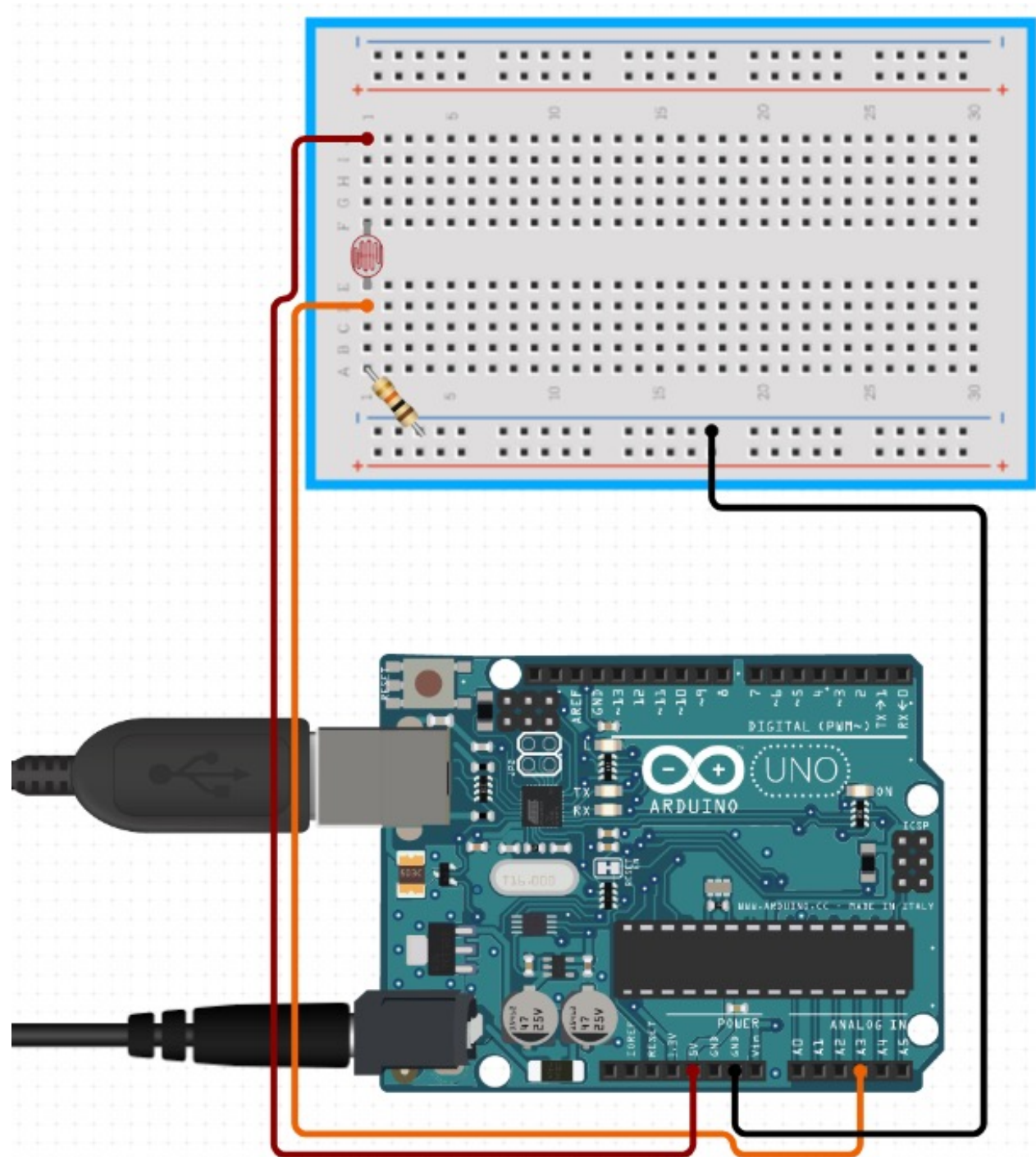
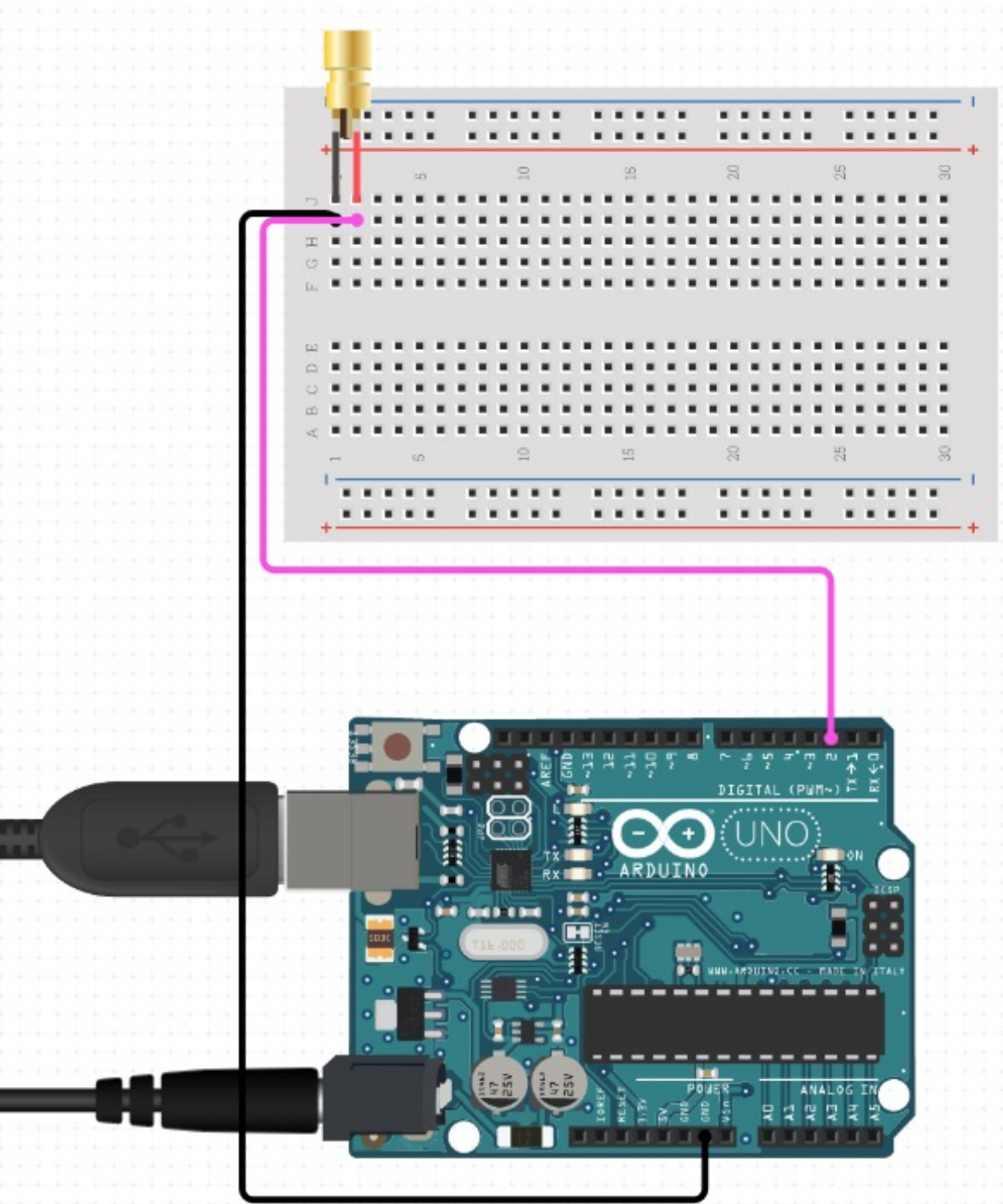


REINVENTING THE INTERNET  
REINVENTING THE INTERNET  
WITH LASERS  
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Co-Author: Colin Suckow

<https://github.com/Colin-Suckow>





# Terms

- Bit – A binary digit (1 or 0)

# Terms

- Byte – A group of binary digits (usually 8)
  - 1 Byte = 8 Bits



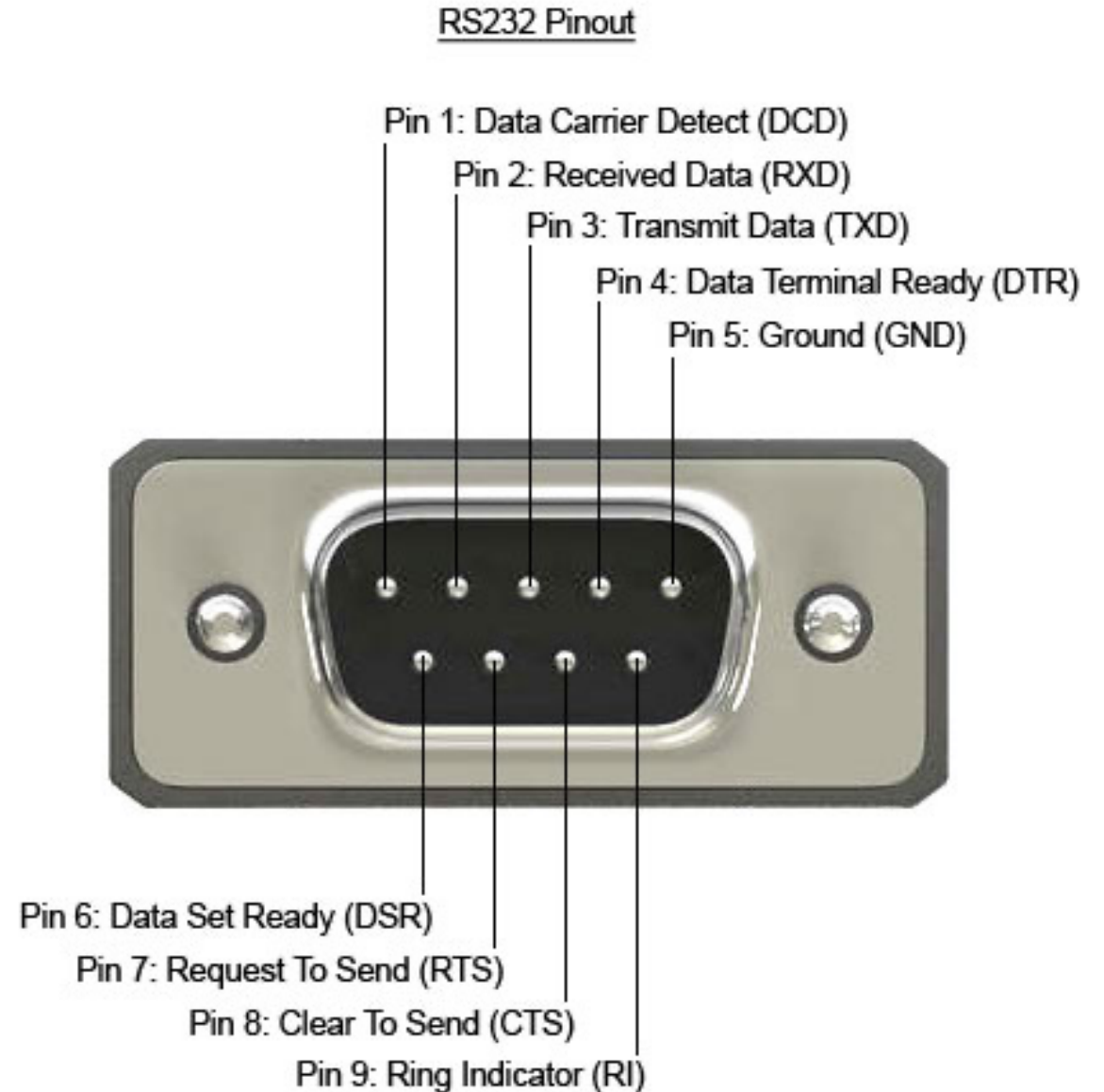
**Eight bits**



**One byte**

# Terms

- Serial Port – A communication port that transfers data, 1 bit at a time



# Transmitting

- Get a string
- Send a single signal to tell the receiver to get ready
- For each character (byte) of the string
  - Convert the byte to binary
  - Turn the laser on for “1” and off for “0”

# Receiving

- If a “start” signal is received, prepare to receive message
  - “Synchronize” to the transmitter
  - Receive individual bits and store in a variable
  - Once 8 bits received, output this to the serial port



# Text to Numbers to Binary?

## Example:

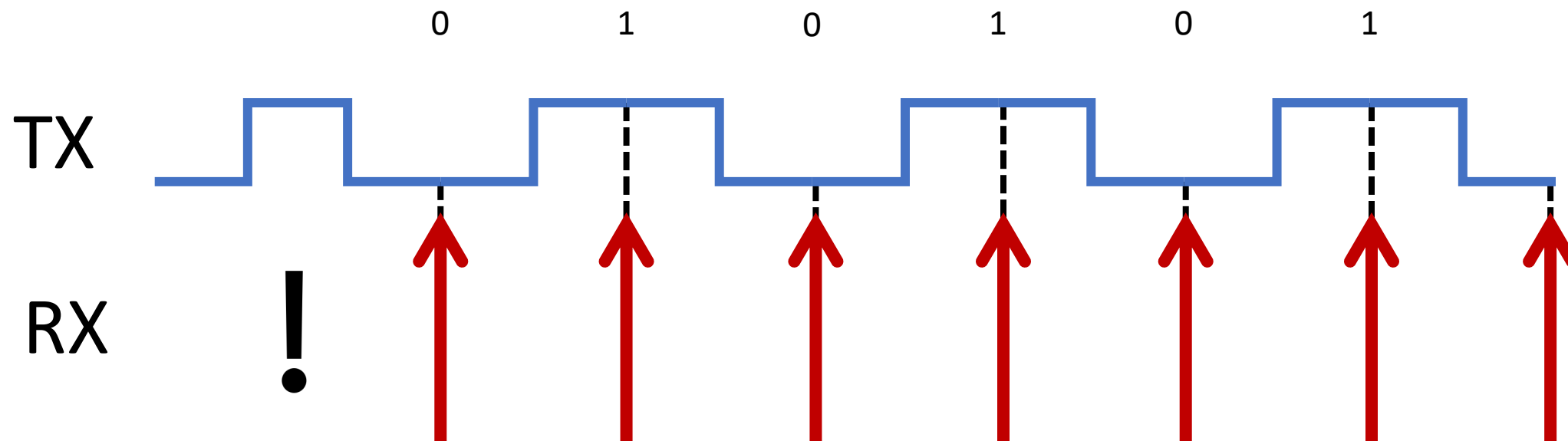
'h' is represented by 104 in decimal (in the ASCII table)



104 in decimal = 01101000 in binary

The computer is told that if it receives 01101000 and it is text, to interpret it as 'h'

Dec	Hx	Oct	Html	Chr
96	60	140	&#96;	`
97	61	141	&#97;	a
98	62	142	&#98;	b
99	63	143	&#99;	c
100	64	144	&#100;	d
101	65	145	&#101;	e
102	66	146	&#102;	f
103	67	147	&#103;	g
104	68	150	&#104;	h



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Co-Author: Kameron Keller

Code:

[https://github.com/KameronKeller/laser\\_data\\_transfer](https://github.com/KameronKeller/laser_data_transfer)