

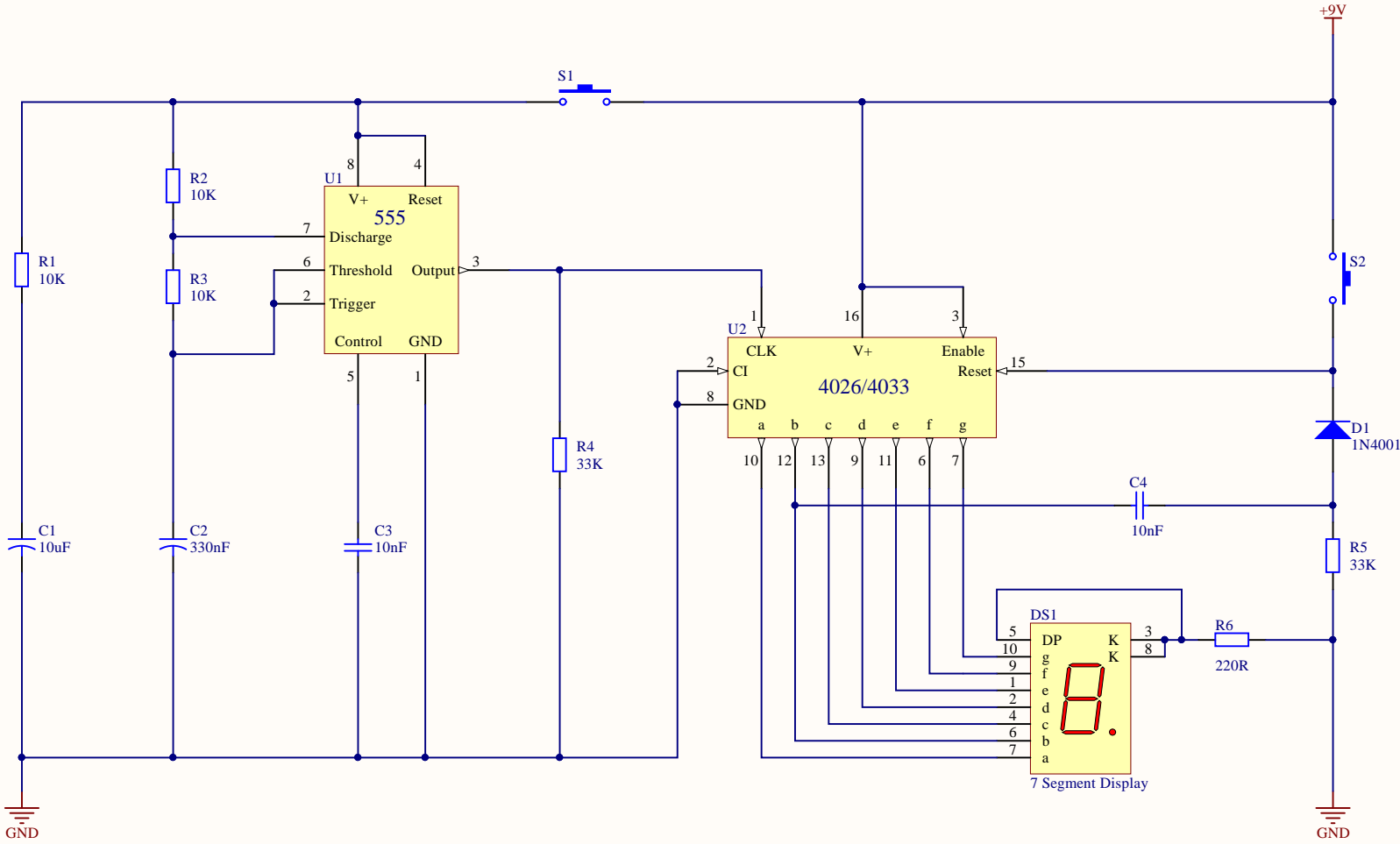
Comments/ Calculations:

Astable 555 Timer

$$t_{HIGH} = 0.693 \times C_2 \times (R_2 + R_3)$$
$$t_{LOW} = 0.693 \times C_2 \times R_3$$
$$T = t_{HIGH} + t_{LOW}$$
$$Frequency = \frac{1}{(T)} = \frac{1.44}{((R_2 + 2R_3)C_2)}$$
$$Duty Cycle = \frac{(R_2 + R_3)}{(R_2 + 2R_3)} \times 100$$

C = Capacitance in Farads  
R = Resistance in Ohms  
T = Time in Seconds  
t = Time in Seconds  
Frequency = Hertz  
Duty Cycke = %  
  
R2 =  
R3 =  
C2 =

Schematic Circuit Diagram:



Data Sheets:

555 Timer:  
Texas Instruments LM55CN/NOPB  
<http://www.ti.com/lit/ds/symlink/lm555.pdf>  
  
4026/4033:  
Texas Instruments CD4026BE / CD4033BE  
<http://www.ti.com/lit/ds/symlink/cd4026b.pdf>

Component list

Worldskills Pre-Competition Task

Job No: N/A  
Filing Reference: N/A  
Revision: v1.1.0

Worldskills Pre-Comp Task.PrjPcb  
Figure1.BomDoc  
Kerris Boulton



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#	Designator	Comment	DesignItemId	Supplier 1	Supplier Part Number 1	Manufacturer 1	Manufacturer Part Number 1	Quantity
1	C1	10uF	Cap2	Farnell	<a href="#">9451382</a>	<a href="#">Multicomp</a>	<a href="#">MCGPR50V106M5X11</a>	1
2	C2	330nF	Cap2	Farnell	<a href="#">1902922</a>	<a href="#">Multicomp</a>	<a href="#">MCRH50V334M5X11</a>	1
3	C3, C4	10nF	Cap	Farnell	<a href="#">1216435</a>	<a href="#">Multicomp</a>	<a href="#">MCRR25103X7RK0050</a>	2
4	D1	1N4001	Diode 1N4001	Farnell	<a href="#">2323100</a>	<a href="#">ON Semiconductor / Fairchild</a>	<a href="#">1N4001</a>	1
5	DS1	7 Segment Display	Dpy Red-CC	Farnell	<a href="#">2314249</a>	<a href="#">Kingbright</a>	<a href="#">SC56-11SURKWA</a>	1
6	R1, R2, R3	10K	Res2	Farnell	<a href="#">2329855</a>	<a href="#">TE Connectivity</a>	<a href="#">LR0204F10K</a>	3
7	R4, R5	33K	Res2	Farnell	<a href="#">2329922</a>	<a href="#">TE Connectivity</a>	<a href="#">LR0204F33K</a>	2
8	R6	220R	Res2	Farnell	<a href="#">2329900</a>	<a href="#">TE Connectivity</a>	<a href="#">LR0204F220R</a>	1
9	S1, S2	SW-PB	SW-PB	Farnell	<a href="#">2468761</a>	<a href="#">TE Connectivity</a>	<a href="#">1825910-7</a>	2
10	U1	555	555 TIMER	Farnell	<a href="#">1564692</a>	<a href="#">TI National Semiconductor</a>	<a href="#">LM555CN/NOPB</a>	1
11	U2	4026/4033	4026/4033	Farnell	<a href="#">1703295</a>	<a href="#">Texas Instruments</a>	<a href="#">CD4026BE</a>	1

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