

# TruEstate – SDE Intern Assignment

**Role:** Software Development Engineer Intern (6 Months + Performance-Based PPO)

**Submission Deadline:** 08 December 2025, 11:59 PM (IST)

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## Assignment Overview

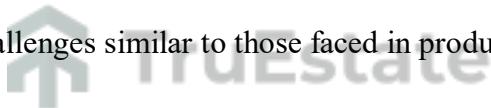
Your task is to develop a **Retail Sales Management System** that demonstrates essential software engineering capabilities across both frontend and backend components.

The system must support advanced **Search, Filtering, Sorting, and Pagination** functionalities based on the dataset specifications provided.

Your implementation should reflect:

- Strong foundational problem-solving and engineering approach
- Clean, maintainable, and modular architecture
- UI built according to provided structural guidelines
- Accurate and efficient handling of structured sales data
- Professional execution aligned with real-world SDE responsibilities

This assignment represents challenges similar to those faced in production-grade systems at TruEstate.



## Dataset, Interface & Design

### Dataset Link

[https://drive.google.com/file/d/1tzbyuxBmrBwMSXbL22r33FUMtO0V\\_lxb/view?usp=sharing](https://drive.google.com/file/d/1tzbyuxBmrBwMSXbL22r33FUMtO0V_lxb/view?usp=sharing)

### Sales Data Requirements

Use the provided dataset, which includes the following attributes:

#### Customer Fields:

- Customer ID
- Customer Name
- Phone Number
- Gender
- Age
- Customer Region
- Customer Type

#### Product Fields:

- Product ID
- Product Name
- Brand
- Product Category
- Tags

#### **Sales Fields:**

- Quantity
- Price per Unit
- Discount Percentage
- Total Amount
- Final Amount

#### **Operational Fields:**

- Date
- Payment Method
- Order Status
- Delivery Type
- Store ID
- Store Location
- Salesperson ID
- Employee Name



Your system must correctly interpret and process all these attributes.

## **Functional Requirements**

### **1. Search**

Implement full-text search across the following fields:

- Customer Name
- Phone Number

Search must be:

- Case-insensitive
- Accurate
- Performant

- Able to work alongside filters and sorting

## 2. Filters (Multi-Select)

Implement multi-select or range-based filtering for:

- Customer Region
- Gender
- Age Range
- Product Category
- Tags
- Payment Method
- Date Range

Filters must:

- Work independently
- Work in combination
- Maintain state alongside sorting and search

## 3. Sorting

Implement sorting for:



- Date (Newest First)
- Quantity
- Customer Name (A–Z)

Sorting must preserve active search and filters.

## 4. Pagination

- Page size: **10 items per page**
- Must support Next / Previous navigation
- Must retain active search, filter, and sort states

# UI Requirements

## Figma Link

<https://www.figma.com/design/6MSR9Lhy8tc5gdOepEyy6q/Assignment?node-id=0-1&p=f&t=ISiFSTN2Ol2BSPjN-0>

Follow a clear, minimal, and structured layout:

- Search Bar

- Filter Panel
- Transaction Table (List/Grid)
- Sorting Dropdown
- Pagination Controls

The UI may be styled creatively, but must align with the provided structure.

# Engineering Requirements

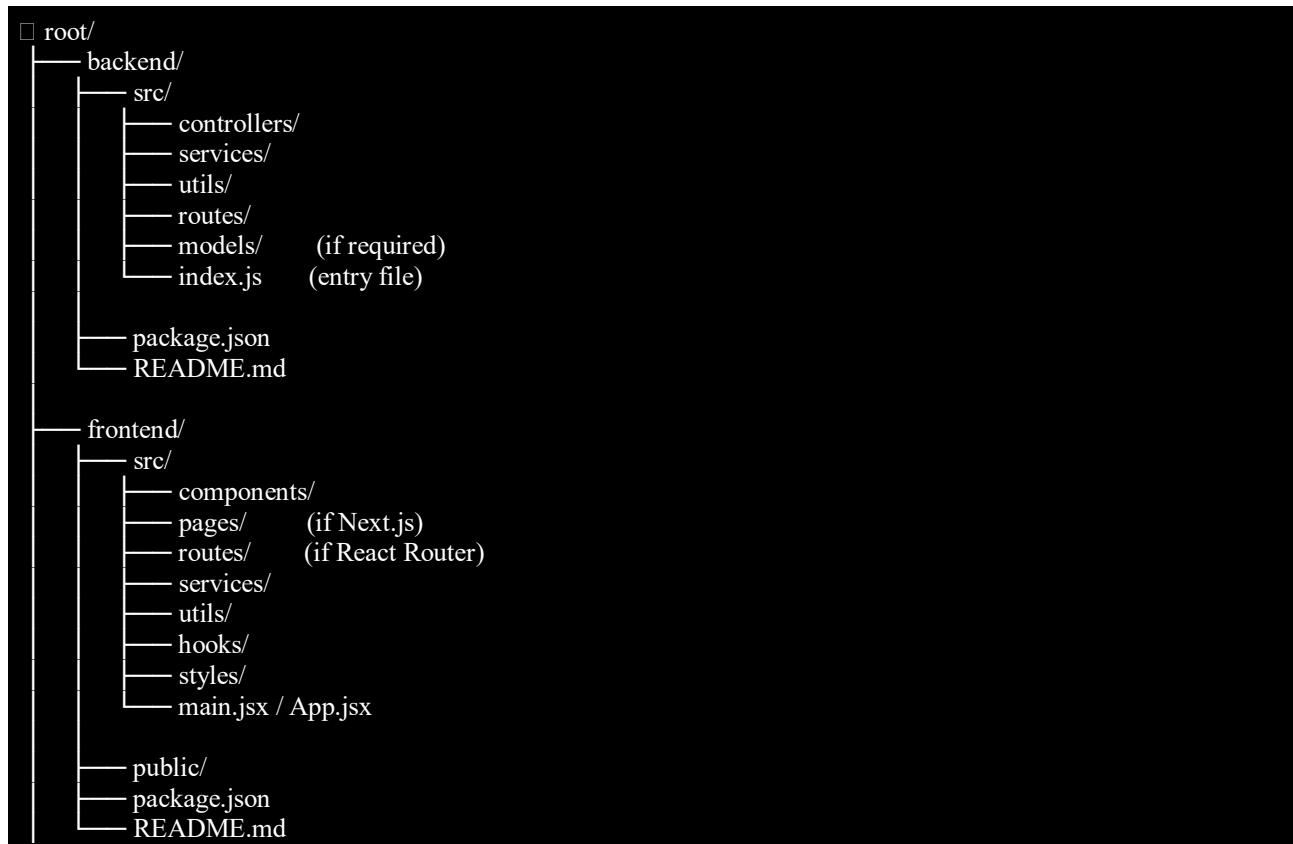
Your solution must demonstrate professional coding standards:

## General

- Clear separation of frontend and backend responsibilities
- Clean, readable, maintainable code
- Predictable state management
- No duplicate logic for filtering or sorting
- Avoid unnecessary nesting or complexity
- Use best coding practices

# Project Structure (Single Repository)

Your submission must follow this exact structure:



```
docs/
  └── architecture.md
 README.md
 package.json (if monorepo setup)
```

# Edge Case Expectations

Your implementation must correctly handle:

- No search results
- Conflicting filters
- Invalid numeric ranges
- Large filter combinations
- Missing optional fields

## Submission Structure

### 1. Live Application URL



A deployed, working version of the full application.

### 2. GitHub Repository URL

A public repository containing the full project.

## README.md — Required Format

Your README must contain **only**:

1. Overview (3–5 lines)
2. Tech Stack
3. Search Implementation Summary
4. Filter Implementation Summary
5. Sorting Implementation Summary
6. Pagination Implementation Summary
7. Setup Instructions

## 4. Architecture Document

Located at: /docs/architecture.md

Must contain:

- Backend architecture
- Frontend architecture
- Data flow
- Folder structure
- Module responsibilities

## Important Notes

- Auto-generated tools or one-click app builders are **not allowed**.
- All logic must be developed by the candidate.
- Near-identical submissions will be rejected.

## All the best

This assignment is crafted to evaluate your clarity of thought, coding discipline, and execution quality — essential attributes for an SDE Intern contributing to scalable systems at TruEstate.

