**3-3 Milestone Two: GPIO UART Lab**

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CS 350: Emerging Sys Arch & Tech

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1. Why do both the SerialTest-Write.py and SerialLightControl-Client.py scripts use the encode() method of the string datatype when writing data to the serial port?
   1. Serial communication uses bytes to send data. .encode() converts the Python code into UTF-8 byte sequences that the serial port can send.
2. Why does the SerialTest-Read.py script use the decode() method of the string datatype when reading the data from the serial port?
   1. .decode() turns the bytes back into strings because ser.readline() reads the bytes from the serial port.
3. What is the purpose of the try/except block in both the SerialLightControl-Client.py script and the SerialLightControl-Server.py script?
   1. This allows the program to handle errors without crashing the program. I tried typing random characters a few times to see what happened, and the program ignored them. This ensures the program runs smoothly and the GPIO cleanup happens correctly.
4. Why is it necessary to make sure that the GPIO pins are always returned to their original state at the end of program run?
   1. Stopping a program without cleaning the GPIO can allow pins to remain in an on state for extended periods of time. This may lead to overheating or damage to the components.