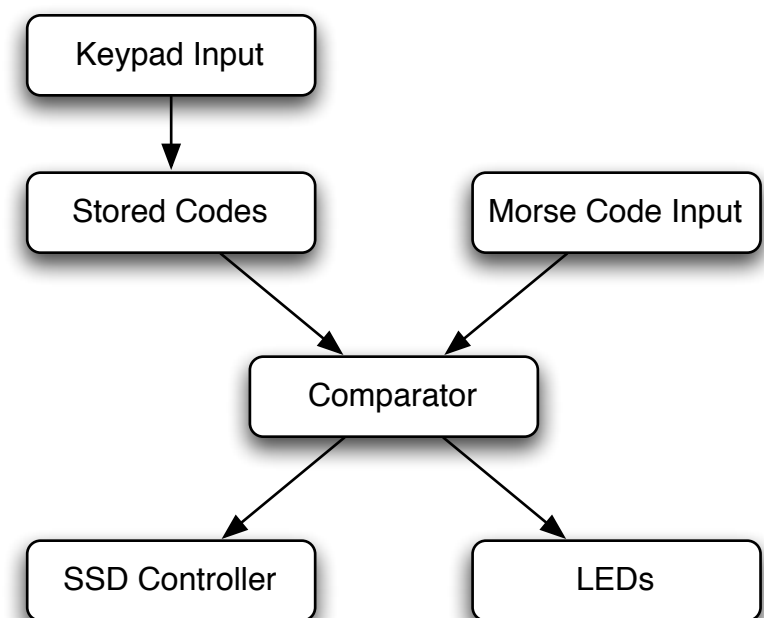# ECE 2220 Final Design Project

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The Project

- Monitor NDB transmission

- Compare transmitted morse code with stored sequence

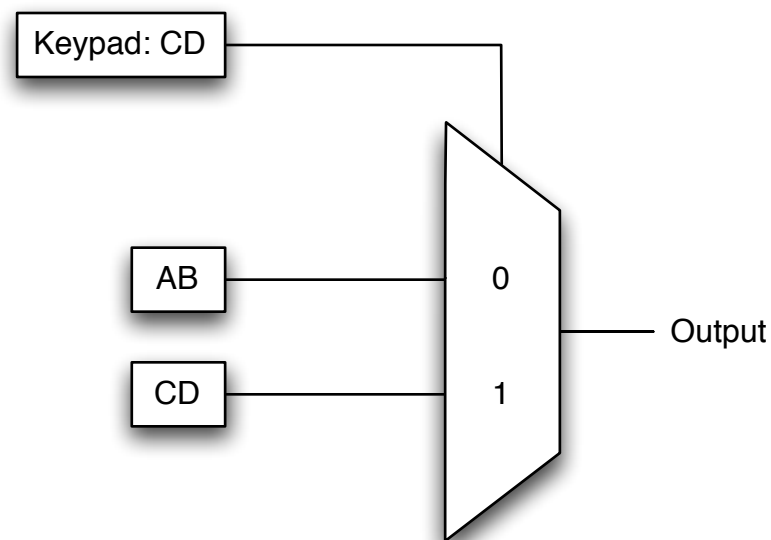- Raise error if sequences don't match

Inputs

- Keypad selects sequence to monitor

- Pushbutton sends sequence

Outputs

- SSD shows sequence being monitored or Error

- Red LED: Error

- Yellow LED: Transmitting
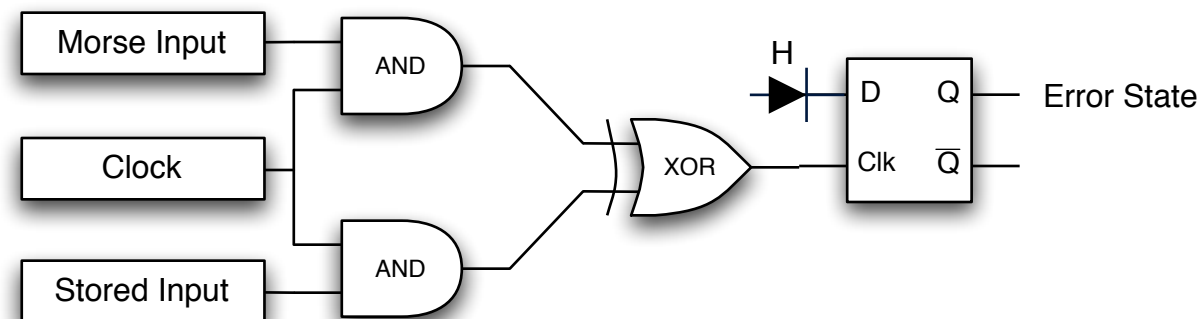
- Green LED: Successful Transmission

Selector

• By default, AB is passed through, unless Keypad:CD has been pressed
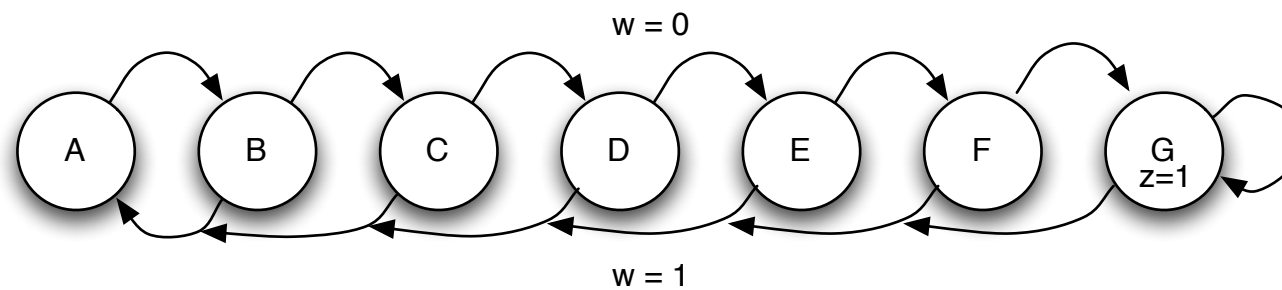
Comparator

- Uses an XOR to compare Input and stored sequence
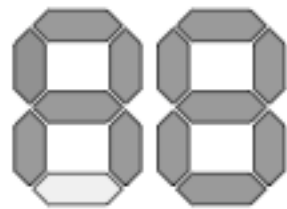
- Triggers a DFF on first error

Zero-overflow Detection

- Outputs 1 when 7 sequential zeroes are encountered

w = 0

A   B   C   D   E   F   G
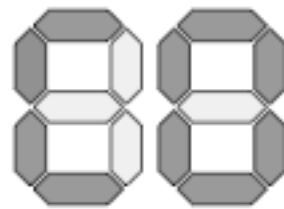   z=1
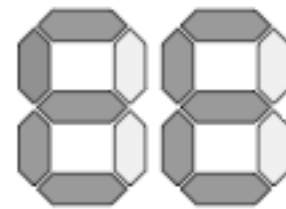
w = 1

Seven Segment Displays

- 'AB' or 'CD' when listening for a sequence or finished listening successfully.

- 'EE' when transmission failed

(a) AB   (b) CD   (c) EE

Interesting Features

- Comparator uses negative clock edge

Questions?