HEART MONITORING SYSTEM

Robotics and Mechatronics

Phebe Le

Test Plans and Test Logs

Session 1.5: 5/6/2023-23/6/23

Test Plan (method):

1. Download the intended Arduino sketch (Ethernet webserver or Smartwatch)
2. Follow the instructions on the output for that intended sketch
    a. Ethernet: Serial Monitor and Webserver
    b. Smartwatch: LCD and Serial Monitor
3. Be in direct contact to the pulse sensor
4. Read measurements on output
5. To further collect data
    a. Open the read file
    b. Upload the file
    c. Open Serial monitor/Serial plotter
6. To delete the collected data
    a. Open up the delete file
    b. Upload the file
    c. Open up Serial Monitor to view the confirmation message of the deletion of data

Test Logs

3 individuals will test this circuit for both the webserver and the smartwatch sketches.

Tester: Kira

Test Condition	Instruction	Outcome	Pass/Fail
Detection of heartrate	**1.**The heartbeat detection will start after the LCD and the serial monitor initialise the variables, libraries and header file. **2.**This will have a range of 45-115 only. **3.**Time will be infinite till stopped	**1.**The heartbeat was detected after the initialisation **2.**The range was between 90-102 BPM **3.**Heartbeat continued till stopped	**1.**Pass **2.**Pass **3.**Pass

Storing of sensor data	**1.** Sensor data will be initialised through the success of finding the text file, writing to the text file and reading the file. **2.**This will be limited to the amount of the buffer. The end of the buffer should show in the serial monitor. **3.**Sensor data will show on LCD, Webserver and Serial monitor	**1.**Finding, reading, writing = success **2.**The buffer of 20 indicated it had ended and reset the buffer to 0 before looping again **3.**LCD, webserver, serial monitor = success	**1.**Pass **2.**Pass **3.**Pass
Accuracy of alert system	If BPM is higher than 100 or lower than 55 than alert the user through a beep from a piezo and turn the red light on else keep the blue light on with no piezo sound	Beep and red light flashed when bpm range was 100-102 Otherwise, blue light is constantly on	Pass

Tester: Phebe

Test Condition	Instruction	Outcome	Pass/Fail
Detection of heartrate	**1.**The heartbeat detection will start after the LCD and the serial monitor initialise the variables, libraries and header file. **2.**This will have a range of 45-115 only. **3.**Time will be infinite till stopped	**1.**The heartbeat was detected after the initialisation **2.**The range was between 73-79 BPM **3.**Heartbeat continued till stopped	**1.**Pass **2.**Pass **3.**Pass
Storing of sensor data	**1.** Sensor data will be initialised through the success of finding the text file, writing to the text file and reading the file. **2.**This will be limited to the amount of the buffer. The end of the buffer should show in the serial monitor. **3.**Sensor data will show on LCD, Webserver and Serial monitor	**1.**Finding, reading, writing = success **2.**The buffer of 20 indicated it had ended and reset the buffer to 0 before looping again **3.**LCD , webserver, serial monitor = success	**1.**Pass **2.**Pass **3.**Pass
Accuracy of alert system	If BPM is higher than 100 or lower than 55 than alert the user through a beep from a piezo and turn the red light on else keep	No beep or red-light flash due to range	Pass

	the blue light on with no piezo sound	Blue light was constantly on	

Tester: Don

Test Condition	Instruction	Outcome	Pass/Fail
Detection of heartrate	**1.**The heartbeat detection will start after the LCD and the serial monitor initialise the variables, libraries and header file. **2.**This will have a range of 45-115 only. **3.**Time will be infinite till stopped	**1.**The heartbeat was detected after the initialisation **2.**The range was between 82-94 BPM **3.**Heartbeat continued till stopped	**1.**Pass **2.**Pass **3.**Pass
Storing of sensor data	**1.** Sensor data will be initialised through the success of finding the text file, writing to the text file and reading the file. **2.**This will be limited to the amount of the buffer. The end of the buffer should show in the serial monitor. **3.**Sensor data will show on LCD, Webserver and Serial monitor	**1.**Finding, reading, writing = success **2.**The buffer of 20 indicated it had ended and reset the buffer to 0 before looping again **3.**LCD , webserver, serial monitor = success	**1.**Pass **2.**Pass **3.**Pass

Accuracy of alert system	If BPM is higher than 100 or lower than 55 than alert the user through a beep from a piezo and turn the red light on else keep the blue light on with no piezo sound	No beep or red-light flash due to range Blue light was constantly on	Pass