

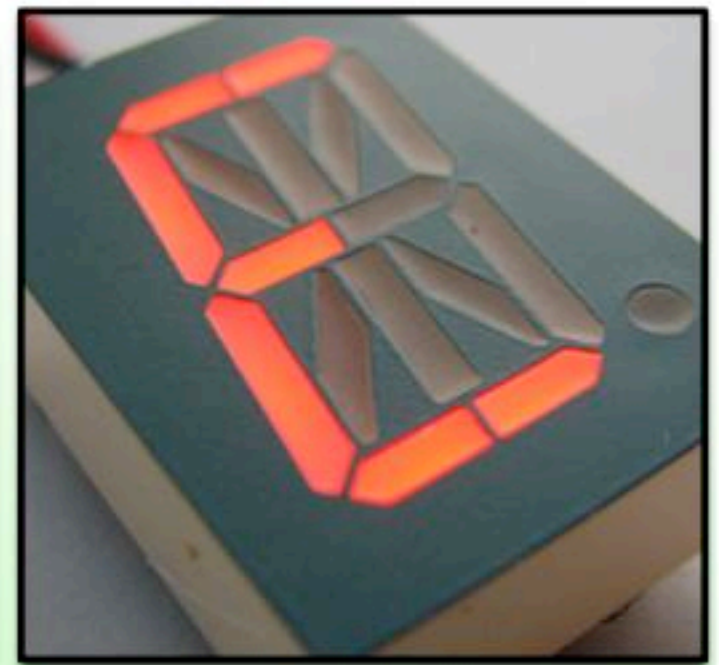
Evil Mad Scientist Laboratories

MAKING THE WORLD A BETTER PLACE, ONE EVIL MAD SCIENTIST AT A TIME

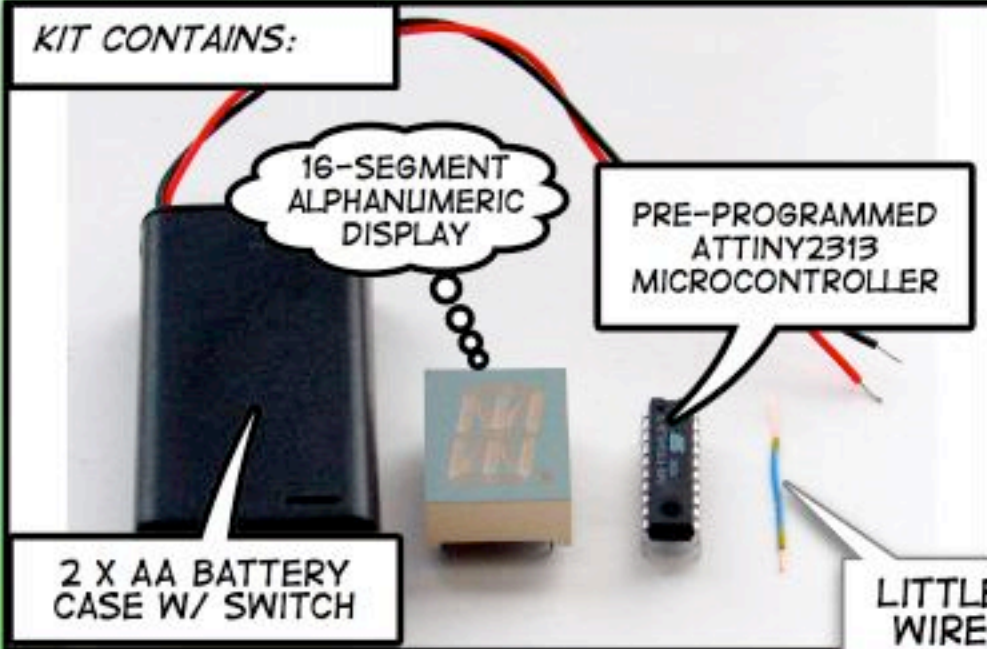
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HOLIDAY ELECTRONICS PROJECTS: MICRO-READERBOARD ORNAMENT

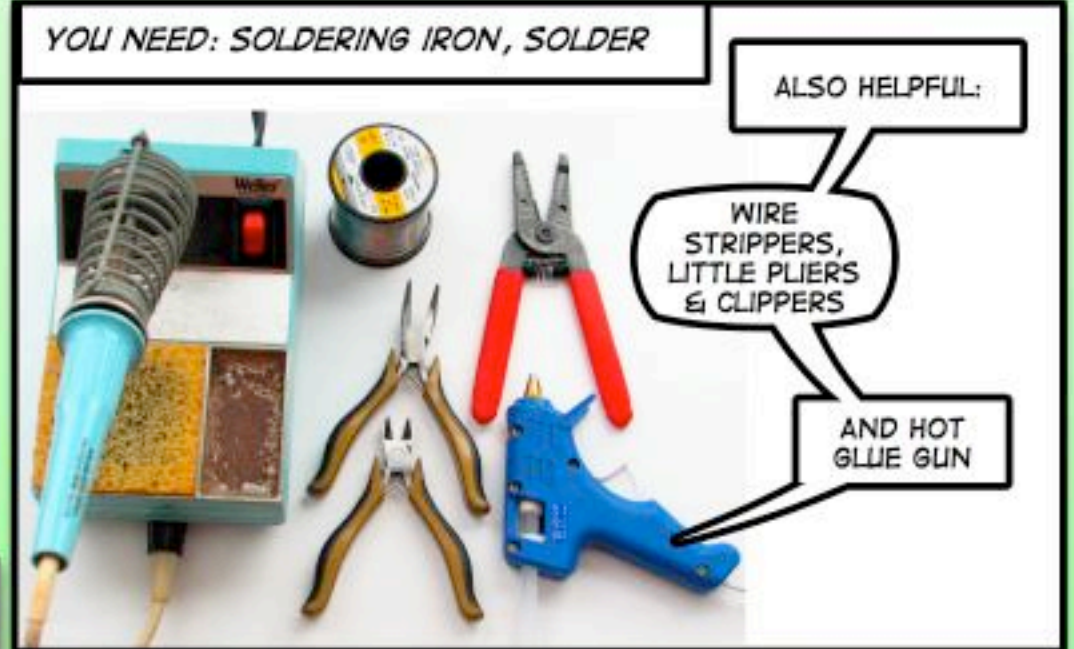
SUPPORT: [HTTP://WWW.EVILMADSCIENTIST.COM/ARTICLE.PHP/HEPSUPPORT](http://WWW.EVILMADSCIENTIST.COM/ARTICLE.PHP/HEPSUPPORT)



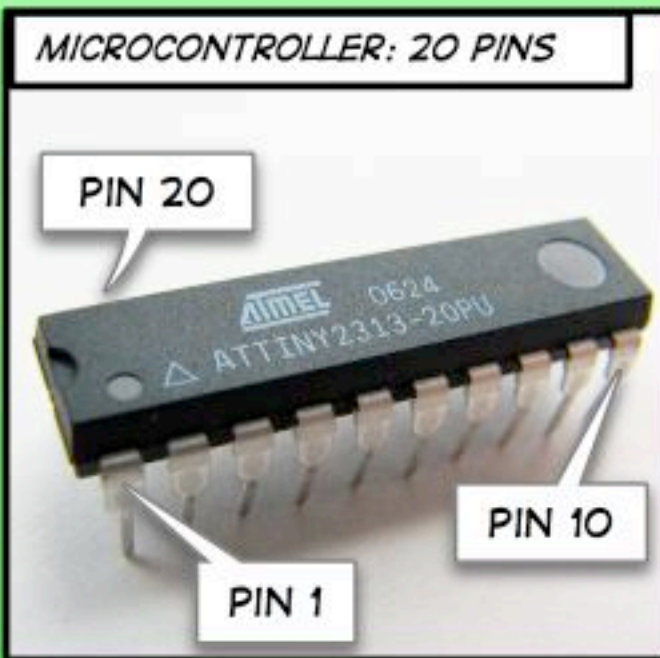
KIT CONTAINS:



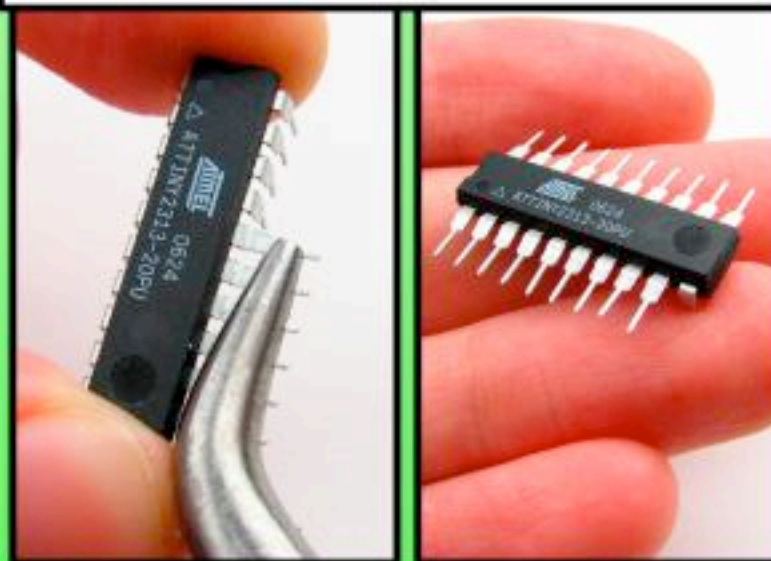
YOU NEED: SOLDERING IRON, SOLDER



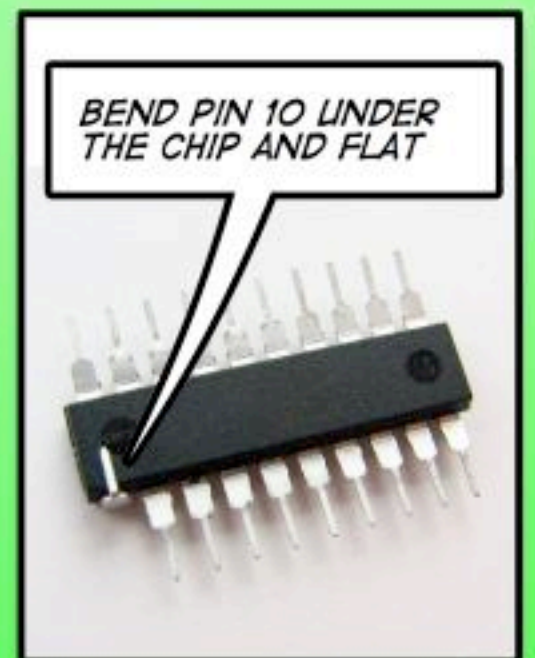
MICROCONTROLLER: 20 PINS



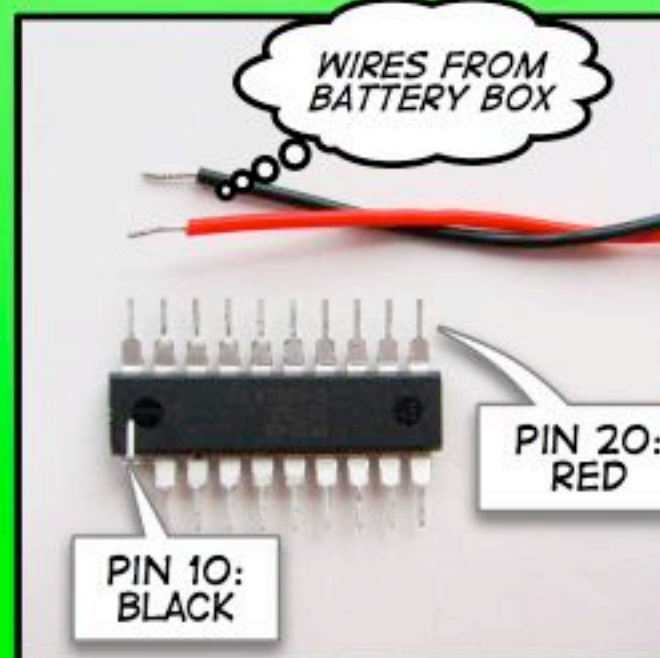
BEND ALL PINS- EXCEPT 10- OUT FLAT



BEND PIN 10 UNDER THE CHIP AND FLAT



WIRES FROM BATTERY BOX



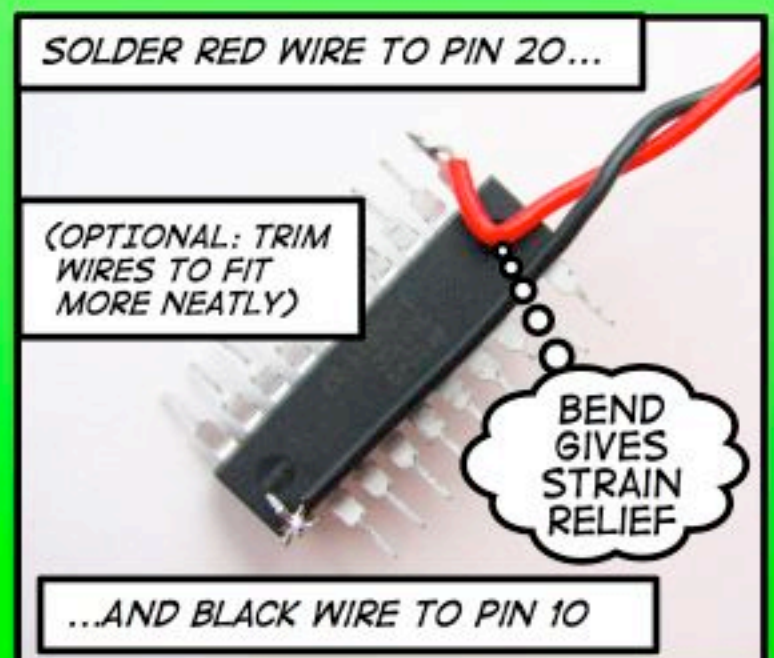
CAUTION!

YOU WILL BE SOLDERING DIRECTLY TO THE PINS OF THE CHIP. TAKE CARE NOT TO OVERHEAT IT!

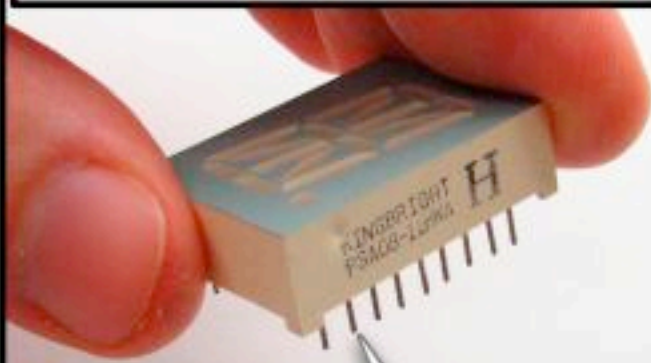
IF YOU DON'T MAKE A GOOD CONNECTION IN LESS THAN ONE SECOND OF SOLDERING, LET IT COOL DOWN BEFORE TRYING AGAIN!

SOLDER RED WIRE TO PIN 20...

(OPTIONAL: TRIM WIRES TO FIT MORE NEATLY)

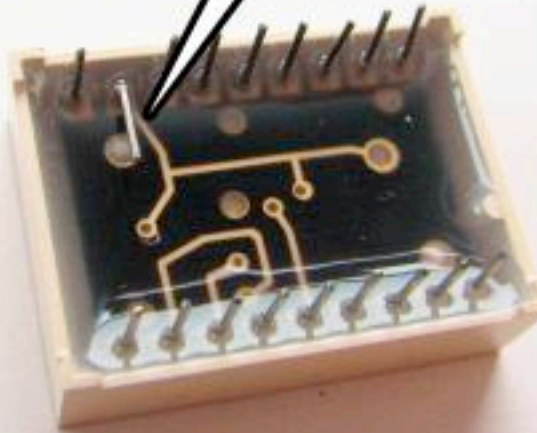


ON ALPHANUMERIC LED DISPLAY, LOCATE THE SECOND PIN ON THE CORNER BY THE DECIMAL POINT

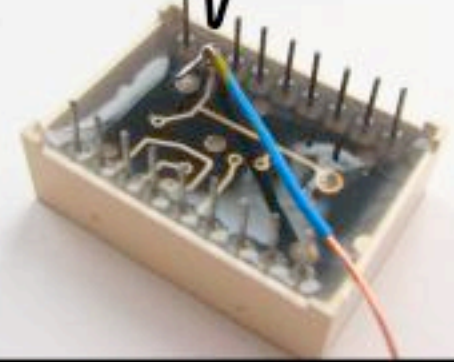


THIS ONE, SILLY

BEND THAT PIN DOWN FLAT, TOWARDS ITS BELLY

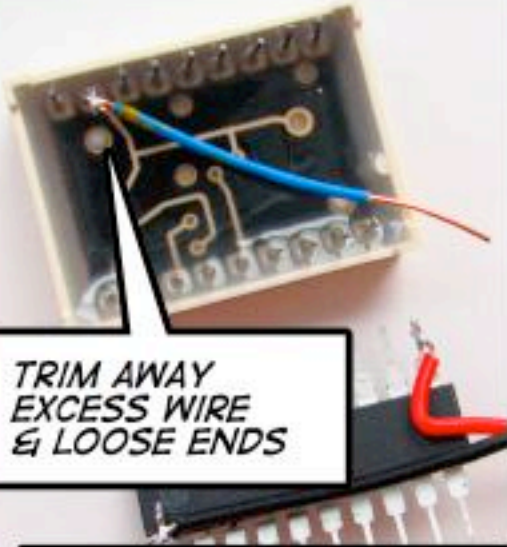


SOLDER A SHORT PIECE OF INSULATED COPPER WIRE TO THE BENT-DOWN PIN AS SHOWN:



THE WIRE SHOULD REACH PAST THE OPPOSITE CORNER OF THE DISPLAY.

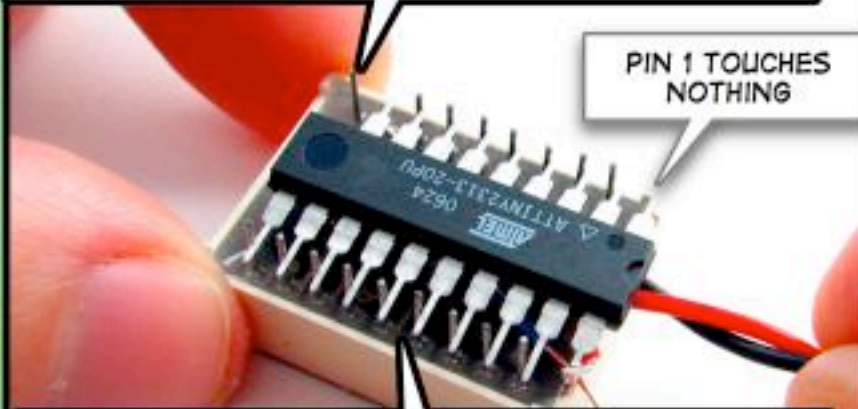
ORIENT THE TWO PARTS SO THAT THIS LONELY LED PIN WOULD TOUCH PIN 10 OF THE CHIP-- IF PIN 10 WEREN'T BENT.



TRIM AWAY EXCESS WIRE & LOOSE ENDS

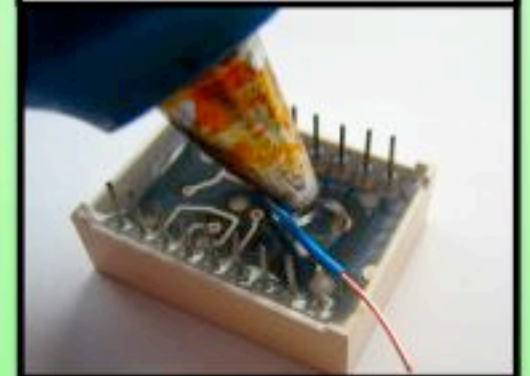
NEXT: SEE HOW THE TWO PIECES FIT TOGETHER...

PIN 1 TOUCHES NOTHING

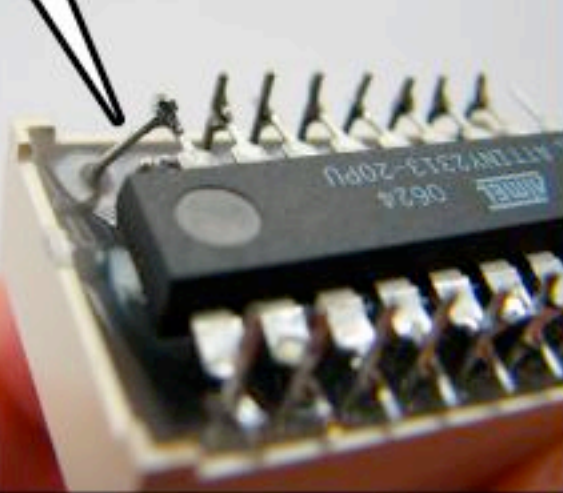
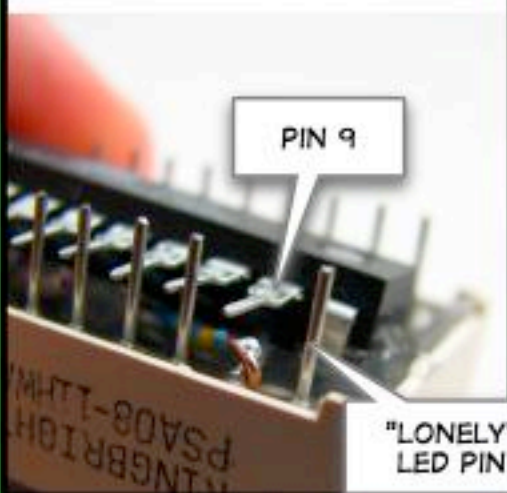


ON THIS SIDE, ALL CHIP PINS-- EXCEPT PIN 20-- REST AGAINST PINS OF THE LED DISPLAY

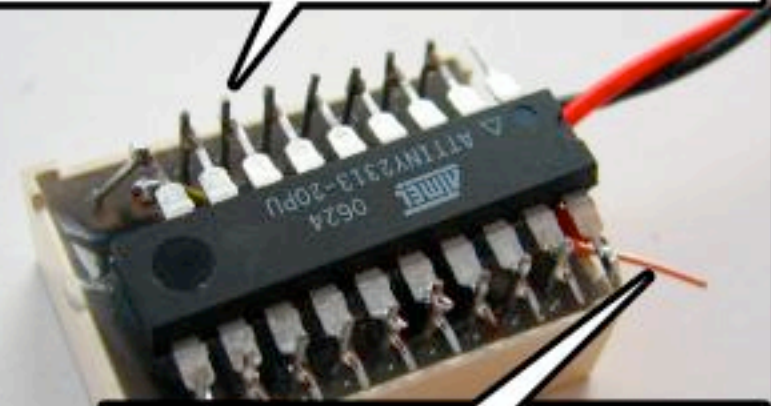
OPTIONAL, GOOD IDEA: USE HOT GLUE TO FIX THE CHIP IN PLACE. THIS MAKES THE REST EASIER TO SOLDER, AND HELPS WITH STRAIN RELIEF



BEND THE "LONELY" LED PIN OVER TO MEET PIN 9 OF THE CHIP AND SOLDER THEM TOGETHER; MAKE SURE THAT THEY DO NOT TOUCH THE COPPER WIRE BELOW.



SOLDER SIXTEEN CONNECTIONS LIKE THIS ONE BETWEEN THE PINS THAT ARE TOUCHING



ALSO: SOLDER THE END OF THE LOOSE COPPER WIRE TO PIN 20

NOW GET SOME BATTERIES!

YES, THAT'S IT. PUT 2 AA BATTERIES IN THE HOLDER AND TURN IT ON.

EACH TIME THAT YOU TURN IT ON, IT WILL REPEAT ONE OF ITS THIRTY SOME MESSAGES.

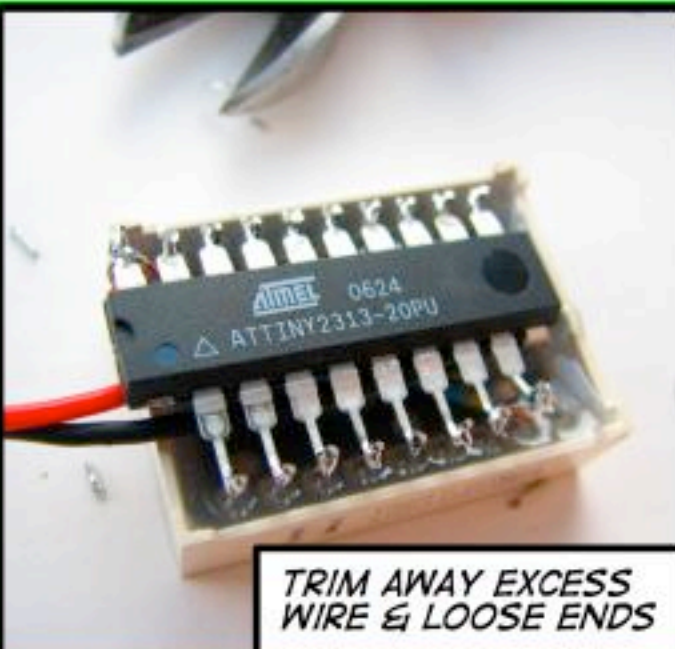
THERE IS ALSO A "SHOW-OFF" MESSAGE THAT WILL SCAN THROUGH ALL OF THE POSSIBLE MESSAGES.



COMMON SENSE:
1. TURN THE SWITCH OFF TO SAVE BATTERIES.

2. DON'T PUT THIS ON AN ALUMINUM (OR WET) TREE. ZAP!

HAVE FUN!



TRIM AWAY EXCESS WIRE & LOOSE ENDS