

User's Manual Superpy

Command Line Interfaces (CLI) are programmatic scripts and libraries that are executed with a unique purpose; mostly these are utilized or operate with the help of command line or from a Windows Power Shell and are control in most of the operating system.

There are so many Python libraries and modules that help to build a command line app from parsing arguments and options to flagging to full blown CLI “frameworks” which do things like colorized output, tabular data, progress bars, sending email and so on.

In the following Supermarket SuperPy app a number of different modules are imported to run to solve the problems that are described in the assignment. First of all to run this program we must to execute it with main file; c: `python3 main.py` (Table.1).

Consequently, this will create a directory known as “supermarket_data”. It encloses all the required inventory files that have been converted with an extension of .csv. When a new item (product) is going to buy or sell, all the relevant information in these newly formed files are stored for further processing.

```
A Directoy as supermarket_data is created in D:\Zafar_Baig_Superpy_27012022
```

Product ID	Product Name	Buying Date	Count	Buying Price(€)	Expiration Date	Sold Date	Sold Price(€)	Stock Update
7053770	Orange	2022-01-05	2.0	7.5	2021-01-07	0	0.0	Expired
8167208	Beef	2022-01-01	3.0	1.5	2022-05-05	2022-01-03	18.95	Sold out
5799471	Milk	2021-04-15	4.0	3.5	2022-07-05	0	0.0	NA
9202141	Bread	2022-01-09	5.0	5.5	2022-05-05	2022-01-12	40.0	Sold out
8920321	Shampoo	2021-02-19	8.0	5.35	2022-04-15	2022-01-13	48.0	Sold out
5415747	Cheese	2022-01-05	1.0	7.15	2021-01-17	0	0.0	Expired
7925493	Fish	2022-01-03	3.0	1.35	2022-05-05	2022-01-03	18.95	Sold out
6885881	Oil	2021-12-15	4.0	3.5	2022-09-15	0	0.0	NA
5575703	Cola	2022-01-09	5.0	5.5	2022-05-05	2022-01-12	40.0	Sold out
6333145	Yogurt	2021-02-19	8.0	5.35	2022-04-15	2022-01-13	48.0	Sold out
7873174	Cheese	2022-01-05	1.0	7.15	2021-01-20	0	0.0	Expired
69015206	Bread	2022-01-15	15.0	5.5	2022-05-05	2022-01-19	49.5	Sold out

```
Registered Number of Products in inventory: 12
Total Number of Expired Products(today): 3
Loss on Expired Products (Buying Price): € 21.8
Total Cost of Buying Product(investment): € 58.85
Total Cost of Sold-out Products (?): € 263.4
Current profit Gain/Loss on total stock: € 182.75

(Salesperson Name): Zafar
```

Table 1. Main Execution of Program

There are four different commands used to acquire proper result of the problems described in the assignment. These CLI explained and simplified as an easy way of conducting program for the users. To get help for the said program `python3 main.py --help` (Table.2) is use to follow instruction given to user.

```

Windows PowerShell

(Salesperson Name): Zafar
<=====
      🍎🍎🍎 Supermarket SuperPy 🍎🍎🍎

To access well-structured and user friendly command-line interface with clear descriptions
of each argument in the --help section, please, explore from the HELP file.
Moreover, the optional commands are described in report, buyproduct, sellproduct or expire.

Type 'python3 main.py -h' for additional information.
<=====
PS D:\Zafar_Baig_Superpy_27012022> python3 main.py -h

Welcome to the 🍎🍎🍎 Supermarket SuperPy. 🍎🍎🍎 This App is build on a Command-Line Tool that the Supermarket SuperPy will use to
keep track of their all the daily activities stock in inventory.

usage: Supermarket SuperPy [-h] {report,buyproduct,sellproduct,expire} ...

positional arguments:
  {report,buyproduct,sellproduct,expire}
    report              It exhibits a comprehensive Stock Inventory. e.g. python3 main.py report
    buyproduct          Enter (buyproduct) and buy a product for Supermarket. e.g. python3 main.py buyproduct
    sellproduct         Sold Items Information with respect to price and date
    expire              Product expiration date, represented with Number of Days counted. Default 0 = Today, negative
                        number(days)with current date = yesterday, positive number(days) = tomorrow

optional arguments:
  -h, --help            show this help message and exit
PS D:\Zafar_Baig_Superpy_27012022>

```

Table 2. Help

1. Buy Product.

To buy a product for the Supermarket a process of item registration is introduced. It will use to keep track of their all the daily activities stock in inventory. Consequently a number of questions require for the registration of buying a product are answer by entering them.

Moreover it makes sure the right product is going to be entering manually, with relevant attributes e.g. Product Name, Buying Date, Price, Expiration Date etc .etc. In this way a command line tool helps to store all the attributes of a product that is going to be bought for Superpy inventory.

After launching the program command line script (python3 main.py buyproduct) is contacted with a number of input fields about the attributes of a product; (Table 3).

- Product Name: Apple
- Date of Buying: 2022-01-27
- Product Amount: 4
- Buying Price: 2.75
- Expiration Date: 2022-08-30

After completion of data entries in the different input fields, supermarket database is updated with all the values that are stored in inventory with their unique product-id. (Table 4) The unique ID numbering of a product plays a vital role in the database. This will help to avoid duplication of the same product's name with different Product ID numbers.

```

Windows PowerShell
69015206 | Bread | 2022-01-15 | 15.0 | 5.5 | 2022-05-05 | 2022-01-19 | 49.5 | Sold out |
=====
PS D:\Zafar_Baig_Superpy_27012022> python3 main.py buyproduct

Welcome to the 🛒🛒🛒Supermarket SuperPy🛒🛒🛒 This App is build on a Command-Line Tool that the Supermarket SuperPy will use to
keep track of their all the daily activities stock in inventory.

Please register the required items with respect to their Product Name, Buying Date, Amount, Price and Expiration Date.

Would you like to execute this program?(yes/no): yes
Please Enter Product's Name: (e.g. Banana) Milk
Is Product's Name 'Milk' perfect (yes/no/quit):yes
Ok This is Milk.
=====
Enter Date of Buying: (e.g. 2022-01-01) 2021-12-30
Is Date of Buying '2021-12-30' perfect (yes/no/quit):yes
Ok This is 2021-12-30.
=====
Enter Product Amount: (Please a number, e.g. 12) 30
Is Quantity of Product '30' perfect (yes/no/quit):yes
Ok This is 30.
=====
Enter Buying Price: (Please a number, e.g. 3.99) 0.95
Is Product Price '0.95' perfect (yes/no/quit):yes
Ok This is 0.95.
=====
Enter Expiration Date: (e.g. 2022-01-01) 2022-01-20
Is Expiration Date'2022-01-20' perfect (yes/no/quit):yes
Ok This is 2022-01-20.
=====
  
```

Table 3. Buying a product with entering different attributes.

```

=====
Enter Expiration Date: (e.g. 2022-01-01) 2022-01-20
Is Expiration Date'2022-01-20' perfect (yes/no/quit):yes
Ok This is 2022-01-20.
=====
These are Updated Directory Folders:

D:\Zafar_Baig_Superpy_27012022\supermarket_data\bought_products.csv
D:\Zafar_Baig_Superpy_27012022\supermarket_data\inventory_report.csv
D:\Zafar_Baig_Superpy_27012022\supermarket_data\expired_products.csv

Registration Ended. Please Enter a New Product!

=====
Product ID | Product Name | Buying Date | Count | Buying Price(€) | Expiration Date | Sold Date | Sold Price(€) | Stock Update |
=====
56627557 | Milk | 2021-12-30 | 30 | 0.95 | 2022-01-20 | 0 | 0.0 | NA |
692883 | Egg | 2022-01-20 | 8 | 1.23 | 2022-08-30 | 0 | 0.0 | NA |
7053770 | Orange | 2022-01-05 | 2.0 | 7.5 | 2021-01-07 | 0 | 0.0 | NA |
8167208 | Beef | 2022-01-01 | 3.0 | 1.5 | 2022-05-05 | 2022-01-03 | 18.95 | Sold out |
5799471 | Milk | 2021-04-15 | 4.0 | 3.5 | 2022-07-05 | 0 | 0.0 | NA |
9202141 | Bread | 2022-01-09 | 5.0 | 5.5 | 2022-05-05 | 2022-01-12 | 40.0 | Sold out |
8920321 | Shampoo | 2021-02-19 | 8.0 | 5.35 | 2022-04-15 | 2022-01-13 | 48.0 | Sold out |
5415747 | Cheese | 2022-01-05 | 1.0 | 7.15 | 2021-01-17 | 0 | 0.0 | NA |
7925493 | Fish | 2022-01-03 | 3.0 | 1.35 | 2022-05-05 | 2022-01-03 | 18.95 | Sold out |
6885881 | Oil | 2021-12-15 | 4.0 | 3.5 | 2022-09-15 | 0 | 0.0 | NA |
5575703 | Cola | 2022-01-09 | 5.0 | 5.5 | 2022-05-05 | 2022-01-12 | 40.0 | Sold out |
6333145 | Yogurt | 2021-02-19 | 8.0 | 5.35 | 2022-04-15 | 2022-01-13 | 48.0 | Sold out |
7873174 | Cheese | 2022-01-05 | 1.0 | 7.15 | 2021-01-20 | 0 | 0.0 | NA |
69015206 | Bread | 2022-01-15 | 15.0 | 5.5 | 2022-05-05 | 2022-01-19 | 49.5 | Sold out |
=====
PS D:\Zafar_Baig_Superpy_27012022>

```

Table 4. Bought product in inventory

2.Sell Product:

One of the purposes of introducing this app is, to hold the data of selling product stored in inventory. When certain product is going to sell another command line “sellproduct” with argument (-sp --soldprice)is used with this script. e.g. `python3 main.py --sellproduct --id 345636 --sp 35.70`(Table 5 & 6). In product specification, when a product is sold out it will clearly show the product ID, date of sold and sold price.

Besides, sellproduct command line can also compute a summary of sold products with total price of sold item. If a product is not in the inventory it also shows the product does not exist, the product is expired or sold out.


```

Windows PowerShell
PS D:\Zafar_Baig_Superpy_27012022> python3 main.py sellproduct -id 56627557 -sp 5.00

Welcome to the 🍌🍌🍌Supermarket SuperPy.🍌🍌🍌 This App is build on a Command-Line Tool that the Supermarket SuperPy will use to
keep track of their all the daily activities stock in inventory.

Product Specification

Product ID: 56627557
Sold Date: 2022-01-28
Sold Price: €5.00

An item with ID 56627557 has been sold..

Now Total Price of Sold items: €268.4

Summary of Sold Products:

=====
Product ID | Product Name | Buying Date | Count | Buying Price(€) | Sold Date | Sold Price(€) | Stock Update |
=====
56627557 | Milk | 2021-12-30 | 30 | 0.95 | 2022-01-28 | 5.00 | Sold out |
8167208 | Beef | 2022-01-01 | 3.0 | 1.5 | 2022-01-03 | 18.95 | Sold out |
9202141 | Bread | 2022-01-09 | 5.0 | 5.5 | 2022-01-12 | 40.0 | Sold out |
8920321 | Shampoo | 2021-02-19 | 8.0 | 5.35 | 2022-01-13 | 48.0 | Sold out |
7925493 | Fish | 2022-01-03 | 3.0 | 1.35 | 2022-01-03 | 18.95 | Sold out |
5575703 | Cola | 2022-01-09 | 5.0 | 5.5 | 2022-01-12 | 40.0 | Sold out |
6333145 | Yogurt | 2021-02-19 | 8.0 | 5.35 | 2022-01-13 | 48.0 | Sold out |
69015206 | Bread | 2022-01-15 | 15.0 | 5.5 | 2022-01-19 | 49.5 | Sold out |
=====
PS D:\Zafar_Baig_Superpy_27012022>

```

Table 5. Selling a product and Summary of Sold items.

```

Windows PowerShell
7873174 | Cheese | 2022-01-05 | 1.0 | 7.15 | 2021-01-20 | 0 | 0.0 | Expired |
69015206 | Bread | 2022-01-15 | 15.0 | 5.5 | 2022-05-05 | 2022-01-19 | 49.5 | Sold out |
=====

Registered Number of Products in inventory: 14
Total Number of Expired Products(today): 3
Loss on Expired Products (Buying Price): € 21.8
Total Cost of Buying Product(investment): € 61.03
Total Cost of Sold-out Products (8): € 268.4
Current profit Gain/Loss on total stock: € 185.57

(Salesperson Name): Zafar
PS D:\Zafar_Baig_Superpy_27012022> python3 main.py sellproduct -id 69015206 -sp 0.0

Welcome to the 🍌🍌🍌Supermarket SuperPy.🍌🍌🍌 This App is build on a Command-Line Tool that the Supermarket SuperPy will use to
keep track of their all the daily activities stock in inventory.

Product Specification

Product ID: 69015206
Sold Date: 2022-01-28
Sold Price: €0.0

No Transaction for suggested ID 69015206.(For verification! Please check "Stock Update" in inventory report).

PS D:\Zafar_Baig_Superpy_27012022> python3 main.py sellproduct -id 69015206 -sd 2022-01-19

```

Table 6. Existed sold item in inventory.

3.Expire Product

This set out a comparison of different schedules in stipulated dates with the expiration of products stored in database. This can be done by computing the number of days passed or advance numbers of days since then and simply set by the command.

The query is simply performed by entering negative number of days (e.g. `python3 main.py expire -nd -15`) which print-out inventory report of the past days The default is zero number of days indicates inventory report publish for today. (Tables 7, 8 & 9),

```
Windows PowerShell
Welcome to the 🍌🍌🍌Supermarket SuperPy.🍌🍌🍌 This App is build on a Command-Line Tool that the Supermarket SuperPy will use to keep track of their all the daily activities stock in inventory.

Transaction Scheduled Till 2022-01-28

Product ID: 56627557 (Milk) is SOLD OUT.
Product ID: 692883 (Egg) is VALID UNTILL\:(2022-08-30)
Product ID: 7053770 (Orange) is EXPIRED...
Product ID: 8167208 (Beef) is SOLD OUT.
Product ID: 5799471 (Milk) is VALID UNTILL\:(2022-07-05)
Product ID: 9202141 (Bread) is SOLD OUT.
Product ID: 8920321 (Shampoo) is SOLD OUT.
Product ID: 5415747 (Cheese) is EXPIRED...
Product ID: 7925493 (Fish) is SOLD OUT.
Product ID: 6885881 (Oil) is VALID UNTILL\:(2022-09-15)
Product ID: 5575703 (Cola) is SOLD OUT.
Product ID: 6333145 (Yogurt) is SOLD OUT.
Product ID: 7873174 (Cheese) is EXPIRED...
Product ID: 69015206 (Bread) is SOLD OUT.

Product ID | Product Name | Count | Buying Price(€) | Expiration Date | Stock Update
7053770 | Orange | 2.0 | 7.5 | 2021-01-07 | Product Expired
5415747 | Cheese | 1.0 | 7.15 | 2021-01-17 | Product Expired
7873174 | Cheese | 1.0 | 7.15 | 2021-01-20 | Product Expired

Loss on Expired Products (Buying Price): €21.8
PS D:\Zafar_Baig_Superpy_27012022>
```

Table 7. Expired products for today

```

Welcome to the 🍌🍌🍌Supermarket SuperPy.🍌🍌🍌 This App is build on a Command-Line Tool that the Supermarket SuperPy will use to
keep track of their all the daily activities stock in inventory.

Transaction Scheduled Till 2022-02-02

Product ID: 56627557 (Milk) is SOLD OUT.
Product ID: 692883 (Egg) is VALID UNTILL\:(2022-08-30)
Product ID: 7053770 (Orange) is EXPIRED...
Product ID: 8167208 (Beef) is SOLD OUT.
Product ID: 5799471 (Milk) is VALID UNTILL\:(2022-07-05)
Product ID: 9202141 (Bread) is SOLD OUT.
Product ID: 8920321 (Shampoo) is SOLD OUT.
Product ID: 5415747 (Cheese) is EXPIRED...
Product ID: 7925493 (Fish) is SOLD OUT.
Product ID: 6885881 (Oil) is VALID UNTILL\:(2022-09-15)
Product ID: 5575703 (Cola) is SOLD OUT.
Product ID: 6333145 (Yogurt) is SOLD OUT.
Product ID: 7873174 (Cheese) is EXPIRED...
Product ID: 69015206 (Bread) is SOLD OUT.

=====
Product ID | Product Name | Count | Buying Price(€) | Expiration Date | Stock Update |
=====
7053770 | Orange | 2.0 | 7.5 | 2021-01-07 | Product Expired |
5415747 | Cheese | 1.0 | 7.15 | 2021-01-17 | Product Expired |
7873174 | Cheese | 1.0 | 7.15 | 2021-01-20 | Product Expired |
=====

Loss on Expired Products (Buying Price): €21.8
PS D:\Zafar_Baig_Superpy_27012022>

```

Table 8. Expired products exhibit advanced number of days

```

=====
Loss on Expired Products (Buying Price): €21.8
PS D:\Zafar_Baig_Superpy_27012022> python3 main.py expire -nd -30

Welcome to the 🍌🍌🍌Supermarket SuperPy.🍌🍌🍌 This App is build on a Command-Line Tool that the Supermarket SuperPy will use to
keep track of their all the daily activities stock in inventory.

Transaction Scheduled Till 2021-12-29

Product ID: 56627557 (Milk) is .
Product ID: 692883 (Egg) is .
Product ID: 7053770 (Orange) is .
Product ID: 8167208 (Beef) is .
Product ID: 5799471 (Milk) is VALID UNTILL\:(2022-07-05)
Product ID: 9202141 (Bread) is .
Product ID: 8920321 (Shampoo) is VALID UNTILL\:(2022-04-15)
Product ID: 5415747 (Cheese) is .
Product ID: 7925493 (Fish) is .
Product ID: 6885881 (Oil) is VALID UNTILL\:(2022-09-15)
Product ID: 5575703 (Cola) is .
Product ID: 6333145 (Yogurt) is VALID UNTILL\:(2022-04-15)
Product ID: 7873174 (Cheese) is .
Product ID: 69015206 (Bread) is .

=====
Product ID | Product Name | Count | Buying Price(€) | Expiration Date | Stock Update |
=====

Loss on Expired Products (Buying Price): €0.0
PS D:\Zafar_Baig_Superpy_27012022>

```

Table 9. Expired products for the past 30 numbers of days.

```

PS D:\Zafar_Baig_Superpy_28012022> py main.py sellproduct -id 4019141 -sp 2.5 -sd 2022-01-18

Welcome to the 🍌🍌🍌Supermarket SuperPy.🍌🍌🍌 This App is build on a Command-Line Tool that the Supermarket SuperPy will use to
keep track of their all the daily activities stock in inventory.

Product Specification
Product ID: 4019141
Sold Date: 2022-01-18
Sold Price: €2.5

An item with ID 4019141 has been sold..

Now Total Price of Sold items: €268.2

Summary of Sold Products:
=====
Product ID | Product Name | Buying Date | Count | Buying Price(€) | Sold Date | Sold Price(€) | Stock Update |
=====
4019141 | Oil | 2021-12-15 | 4.0 | 3.5 | 2022-01-18 | 2.5 | Sold out |
7597126 | Milk | 2021-04-15 | 4.0 | 3.5 | 2022-02-09 | 2.3 | Sold out |
569654 | Beef | 2022-01-01 | 3.0 | 1.5 | 2022-01-03 | 18.95 | Sold out |
4928130 | Bread | 2022-01-09 | 5.0 | 5.5 | 2022-01-12 | 40.0 | Sold out |
8339086 | Shampoo | 2021-02-19 | 8.0 | 5.35 | 2022-01-13 | 48.0 | Sold out |
8153160 | Fish | 2022-01-03 | 3.0 | 1.35 | 2022-01-03 | 18.95 | Sold out |
2328433 | Cola | 2022-01-09 | 5.0 | 5.5 | 2022-01-12 | 40.0 | Sold out |
8598052 | Yogurt | 2021-02-19 | 8.0 | 5.35 | 2022-01-13 | 48.0 | Sold out |
44855114 | Bread | 2022-01-15 | 15.0 | 5.5 | 2022-01-19 | 49.5 | Sold out |
=====
PS D:\Zafar_Baig_Superpy_28012022> py main.py sellproduct -id 4019141 -sp 2.5 -sd 2022-01-18

```

Table 10. Sell product with name, price and specified date.

4.Report Inventory.

The command line “report” makes a comprehensive inventory report of sold products, bought products and status of product expired. E.g. `python3 main.py report`.

Furthermore report also exhibits the products with respect to Registered Number of items, Total Costs, Total Number of sales, Total Number of Expired Items and Current Profit Gain/Loss on Total Stock(Table 10).

Product ID	Product Name	Buying Date	Count	Buying Price(€)	Expiration Date	Sold Date	Sold Price(€)	Stock Update
56627557	Milk	2021-12-30	30	0.95	2022-01-20	2022-01-28	5.00	Sold out
692883	Egg	2022-01-20	8	1.23	2022-08-30	0	0.0	NA
7053770	Orange	2022-01-05	2.0	7.5	2021-01-07	0	0.0	Expired
8167208	Beef	2022-01-01	3.0	1.5	2022-05-05	2022-01-03	18.95	Sold out
5799471	Milk	2021-04-15	4.0	3.5	2022-07-05	0	0.0	NA
9202141	Bread	2022-01-09	5.0	5.5	2022-05-05	2022-01-12	40.0	Sold out
8920321	Shampoo	2021-02-19	8.0	5.35	2022-04-15	2022-01-13	48.0	Sold out
5415747	Cheese	2022-01-05	1.0	7.15	2021-01-17	0	0.0	Expired
7925493	Fish	2022-01-03	3.0	1.35	2022-05-05	2022-01-03	18.95	Sold out
6885881	Oil	2021-12-15	4.0	3.5	2022-09-15	0	0.0	NA
5575703	Cola	2022-01-09	5.0	5.5	2022-05-05	2022-01-12	40.0	Sold out
6333145	Yogurt	2021-02-19	8.0	5.35	2022-04-15	2022-01-13	48.0	Sold out
7872174	Cheese	2022-01-05	1.0	7.15	2021-01-20	0	0.0	Expired
69015206	Bread	2022-01-15	15.0	5.5	2022-05-05	2022-01-19	49.5	Sold out

Registered Number of Products in inventory:	14
Total Number of Expired Products(today):	3
Loss on Expired Products (Buying Price):	€ 21.8
Total Cost of Buying Product(investment):	€ 61.03
Total Cost of Sold-out Products (8):	€ 268.4
Current profit Gain/Loss on total stock:	€ 185.57

(Salesperson Name): Zafar

Table 11. Inventory Report showing Current profit on total stock.

Supermarket SuperPy Guidelines

- {buyproduct: Buy a product with different attributes.
- Sellproduct: Sell a product with different attributes.
- Expired: To inquire condition of a product in inventory with stipulated dates.
- Report: A comprehensive report of all the stock in inventory with gain Profit/Loss}