

**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>*

**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*

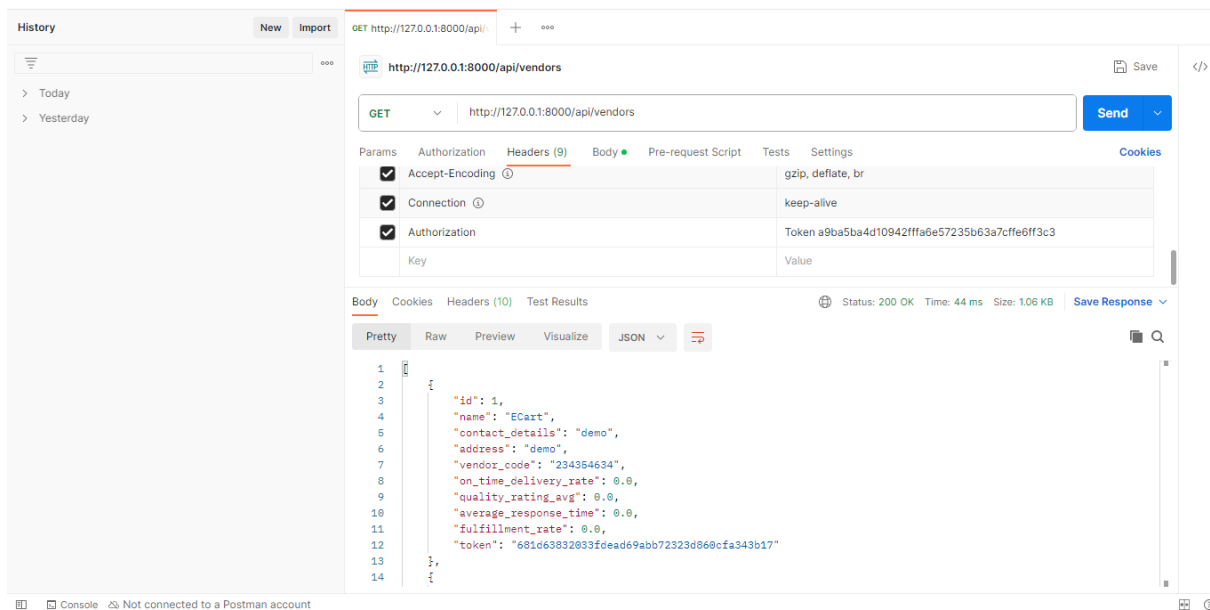
**Step 9: run server**

*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/auth/token/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/](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/](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/](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/](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/{po_id}/) : 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/](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.