SERIAL COMMUNICATION:
This lab aims to practice your serial port communication capability between the
workstation and the Handy Board, esp. in preparation for Problem Set 10b
Serial Communications Libraries are available at:
http://web.mit.edu/16.070/www/serial/serial_hb.c
for the Handy Board and the Workstation respectively.
Refer to Recitation 9 for an example program.

Problem 1 (Serial Rx/Tx)
M has decided to issue all field agents with a Handy Board encryption tool and you have been drafted by Q
to design the prototype.

On the workstation:
Design and write a program that accepts a character string of less than 30 characters from the keyboard.
The program then transfers the input string to the Handy Board via the serial port.
It then receives the encrypted version of the character string from the Handy Board and displays the
encrypted version as ASCII indices to the screen. Then display the decrypted version by XOR-ing each
received character with the hexadecimal number 0x01F.

On the Handy Board:
Design and write a program that first receives no more than 30 characters via the serial port and saves them
in an array. Display the original array of characters (string) on the Handy Board LCD. Then encrypt each
character in the array by bit-wise XOR with the hexadecimal number 0x01F (your encryption key). Now
send the entire encrypted version back to the workstation via the serial port.

Typical output:

Please enter a character string [length <30]:
Hello Moneypenny ;-) !
Sending Data:... Hello Moneypenny ;-) ! |||||||
Success!

Encrypted Version:100 73 64 64 67 12 97 67 66 73 85 92 73 66 66 85
12 23 1 5 12
12 13
Receive Success!

Decrypted Version: Hello Moneypenny ;-) !
Press any key to continue