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\* Engr220L - Lab 12

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\* Allows interaction with the LCD screen from Putty

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// include for LCD device from the BSP

#include "altera\_up\_avalon\_character\_lcd.h"

// include for UART device from the BSP

#include "altera\_up\_avalon\_rs232.h"

int main( void )

{

// open the LCD device

alt\_up\_character\_lcd\_dev \* char\_lcd\_dev;

char\_lcd\_dev = alt\_up\_character\_lcd\_open\_dev ("/dev/LCD");

// open the UART device

alt\_up\_rs232\_dev \* rs232\_dev;

rs232\_dev = alt\_up\_rs232\_open\_dev("/dev/UART");

// if either device failed to open... return -1

if (char\_lcd\_dev == NULL) {

return -1;

} else if (rs232\_dev == NULL) {

return -1;

}

// initialize the LCD device

alt\_up\_character\_lcd\_init (char\_lcd\_dev);

// declare working variables (partiy & character)

int x = 1;

int y = 2;

alt\_u8 \* data = &x;

alt\_u8 \* parity\_error = &y;

// loop infinitely...

// read UART device

// if read was success...

// write character to LCD

// echo reversed-case character to Putty

while (1) {

int result = alt\_up\_rs232\_read\_data(rs232\_dev, data, parity\_error);

if (result == 0) {

alt\_up\_character\_lcd\_string(char\_lcd\_dev, data);

if (isupper(\*data)) {

alt\_u8 new\_R = tolower(\*data);

alt\_up\_rs232\_write\_data(rs232\_dev, new\_R);

} else if (islower(\*data)) {

alt\_u8 new\_R = toupper(\*data);

alt\_up\_rs232\_write\_data(rs232\_dev, new\_R);

} else {

alt\_up\_rs232\_write\_data(rs232\_dev, \*data);

}

}

}

// Return Success

return 0;

}

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