RFID Reader Parts List and Instructions for 2 readers
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A. Parts List:
1 x Arduino Uno: http://www.adafruit.com/products/50

1 x Adafruit SD Card Data Logger Shield: http://www.adafruit.com/products/1141 (with optional extra stacking headers)

2 x seeed 125 khz RFID reader module: http://www.seeedstudio.com/depot/125Khz-RFID-module-UART-p-171.html?cPath=19_24

*NB: above is an old, possibly defunct link. This looks like the new equivalent product, but I haven't tested this version: https://www.seeedstudio.com/125Khz-RFID-module-UART-p-171.html

some jumper cables: http://www.adafruit.com/products/266 (one pack will be more than enough to get started)

and some male headers: http://www.adafruit.com/products/400

Any FAT16 or FAT32 SD card (these work great: http://www.adafruit.com/products/102)

1 x USB-A to USB-B cable (one should come with the arduino)

125 khz FDX-A tags - currently using the 1.4x8 mm glass tags from: http://freevisioncorp.en.ec21.com/Rfid_Glass_Tag_for_Animal--6117901_8423081.html

Mini breadboard (optional, but good for playing around) - http://www.adafruit.com/products/64

And a power supply: http://www.adafruit.com/products/63

B. Tools
Diagonal cutters (optional): http://www.adafruit.com/products/276

Soldering iron - there are some available on adafruit.com, but any one should work just fine!

C. Software List
Arduino software: http://www.arduino.cc/

RTC library: https://github.com/adafruit/RTClib/ - download this package as a zip file (button on bottom right corner), unzip, rename folder from "RTClib-master" to "RTClib" then place folder in Document/Arduino/libraries/ (you might have to create the libraries folder).

RFID_Uno_2Readers script (emailed to you). Place the script file ("RFID_Uno_2Readers.ino") in a folder of the same name ("RFID_Uno_2Readers") in the arduino directory (".../Documents/Arduino/")

D. Wiring Instructions

1. Get the data logger shield ready for use: In the latest adafruit versions, it comes preassembled, so you shouldn't have to do anything except install the headers, which you can do following adafruit's nifty instructions: https://learn.adafruit.com/adafruit-data-logger-shield/installing-the-headers (Follow the instructions for stackable headers). Once the headers are soldered into place, stack the shield on top of the Arduino Uno (all pins should line up and slide right into place!).

2. Wiring up the RFID modules.
      a. First, you'll need to get some wires ready. Separate eight individual jumper wires, and also cut off 10 individual male header pins using the diagonal cutters, and insert one male header pin into one end of each jumper cable, then add additional male pins on the ends of two of the cables, so you have 6 male-female (m-f) cables and 2 male-male (m-m) cables.
      b. Wire up power to the RFID modules. The squared off pin in the series of five on the RFID module (see below) is the power pin (has a red line coming off in diagram), and the pin next to that is the ground pin. Using m-f cables, connect the power pins from each module to the red(+) column on the breadboard, and the ground pins to the black (-) column. Then using the two m-m pins, connect the red and black breadboard columns to the power(5v) and ground pins on the arduino, respectively. (see diagram).
      c. Wire up RFID module communication. Using the two leftover m-f cables, wire the fifth pin in the same series as the power/ground pins on the rfid modules (far upper left in diagram) to the arduinos - the pin from the module you want to have the "inner" antenna connects to the digital0 pin on the arduino, and the pin from the other module connects to digital2.
      d. Wire up the antenna: For each module, connect the prepackage antenna to the two pins on the bottom right in the diagram (orientation doesn't matter).
      Now you're all wired up!

E. OPERATION

3. Setting up the software.
      a. After you've opened up arduino and made sure everything's working, **disconnect the wire connected to digital pin 0 on the arduino**. [NB: *this is kind of obnoxious I know, but the way I got around having only one serial port on the arduinos (and therefore fit on two rfid modules) is by kind of hijacking the serial port the arduino uses to communicate with the computer, which means you can only have the arduino talk to either the computer or the second rfid module, but not both at the same time (which also means in this incarnation you always have to run the arduino untethered from a computer)*].
      b. Put an SD card in the slot and hook the arduino up to the computer with the USB cable.
      c. Open the Arduino software and under Tools -> Board select Arduino Uno, and then under Tools -> Serial port select the correct serial port (fiddle around with which one it is if necessary). Then open the sketch under File -> Example -> RTClib -> ds1307.

Compile (check button in the upper left of the sketch window) and then, once verified, go ahead and upload (right arrow next to the check button) the sketch. On the bottom of that window it should soon say "Done uploading." Open the serial monitor (button in the upper right) and you should see the correct time being spit out by the arduino.

       d. Now you're ready to upload the rfid software. Under File -> Sketchbook open "RFID_Uno_2Readers", then compile and upload as above. Once it says it's done uploading, close Arduino and disconnect the cable

4. Setting up the reader. This is pretty simple - Make sure the SD card is in the slot, reconnect the digital pin 0 on the arduino, and plug the arduino into wall power using the 2.1 mm jack and the power supply. Swipe an RFID tag by the antennae, then disconnect power, remove the SD card and see if the rfid visit was logged with the correct timestamp in the file "RFIDLOG.CSV."

5. Troubleshoot.
For now, just shoot me an email if you run into any serious problems :) it's not quite a streamlined system yet but I'd like to get it there! There's also lots of possible variations on this setup (i.e. adding more and different sensors, more readers, etc) that are easy and I'd be happy to chat about those if you want to add stuff on!

SD CARD SLOT

5v (Power)

Ground

Digital 0

Digital 2

INNER
ANTENNA

OUTER
ANTENNA