Introduction

The goal of unit testing is to segregate each part of the program and test that the individual parts are working correctly. It isolates the smallest piece of testable software from the remainder of the code and determines whether it behaves exactly as you expect. Unit testing has proven its value in that a large percentage of defects are identified during its use. It allows automation of the testing process, reduces difficulties of discovering errors contained in more complex pieces of the application, and enhances test coverage because attention is given to each unit.

To pull off this experiment, first, we arrange everything we need to run the experiment.
With the arranging in place, we act. In this case, we invoke the related code and capture the result.
Finally, we assert. We verify that the result is conforme with the expectation

The unit test should be short, sweet and visible.
It should focus on the smallest part of the code and should not contain complex logic,
And when the test fails we need to know immediately what is wrong.

Unit test definition

The unit tests need to be the most simple possible and test only one feature.

We can create a serie of unit tests by combining one of each of the following aspects:
- Transaction Type:
    - Invest_In
    - Dispose_Off
    - Borrow
    - Introduce_Capital
    - PayBank
    - Loss
    - Gain

- Currency conversion
    - with currency conversion
    - without currency conversion

- Shares trend
    - shares up
    - shares down
    - shares equal

I joined two examples of tests:

- Invest_In with currency conversion whith shares up
    - test_Invest_In_with_currency_conversion_shares_up.py
    - test_Invest_In_with_currency_conversion_shares_up.xml
  - Payback with currency conversion
    - test_payback_with_currency_conversion.py
    - test_payback_with_currency_conversion.xml

Install and run

The test are coded in python and use Beautifulsoup to invoke the web API, and pytest to run the unit tests.

We need to install Beautiful Soup by running the following command:
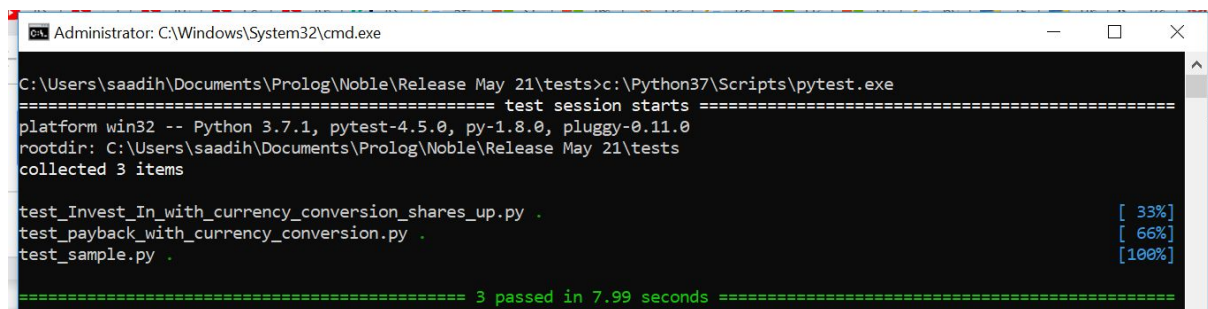
```
pip3 install BeautifulSoup4
```

We need to install pytest by running the following command:

```
pip3 install pytest
```

To test, we need to run the following in directory containing the tests:

```
c:\python37\Scripts\pytest.exe
```