

## HANGMAN GAME

Our project proposal is to build a hangman game. The goal is to have the user input letters one at a time in an attempt to guess the correct word. Words will be either selected from a dictionary or will be implemented so that another user can input any word. There will be a separate LCD screen to display the letters guessed and the "hangman" drawing. For every letter guessed incorrectly, there will be another body part added to the picture. When the full body is in the picture, it is game over.

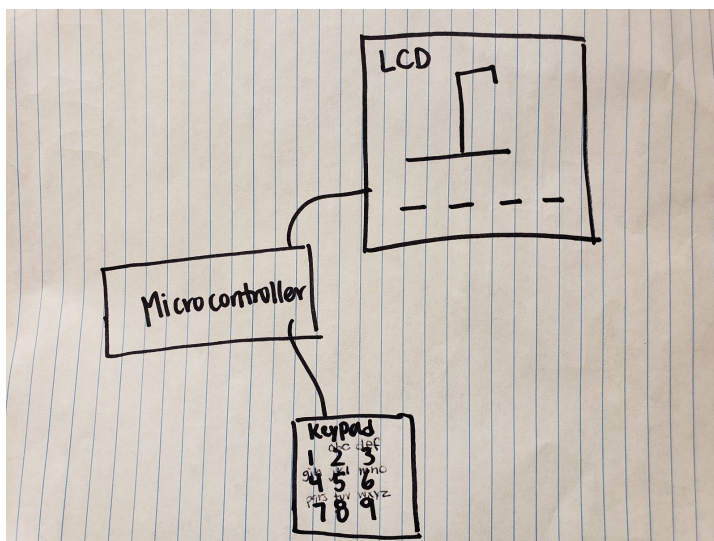
### Peripherals:

- LCD screen: To display hangman image & letters guessed
- Phone style Matrix Keypad

### Serial Interface Protocols:

- I2C
- SPI

### Block Diagram:



### Responsibility List:

#### Cynthia:

- get the keys to read the input & output the correct letters
- create dictionary of words & implement so user can also create word
- make sure display correctly leaves the right amount of empty spaces of the word length & put correct letters in right spot after guessed

#### Rucha:

- connect LCD to properly read input of keys
- program LCD to display drawing of the "hangman"
- program to display a list of words to choose from

Software Structure:

- Prompt user to input word or choose word from list displayed
- Specific keypad hasn't been decided yet but as of now it is a phone like keypad so it has three letters to every button. Will have to implement if button pressed one then it is this letter, if pressed twice then next letter and if pressed three times then last letter.  
Example: 2- ABC. If 2 pressed once then letter a, if 2 pressed twice the letter b, if 2 pressed three times then letter c.
- Read input from the matrix keypad
- Display empty spaces with underline for length of the word & fill in the space when a correct letter is guessed
- Display hangman. For each incorrect guess add a body part to the hangman & display letters that are already guessed/don't take the same letter as a new guess(don't add a new body part if already guessed)
- If the hangman body is full, then display "game over". Body parts: head, body(line down the center), right-foot, left-foot, right-hand, left-hand
- Interrupts will be used because the software will only be activated when the user inputs a letter in the keypad