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/*EXPEREMENT 1: BLINKING AN LED Turn an LED on for one second, off for one second, and repeat forever.*/

// Welcome to Arduino!

// If you're brand-new to this, there will be some new things to
// learn, but we'll jump right in and explain things as we go.

// The Arduino is a tiny computer that runs programs called
// "sketches". These are text files written using instructions
// the computer understands. You're reading a sketch right now.

// Sketches have computer code in them, but also (hopefully)
// "comments" that explain what the code does. Comments and code
// will have different colors in the editor so you can tell them
// apart.

// This is a comment - anything on a line after "//" is ignored
// by the computer.

/* This is also a comment - this one can be multi-line, but it must start and end with these characters */

// A "function" is a named block of code, that performs a specific,
// well, function. Many useful functions are already built-in to
// the Arduino; others you'll name and write yourself for your
// own purposes.

// All Arduino sketches MUST have two specific functions, named
// "setup()" and "loop()". The Arduino runs these functions
// automatically when it starts up or if you press the reset
// button. You'll typically fill these function "shells" with your
// own code. Let's get started!

// The setup() function runs once when the sketch starts.
// You'll use it for things you need to do first, or only once:

void setup()
{
  // The Arduino has 13 digital input/output pins. These pins
  // can be configured as either inputs or outputs. We set this
  // up with a built-in function called pinMode().

  // The pinMode() function takes two values, which you type in
  // the parenthesis after the function name. The first value is
  // a pin number, the second value is the word INPUT or OUTPUT.

  // Here we'll set up pin 13 (the one connected to a LED) to be
  // an output. We're doing this because we need to send voltage
  // "out" of the Arduino to the LED.

  pinMode(13, OUTPUT);

  // By the way, the Arduino offers many useful built-in functions
  // like this one. You can find information on all of them at the
  // Arduino website: http://arduino.cc/en/Reference
}

// After setup() finishes, the loop() function runs over and over
// again, forever (or until you turn off or reset the Arduino).
// This is usually where the bulk of your program lives:

void loop()
{
  // The 13 digital pins on your Arduino are great at inputting
  // and outputting on/off, or "digital" signals. These signals
  // will always be either 5 Volts (which we call "HIGH"), or
  // 0 Volts (which we call "LOW").

  // Because we have an LED connected to pin 13, if we make that

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// output HIGH, the LED will get voltage and light up. If we make
// that output LOW, the LED will have no voltage and turn off.

// digitalWrite() is the built-in function we use to make an
// output pin HIGH or LOW. It takes two values; a pin number,
// followed by the word HIGH or LOW:

digitalWrite(13, HIGH); // Turn on the LED

// delay() is a function that pauses for a given amount of time.
// It takes one value, the amount of time to wait, measured in
// milliseconds. There are 1000 milliseconds in a second, so if
// you delay(1000), it will pause for exactly one second:

delay(1000); // Wait for one second

digitalWrite(13, LOW); // Turn off the LED

delay(1000); // Wait for one second

// All together, the above code turns the LED on, waits one
// second, turns it off, and waits another second.

// When the computer gets to the end of the loop() function,
// it starts loop() over again. So this program will continue
// blinking the LED on and off!

// Try changing the 1000 in the above delay() functions to
// different numbers and see how it affects the timing. Smaller
// values will make the loop run faster. (Why?)
}
```