

Here's a clean and scalable **backend folder structure** for your **PERN Stack Stationery E-commerce Website**, designed to support:

- Role-based access ( `admin` , `user` )
- Auth (JWT: access & refresh tokens)
- Product, Cart, Order, and Return Management
- PostgreSQL with a query builder or ORM (e.g., **Sequelize**, **Prisma**, or **Knex** — adaptable)

## 📁 Backend Folder Structure

```
backend/
├── config/
│   ├── db.js           # PostgreSQL DB connection
│   ├── jwt.js          # JWT secret keys & config
│   └── dotenv.js       # Load environment variables
│
├── controllers/
│   ├── auth.controller.js # Register, Login, Logout, Refresh
│   ├── user.controller.js # User data, profile, admin-user mgmt
│   ├── product.controller.js # CRUD for products
│   ├── cart.controller.js  # Cart management
│   ├── order.controller.js # Place, view, update orders
│   └── return.controller.js # Return request and status mgmt
│
├── middleware/
│   ├── auth.middleware.js # JWT token verify middleware
│   ├── role.middleware.js # Role-based access control
│   └── validate.middleware.js # Input validation (if needed)
│
├── models/
│   ├── index.js         # Init all models
│   ├── user.model.js
│   ├── product.model.js
│   ├── cart.model.js
│   ├── order.model.js
│   ├── orderItem.model.js
│   └── return.model.js
│
├── routes/
│   ├── auth.routes.js
│   ├── user.routes.js
│   └── product.routes.js
```

```
|   ├── cart.routes.js
|   ├── order.routes.js
|   ├── return.routes.js
|   └── index.js           # Combine all routes
|
└── services/
    ├── auth.service.js
    ├── user.service.js
    ├── product.service.js
    ├── cart.service.js
    ├── order.service.js
    └── return.service.js
|
└── utils/
    ├── token.utils.js    # Create, verify tokens
    ├── password.utils.js # Hash/compare passwords
    └── response.utils.js  # Format standard responses
|
└── validations/
    ├── auth.validation.js
    ├── product.validation.js
    ├── cart.validation.js
    ├── order.validation.js
    └── return.validation.js
|
└── .env                  # Environment variables
└── app.js                # Express app config
└── server.js             # App entry point
└── package.json
```