For Loop Iteration

Often you want to iterate over a series of pins and do something to each one. For instance, this example blinks 6 LEDsattached to the Arduino or Genuino by using a [for()](https://www.arduino.cc/en/Reference/For) loop to cycle back and forth through digital pins 2-7. The LEDS are turned on and off, in sequence, by using both the [digitalWrite()](https://www.arduino.cc/en/Reference/DigitalWrite) and [delay()](https://www.arduino.cc/en/Reference/Delay) functions .

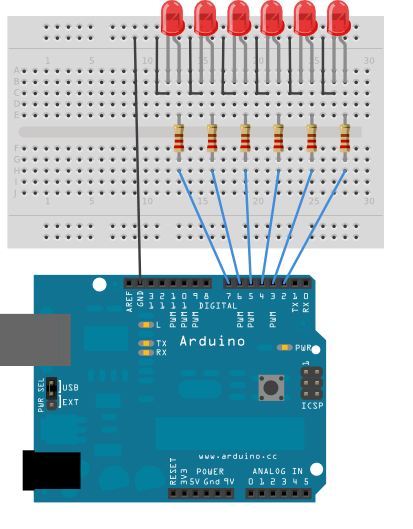
We also call this example "[Knight Rider](http://en.wikipedia.org/wiki/KITT)".

Hardware Required

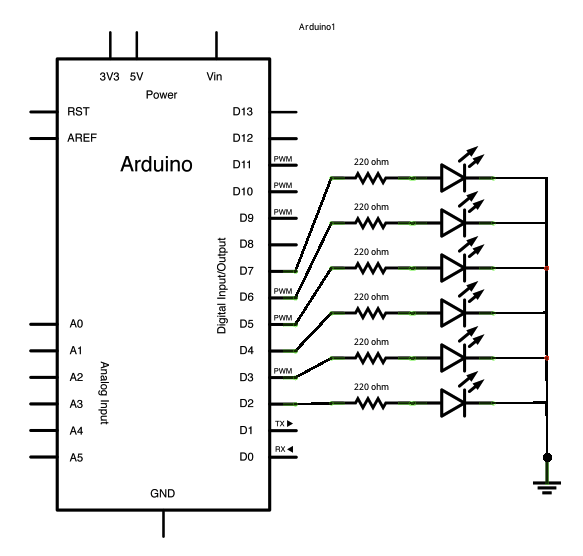
* Arduino or Genuino Board
* 6 220 ohm resistors
* 6 LEDs
* hook-up wires
* breadboard

Circuit

Connect six LEDS, with 220 ohm resistors in series, to digital pins 2-7 on your Arduino.



Schematic:



Code

The code below begins by utilizing a for() loop to assign digital pins 2-7 as outputs for the 6 LEDs used.

In the main loop of the code, two for() loops are used to loop incrementally, stepping through the LEDs, one by one, from pin 2 to pin seven. Once pin 7 is lit, the process reverses, stepping back down through each LED.

int timer = 100;           *// The higher the number, the slower the timing.*  
  
void **setup**() {  
  *// use a for loop to initialize each pin as an output:*  
  for (int thisPin = 2; thisPin < 8; thisPin++) {  
    pinMode(thisPin, OUTPUT);  
  }  
}  
  
void **loop**() {  
  *// loop from the lowest pin to the highest:*  
  for (int thisPin = 2; thisPin < 8; thisPin++) {  
    *// turn the pin on:*  
    digitalWrite(thisPin, HIGH);  
    delay(timer);  
    *// turn the pin off:*  
    digitalWrite(thisPin, LOW);  
  }  
  
  *// loop from the highest pin to the lowest:*  
  for (int thisPin = 7; thisPin >= 2; thisPin--) {  
    *// turn the pin on:*  
    digitalWrite(thisPin, HIGH);  
    delay(timer);  
    *// turn the pin off:*  
    digitalWrite(thisPin, LOW);  
  }  
}