Customer Rewards Dashboard – Project Documentation

# 📌 Overview

This project is a web-based dashboard that visualizes customer transactions and computes reward points based on transaction amounts. It includes dynamic filters, tables, and interactive data views to analyze reward trends over time.

# 🏗️ Tech Stack

- Frontend Framework: React (with Vite)  
- Styling: styled-components  
- Language: JavaScript  
- State Management: React useState, useEffect  
- Build Tool: Vite

# 🧮 Reward Calculation Logic

Reward points are calculated per transaction as follows:  
- 1 point per $ spent over $50.  
- 2 points per $ spent over $100 (plus 50 from $50–$100).

Code:  
const calculateRewardPoints = (amount) => {  
 let points = 0;  
 if (amount > 100) {  
 points += (amount - 100) \* 2 + 50;  
 } else if (amount > 50) {  
 points += (amount - 50);  
 }  
 return Math.floor(points);  
};

# 📊 Features

* 1. Customer Table

Displays customer details such as name, ID, and total transactions. Positioned on the left side.

* 2. Monthly Rewards Table

Displays total reward points grouped by month. Clicking a row filters transactions for that month.

* 3. Transaction Table

Shows transactions for selected month and year. Updates dynamically.

* 4. Filters

Month Filter: Multi-select with default 3 months. Year Filter: Single-select (2021–2025).

# 🧰 Utility Functions

getRecentThreeMonths(): Returns current, previous, and second previous months based on today’s date.

Code:  
function getRecentThreeMonths() {  
 const date = new Date();  
 const months = [];  
 for (let i = 0; i < 3; i++) {  
 const d = new Date(date.getFullYear(), date.getMonth() - i);  
 months.push(d.toLocaleString("default", { month: "long" }));  
 }  
 return months.reverse();  
}

# 🗂️ Folder Structure (Suggested)

src/  
├── components/  
│ ├── Filters.jsx  
│ ├── CustomerTable.jsx  
│ ├── MonthlyRewardsTable.jsx  
│ ├── TransactionTable.jsx  
├── utils/  
│ ├── rewardUtils.js  
├── App.jsx  
├── main.jsx  
├── data/  
│ └── transactions.json

# 🖼️ Layout Design

The layout is three-column (side-by-side):

+------------------+----------------------+------------------------+  
| Customer Table | Monthly Rewards | Transaction Table |  
| | Table | (filtered by month) |  
+------------------+----------------------+------------------------+

# 🔄 Data Flow

1. Filters set the state: selectedMonths, selectedYear.  
2. These values are passed to:  
 - MonthlyRewardsTable: calculates rewards per month.  
 - TransactionTable: filters transactions.  
3. Clicking a month row sets activeMonth, affecting the transaction list.

# 📈 Future Enhancements (Optional)

* Pagination for large datasets
* Lazy loading or infinite scroll
* Backend integration (Node.js + MongoDB)
* Charts for visualizing reward trends
* Export to CSV/PDF