

Testing task 6

In total, I created four test classes. Two of them perform test on units, the other two test integration of several units.








The `CustomWebSocketClientTest` class verifies the functionality of the `CustomWebSocketClient` class, specifically focusing on how it handles WebSocket messages, connections, and errors. The test cases include checking that valid messages are correctly parsed and stored in `DataStorage`, ensuring that invalid messages do not result in data being stored, and verifying the client's behavior when the connection is closed or an error occurs.

The `WebSocketClientErrorHandlingTest` class focuses on how `CustomWebSocketClient` handles errors and maintains data integrity in case of transmission failures. This includes simulating data transmission failures and ensuring that data remains intact and correctly stored even when errors occur.

The `DataStorageIntegrationTest` class ensures that `DataStorage` integrates properly with `CustomWebSocketClient` and handles real-time data processing and alert generation. Test cases include verifying that real-time messages are processed and stored correctly and that alerts are generated based on the stored data.

The `IntegrationTestSuite` provides integration testing across different components of the system, ensuring end-to-end functionality. This includes verifying that generated data is processed and stored correctly, that alerts are generated based on this data, and that WebSocket connections are handled appropriately, including dealing with connection loss and recovery.

Overall, these tests seem to confirm that the system handles data parsing and storage, error handling, real-time data processing, alert generation, and connection management correctly, as reflected in the following screenshot:

- ✓ Test run at 6/9/2024, 2:37:49 PM
 - ✓  testOnClose()
 - ✓  testOnError()
 - ✓  testOnMessage_InvalidMessage()
 - ✓  testOnMessage_ValidMessage()
- ✓ Test run at 6/9/2024, 2:37:33 PM
 - ✓  testAlertGeneration()
 - ✓  testRealTimeDataProcessing()
- ✓ Test run at 6/9/2024, 2:37:06 PM
 - ✓  testDataTransmissionFailure()