Unit Testing and Integration Testing Report - Sensor Module

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Unit Test:

Test Case	Description	Expected Result	Actual Result	Pass/Fail
UT-001	Verify successful initialization of WiFiManager	WiFiManager connects successfully to WiFi	Connected to WiFi	Pass
UT-002	Check DHT sensor initialization	DHT sensor is initialized without errors	Sensor initialized without errors	Pass
UT-003	Read temperature from DHT sensor	Temperature reading within expected range	25.5°C	Pass
UT-004	Read humidity from DHT sensor	Humidity reading within expected range	55%	Pass
UT-005	Read analog input from LDR	Analog value is read successfully	450	Pass
UT-006	Read the water level from ThingSpeak	Water level reading retrieved successfully	1	Pass
UT-007	Write temperature data to ThingSpeak	Temperature data successfully written to ThingSpeak	Data written successfully	Pass
UT-008	Write humidity data to ThingSpeak	Humidity data successfully written to ThingSpeak	Data written successfully	Pass
UT-009	Write LDR value to ThingSpeak	LDR value successfully written to ThingSpeak	Data written successfully	Pass
UT-010	Write water level data to ThingSpeak	Water level data successfully written to ThingSpeak	Data written successfully	Pass

Integration Test:

Test Case	Description	Expected Result	Actual Result	Pass/Fail
IT-001	Ensure WiFi connection and ThingSpeak initialization	WiFi connection and ThingSpeak initialization successful	Connected to WiFi and ThingSpeak initialized successfully	Pass
IT-002	Verify seamless data transmission to ThingSpeak	Data is transmitted to ThingSpeak without errors	Data transmitted without errors	Pass
IT-003	Check correct execution of loop() function	Loop function executes without errors	Loop function executed successfully	Pass