AG Grid Test Demo

Test Strategy:

The objective is to write automated tests for the angular grid element present on the webpage <https://www.ag-grid.com/example-finance/>

Test Automation Approach:

* Identify the test cases required to test the functionality and break them down to manual steps required for each test case
* Simulate all the user actions on the user interface using Selenium Web Driver and implement the actions in Python 3.12
* Orchestrate the independent user actions in a test method in python written using the pytest library
* Validate the results as per the requirement of the test case.

Assumptions Made:

* Google chrome browser is used to access webpage and testing
* Values in PnL are calculated as: PnL = TotalValue – Quantity\*Price

Key considerations for choosing tools:

* Python
  + Versatile programming language
  + Capable of large data comparisons with ease
  + Flexible and offers coding styles which easy to read and write
  + Easier to debug
* Selenium
  + Offers a simple solution to implement user actions on web-based UI
  + Free and open source
  + Supports multiple browsers and operating systems
  + Support multiple programming languages
* Pytest
  + Easy integration with reporting tools like allure
  + Flexibility to extend the test framework to add a layer of BDD if required in future.
  + Seamless integration with CI tools CI pipelines if needed in future
  + Powerful fixtures to extend the framework in future
  + Improved assertions

Test Strategy (Future enhancements proposed):

* Implement configuration management
  + Introduce variations of the test configurations by means of config files
  + Adds flexibility to run on different environments
  + Hosts, URLs, browsers, credentials can be read from config files
* Implement logging
  + Introduce a logger which can help debug issues.
  + Different log level can offer clarity and reduce noise while debugging
* Integrate allure reporting
  + Streamline the test results reporting on per execution basis
  + Provides a concise and clear representation of the test cycle to stake holders
  + Can be used in the event of audits
  + Adds more readability to the test execution reports
  + Provides analytics and statistics on incremental executions
  + Serves as test evidence by capturing relevant logs and screenshots
* Setup CI pipelines
  + Integrate the test to the dev commit process by creating CI pipelines
  + Configure code commit process to run a subset of critical tests before merging code.
  + Setup triggers to run all the tests before creating new builds
  + Setup nightly automated tests in the CI pipelines