**Step 1: Open the command prompt**

**Step 2: clone the project from git by pasting the below query**

*git clone* [*https://github.com/Shravendra/Vendor-Management-System-with-Performance-Metrics.git*](https://github.com/Shravendra/Vendor-Management-System-with-Performance-Metrics.git)

**Step 3: Open the cloned project in any editor (Visual Studio)**

**Step 4: Create a virtual environment**

*python -m venv venv*

**Step 5: Activate the virtual environment**

*venv\Scripts\activate*

**Step 6: Install dependencies**

*pip install -r requirements.txt*

**Step 7: Apply migrations**

*python manage.py migrate*

**Step 8: Create a superuser (for admin access)**

*python manage.py createsuperuser*

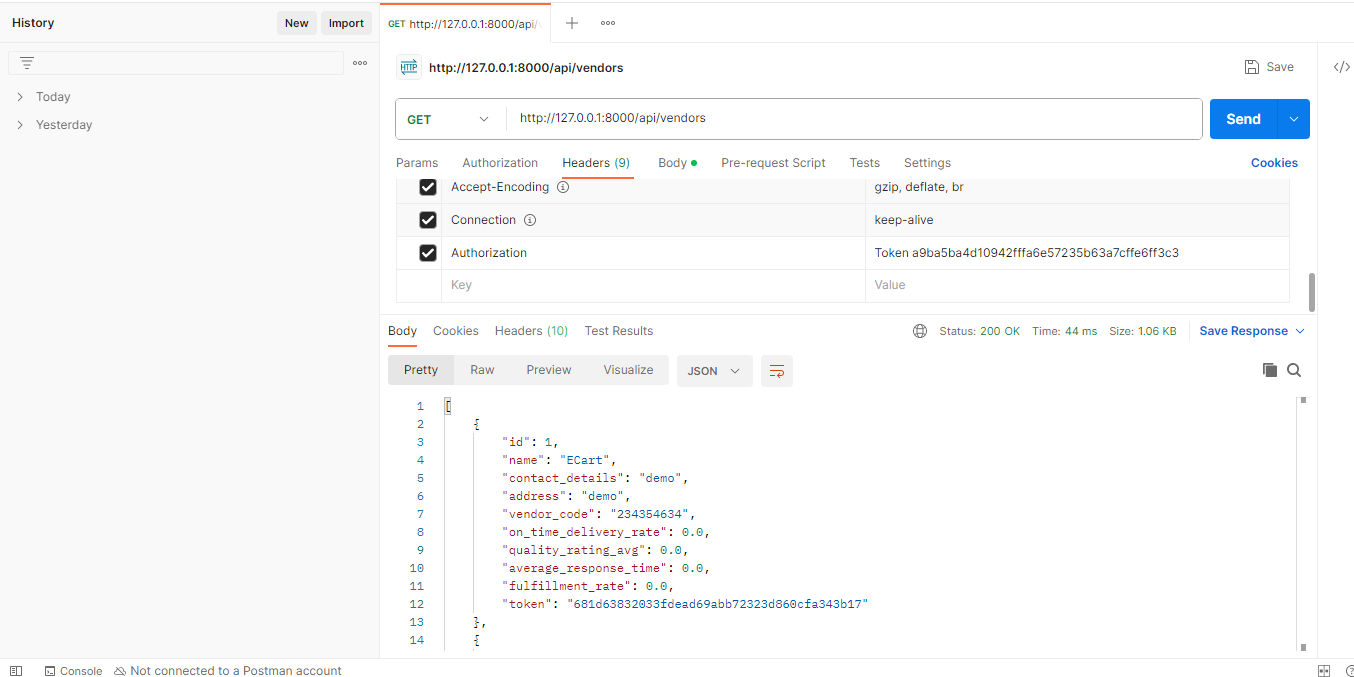
**Step 9: run server**

python manage.py runserver

**Now test the API endpoints using any API testing**

**Open Postman**

* In the Header Section add
* “Authorization” at key place
* and “Token token-value” at value place.
* Get token from <http://127.0.0.1:8000/admin/authtoken/tokenproxy/>
* Now can test API endpoints.



**API Endpoints Test Samples**

**Vendor Profile Management:**

**POST** <http://127.0.0.1:8000/api/vendors/> : Create a new vendor.

{

        "name": "Fashion Addict",

        "contact\_details": "demo",

        "address": "demo",

        "vendor\_code": "231764699",

        "on\_time\_delivery\_rate": 0.0,

        "quality\_rating\_avg": 0.0,

        "average\_response\_time": 0.0,

        "fulfillment\_rate": 0.0

    }

**GET** <http://127.0.0.1:8000/api/vendors/> : List all vendors.

[

    {

        "id": 1,

        "name": "ECart",

        "contact\_details": "demo",

        "address": "demo",

        "vendor\_code": "234354634",

        "on\_time\_delivery\_rate": 100.0,

        "quality\_rating\_avg": 0.0,

        "average\_response\_time": 2.0,

        "fulfillment\_rate": 100.0,

        "token": "681d63832033fdead69abb72323d860cfa343b17"

    },

    {

        "id": 2,

        "name": "VMart",

        "contact\_details": "demo V Mart",

        "address": "demo V Mart",

        "vendor\_code": "231215454",

        "on\_time\_delivery\_rate": 0.0,

        "quality\_rating\_avg": 0.0,

        "average\_response\_time": 0.0,

        "fulfillment\_rate": 0.0,

        "token": "e779e7259eae576b38fc7091868ba60889fe3508"

    },

    {

        "id": 3,

        "name": "DMart",

        "contact\_details": "demo",

        "address": "demo address",

        "vendor\_code": "652147859",

        "on\_time\_delivery\_rate": 0.0,

        "quality\_rating\_avg": 0.0,

        "average\_response\_time": 0.0,

        "fulfillment\_rate": 0.0,

        "token": "a9ba5ba4d10942fffa6e57235b63a7cffe6ff3c3"

    },

    {

        "id": 4,

        "name": "Fashion Addict",

        "contact\_details": "demo",

        "address": "demo",

        "vendor\_code": "231764699",

        "on\_time\_delivery\_rate": 0.0,

        "quality\_rating\_avg": 0.0,

        "average\_response\_time": 0.0,

        "fulfillment\_rate": 0.0,

        "token": "0179e572bbebd1c3a2b82a9fac14434e0af41355"

    }

]

**GET** <http://127.0.0.1:8000/api/vendors/4/> : Retrieve a specific vendor's details.

{

    "id": 4,

    "name": "Fashion Addict",

    "contact\_details": "demo",

    "address": "demo",

    "vendor\_code": "231764699",

    "on\_time\_delivery\_rate": 0.0,

    "quality\_rating\_avg": 0.0,

    "average\_response\_time": 0.0,

    "fulfillment\_rate": 0.0,

    "token": "0179e572bbebd1c3a2b82a9fac14434e0af41355"

}

**PUT** <http://127.0.0.1:8000/api/vendors/4/> : Update a vendor's details.

{

        "id": 4,

        "name": "Fashion Addict",

        "contact\_details": "demo\_update",

        "address": "Banglore India",

        "vendor\_code": "231764699",

        "on\_time\_delivery\_rate": 0.0,

        "quality\_rating\_avg": 0.0,

        "average\_response\_time": 0.0,

        "fulfillment\_rate": 0.0,

        "token": "0179e572bbebd1c3a2b82a9fac14434e0af41355"

    }

**DELETE** <http://127.0.0.1:8000/api/vendors/4/> : Delete a vendor.

**Purchase Order Tracking:**

**POST** <http://127.0.0.1:8000/api/purchase_orders/> : Create a purchase order.

{

        "po\_number": "2484597315",

        "order\_date": "2023-11-20T21:08:50Z",

        "delivery\_date": "2023-11-22T12:00:00Z",

        "items": 3,

        "quantity": 5,

        "status": "Completed",

        "quality\_rating": **null**,

        "issue\_date": "2023-11-22T21:09:08Z",

        "acknowledgment\_date": "2023-11-22T21:09:10Z",

        "vendor": 1

    }

**GET** <http://127.0.0.1:8000/api/purchase_orders/> : List all purchase orders with an option to filter by the vendor.

[

    {

        "id": 1,

        "po\_number": "2424235235",

        "order\_date": "2023-11-20T21:08:50Z",

        "delivery\_date": "2023-11-22T12:00:00Z",

        "items": 2,

        "quantity": 7,

        "status": "Completed",

        "quality\_rating": **null**,

        "issue\_date": "2023-11-22T21:09:08Z",

        "acknowledgment\_date": "2023-11-22T21:09:10Z",

        "vendor": 1

    },

    {

        "id": 2,

        "po\_number": "2484597315",

        "order\_date": "2023-11-20T21:08:50Z",

        "delivery\_date": "2023-11-22T12:00:00Z",

        "items": 3,

        "quantity": 5,

        "status": "Completed",

        "quality\_rating": **null**,

        "issue\_date": "2023-11-22T21:09:08Z",

        "acknowledgment\_date": "2023-11-22T21:09:10Z",

        "vendor": 1

    }

]

**GET** <http://127.0.0.1:8000/api/purchase_orders/1/> : Retrieve details of a specific purchase order.

{

    "id": 1,

    "po\_number": "2424235235",

    "order\_date": "2023-11-20T21:08:50Z",

    "delivery\_date": "2023-11-22T12:00:00Z",

    "items": 2,

    "quantity": 7,

    "status": "Completed",

    "quality\_rating": **null**,

    "issue\_date": "2023-11-22T21:09:08Z",

    "acknowledgment\_date": "2023-11-22T21:09:10Z",

    "vendor": 1

}

**PUT** <http://127.0.0.1:8000/api/purchase_orders/1/> : Update a purchase order.

{

    "id": 1,

    "po\_number": "2424235235",

    "order\_date": "2023-11-20T21:08:50Z",

    "delivery\_date": "2023-11-22T12:00:00Z",

    "items": 5,

    "quantity": 11,

    "status": "Completed",

    "quality\_rating": **null**,

    "issue\_date": "2023-11-22T21:09:08Z",

    "acknowledgment\_date": "2023-11-22T21:09:10Z",

    "vendor": 1

}

**DELETE** [http://127.0.0.1:8000/api/purchase\_orders/{po\_id}/](http://127.0.0.1:8000/api/purchase_orders/%7bpo_id%7d/) : Delete a purchase order.

**Vendor Performance Evaluation:**

**GET** <http://127.0.0.1:8000/api/vendors/1/performance> : Retrieve a vendor's performance metrics.

{

    "id": 1,

    "date": "2023-11-22T21:09:11.867402Z",

    "on\_time\_delivery\_rate": 100.0,

    "quality\_rating\_avg": 0.0,

    "average\_response\_time": 2.0,

    "fulfillment\_rate": 100.0,

    "vendor": 1

}

**Vendor Acknowledgment:**

**POST** <http://127.0.0.1:8000/api/purchase_orders/2/acknowledge/> : Vendors acknowledge purchase orders.

{

  "acknowledgment\_date": "2023-11-24T08:30:00Z"

}

**Backend Logic for Performance Metrics**

**On-Time Delivery Rate:**

Calculated each time a PO status changes to 'completed'.

Logic: Count the number of completed POs delivered on or before delivery\_date and divide by the total number of completed POs for that vendor.

**Quality Rating Average:**

Updated upon the completion of each PO where a quality\_rating is provided.

**Logic**: Calculate the average of all quality\_rating values for completed POs of the vendor.

**Average Response Time:**

Calculated each time a PO is acknowledged by the vendor.

**Logic**: Compute the time difference between issue\_date and acknowledgment\_date for each PO, and then find the average of these times for all POs of the vendor.

**Fulfillment Rate:**

Calculated upon any change in PO status.

**Logic**: Divide the number of successfully fulfilled POs (status 'completed' without issues) by the total number of POs issued to the vendor.