

## Lab Work 2: Product Catalog with Listing and Search

### Objective

Enable listing and searching of products through a dynamic product catalog.

### Steps:

#### 1. Product Table Setup

Defined a Product model in schema.prisma with fields: id, name, category, price, description, image, createdAt

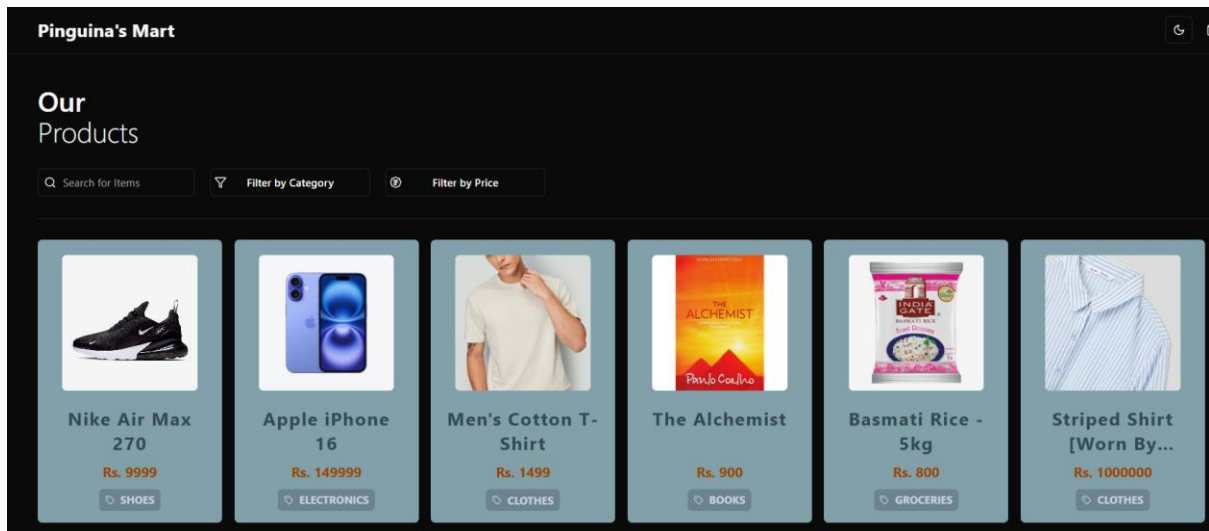
```
model Product {
  id String @id @default(cuid())
  name String
  category ProductCategory
  price Float
  quantity Int
  description String
  image String
  createdAt DateTime @default(now())

  // Relations
  carts Cart[]
  reviews Review[]
  orderItems OrderItem[]

  @@index([category])
}
```

#### 2. Product Listing

- Created a server-side rendered page that fetches products from the PostgreSQL database using Prisma on the home screen.
- Displayed products in a responsive grid/card layout using Tailwind CSS.
- Each product shows an image, name, category, and price.
- Each product is a clickable element that opens up the specific product page. (/product/:productid)



### 3. Product Search

- Implemented a search bar, filter by category and filter by price that filters products by name, category, and price.

#### Source Code

```
export async function getFilteredProduct(
  search?: string,
  category?: $Enums.ProductCategory,
  priceSort?: "asc" | "desc"
) {
  try {
    const products: HomeProductType[] = await
prisma.product.findMany({
      where: {
        name: search
        ? {
            contains: search,
            mode: "insensitive",
          }
        : undefined,
        category: category || undefined,
      },
      orderBy: priceSort
        ? {
            price: priceSort,
          }
        : undefined,

      select: {
        id: true,

```

```

        name: true,
        price: true,
        image: true,
        category: true,
    },
    });
    return products;
} catch (error) {
    console.log("Error in getFilteredProduct: ", error);
    throw new Error("Failed to fetch filtered products");
}
}

```

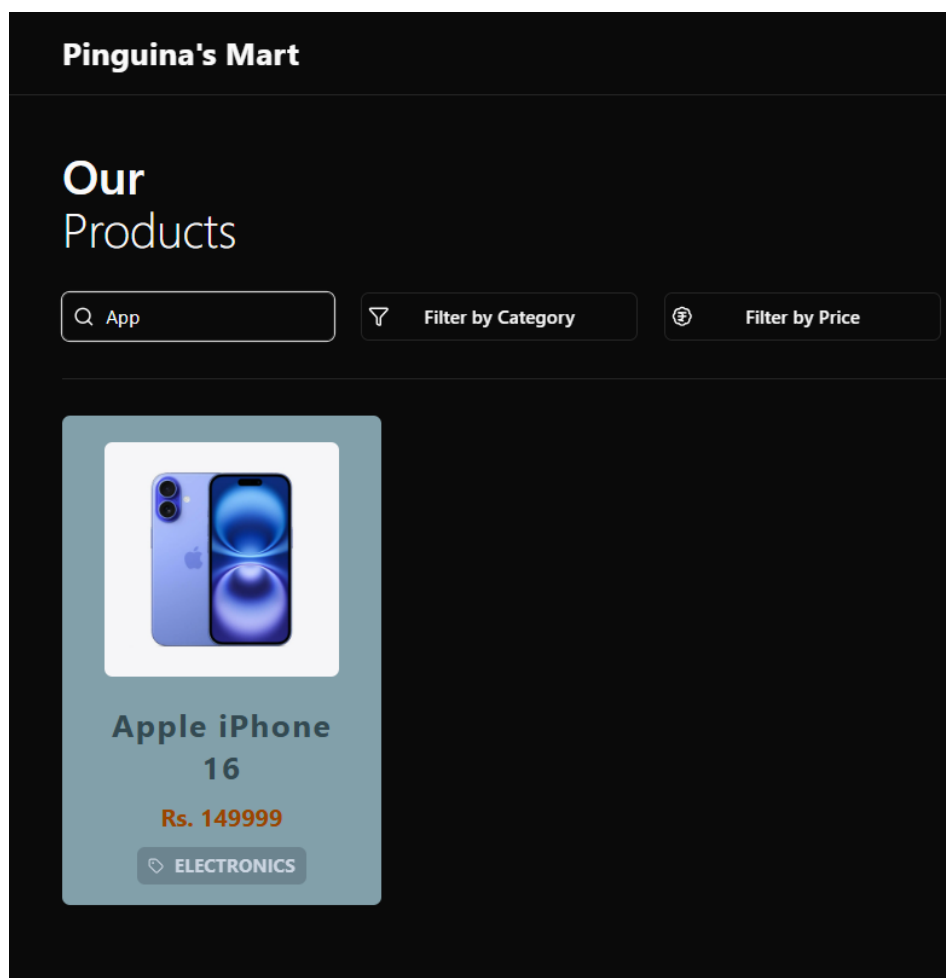


Figure 1: Product Sorting by Search

#### 4. Product Categorization

Added predefined categories like Shoes, Electronics, Clothes, Groceries, etc to enhance filtering and display logic.

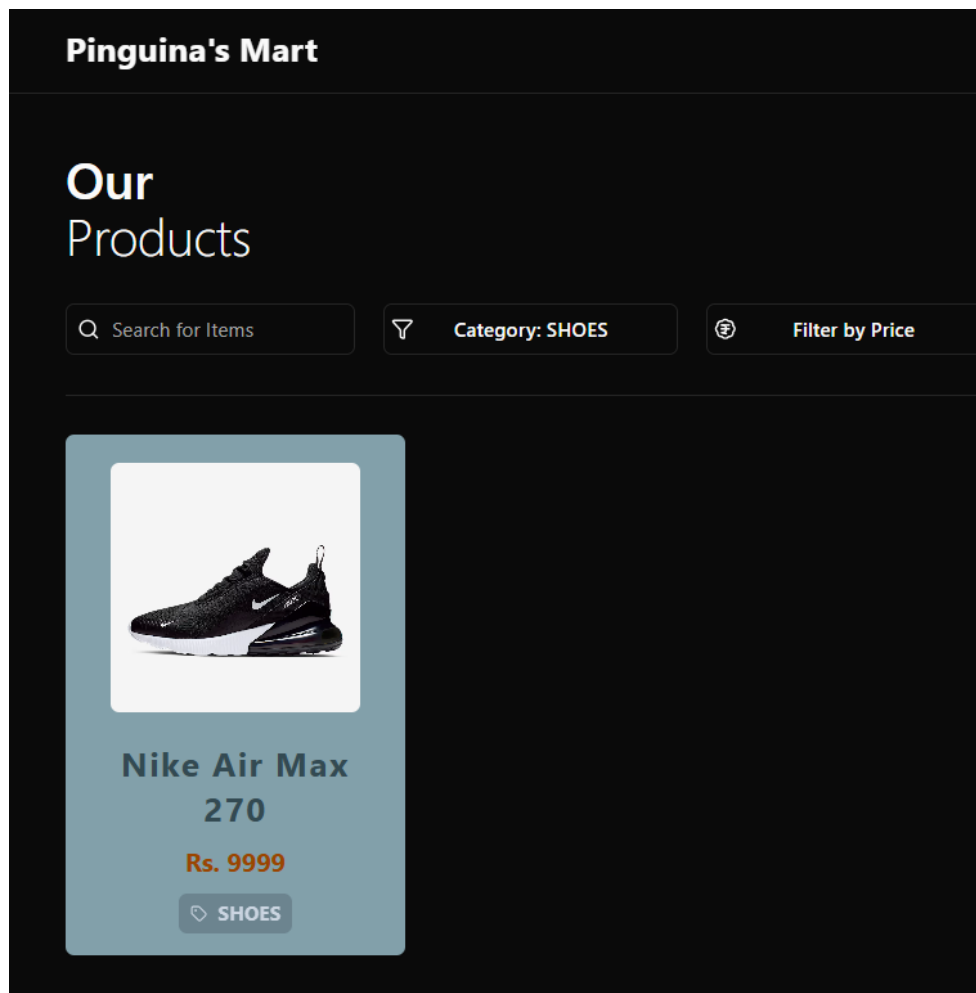


Figure 2: Product Sorting by Category

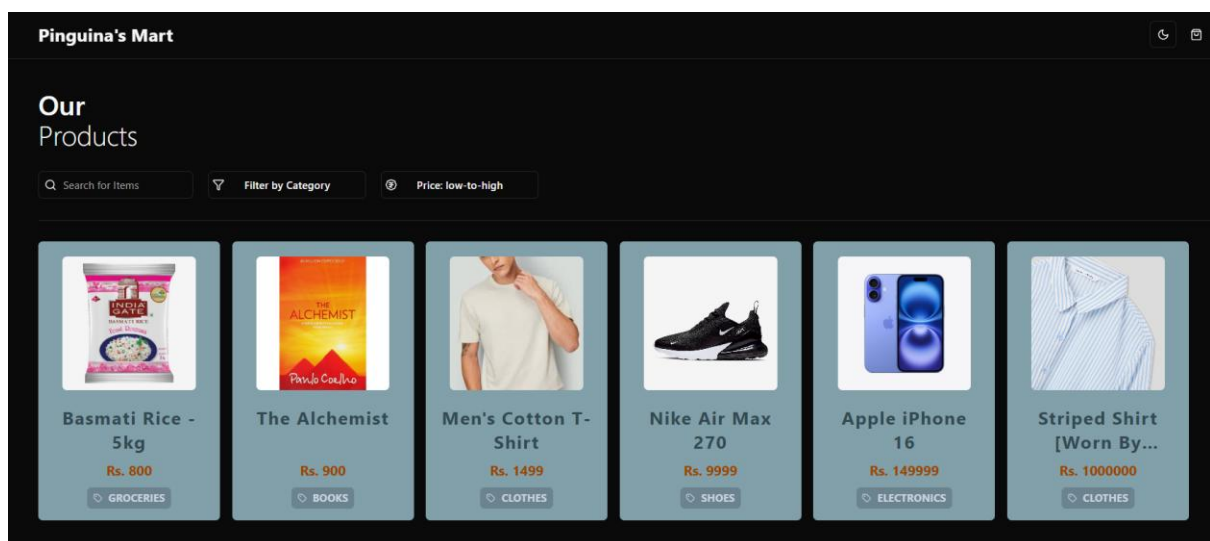


Figure 3: Product Sorting by Price (low-to-high)

## Result

Created a dynamic product catalog that allows users to browse and search products by name or category, with the feature to sort by the price.