

Warehouse Management

Mohammad Hasnain Rajan


Following are the steps to run the application

1. git clone <https://github.com/hasnain2808/Warehouse-Management>
2. cd Warehouse-Management
3. python -m venv venv
4. activate the venv depending on the OS
 - a. Windows → venv\Scripts\activate
 - b. Ubuntu → source venv/bin/activate
5. python -m pip install -r requirements.txt
6. set variables depending upon os
 - a. Windows
 - i. set FLASK_APP= warehouse_management
 - ii. set FLASK_ENV=development
 - b. Ubuntu
 - i. export FLASK_APP= warehouse_management
 - ii. export FLASK_ENV=development
7. #flask init-db Run this command only if you want a fresh sqlite instance
8. flask run

Go to <http://localhost:5000/> to use the App

Updated UI Screenshots:

- **Add Product Movement**



Manage Product Movement ▾

Manage Product ▾

Manage Location ▾

Generate Report

Add Product Movement

Quantity

From Location

To Location


Product

Bat

Reset

Submit

- **Add product movement validations**



Manage Product Movement ▾

Manage Product ▾

Manage Location ▾

Generate Report

Add Product Movement

Quantity

"Quantity" cannot be empty

From Location

Pune

To Location

Pune

"To Location" cannot be equal to "From Location"


Product

Bat

Reset

Submit

- Add product movement success



Manage Product Movement ▾ Manage Product ▾ Manage Location ▾ Generate Report

Add Product Movement

Added successfully

Quantity

From Location

▾

To Location

▾

Product


Bat

▾

Reset











Submit

- View Product Movement




Manage Product Movement ▾ Manage Product ▾ Manage Location ▾ Generate Report

Product Movement Listing

Movement Id	Timestamp	From Location	To Location	Product Id	Product Name	Quantity	Update	Delete
1	2020-07-31 11:33:58	0	1	1	Bat	12		
2	2020-07-31 11:45:09	0	4	1	Bat	12		
3	2020-07-31 11:45:59	0	5	2	Ball	12		
4	2020-07-31 11:46:13	0	3	3	cap	42		
5	2020-07-31 11:46:33	0	4	3	cap	65		

- **Add Product**



Manage Product Movement ▾ Manage Product ▾ Manage Location ▾ Generate Report


Add Product

Product Name

Reset





Submit

- **View Product**




Manage Product Movement ▾ Manage Product ▾ Manage Location ▾ Generate Report

Product Listing

Product Id	Product Name	Delete
1	Bat	
2	Ball	
3	cap	
4	pants	

- **Add Location**



Manage Product Movement ▾

Manage Product ▾

Manage Location ▾

Generate Report

Add Location


Location Name

Reset

Submit

location/add_location*

- **View Location**



Manage Product Movement ▾

Manage Product ▾

Manage Location ▾

Generate Report


Add Location

Location Name

Reset

Submit

- **Report**



Manage Product Movement ▾


Manage Product ▾


Manage Location ▾

Generate Report

Product Report		
Product	Warehouse	Quantity
Bat	1	12
Bat	4	12
cap	4	65
Ball	5	12
cap	3	42

- **Responsive**





Add Product Movement

Quantity

From Location

▾

To Location

▾

Product

Bat

▾

Reset

Submit

The tables can be scrolled

Product Movement Listing

Movement Id	Timestamp	From Location
1	2020-07-31 11:33:58	0
2	2020-07-31 11:45:09	0
3	2020-07-31 11:45:59	0
4	2020-07-31 11:46:13	0
5	2020-07-31 11:46:33	0

Product Movement Listing

Id	Timestamp	From Location	To Location	Product
1	11:33:58	0	1	1
1	11:45:09	0	4	1
1	11:45:59	0	5	2
1	11:46:13	0	3	3
1	11:46:33	0	4	3

Navbar

Manage Product Movement ▾

Manage Product ▾

Manage Location ▾

Generate Report

Bat	1	12
Bat	4	12
cap	4	65
Ball	5	12
cap	3	42

This report summarizes the key features of the MVP

Database

SQLite was used so that evaluation is easier

The requirements issued directed creation of the following Tables

1. Product (product_id)
2. Location (location_id)
3. ProductMovement (movement_id, timestamp, from_location, to_location, product_id, qty)

Script used

```
DROP TABLE IF EXISTS Product;
DROP TABLE IF EXISTS Location;
DROP TABLE IF EXISTS ProductMovement;

CREATE TABLE Product (
  product_id INTEGER PRIMARY KEY AUTOINCREMENT
);

CREATE TABLE Location (
  location_id INTEGER PRIMARY KEY AUTOINCREMENT
);

CREATE TABLE ProductMovement (
  movement_id INTEGER PRIMARY KEY AUTOINCREMENT,
  timestamp TIMESTAMP DEFAULT CURRENT_TIMESTAMP NOT NULL,
  from_location INTEGER ,
  to_location INTEGER ,
  product_id INTEGER NOT NULL,
  qty INTEGER,
  FOREIGN KEY (movement_id) REFERENCES Product (product_id),
  FOREIGN KEY (from_location) REFERENCES Location (location_id),
  FOREIGN KEY (to_location) REFERENCES Location (location_id)
);
```


Views:

The views were created as directed in the requirements. Edit for Location and Product is not created because as they have only one column and that is the primary key. Editing it is not correct. Although Delete is added for all Entities

Requirement	Endpoint
Add Product	/product/add_product
View Product	/product/view_product
Delete Product	/product/delete_product/id
Add Location	/location/add_location
View Location	/location/view_location
Delete Location	/location/delete_location/id
Add ProductMovement	/product_movement/add_product_movement
Edit ProductMovement	/product_movement/update_product_movement/id
View ProductMovement	/product_movement/view_product_movement
Delete ProductMovement	/product_movement/delete_product_movement/1
Report	/product_movement/get_report

Use Cases

1. Create 3/4 Products

Product Id	Delete
1	
2	
3	
4	

2. Create 3/4 Locations

Warehouse Management	View Product Movement	Add Product Movement	View Product	Add Product	View Location	Add Location	Report
Location Id							
1							
2							
3							
4							

3. Make ProductMovements

a. After 8 Movements

View

Movement Id	Timestamp	From Location	To Location	Product Id	Quantity	Update	Delete
1	2020-07-21 01:44:44	None	1	1	5		
2	2020-07-21 01:44:51	None	1	2	5		
3	2020-07-21 01:45:01	None	2	3	5		
4	2020-07-21 01:45:08	None	2	4	5		
5	2020-07-21 01:45:42	None	3	1	5		
6	2020-07-21 01:45:50	None	3	2	5		
7	2020-07-21 01:46:01	None	4	3	5		
8	2020-07-21 01:46:08	None	4	4	5		

Report

Product	Warehouse	Quantity
1	1	5
2	1	5
3	2	5
4	2	5
1	3	5
2	3	5
3	4	5
4	4	5

b. After 12 movements

View

Warehouse Management							
View Product Movement							
Add Product Movement							
View Product							
Add Product							
View Location							
Add Location							
Report							
Movement Id	Timestamp	From Location	To Location	Product Id	Quantity	Update	Delete
1	2020-07-21 01:44:44	None	1	1	5		
2	2020-07-21 01:44:51	None	1	2	5		
3	2020-07-21 01:45:01	None	2	3	5		
4	2020-07-21 01:45:08	None	2	4	5		
5	2020-07-21 01:45:42	None	3	1	5		
6	2020-07-21 01:45:50	None	3	2	5		
7	2020-07-21 01:46:01	None	4	3	5		
8	2020-07-21 01:46:08	None	4	4	5		
9	2020-07-21 01:48:49	1	2	1	2		
10	2020-07-21 01:50:22	1	3	1	1		
11	2020-07-21 01:51:14	4	2	4	2		
13	2020-07-21 01:59:06	3	1	2	1		

Report

Warehouse Management		
View Product Movement		
Add Product Movement		
View Product		
Add Product		
View Location		
Add Location		
Report		
Product	Warehouse	Quantity
1	1	2
2	1	6
3	2	5
4	2	7
1	2	2
1	3	6
2	3	4
3	4	5
4	4	3

c. After 20 movements

Warehouse Management							
View Product Movement		Add Product Movement		View Product	Add Product	View Location	Add Location
Report							
Movement Id	Timestamp	From Location	To Location	Product Id	Quantity	Update	Delete
1	2020-07-21 01:44:44	None	1	1	5		
2	2020-07-21 01:44:51	None	1	2	5		
3	2020-07-21 01:45:01	None	2	3	5		
4	2020-07-21 01:45:08	None	2	4	5		
5	2020-07-21 01:45:42	None	3	1	5		
6	2020-07-21 01:45:50	None	3	2	5		
7	2020-07-21 01:46:01	None	4	3	5		
8	2020-07-21 01:46:08	None	4	4	5		
9	2020-07-21 01:48:49	1	2	1	2		
10	2020-07-21 01:50:22	1	3	1	1		
11	2020-07-21 01:51:14	4	2	4	2		
13	2020-07-21 01:59:06	3	1	2	1		
14	2020-07-21 02:01:32	4	1	3	4		
15	2020-07-21 02:02:40	2	1	4	3		
16	2020-07-21 02:03:48	3	4	1	1		
17	2020-07-21 02:05:05	2	None	3	5		
18	2020-07-21 02:05:46	1	None	4	3		
19	2020-07-21 02:06:15	1	None	3	2		
20	2020-07-21 02:07:11	3	None	1	3		
21	2020-07-21 02:07:53	3	1	2	4		

4. Final Report

Warehouse Management			View Product Movement	Add Product Movement	View Product	Add Product	View Location	Add Location	Report
Product	Warehouse	Quantity							
1	1	2							
2	1	10							
3	1	2							
4	1	0							
3	2	0							
4	2	4							
1	2	2							
1	3	2							
2	3	0							
3	4	1							
4	4	3							
1	4	1							

Key Features

1. Responsive UI using Bootstrap
2. Add, view, Delete Location
3. Add, view, Delete Product
4. Add, view, Edit, Delete ProductMovements
5. Final Report handles all types of product movements. If the user moves out something that is not available that is easily recognizable in the report by a negative quantity
6. Error handling using try/ catch so that appropriate message is displayed on the console and a error page to the user
7. Form Validations
8. Used SQLite to facilitate Evaluation
9. Code with comments and docstrings
10. Used Reusable templates for navbar