Morse Code Project

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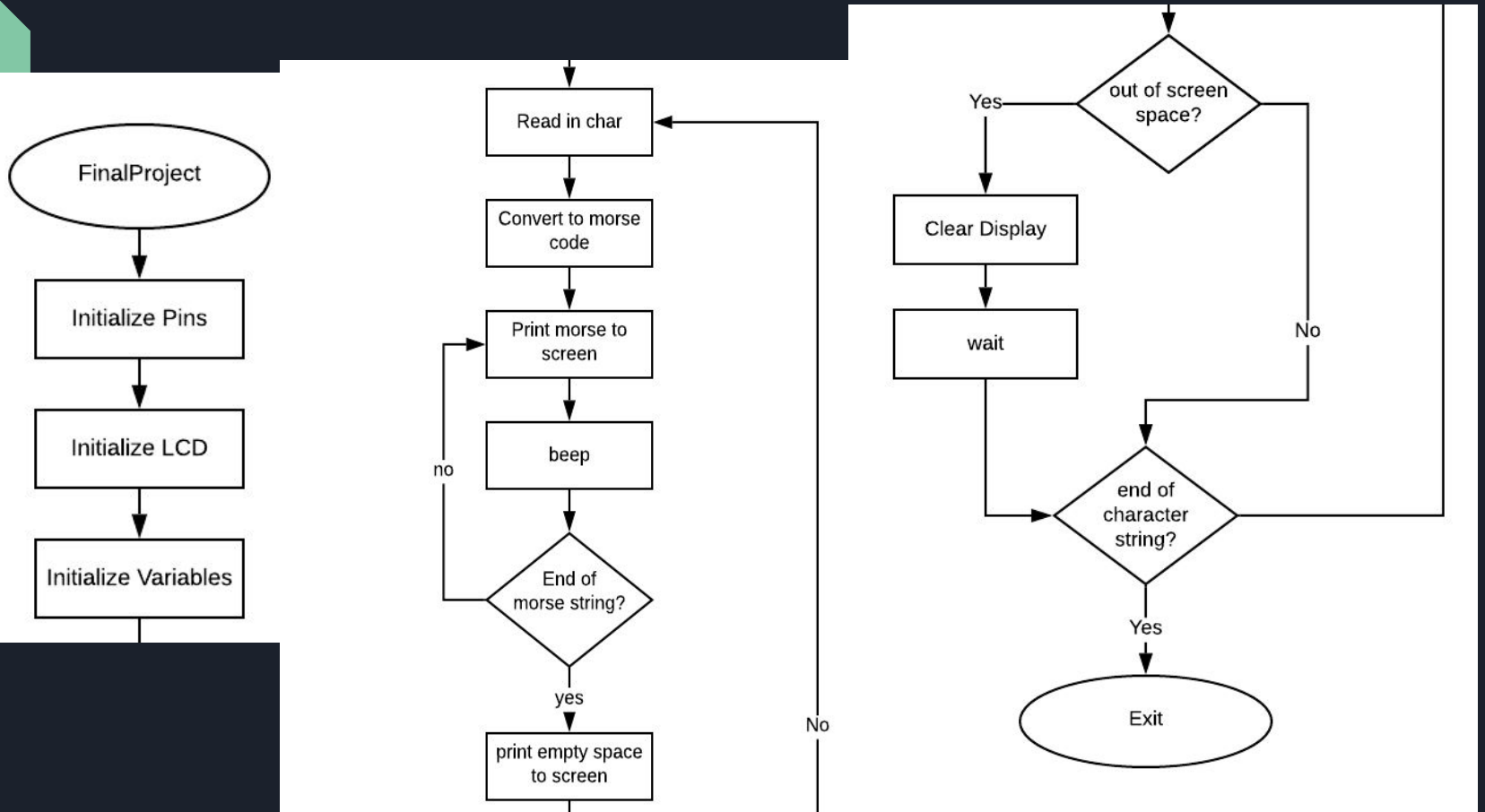
Intro

- Convert a string to morse code and have it display on the LCD with a corresponding beep for each
- Utilize the PWM to control the pitch of the beeps
  - Users have different frequency ranges they can hear so being able to adjust it on the fly would be very useful

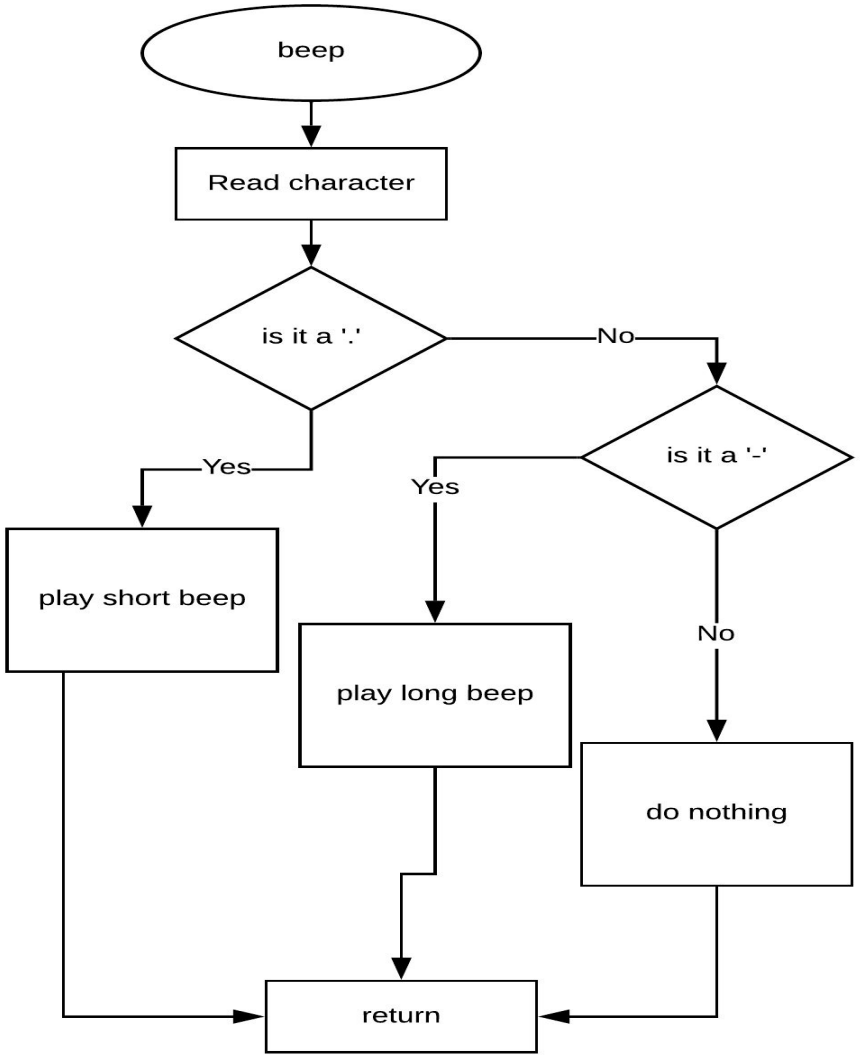
Morse code

- Each letter of the alphabet is represented by a series of ‘.’ or ‘-’
  - So the letter S is ‘---’
- These dots or dashes are also represented by a tone playing for a specific time
- The time ratio has to be 1:3, so for however long our dot sound is, the dash would have to be 3 times that length

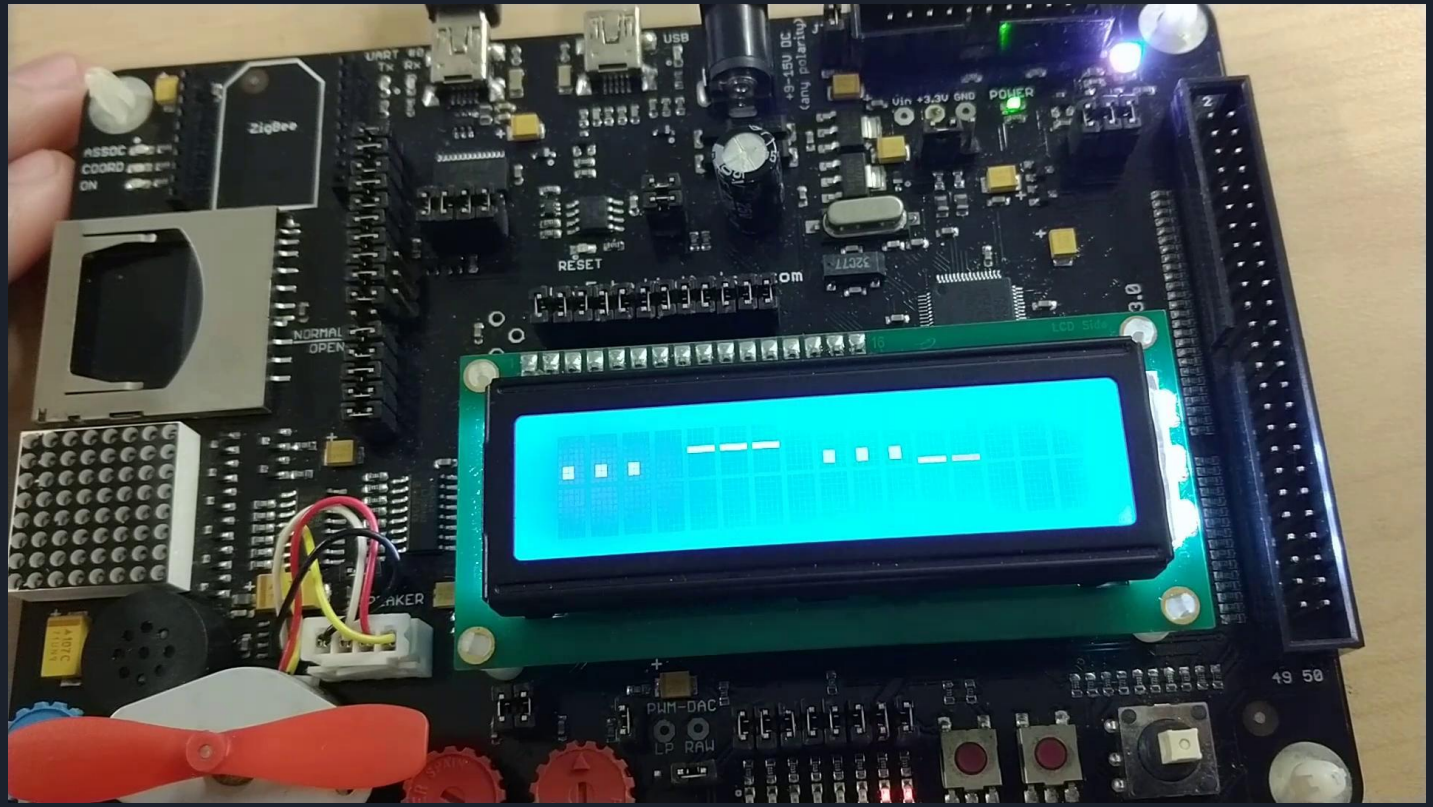
Flowchart - Main



Flowchart - BEEP



Video Demonstration



Problems encountered

- Couldn’t get PWM to control the frequency of the beeps properly
  - It would either have the dots and dashes be completely different frequencies or would mess with the timing ratio (1:3)
- Clear Display would only work on the first clear
  - After the first call, every subsequent call wouldn’t clear when the LCD ran out of room to display characters.

Future Work

- Figure out how to read in a string from an external source
  - Radio signals, wifi, etc.
- Fix the clear display function
  - Use a different board that can clear faster?
- Implement the PWM to control the pitch of the beeps