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Lab4 – UART

1. What is the difference between a parallel and serial interface?
    - Parallel interfaces transmit entire blocks of data using multiple wires, with each wire representing the value of a single binary bit.
    - Serial interfaces use a single wire and stream a block of data over time by lining up the bits behind each other.
2. What is the difference between a synchronous and asynchronous interface?
    - Synchronous systems use a separate clock signal which notifies the receiver when to sample. They are simpler than Asynchronous.
    - Asynchronous systems operate without a physical clock signal. They are more complex than synchronous.
3. What is one thing that a communication protocol does?
    - They make it possible to convert an input signal into a collection of bits that have meaning and create useful data. There are Hardware and software protocols. Hardware protocols primarily involve the rate that data is sampled and whether the interface has an explicit clock signal or is asynchronous. Usually include higher level features. Software protocols are device drivers that give meaning to the binary data flowing in and out of the system.
4. What does the baud rate of a signal mean?
    - Represents the number of bits per second that is transmitted. It is an agreement of a period between bits transmitted per second.
5. What register in the USART would you use to enable the transmitter hardware?
    - The USART_CR1 register
6. Does the transmit (TX) line of the USB-USART cable connect to the transmit (TX) or receive (RX) of the STM32F0?
    - It connects to the Receive(RX) line