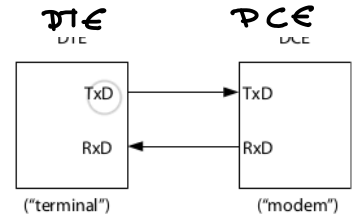


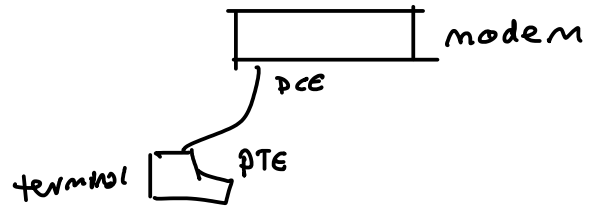
Lecture 2 - Asynchronous Serial Interfaces

Exercise 1: Is the "Transmit Data" (TxD) signal an input or an output? How about "Receive Data" (RxD)? Is a computer a 'modem' (DCE) or a 'terminal' (DTE)?

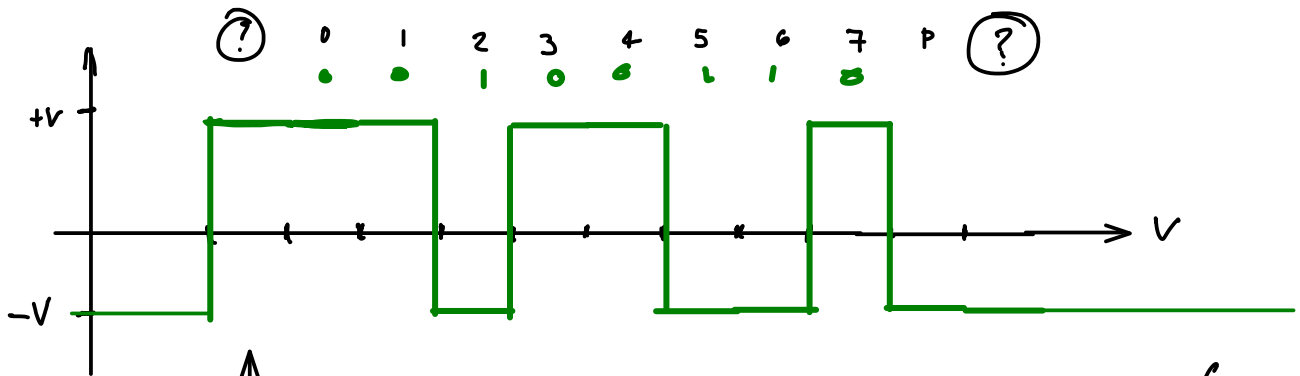


TxD - it depends :
 { input on DCE
 { o/p on DTE

RxD
 { input on DTE
 { output on DCE

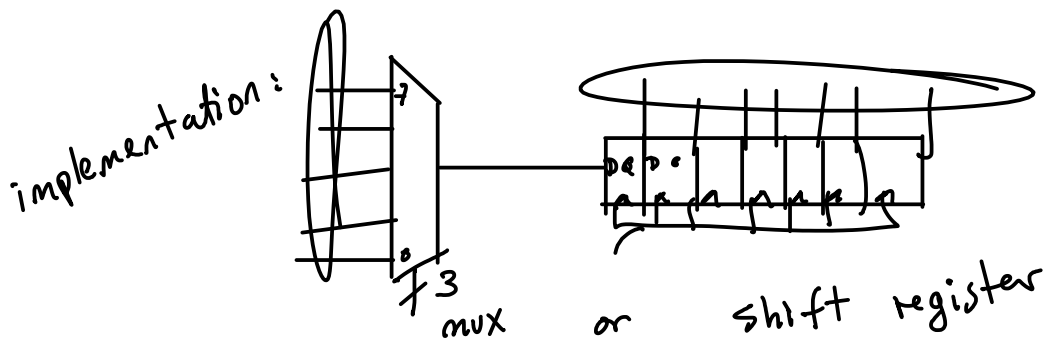


Exercise 2: Draw the waveform used to send the ASCII character 'd' (hex 64) at 4800 bps with eight data bits and even parity.



$\frac{1}{4800} s$
 $\approx 208 \mu s.$

0x64 = 0 1 1 0 0 1 0 0
 parity bit = 1



Exercise 3: Will the parity bit allow the receiver to detect all single-bit errors? All double-bit errors?

single bit errors - yes, all
double-bit errors - no, none

Exercise 4: What happens if the receiver's clock is running faster than the transmitter clock?

receiver samples earlier & earlier in each bit. May sample wrong bit if the difference is large enough.

Exercise 5: What would happen if the receiver was expecting 8-bit characters and the transmitter was sending 7-bit characters? What about the reverse case?

- would see the stop bit as the MS data bit ($L=1$)
- would see the MS data bit as the stop bit.