E-Commerce Product Management System Implementation Report

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Course: Full Stack Development

1. Introduction

This report details the step-by-step implementation of an E-Commerce Product Management System using Django.
The system allows managing product listings and categories via the Django Admin interface and displays products using Django's ListView.
Additionally, a database migration was performed to introduce a discount field after initial development.

2. Step-by-Step Implementation

2.1 Setting Up Django Project and App

1. Install Django:

```
pip install django
```

2. Create a new Django project and app: `django-admin startproject ecommerce cd ecommerce django-admin startapp products`

2.2 Define Models

```
from django.db import models

class Category(models.Model):     name =
models.CharField(max_length=255, unique=True)

    def __str__(self):
return self.name

class Product(models.Model):
    name = models.CharField(max_length=255)     description =
models.TextField()     price =
```

```
models.DecimalField(max_digits=10, decimal_places=2)     stock =
models.PositiveIntegerField()
    category = models.ForeignKey(Category, on_delete=models.CASCADE,
related_name="products")

    def __str__(self):

        return self.name
```

2.3 Register Models in Django Admin

```
from django.contrib import admin from
.models import Product, Category

@admin.register(Product) class
ProductAdmin(admin.ModelAdmin):
    list_display = ('name', 'price', 'stock', 'category')
search_fields = ('name', 'category__name')
list_filter = ('category',)

@admin.register(Category) class
CategoryAdmin(admin.ModelAdmin):
list_display = ('name',)
```

2.4 Apply Migrations

```
python manage.py makemigrations
python manage.py migrate
```

2.5 Implement Product List View

```
from django.views.generic import ListView
from .models import Product

class ProductListView(ListView):
    model = Product     template_name =
"products/product_list.html"
context_object_name = "products"
```

2.6 Configure URL Patterns

```
from django.urls import path from
.views import ProductListView

urlpatterns = [ path('products/', ProductListView.as_view(),
name='product-list'), ]
```

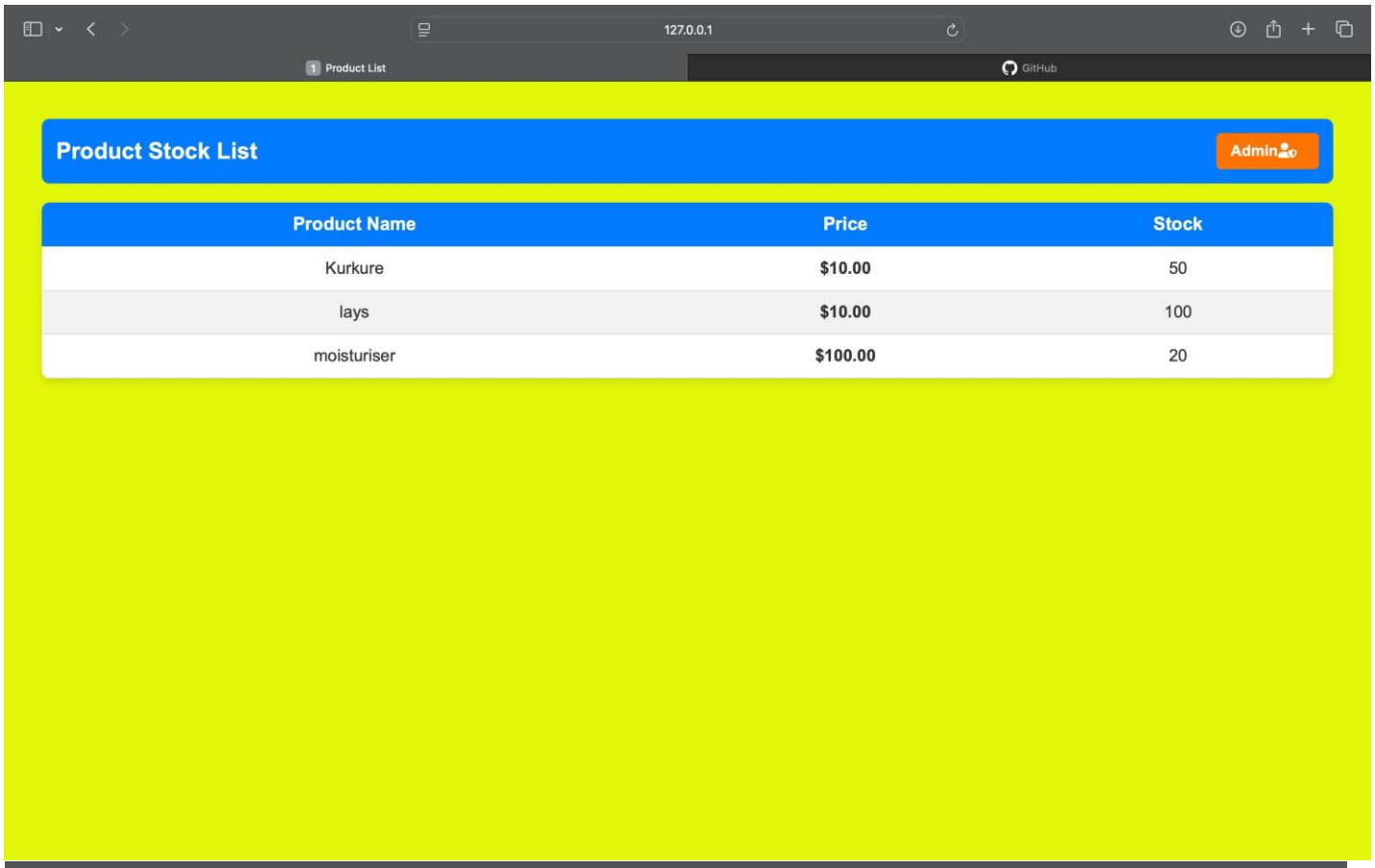
2.7 Add Discount Field via Migrations

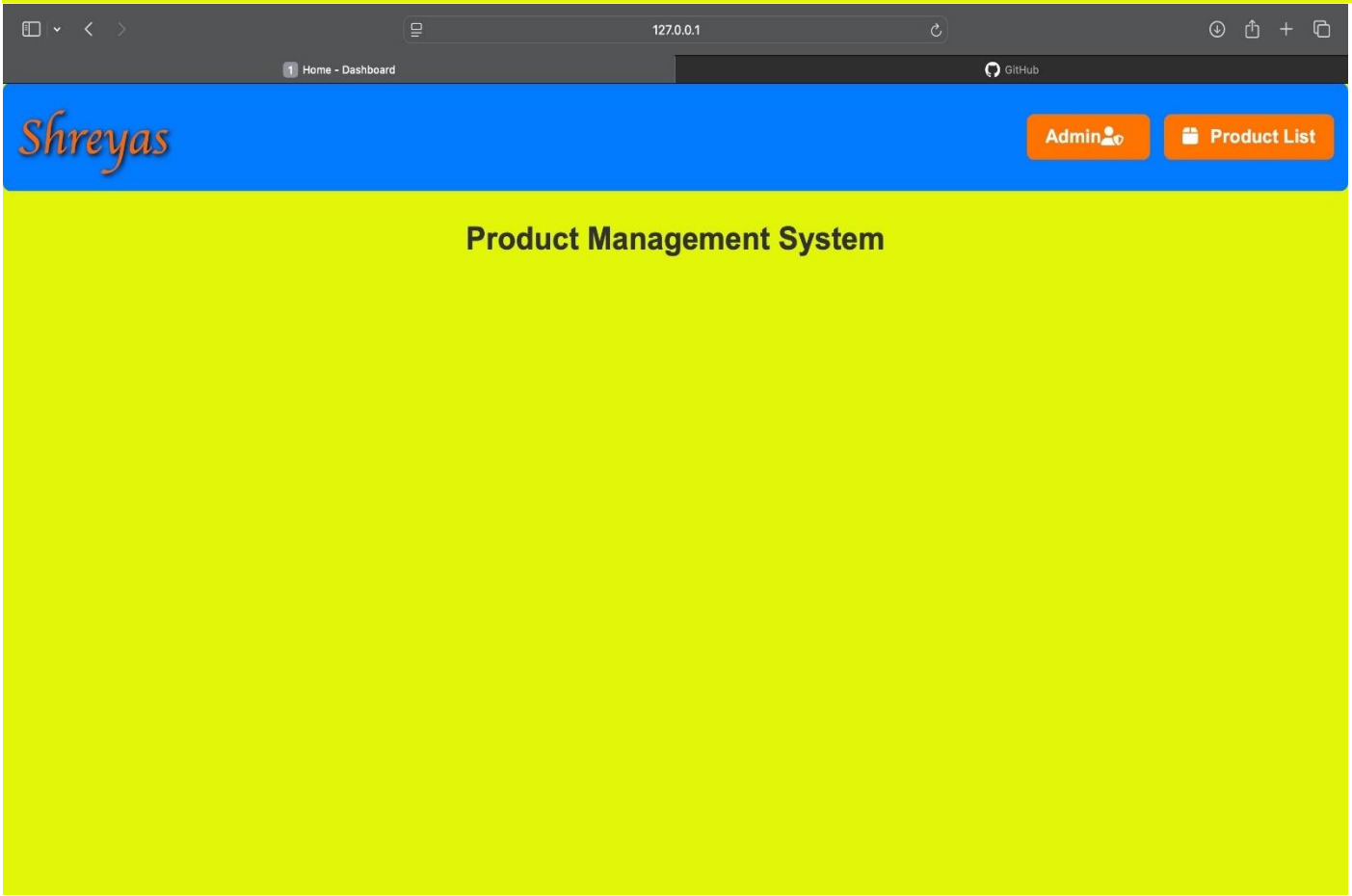
```
class Product(models.Model):

    name = models.CharField(max_length=255)     description =
models.TextField()     price =
models.DecimalField(max_digits=10, decimal_places=2)     stock =
models.PositiveIntegerField()
    category = models.ForeignKey(Category, on_delete=models.CASCADE,
related_name="products")    discount = models.DecimalField(max_digits=5, decimal_places=2,
default=0.00)  # New Field
```

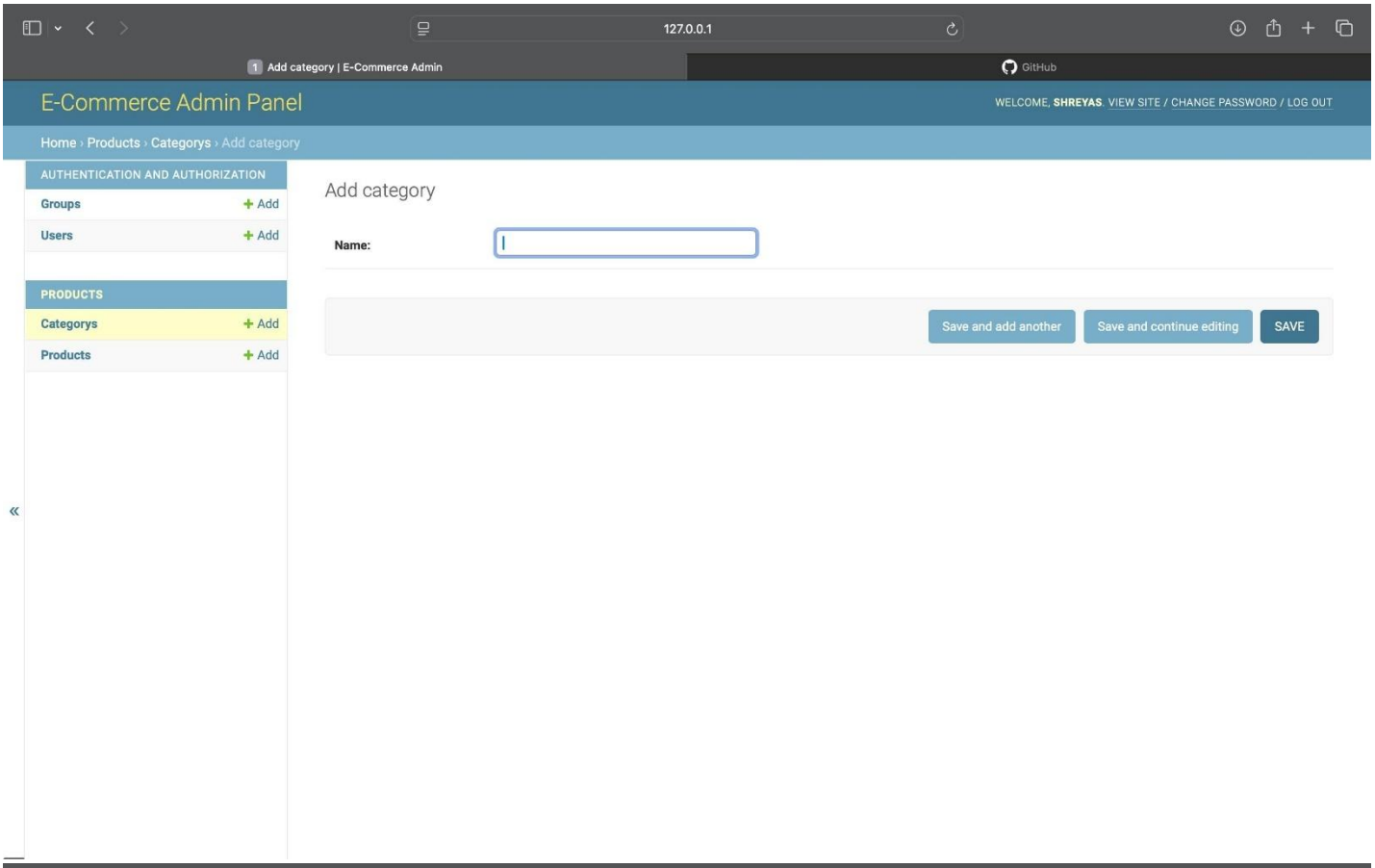
2.8 Run the Server and View Products

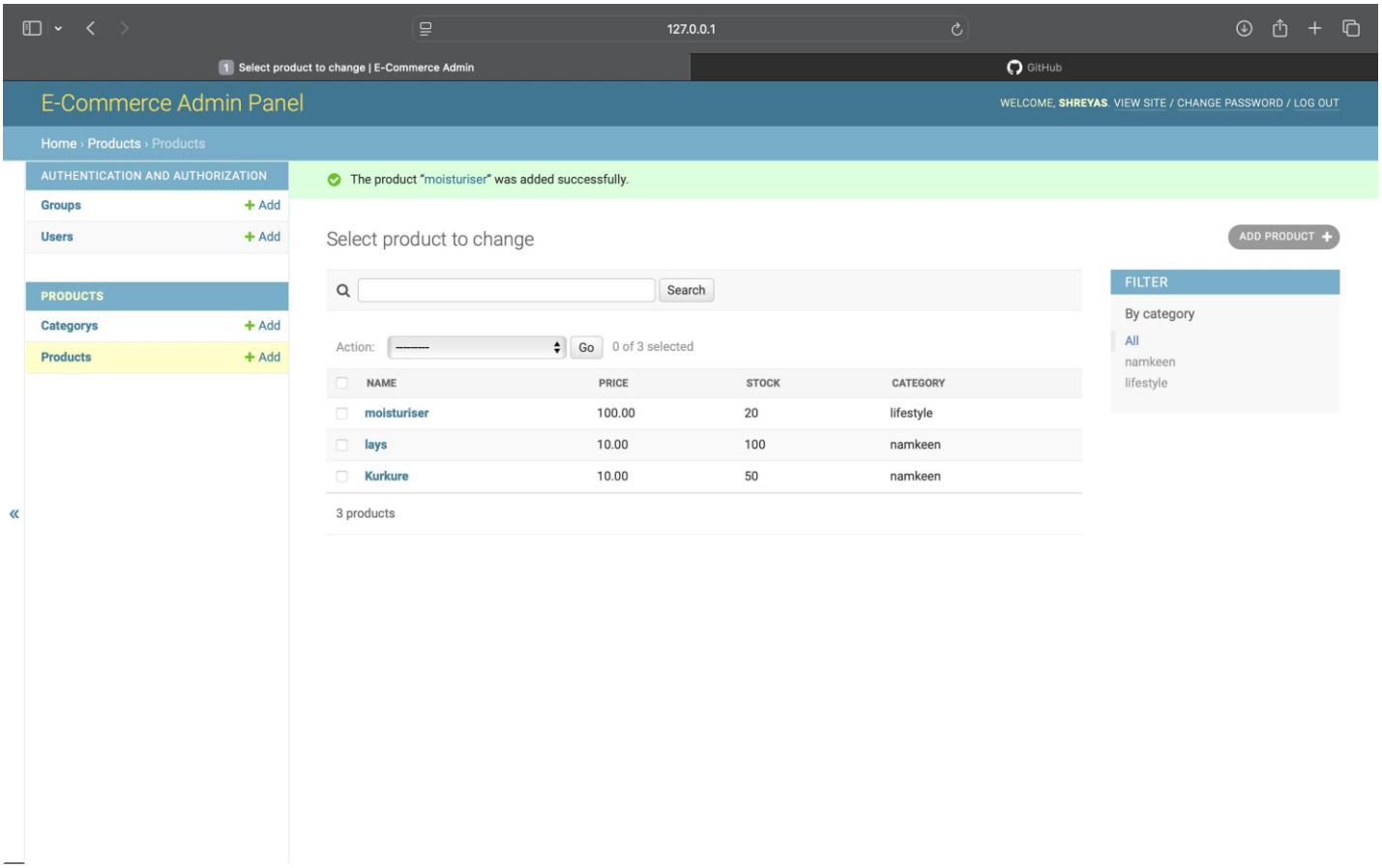
```
python manage.py runserver
```

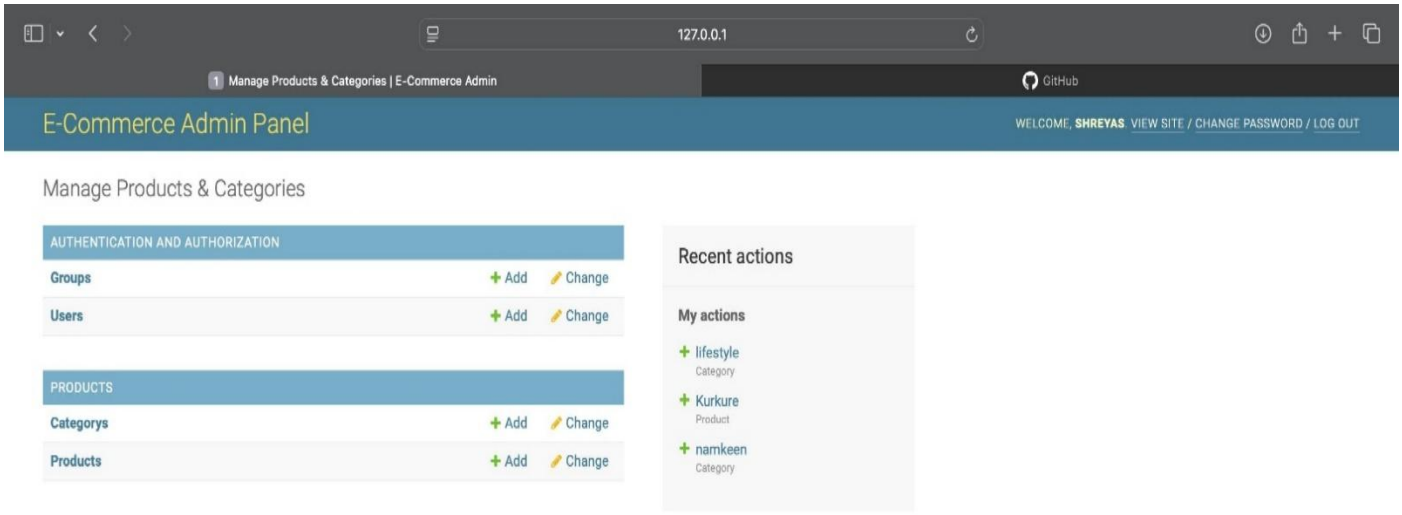
3. Screenshots

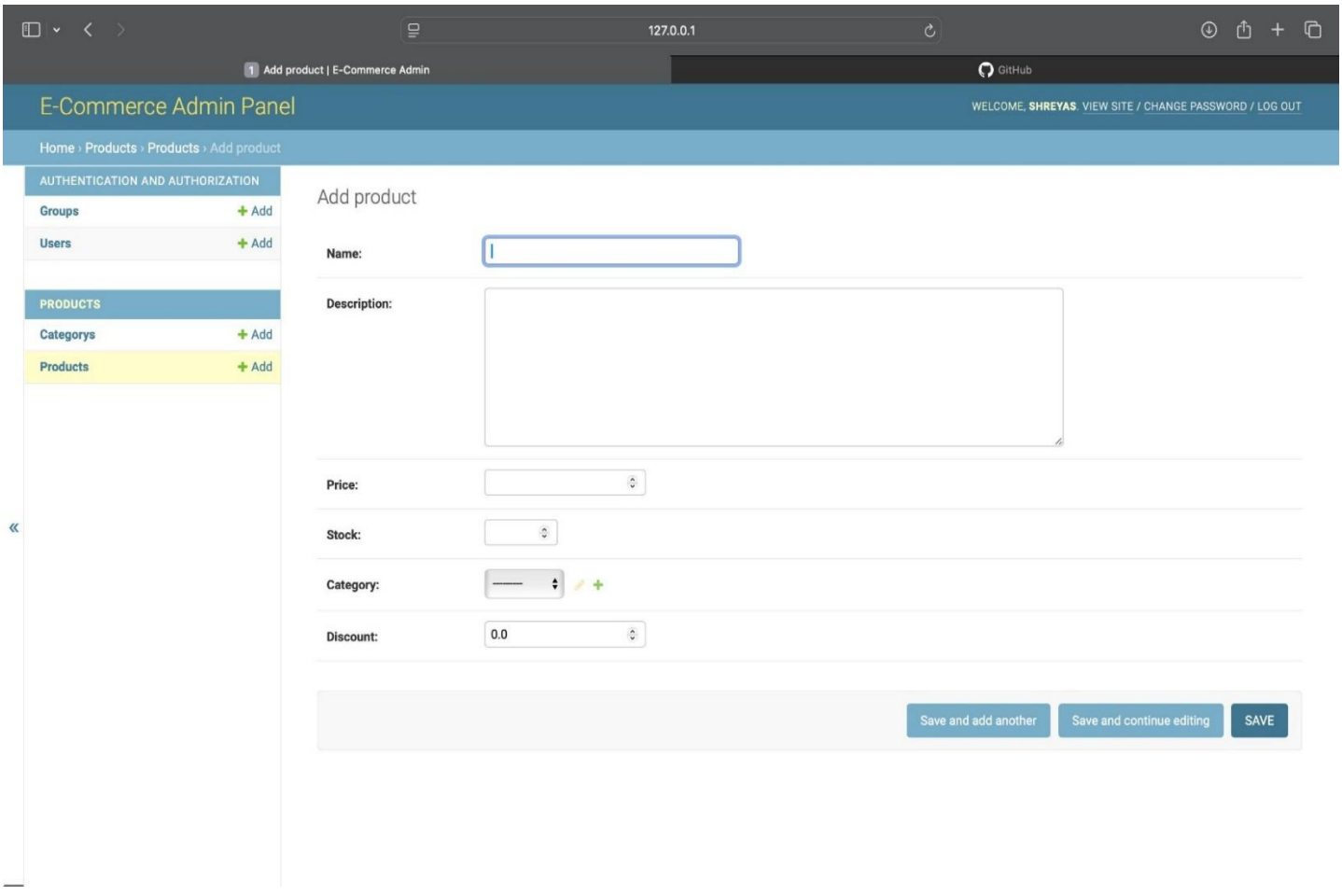





127.0.0.1
1 Add category | E-Commerce Admin
GitHub
E-Commerce Admin Panel
WELCOME, SHREYAS. VIEW SITE / CHANGE PASSWORD / LOG OUT
Home › Products › Categorys › Add category
AUTHENTICATION AND AUTHORIZATION
Groups + Add
Users + Add
PRODUCTS
Categorys + Add
Products + Add
Add category
Name:
Save and add another
Save and continue editing
SAVE


127.0.0.1
1 Select product to change | E-Commerce Admin
GitHub
E-Commerce Admin Panel
WELCOME, SHREYAS. VIEW SITE / CHANGE PASSWORD / LOG OUT
Home › Products › Products
AUTHENTICATION AND AUTHORIZATION
Groups + Add
Users + Add
PRODUCTS
Categorys + Add
Products + Add
The product "moisturiser" was added successfully.
Select product to change
ADD PRODUCT +
Search
Action: ---------- Go 0 of 3 selected
NAME PRICE STOCK CATEGORY
moisturiser 100.00 20 lifestyle
lays 10.00 100 namkeen
Kurkure 10.00 50 namkeen
3 products
FILTER
By category
All
namkeen
lifestyle


127.0.0.1
Manage Products & Categories | E-Commerce Admin
GitHub
E-Commerce Admin Panel
WELCOME, SHREYAS. VIEW SITE / CHANGE PASSWORD / LOG OUT
Manage Products & Categories
AUTHENTICATION AND AUTHORIZATION
Groups + Add Change
Users + Add Change
PRODUCTS
Categorys + Add Change
Products + Add Change
Recent actions
My actions
+ lifestyle
Category
+ Kurkure
Product
+ namkeen
Category


127.0.0.1
Add product | E-Commerce Admin
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AUTHENTICATION AND AUTHORIZATION
Groups + Add
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PRODUCTS
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Products + Add
Add product
Name:
Description:
Price:
Stock:
Category:
Discount:
0.0
Save and add another
Save and continue editing
SAVE

```python
#!/usr/bin/env python
"""Django's command-line utility for administrative tasks."""
import os
import sys


def main():
    """Run administrative tasks."""
    os.environ.setdefault('DJANGO_SETTINGS_MODULE', 'ecommerce.settings')
    try:
        from django.core.management import execute_from_command_line
    except ImportError as exc:
        raise ImportError(
            "Couldn't import Django. Are you sure it's installed and "
            "available on your PYTHONPATH environment variable? Did you "
            "forget to activate a virtual environment?"
        ) from exc
    execute_from_command_line(sys.argv)


if __name__ == '__main__':
    main()
```