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CECS 447

**Project 2 Description**

In this project, the goal is to program the LPC2148 board so that we can get the UART to interface with the keyboard and the HyperTerminal. The project requires writing a main.c program that will read in characters from the keyboard into the UART, process them as desired using the LPC2148 and send them back to the HyperTerminal. The code will first send a banner to the screen, followed by a prompt. When a character is received, it is echoed, except for a few special cases. If the <CR> or <LF> character is received, then <CR><LF> is echoed. If <BS> is received, then <BS><space><BS> character is echoed, unless the cursor is at the end of the prompt, then nothing will happen so that the prompt is not deleted. When the ‘\*’ character is received, then the system responds with the city you live in. Sending and receiving of characters is accomplished using a polling technique, where the program will loop around until a character is available in the Reading Buffer Register (RBR). Once a character is available, the program will decide what do with the character before sending it to the Transmit Holding Register (THR). From here, the character is sent back to the computer and will show up on the HyperTerminal. All code is edited and compiled using the Keil uVision programming environment. Once the startup.s and main.c files are compiled, then we use the debugging mode in Keil to verifty proper operation of the code. Once proper operation is confirmed, then we use the hex file generated by Keil and download the file to our LPC2148 board using Flash magic. Once the code is downloaded to the board, we must demonstrate its proper operation. In this case, we type different characters on the keyboard and see that they do the desired actions.