Diagram 1 — Morse Code State Machine (upper)

- INIT
  - Initialize GPIO
  - Initialize LCD Display
  - Set active message to SOS

- GET NEXT ACTIVE MESSAGE
  - Split active message into words
  - Update display with active message

- WORD PAUSE
  - Delay 3000ms

- OFF

- CHECK NEXT WORD
  - Next letter is NOT available → WORD PAUSE
  - Another word is available / Split word into letters
  - Another word is NOT available

- CHECK LETTER PAUSE
  - Next letter is available → LETTER PAUSE
  - Next action is NOT available

- LETTER PAUSE
  - Pause 750ms

- OFF

- CHECK NEXT LETTER
  - Another letter is available / Get morse code mapping / Split mapping into actions for dots and dashes
  - Another letter is NOT available

- CHECK DOT DASH PAUSE
  - Next dot/dash action is available → DOT/DASH PAUSE

- DOT/DASH PAUSE
  - Pause 250ms

- OFF

- CHECK NEXT DOT/DASH
  - Next action is available and is a DOT → DOT
  - Next action is available and is a DASH → DASH
  - Next action is NOT available

- DOT
  - Blink RED light for 500ms
  - Turn red light OFF

- DASH
  - Blink BLUE light for 1500ms
  - Turn blue light OFF

- OFF

Note that WORD PAUSE is always included, even if this is the last word. If we are restarting with the next message a pause between messages is needed.

Diagram 2 — Button State Machine (lower)

- INIT BUTTON
  - Initialize Button

- WAIT FOR BUTTON PRESS
  - Pressed → BUTTON PRESSED
  - NOT Pressed

- BUTTON PRESSED
  - Active message is SOS → SOS
  - Active message is OK → OK

- SOS
  - Change active message to OK

- OK
  - Change active message to SOS

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