Kent Mark

Cpre 288 – Homework 3

3/3/20

Homework 3

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   Description automatically generatedThe question that I chose to answer was question 3 which focused on understanding the UART Frame Format, which meant that I was tasked with interpreting the significance of the start bit, the data bits, the parity bit, and the stop bit. For this particular question I was told that the character “W”, whose ASCII value in binary is 0b01010111, was being transmitted at a baud rate of 9600. I was also told that the frame format for the UART was as follows: 1 start bit, 8 data bits, an odd parity bit, and 1 stop bit. Lastly, I was tasked with using this information to sketch the waveform diagram for the UART as it transmitted the character “W”. My sketch looked as follows:
2. A key concept from class that applies to this question is Parity Bit. In class we learned that the parity bit serves as way to make the number of 1-bits in a binary number even or odd. We learned that the purpose of a parity check is to provide a way for someone to check for errors when storing or transferring data, because it is sometimes possible for a bit to “flip” during these processes. So, if a user wanted to check a number for even parity and there is not an even number of 1s in the binary string then most likely an error has occurred.
3. A resource that I used to help me answer this question was an article that was a help page on the website ComputerHope.com. This help page focused primarily on the function of the parity bit, it’s usefulness for error handling, and how to interpret meaning of the terms “even parity” and “odd parity”.
4. My own question:

Sketch the logic waveform appearing at the output of the UART when it transmits the character “K” at a baud rate of 9600. The frame format is: 1 start bit, 8 data bits, and odd parity bit, and 1 stop bit.

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