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| Macintosh HD:Users:nate:Desktop:WIT-shield.png | **Wentworth Institute of Technology**  –  , |

Electronic Lock

# Arduino

The Arduino authenticates a 4-digit passcode supplied via USB/Serial.

## Build the Arduino + Breadboard Stand

1. See page 12 in the Arduino book

## Test the Arduino (Blink! No Blink!)

1. If you do not have the Arduino IDE installed, download and install[[1]](#footnote-1)
2. Plug in the USB cable to the computer and Arduino board
3. Run the Arduino IDE
4. Load the Blink example: File -> Examples -> Basics -> Blink
5. Tell the computer to talk to the board using the right port: Tools -> Port -> choose the port that has the Arduino UNO on it
6. Click the right-arrow (⇒) button – this compiles the program and uploads it to the board
7. After a few seconds, there should be a blinking orange LED on your board :)
8. Now load the BareMinimum example (it does nothing): File -> Examples
9. Compile and upload – your blinking LED should no longer blink.

## Build the Lock Circuit

1. See the provided diagram, be cautious of…
   * Resistor values (one is unlike the other three); orientation doesn’t matter
   * Capacitor orientation (minus stripe/short wire = negative)
   * LED orientation (short wire = negative)
   * Button orientation (both legs should be on the same side of the divide)
   * Motor wires (black=negative, red=positive, white=control via Arduino)
   * Shorts (any time positive/negative meet without something in the middle)
2. Have your circuit inspected before supplying power/moving on

## Program the Arduino with Lock Software

1. Download Zip: <https://github.com/natederbinsky/htmaa>
2. Download Zip: <https://github.com/joshmarinacci/CmdArduino>
3. Unzip htmaa-master (a), open server\htmaa\htmaa.ino (in Arduino IDE)
4. Use the CmdArduino library: Sketch->Include Library->Add .ZIP Library
   * Choose CmdArduino-master
5. Compile & Upload

## Command the Arduino!

1. Invoke the Serial Monitor in the Arduino IDE
   * Either upper right corner, magnifying glass OR Tools->Serial Monitor
2. Make sure to choose “Carriage return” and “9600 baud” in the two dropdowns
3. Type “move 1234” (no quotes) – the motor should move and the green LED blinks
4. Type “move 4321” – the red LED should blink (bad passcode!)
5. Type “change 1234 4321” – the blue LED should blink (passcode changed!)
6. Type “move 4321” – green should blink and motor should engage
7. Click the button on the board – the blue LED should blink (passcode is now 1234)

1. <https://www.arduino.cc> [↑](#footnote-ref-1)