ENGI 301

Software Block Diagram

3/7/24

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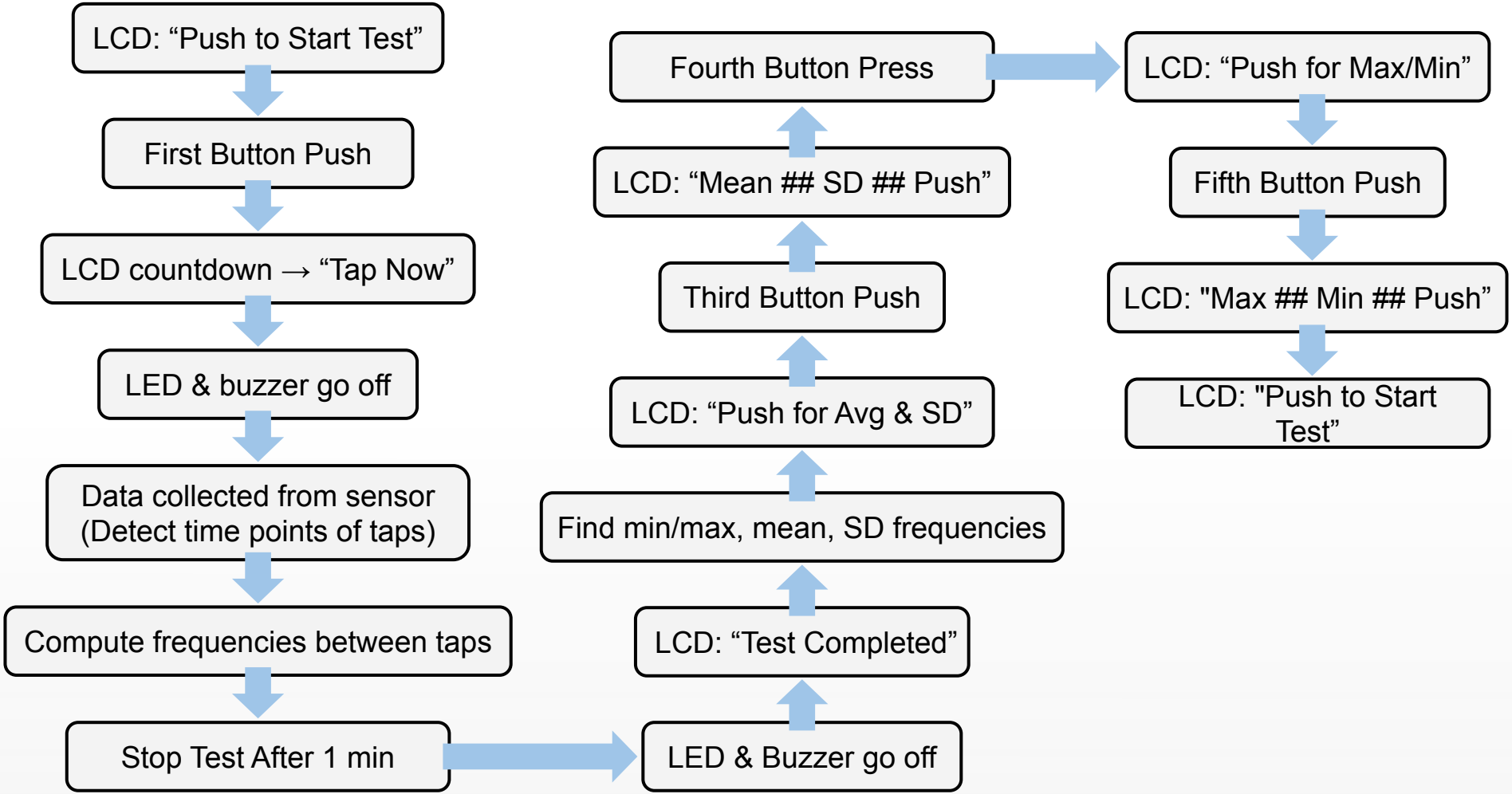
LCD: “Push to Start Test”
First Button Push
LCD countdown → “Tap Now”
LED & buzzer go off
Data collected from sensor (Detect time points of taps)
Compute frequencies between taps
Stop Test After 1 min
LED & Buzzer go off
LCD: “Test Completed”
Find min/max, mean, SD frequencies
LCD: “Push for Avg & SD”
Third Button Push
LCD: “Mean ## SD ## Push”
Fourth Button Press
LCD: “Push for Max/Min”
Fifth Button Push
LCD: "Max ## Min ## Push”
LCD: "Push to Start Test”

Classes

button:
wait_for_press- waits for button to be pressed
is_pressed- determines whether button is pressed

buzzer:
play- plays noise
stop- stops noise

led:
on- turn light on
off- turn light off

display:
blank- turns off all LEDs
countdown- display 5 second countdown
text- update display with text
data- update display with frequency data

sensor:
wait_for_tap- waits for tap
is_tapped- determines whether sensor is tapped
tap_times: stores a list of time points of all taps since start of test
freq- stores a list of frequencies
analyze- compute mean, SD, max, min freq.
sim_times: simulate random values for testing before implementing sensor