

Richard and Jen Ace Stochastics



DESKTOP SLOT MACHINE PARTS LIST

Amt	Part Description	Allied Part #
1	Parallel 16x2 LCD Display	670-0036
3	Bipolar stepper motor driver	248-2970
25	1 k Ω resistor	296-5562
5	10 k Ω resistor	296-5586
20	4.7 k Ω resistor	296-5578
10	22 nF capacitor	213-0102
15	0.1 μ F capacitor	213-3622
1	22 k Ω ceramic photocell	669-9512
1	5V dc relay	866-2351
1	Voltage comparator	568-4660
5	4 MHz crystal oscillator	895-0677
	Protoboard	761-0010
	NPN power transistor	568-4085
4	Red LED	782-0011
	Green LED	782-1503
3	Yellow LED	782-0040

Additional parts required: 5 PIC 16F84A microcontrollers; 1 bright white LED; 3 bipolar stepper motors; 3 H-bridge with flyback diodes; 1 computer power supply; 1 slot machine N.O. spin button; 1 digital sound module; 1 amplified computer speakers; 1 car emergency brake handle; 1 doorbell

For Richard Hopkins and Jen Harmel's complete instructions on how to build your own penny slot machine, microcontroller code, and a video of the slot machine in action, go to <http://rbi.ims.ca/4391-509>.

Gamblers who play engineering students Richard and Jen's handy desktop slot machine simply insert a coin and press a button or pull a handle. Three stepper motor microcontrollers generate a random number between 0 and 7, using this number to spin the three reels to new positions. For a cool visual effect, the reels are spun through multiple rotations. If the reels arrive at a winning combination, "winner" is displayed on an LCD, chimes ring, and a central microcontroller sends pulses to a relay that runs a set of solenoids that push out the winning coins. Viva Las Vegas!

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