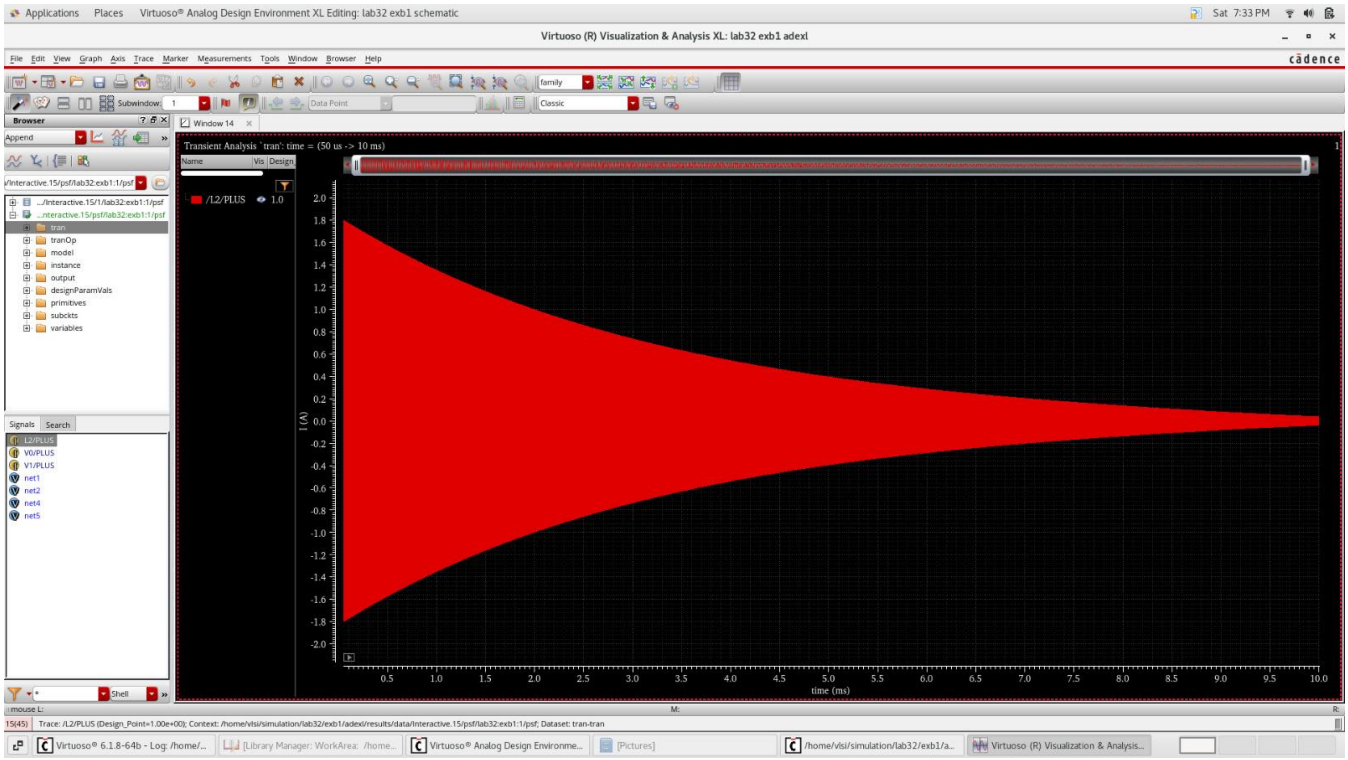


We increase the value of inductance (L) and make the capacitance constant value ➔ We note that while we increase the L value the current reaches the zero value more later as the damping ration increases (more oscillations starting from t=0 till current reaches zero or steady state).

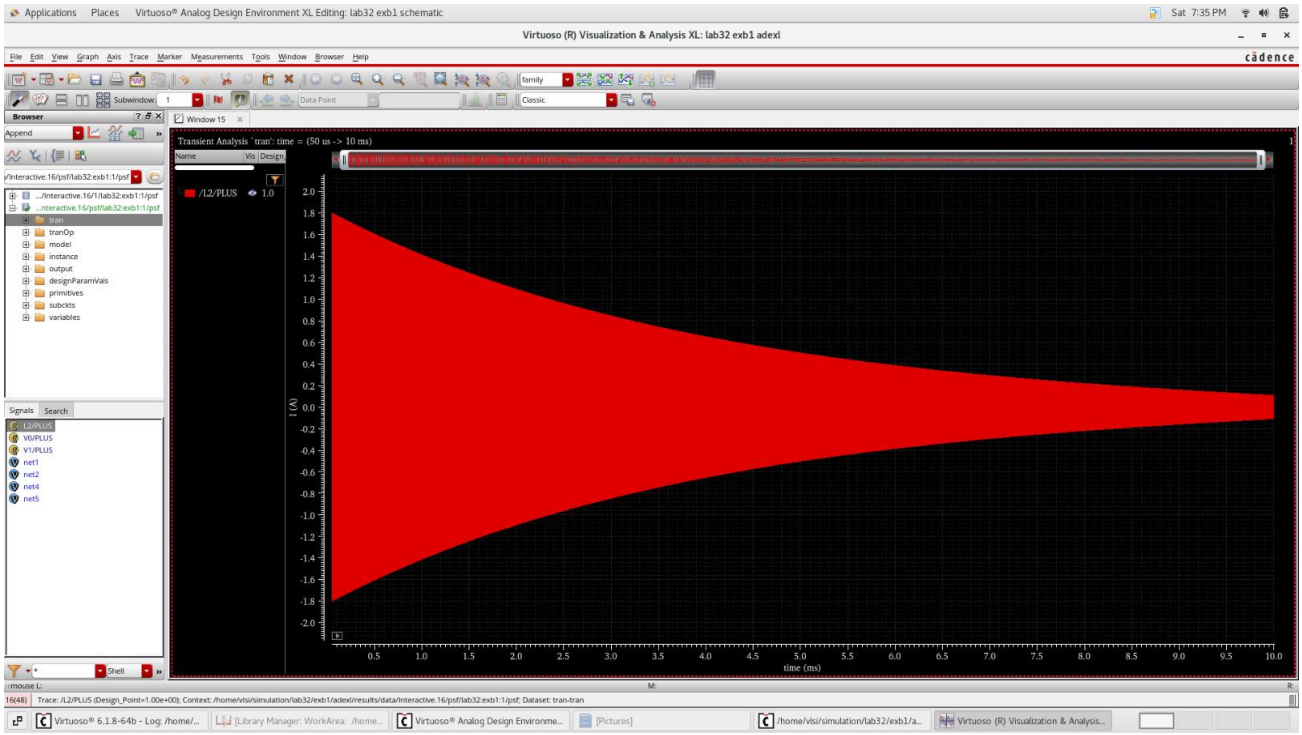
L=40mH


Virtuoso® Analog Design Environment XL Editing: lab32 exb1 schematic
Virtuoso (R) Visualization & Analysis XL: lab32 exb1 adexl
Transient Analysis `tran': time = (50 us -> 10 ms)
/L2/PLUS
time (ms)

L=50mH


Virtuoso® Analog Design Environment XL Editing: lab32 exb1 schematic
Virtuoso (R) Visualization & Analysis XL: lab32 exb1 adexl
Transient Analysis `tran': time = (50 us -> 10 ms)
/L2/PLUS
time (ms)

L=60mH


Virtuoso (R) Visualization & Analysis XL: lab32 exb1 adexl
Transient Analysis `tran': time = (50 us -> 10 ms)
/L2/PLUS
time (ms)