1BLG351E Experiment 7 “LCD Display” REPORT	CRN	12635
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Q1) (40 pts.) You were given an example code (“display.asm”) to display a string in LCD Display. Explain why there was 2 different subroutines (“SendCMD” & “SendData”) to send command and data?

LCD reads from its 4-bit data port when R/W (P2.6) blinks. RS (P2.7) determines the character input or command input. Commands and characters are read in two steps, those cables are connected to P1.7 - P1.4. Data or command is sent by first sending most-significant half-byte then least-significant half-byte. This is achieved by left shifting the register 4 times.

If P2.7 (RS) is set to 1, it sends data, character which would be written to LCD. “SendData” sets P2.7 to 1 to send character and after character is sent, it clears P2.7.

If P2.7 (RS) is sent to 0, it sends command to LCD. “SendCMD” clears P2.7 then sends the command.

Q2) (30 pts.) Why the DDRAM address is changed for the next line of the LCD display?

LCD displays data that held in DDRAM. DDRAM address corresponds to cursor address so DDRAM address 100 000 corresponds to bottom line’s first character address.

We send 1100 0000 to set DDRAM address, format is 1XXX XXXX, where X’es are the bits for the address.

Q3) (30 pts) Assume that you want to set your LCD Display in a way without cursor & blinking. Which command do you have to send to LCD Display? What does this command represent?

The command that sets LCD’s on/off status and its configuration is 0000 1XXX, X’es are the bits for configuration of the LCD.

3rd X (next to 1) sets ON/OFF status, 1: ON, 2: OFF.

2nd X sets Cursor ON/OFF, 1: ON, 2: OFF.

1st X sets Blinking ON/OFF, 1:ON, 2: OFF.

For without cursor and blinking, command 0000 1100 must be sent.