Overview:

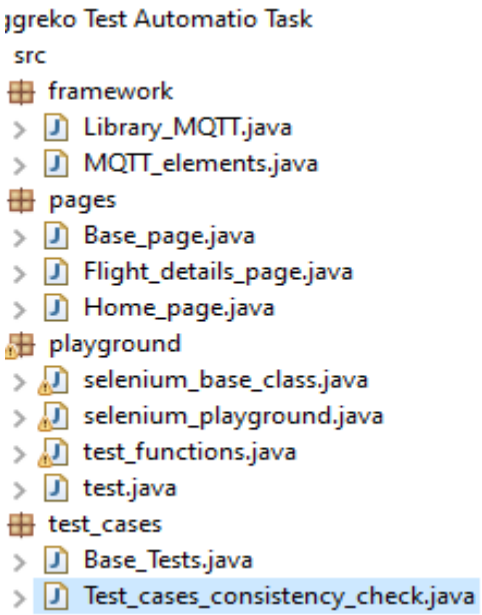
The test script for the automation assignment was written in Java language using the following technologies:

- Sikuli for automating the GUI of the desktop tool MQTT.fx
- Selenium for automating the web interface
- TestNG for test reporting and test assertion

Project Architecture:

The project consists of four main packages each package consists of several classes

- **Framework package** consisting of classes concerned with automating the GUI of the MQTT.fx desktop tool
- **Playground package** is mainly for testing purposes and debugging different functions used inside the project and can be deleted
- **Pages package** is for automating the web interface consisting of a page object model for different pages inside the web interface
- **Testcases package** has of the only executable file of the project where the test script will run. Inside the package choose **" Test_cases_consistency_check"** and run this file to execute the whole project
- Inside " **Test_cases_consistency_check"** file at the beginning of the script 3 important variables can be found the importance of these variables will be discussed in the section below.



Notes to be considered:

Messages being sent through MQTT protocol are not periodically sent as they are sent once there is an update therefore it was difficult to estimate the number of messages to be considered and the time frame to wait till messages are being sent.

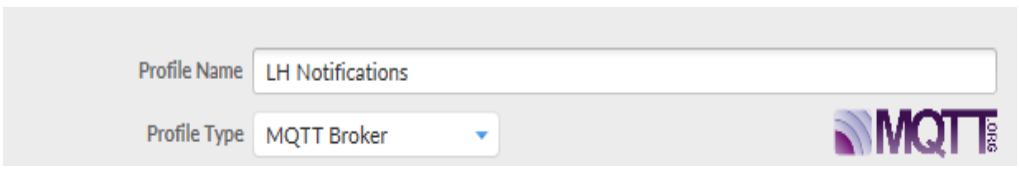
Accordingly, the following assumptions were made however they can be easily manipulated through variables found at the beginning of the script inside package name "test_cases" then class name "Test_cases_consistency_check"

- The script waits for 5 minutes till enough number of messages are being sent through the MQTT protocol. The number of minutes can be easily manipulated through variable name **"period_of_time_to_wait_till_start_notifications_check**"

- The script only considers the first 20 messages sent through MQTT if less than 20 messages are being sent it will consider the number of messages found once message check starts.
  The number of messages to be considered can be easily manipulated through variable name "**number_of_notifications_to_be_considered**"

- The target location of the MQTT.fx tool saved on the machine where the script shall be executed must be added to the script through variable name **"MQTT_FX_target_path"**
  The location can be found easily through the following steps:
  1. In the windows search beside the start menu type " MQTT.FX"
  2. Choose open file location
  3. You will be directed to the folder where the shortcut of the purple MQTT.fx .exe found
  4. Right click on the MQTT.fx.exe shortcut purple icon
  5. Choose properties
  6. Click on shortcut tab
  7. Copy the full path saved in Start in field
  8. The path shall be location of the MQTT.FX.exe…ONLY the location without adding to it the .exe file ..example >>>"C:\Users\hussein.gadallah\AppData\Local\Programs\mqttfx" NOT>>>>>>> "C:\Users\hussein.gadallah\AppData\Local\Programs\mqttfx\mqttfx.exe"
  9. Update the variable found at the beginning of the script of name "**MQTT_FX_target_path"** with the updated value

- The broker name profile for test automation purposes MUST be of name "**LH Notifications" as** per the below image



Prerequisites before execution:

Details for the setup can be found at the ppt of name " Project set up " attached with the project.