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Laboratory Activity #1a
Familiarization with the Software

11/30/2021

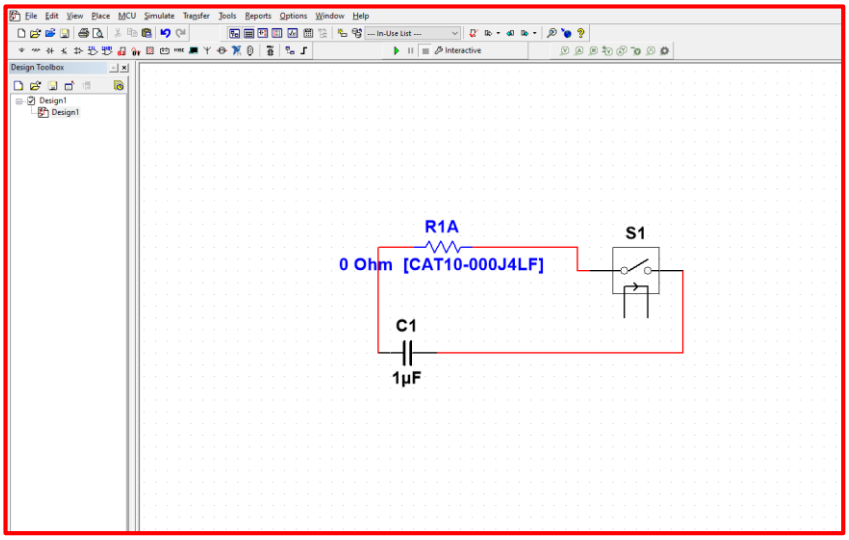
ECE101-1L – FUNDAMENTALS OF ELECTRONIC CIRCUITS (LAB)

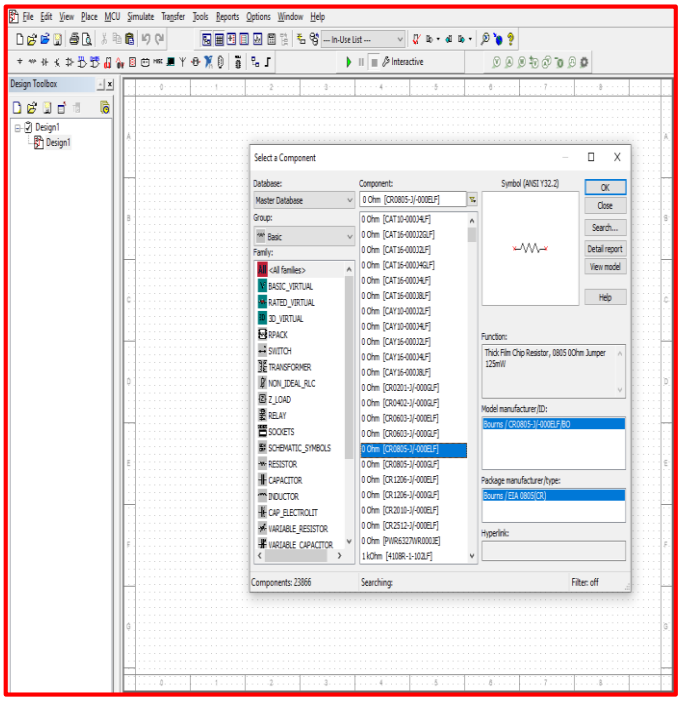
Activity #1a: Familiarization with the Software

Part A. Multisim

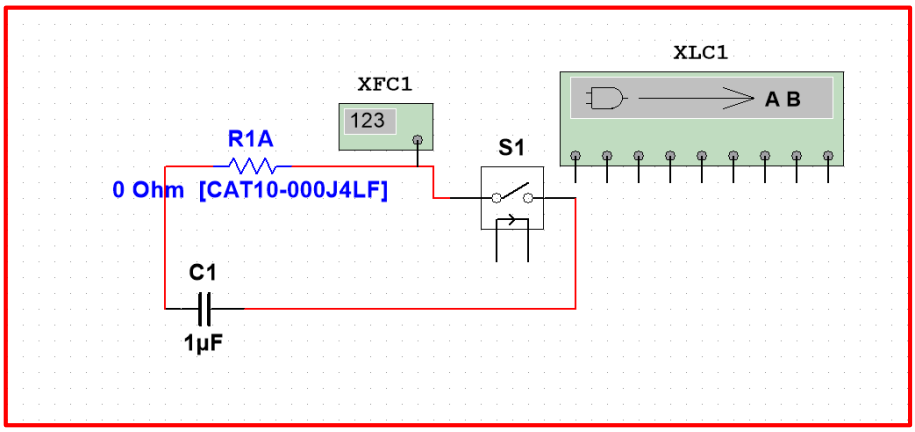
1. Open Multisim

2. Explore different components on the components toolbar and place it on your workspace





3. Explore different instruments on the instrument toolbar located at the right side of the window. Capture and List some of the instrument's present on the software.



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4. Create the circuit diagram below and measure the voltage across R1 and current flowing at Q1 (collector terminal). Simulate when switch is close and open.

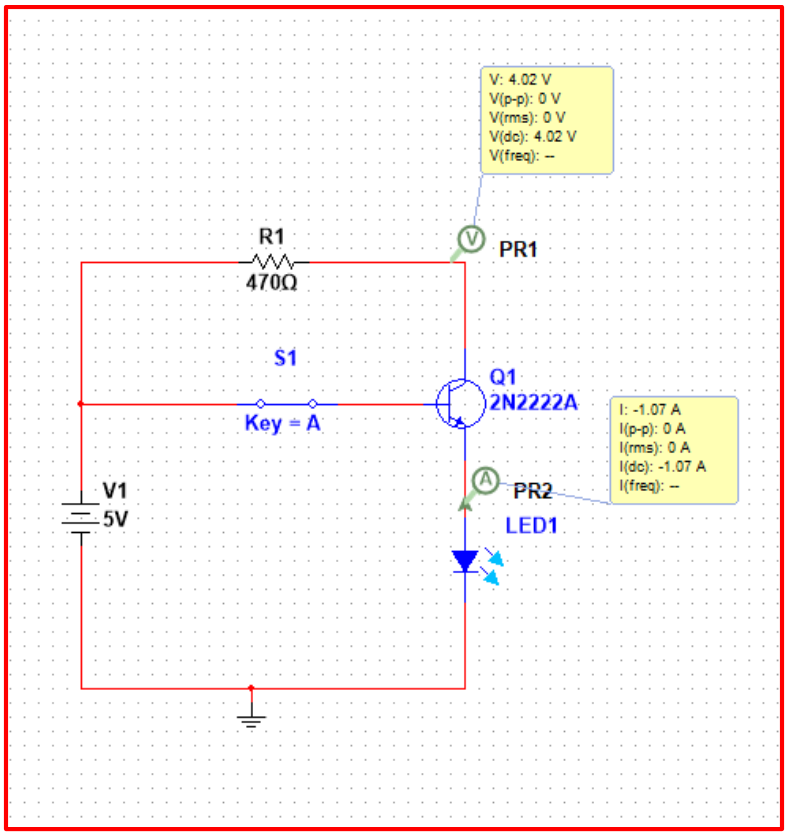

Figure 4.1: Switch is ON

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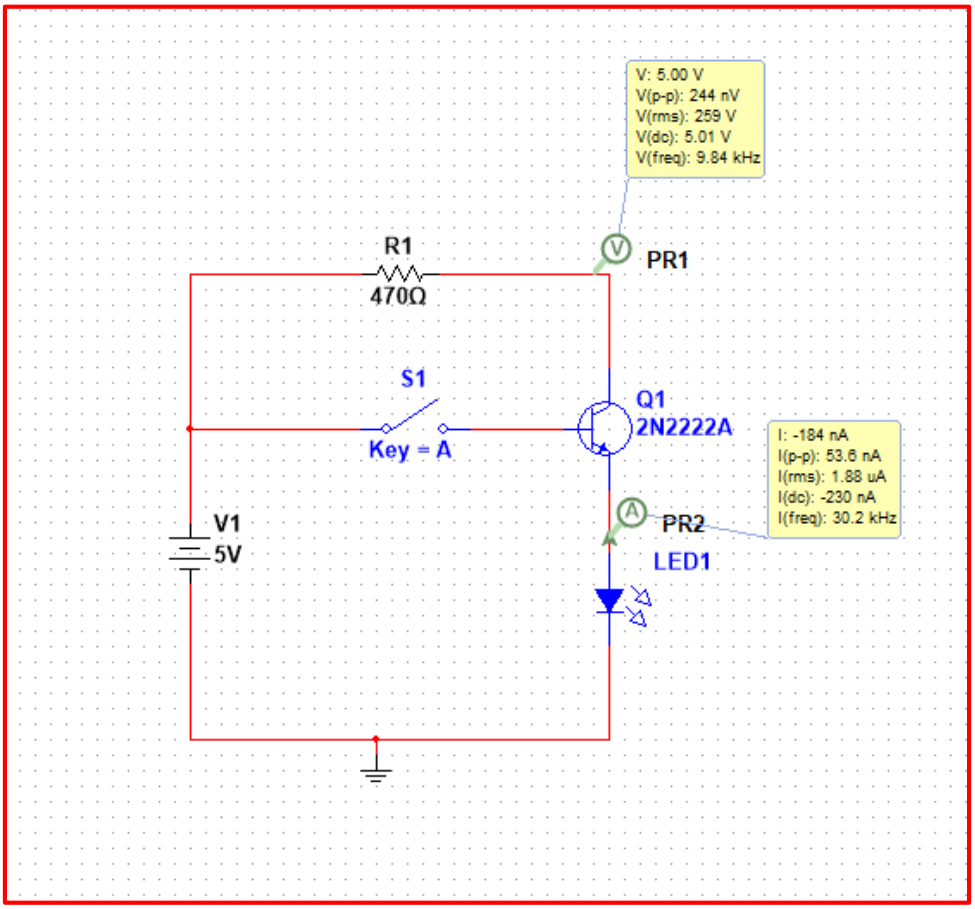

Figure 4.2: Switch is OFF

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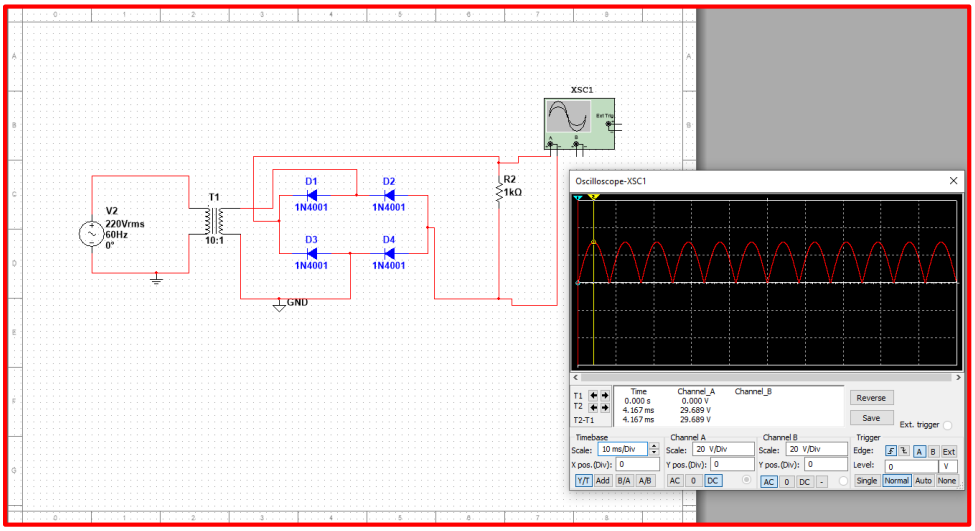
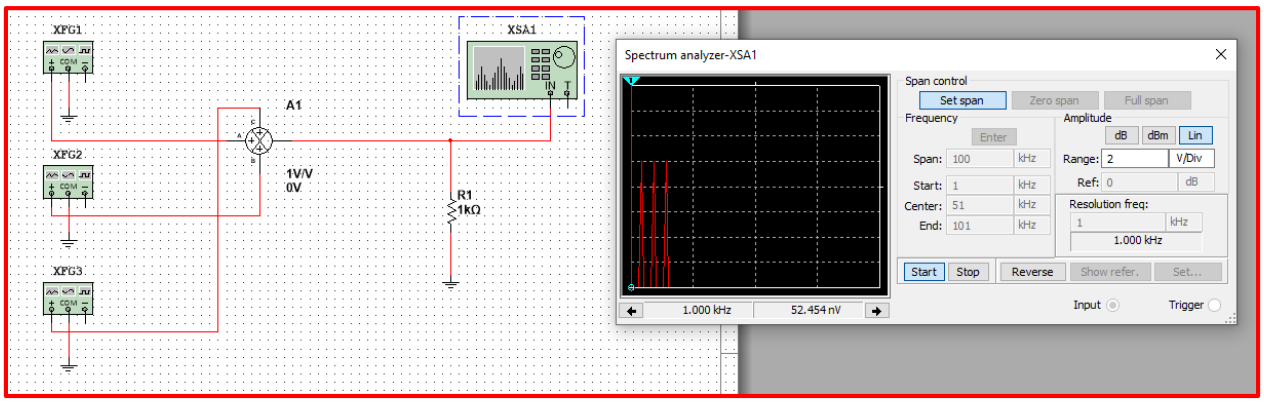
5. Create the circuit diagram below and using the oscilloscope measure the Vpeak of R2.



6. Place three Function Generators with 5kHz, 10KHz, 15KHz and connect to a Voltage summer inputs A, B, C and a resistor at the output. Using Spectrum Analyzer capture the output plot and identify the frequencies present on the plot.



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7. Place a Function Generator with 100Hz Frequency, voltage peak value of 5, Sine Wave. Add resistors in series with the function generator Ri = 50 ohms and RL = 1k ohms.

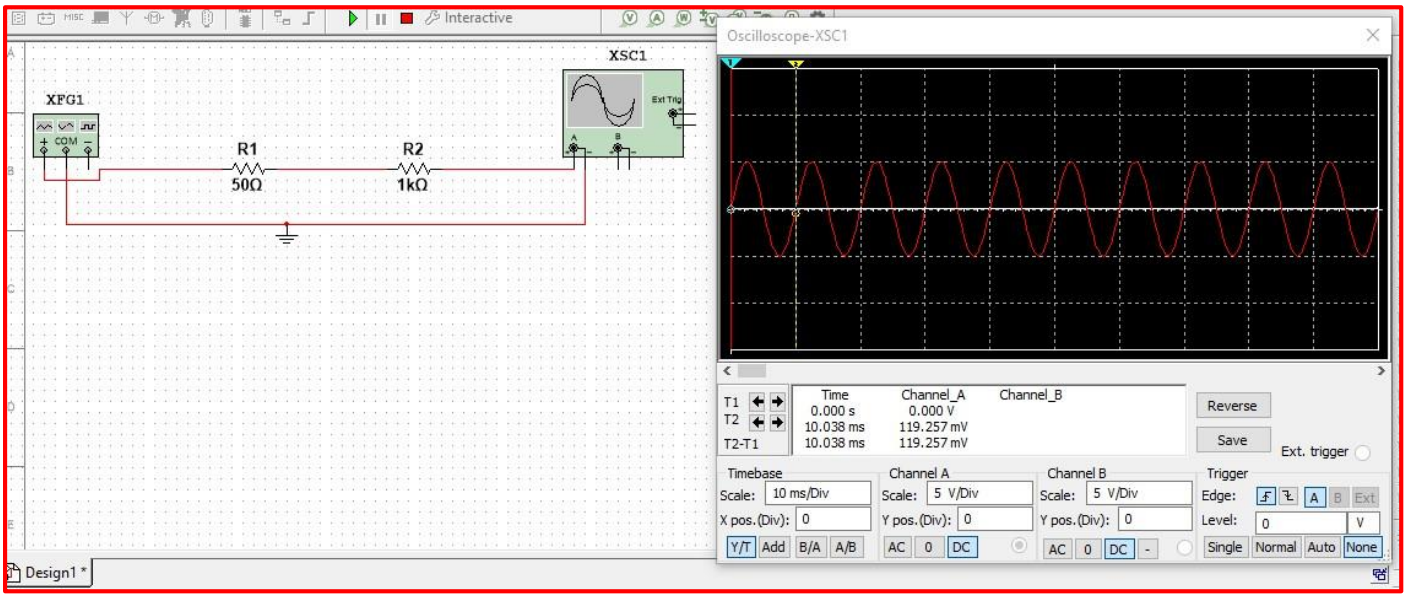
a. Calculate the Period (T).

T = 1/f

= 1/100Hz

= **0.01s**

b. Using Oscilloscope show the Period Measured



Discussions:

Through this activity we have familiarized ourselves with using this version of Multisim, as our prior experience with this kind of program was with the Multisim Live version which was much more simplified compared to Multisim NI. It is definitely a more in-depth simulator program compared to the online version and is no doubt much more capable of testing more complex circuit diagrams than the free online version and is a good way for us to conduct our subsequent experiments without needing to have the physical components and to be in person to do so.