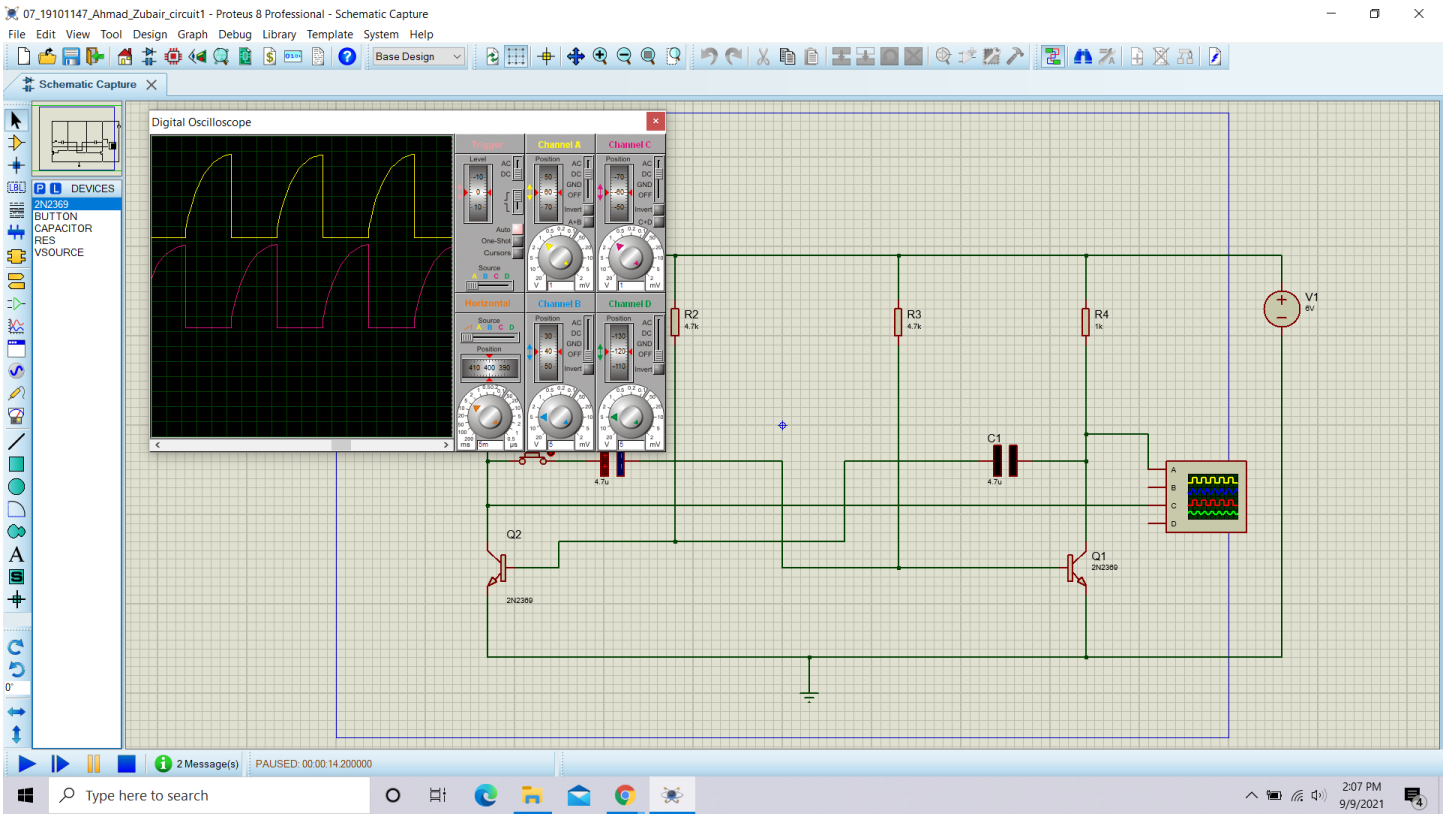
CSE350

Ahmad Zubair

Sec: 07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Digital Oscilloscope
DEVICES
2N2369
BUTTON
CAPACITOR
RES
VSOURCE
R2
4.7k
R3
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V1
6V
C1
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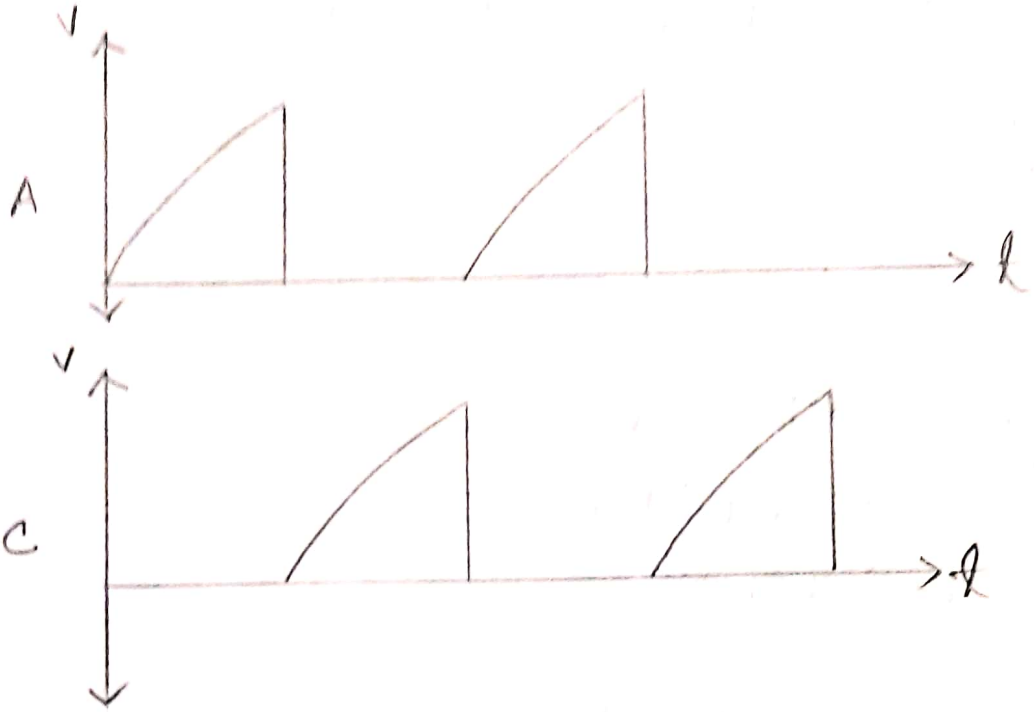
1.



2. Yes, there is some deviation in the experimental output wave shape from the desired wave. Our desired output was square wave but we got the one with tapered shape and that's because we have used capacitors in the circuit and we know that it takes time for capacitors to get charged up or get discharged. As a result, the wave

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does not get from low to high immediately.

3.

$t_1 = 0.69 \times R3 \times C1$

$= 0.69 \times 4.7 \times 4.7$

$= 15.2421$ ms

$t_2 = 0.69 \times R2 \times C2$

$= 0.69 \times 4.7 \times 4.7$

$= 15.2421$ ms

$\therefore T = t_1 + t_2$

$= 30.4842$ ms

And from experiment we get, $T = 30.5$ ms which is very close to 30.4842 ms. So, the time period of the experimental wave is similar to the calculated wave.

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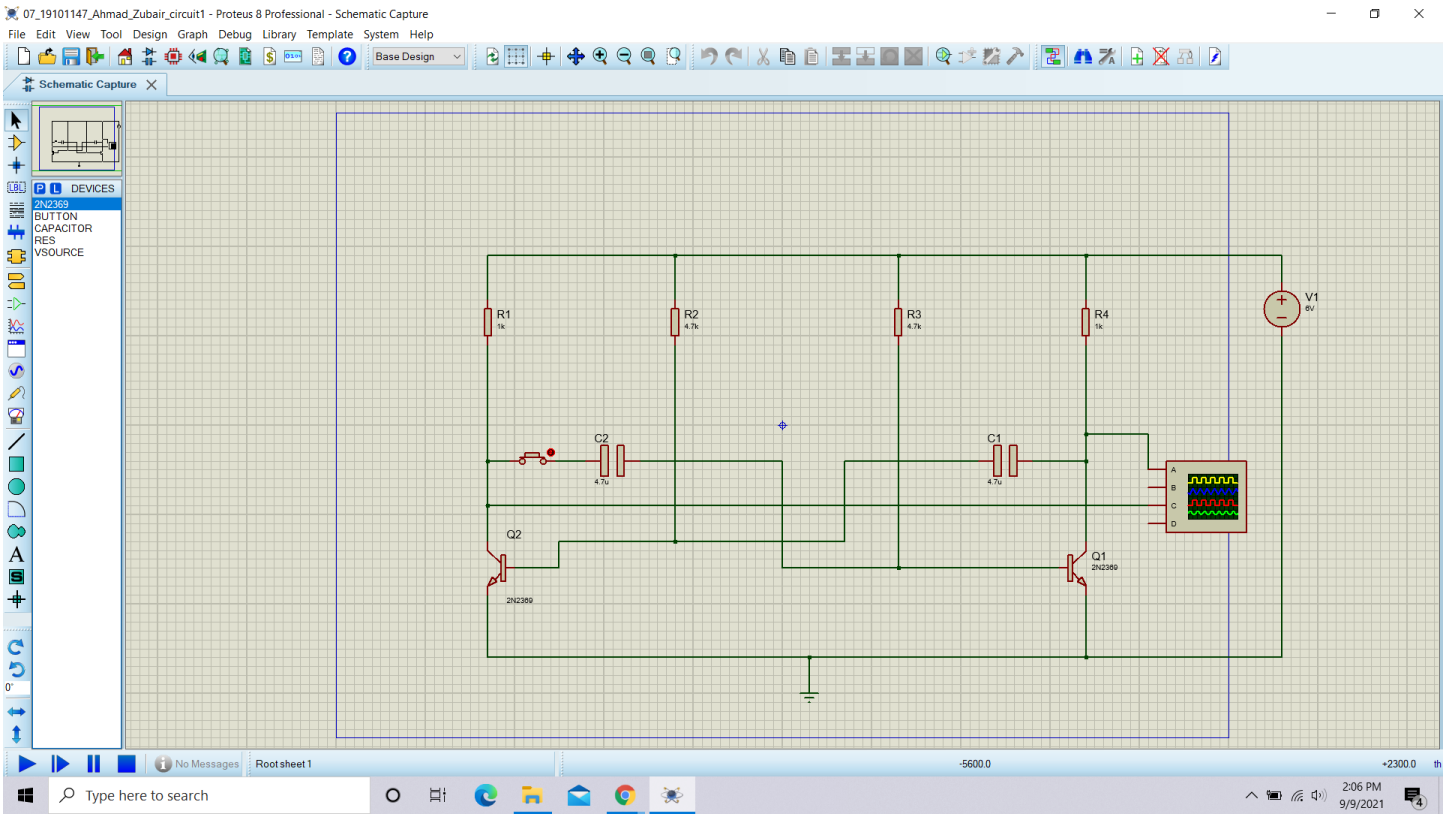
4. It can be possible to use the above multivibrator to create variable frequency square wave generator. To change frequency of the square wave, we need to change the ~~fre~~ period of the square wave and to change the period of the square wave, we can change the parameters of this circuit which are the capacitors and the R2 and R3 resistors.

5. The duty cycle of the circuit is the percentage of the time in a period when the output is high. We can change the value of the resistors and capacitors to change the time in a period when the output is high and that will change the duty cycle.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R1
1k
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R3
4.7k
R4
1k
V1
6V
C2
4.7u
C1
4.7u
Q2
2N2369
Q1
2N2369
A
B
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No Messages
Root sheet 1
-5600.0
+2300.0
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