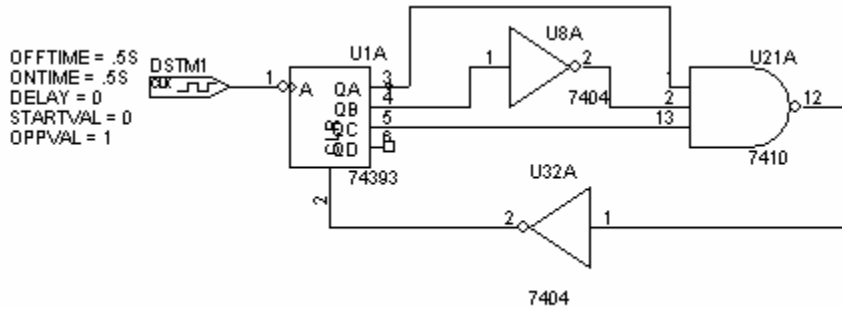


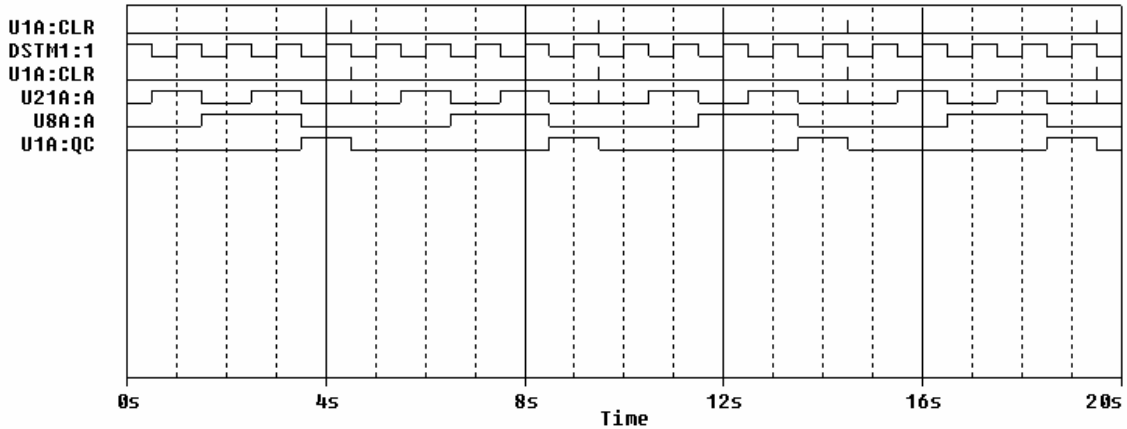


Reset Circuit that counts to TEN

The figure below is a circuit that counts to four and then resets.



Here is the output from PSpice. You can see that it counts to four before the reset spike (U1A:CLR) resets it. (Observe that the reset actually comes when the counter outputs a five.)



You are to design and build a circuit that counts up to *ten* before it resets.

Use the function generator for the clock and set it at 2 Hz. Also remember to set the clock so that it cycles between 0 and 5V. Place an LED on each of the four outputs from the counter (QA,QB,QC,QD). Have the staff member observe that your circuit counts up to 10 and resets.

Name of student: \_\_\_\_\_

Section \_\_\_\_\_ Group \_\_\_\_\_

Apply Towards: \_\_\_\_\_

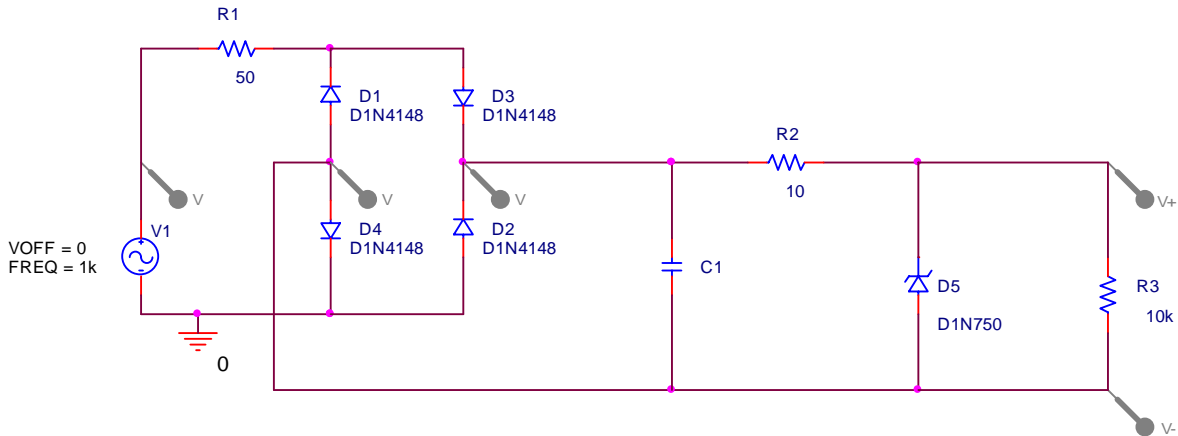
Points \_\_\_\_\_ (Points per circuit: quiz = 4, project = 1.5, experiment = 4)

Protoboard returned \_\_\_\_\_

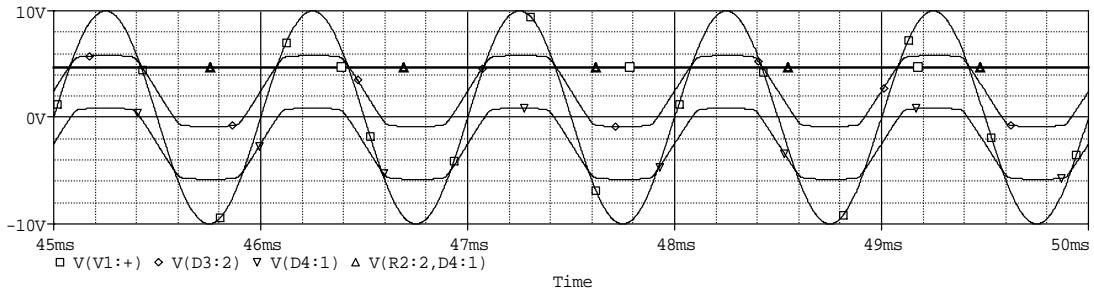
Staff Signature \_\_\_\_\_

AC to DC Conversion

The figure below is a circuit that performs AC to DC conversion.



Build this circuit on your protoboard. Because the scope cannot handle a signal that is not measured with respect to ground, you will have to place one channel of the scope at V+ and the other at V- and subtract them using the math features of the scope. Note that you will have to choose an amplitude for your input signal and a value for the capacitor C1. The input and output, when you choose correctly, should look like this:



You will probably need to borrow a few diodes from the staff. Please return these when you are finished. Have the staff member observe that the input is correct. Then show the staff member the voltage at V+ and V- AND the difference between these two voltages.

Name of student: \_\_\_\_\_

Section \_\_\_\_\_ Group \_\_\_\_\_

Apply Towards: \_\_\_\_\_

Points \_\_\_\_\_ (Points per circuit: quiz = 4, project = 1.5, experiment = 4)

Protoboard returned \_\_\_\_\_

Staff Signature \_\_\_\_\_