

How can we write our own binary protocol?

Sept. 11, 2017

Vocabulary Review

Protocol

For our purposes today a "protocol" is simply a set of rules about sending, receiving and interpreting binary messages.

Vocabulary Review

Bit

We will call each element of a binary message a bit.

"Bit" is short for binary digit.

So for example if you have a binary message A B B A, we would say that is a 4-bit message.

Internet Simulator

Today you and your partner will be developing a protocol for exchanging 2-bit messages using an Internet Simulator.

This tool simulates a single wire connecting two people who cannot otherwise see or speak to each other.

I let you play with this a little on Friday, but I explained very little

Internet Simulator

Imagine that this simulates a SHARED wire between the two people.

The wire can hold only a single state - A or B

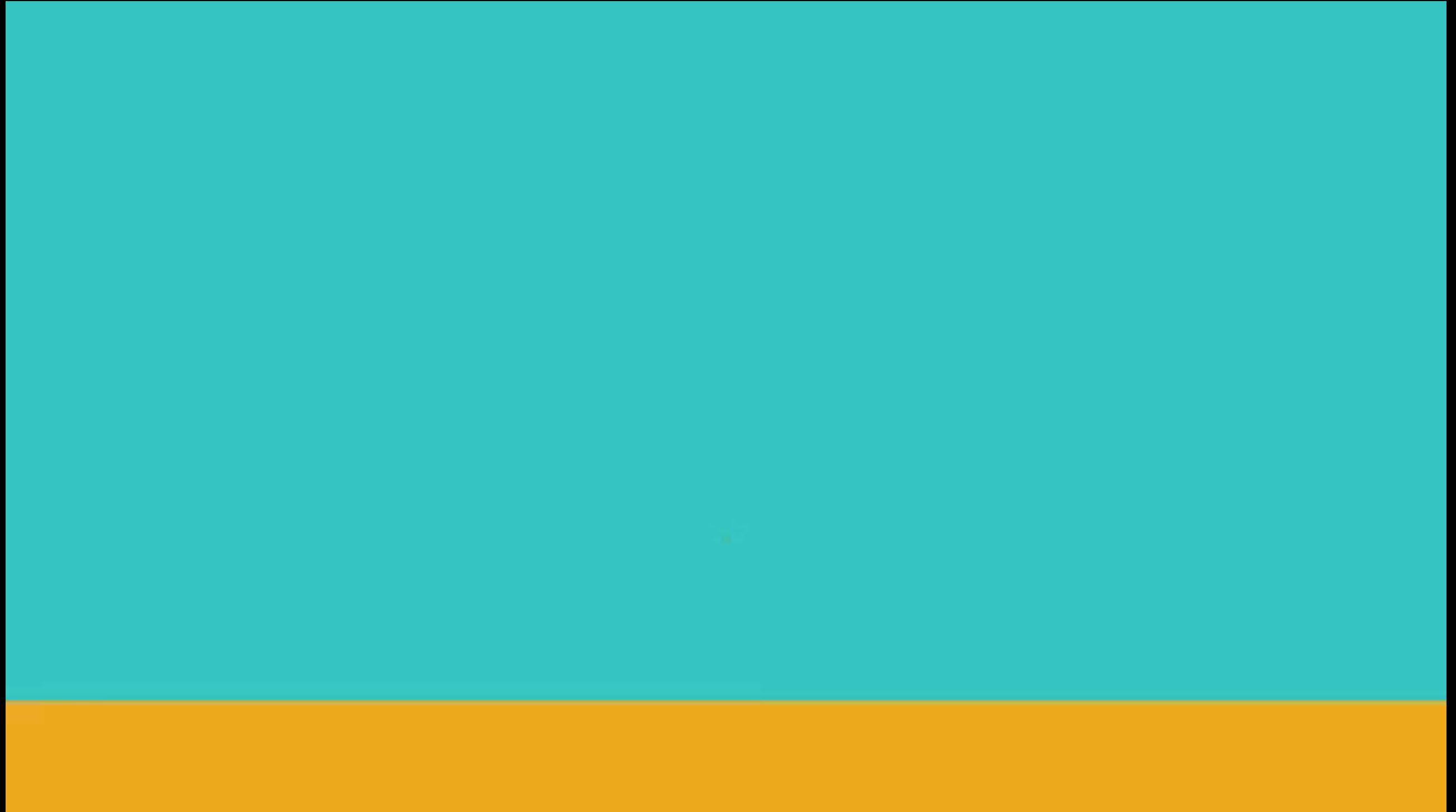
THERE IS NO NEUTRAL STATE

It can be set by either person at any time.

At any time either person can read the wire to see which state it's in

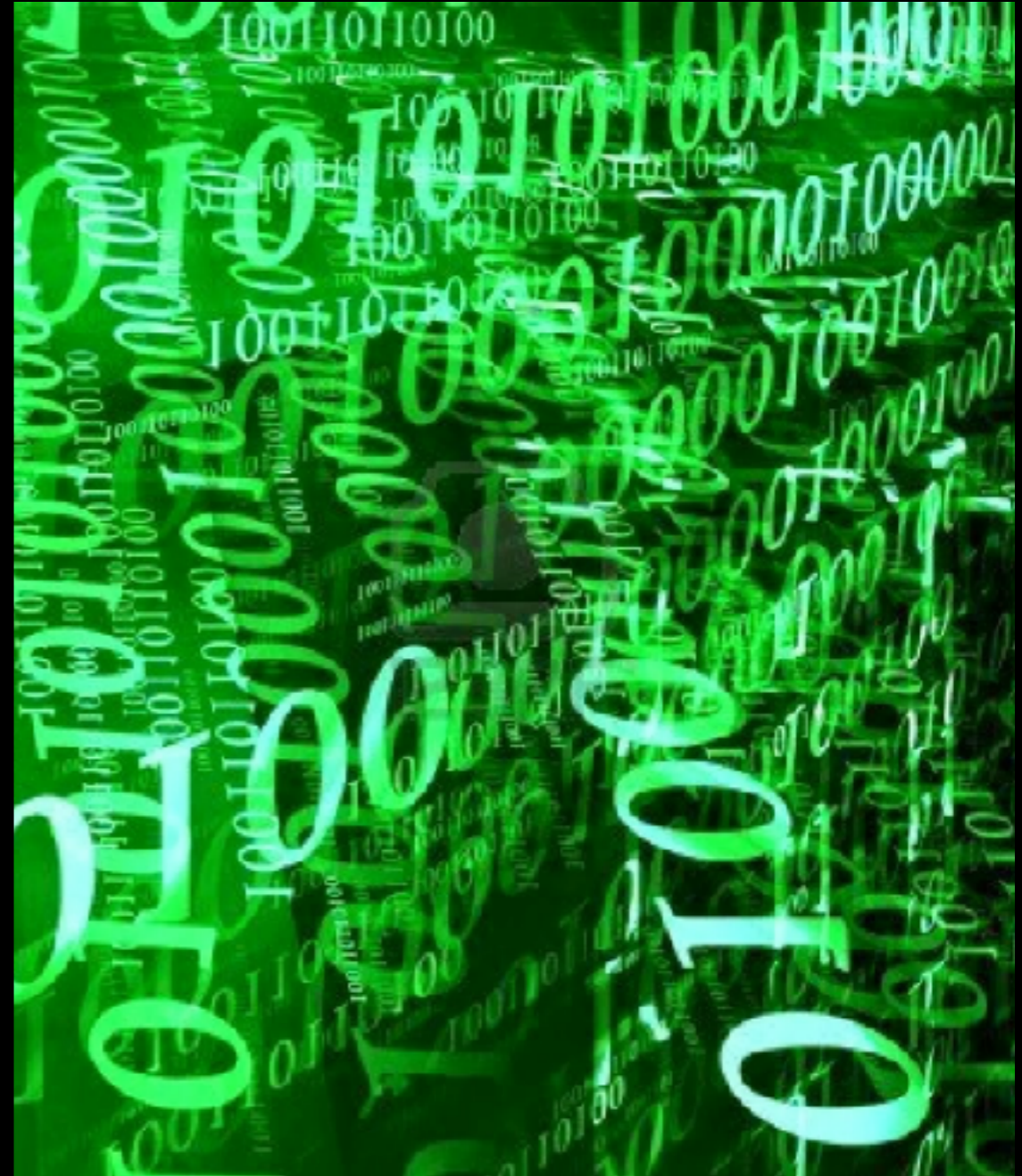
Keep This In Mind

The challenge of today's activity is to figure out a way to coordinate actions with your partner to make this tool into a functioning two-way bit-sending device.



The 2-bit Message Exchange Challenge!

- You will practice relaying a 2-bit sequence with your partner.
- The goal is to exchange 2-bit messages (partner sends a 2-bit message, other partner sends a 2-bit message back) as quickly and accurately as possible.
- Plan your protocol on the worksheet I'm giving you



The 2-bit Message Exchange Challenge!

- Rules for the Challenge:
 - You have to decide who sends first.
 - I will reveal a sequence of bits to be sent. Partner A of each group may enter this sequence of bits into Internet Simulator but may not begin sending them.
 - I will say “GO” and partners will exchange messages.
 - During the challenge students may not communicate with one another.
 - You will yell “STOP” once you have **SUCCESSFULLY** completed your exchange.
 - I will verify that each partner received what the other sent by checking outgoing and incoming messages.

