

Vendor Management System Documentation

Introduction

This document provides an overview of the Vendor Management System developed using Django and Django REST Framework. The system facilitates vendor management, purchase order handling, and performance metric calculations.

Technical Stack

- Django 3.x
- Django REST Framework 3.x
- Python 3.x

Setup Instructions

1. Clone the repository from GitHub :

2. Install dependencies using pip:

3. Apply database migrations:

4. Run the development server:

API Endpoints

Vendor Endpoints

- **GET /api/vendors/**
List all vendors or create a new vendor.
- **GET /api/vendors/{vendor_id}/**
Retrieve, update, or delete a specific vendor.

Purchase Order Endpoints

- **GET /api/purchaseorders/**

- List all purchase orders or create a new purchase order.
- **GET /api/purchaseorders/{purchaseorder_id}/**
- Retrieve, update, or delete a specific purchase order.

Performance Metrics Endpoints

- **GET /api/vendors/{vendor_id}/performance/**
- Retrieve performance metrics for a specific vendor.
- **POST /api/purchase_orders/{po_id}/acknowledge/**
- Acknowledge a purchase order, updating acknowledgment date.

Data Validations

- Comprehensive data validations are implemented for models to ensure data integrity.
- Constraints and rules are enforced at the model level to maintain consistency.

Security

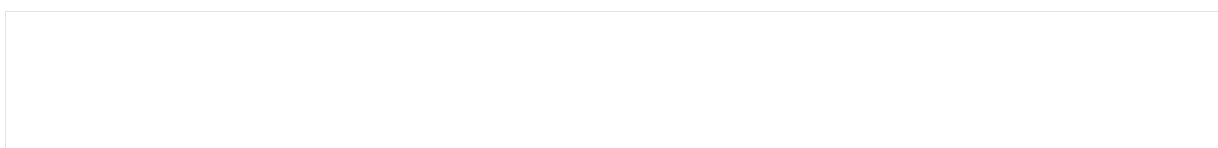
- API endpoints are secured with token-based authentication to control access and ensure user authentication.

Code Quality

- Codebase adheres to PEP 8 style guidelines for Python code to maintain readability and consistency.
- Django ORM is used for efficient database interactions, ensuring optimal performance with large datasets.

Testing

- A comprehensive test suite is provided to demonstrate the functionality and reliability of the endpoints.
- Unit tests and integration tests cover various scenarios to validate endpoint behavior.



Additional Considerations

- **Efficient Calculation:** Logic for calculating metrics is optimized to handle large datasets without significant performance issues.
- **Data Integrity:** Checks are included to handle scenarios like missing data points or division by zero in calculations.
- **Real-time Updates:** Django signals are used to trigger metric updates in real-time when related PO data is modified.

Screenshots of Apis:

Vendors :

GET :

The screenshot displays a REST client interface with a GET request to `http://127.0.0.1:8000/api/vendors/`. The response is a JSON array of two vendor objects, returned with a 200 OK status and 742 B of data.

```
{
  "id": 1,
  "name": "Pranali yadav",
  "contact_details": "9356947669",
  "address": "Pune",
  "vendor_code": "12",
  "on_time_delivery_rate": 0.0,
  "quality_rating_avg": 0.0,
  "average_response_time": 84020.676164,
  "fulfillment_rate": 0.0
},
{
  "id": 2,
  "name": "sahil modak",
  "contact_details": "7798724880",
  "address": "chiplun",
  "vendor_code": "13",
  "on_time_delivery_rate": 62.0,
  "quality_rating_avg": 80.0,
  "average_response_time": 0.0,
  "fulfillment_rate": 70.0
}
```

GET element through id:

HTTP <http://127.0.0.1:8000/api/vendors/1/> Save

GET <http://127.0.0.1:8000/api/vendors/1/> Send

Params Auth Headers (9) **Body** Pre-req. Tests Settings Cookies

raw JSON Beautify

1 5

body Cookies (1) Headers (10) Test Results 200 OK 27 ms 547 B Save Response

Pretty Raw Preview Visualize JSON 5

```
1 {
2   "id": 1,
3   "name": "Pranali yadav",
4   "contact_details": "9356947669",
5   "address": "Pune",
6   "vendor_code": "12",
7   "on_time_delivery_rate": 0.0,
8   "quality_rating_avg": 0.0,
9   "average_response_time": 84020.676164,
10  "fulfillment_rate": 0.0
11 }
```

Delete :

DELETE <http://127.0.0.1:8000/api/vendors/1/> Send

Params Auth Headers (9) **Body** Pre-req. Tests Settings Cookies

raw JSON Beautify

1 5

Body Cookies (1) Headers (9) Test Results 204 No Content 22 ms 310 B Save Response

Pretty Raw Preview Visualize Text 5

```
1
```

Purchase orders

POST:

POST

http://127.0.0.1:8000/api/purchaseorders/

Send

ParamsAuthHeaders (9)BodyPre-reqTestsSettings

rawJSON

Beautify

12

```
1 {
2   "po_number": "103",
3   "vendor": "2",
4   "order_date": "2024-04-27",
5   "delivery_date": "2024-05-03",
6   "items": "Clothes",
7   "quantity": 3,
8   "status": "Delievered",
9 }
```

BodyCookies (1)Headers (10)Test Results

201 Created26 ms602 BSave Response

PrettyRawPreviewVisualizeJSON

112

```
1 {
2   "id": 3,
3   "po_number": "103",
4   "order_date": "2024-04-27T00:00:00Z",
5   "delivery_date": "2024-05-03T00:00:00Z",
6   "items": "Clothes",
7   "quantity": 3,
8   "status": "Delievered",
9   "quality_rating": 90.0,
10  "issue_date": "2024-05-04T04:27:42.856027Z",
11  "acknowledgment_date": "2024-04-29T00:00:00Z",
12  "vendor": 2
}
```

GET :

HTTP

http://127.0.0.1:8000/api/purchaseorders/

Save

GET

http://127.0.0.1:8000/api/purchaseorders/

Send

ParamsAuthHeaders (9)BodyPre-reqTestsSettings

rawJSON

Beautify

15

BodyCookies (1)Headers (10)Test Results

200 OK17 ms1.13 KBSave Response

PrettyRawPreviewVisualizeJSON

120

```
1 {
2   {
3     "id": 1,
4     "po_number": "100",
5     "order_date": "2024-04-27T00:00:00Z",
6     "delivery_date": "2024-05-03T00:00:00Z",
7     "items": "Clothes",
8     "quantity": 3,
9     "status": "Delievered",
10    "quality_rating": 90.0,
11    "issue_date": "2024-05-03T05:05:54.395059Z",
12    "acknowledgment_date": "2024-05-04T04:26:15.071223Z",
13    "vendor": 1
14  },
15  {
16    "id": 2,
17    "po_number": "101",
18    "order_date": "2024-04-27T00:00:00Z",
19    "delivery_date": "2024-05-03T00:00:00Z",
20    "items": "Clothes",

```

GET Elemets through id :

GET

http://127.0.0.1:8000/api/purchaseorders/1/

Send

Params

Auth

Headers (9)

Body

Pre-req.

Tests

Settings

Cookies

Beautify

raw

JSON

1

2

3

4

5

6

7

1

2

3

4

5

6

7

Body

Cookies (1)

Headers (10)

Test Results

200 OK

47 ms

618 B

Save Response

Pretty

Raw

Preview

Visualize

JSON

1

2

3

4

5

6

7

8

9

10

11

12

13

"id": 1,

"po_number": "100",

"order_date": "2024-04-27T00:00:00Z",

"delivery_date": "2024-05-03T00:00:00Z",

"items": "Clothes",

"quantity": 3,

"status": "Delievered",

"quality_rating": 90.0,

"issue_date": "2024-05-03T05:05:54.395059Z",

"acknowledgment_date": "2024-05-04T04:26:15.071223Z",

"vendor": 1

Delete element through id :

DELETE

http://127.0.0.1:8000/api/purchaseorders/1/

Send

Params

Auth

Headers (9)

Body

Pre-req.

Tests

Settings

Cookies

Beautify

raw

JSON

1

2

3

4

5

6

7

1

2

3

4

5

6

7

Body

Cookies (1)

Headers (9)

Test Results

204 No Content

21 ms

310 B

Save Response

Pretty

Raw

Preview

Visualize

Text

1

Update element through id :

PUT `http://127.0.0.1:8000/api/purchaseorders/2/` **Send**

Params Auth Headers (9) **Body** ● Pre-req. Tests Settings

Cookies

raw JSON


Beautify

```
1  {
2
3      "po_number": "103",
4      "vendor": "2",
5      "order_date": "2024-04-27",
6      "delivery_date": "2024-05-03",
7      "items": "Clothes",
```

Body Cookies (1) Headers (10) Test Results

400 Bad Request 20 ms 412 B

Save Response

Pretty Raw Preview Visualize JSON 

```
1
2     "po_number": [
3         "purchase order with this po number already exists."
4     ]
5
```

Performance Metrics :

GET Send

Params Auth Headers (9) **Body** ● Pre-req. Tests Settings

Cookies

raw JSON

Beautify

```
1 {
2
3     "po_number": "101",
4     "vendor": "2",
5     "order_date": "2024-04-27",
6     "delivery_date": "2024-05-03",
7     "items": "Clothes",
8     "quantity": 3,
9     "status": "Delievered",
```

ody Cookies (1) Headers (10) Test Results

200 OK 36 ms 418 B

Save Response

Pretty Raw Preview Visualize JSON

```
1
2     "on_time_delivery_rate": 0,
3     "quality_rating_avg": 0,
4     "average_response_time": 84020.676164,
5     "fulfillment_rate": 0
6
```

HTTP

http://127.0.0.1:8000/api/purchase_orders/1/acknowledge

Save

GET

http://127.0.0.1:8000/api/purchase_orders/1/acknowledge

Send

Params

Auth

Headers (9)

Body

Pre-req.

Tests

Settings

Cookies

Beautiful

raw

JSON

```
1 {
2
3   ... "po_number": "101",
4   ... "vendor": "2",
5   ... "order_date": "2024-04-27",
6   ... "delivery_date": "2024-05-03",
7   ... "items": "Clothes",
8   ... "quantity": 3,
9   ... "status": "Delievered",
```

body

Cookies (1)

Headers (10)

Test Results

405 Method Not Allowed

13 ms

366 B

Save Response

Pretty

Raw

Preview

Visualize

JSON

```
1 {
2   "detail": "Method \"GET\" not allowed."
3 }
```

POST

http://127.0.0.1:8000/api/purchase_orders/1/acknowledge

Send

Params

Auth

Headers (9)

Body

Pre-req.

Tests

Settings

Cookies

Beautiful

raw

JSON

```
1 {
2
3   ... "po_number": "101",
4   ... "vendor": "2",
5   ... "order_date": "2024-04-27",
6   ... "delivery_date": "2024-05-03",
7   ... "items": "Clothes",
8   ... "quantity": 3,
9   ... "status": "Delievered",
```

body

Cookies (1)

Headers (10)

Test Results

200 OK

32 ms

366 B

Save Response

Pretty

Raw

Preview

Visualize

JSON

```
1 {
2   "message": "Purchase order acknowledged successfully."
3 }
```