**Reward Points Calculator**

A retailer offers a rewards program to its customers, awarding points based on each recorded purchase.

A customer receives 2 points for every dollar spent over $100 in each transaction, plus 1 point for every dollar spent between $50 and $100 in each transaction.

(e.g. a $120 purchase = 2x$20 + 1x$50 = 90 points).

Given a record of every transaction during a three month period, calculate the reward points earned for each customer per month and total.

**Flow Diagram**

A screenshot of a computer

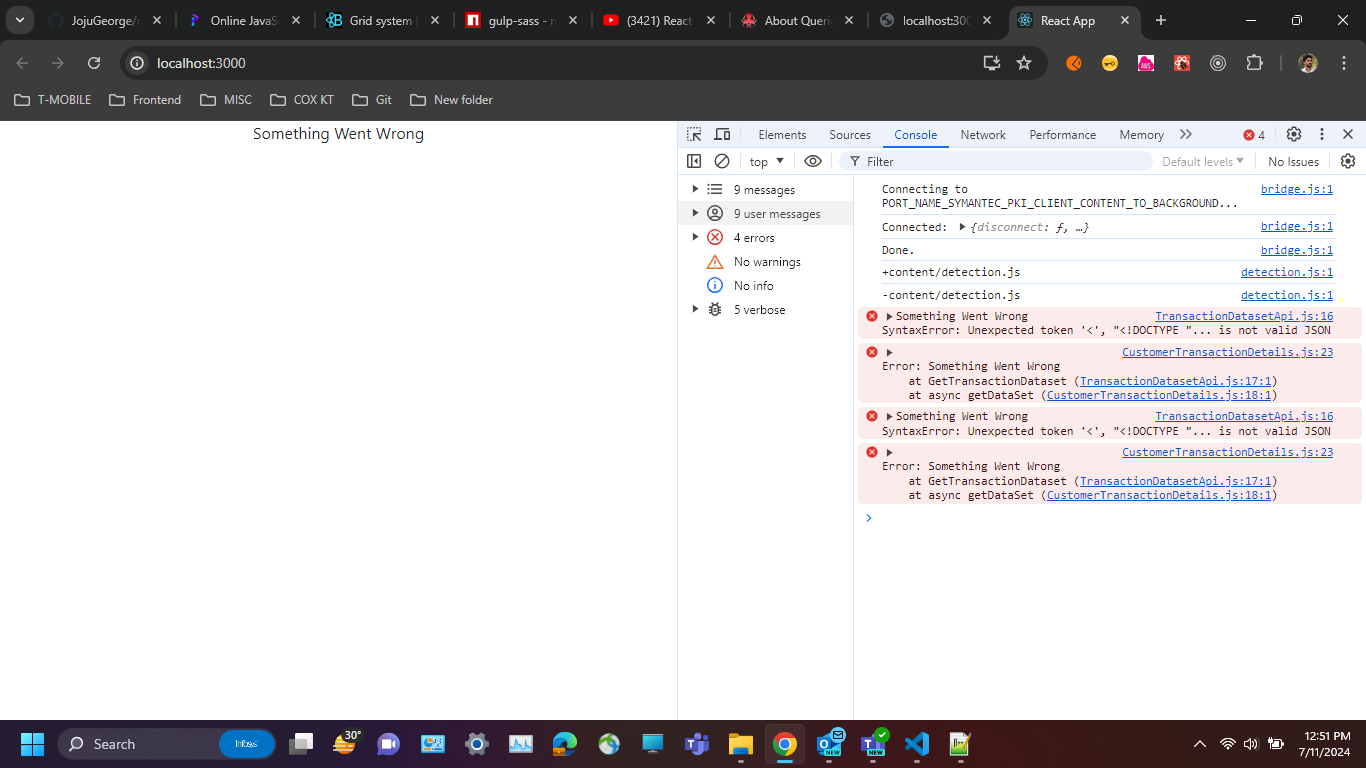
Description automatically generated

Image : Customer transaction details with Reward points and logging

A screenshot of a computer

Description automatically generated

Image : Incorrect API endpoint will throw error. Error Handling, with logging



**Test Cases**

**Test File :** CalculateRewardByTransaction.text.js

**Test Scenario :** Test case calculating the Reward points based on the transaction

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| **Test Case No** | **Test Case** | **Test Data** | **Expected Result** | **Actual Result** | **Status (PASS / FAIL)** |
| **1** | Calculate reward points of transaction between 50 to 100 | {…,  amount: 70} | 20 | 20 | **PASS** |
| **2** | Calculate reward points of transaction above 100 | {…,  amount: 120} | 90 | 90 | **PASS** |
| **3** | Calculate reward points of transaction below 50 | {…,  amount: 30} | 0 | 0 | **PASS** |
| **4** | Calculate reward points of transaction exactly 50 | {…,  amount: 50} | 0 | 0 | **PASS** |
| **5** | Calculate reward points of transaction exactly 100 | {…,  amount: 100} | 50 | 50 | **PASS** |

**Test File :** CustomerTransactionCalculator.test.js

**Test Scenario :** Calculate reward points, purchase and check correct dataset

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| **Test Case No** | **Test Case** | **Test Data** | **Expected Result** | **Actual Result** | **Status (PASS / FAIL)** |
| **1** | Reward points calculation for single transaction above 100 | [{  "transactionId": 1, "customerId": 1, "customerName": "Customer One", "transactionDate": "2024-01-12", "amount": 120  }]; | {  1: {  "customerName": "Customer One",  "monthlyTransaction": {  "January": {  "monthlyAmount": 120,  "monthlyReward": 90  }  },  "totalRewards": 90,  "totalPurchase": 120  },  } | {  1: {  "customerName": "Customer One",  "monthlyTransaction": {  "January": {  "monthlyAmount": 120,  "monthlyReward": 90  }  },  "totalRewards": 90,  "totalPurchase": 120  },  } | **PASS** |
| **2** | Reward points calculation for multiple transaction with different customer | [{  "transactionId": 1,  "customerId": 1,  "customerName": "Customer One",  "transactionDate": "2024-01-12",  "amount": 120  },  {  "transactionId": 2,  "customerId": 2,  "customerName": "Customer Two",  "transactionDate": "2024-02-14",  "amount": 70  }  ]; | {  1: {  "customerName": "Customer One",  "monthlyTransaction": {  "January": {  "monthlyAmount": 120,  "monthlyReward": 90  }  },  "totalRewards": 90,  "totalPurchase": 120  },  2: {  "customerName": "Customer Two",  "monthlyTransaction": {  "February": {  "monthlyAmount": 70,  "monthlyReward": 20  }  },  "totalRewards": 20,  "totalPurchase": 70  },  } | {  1: {  "customerName": "Customer One",  "monthlyTransaction": {  "January": {  "monthlyAmount": 120,  "monthlyReward": 90  }  },  "totalRewards": 90,  "totalPurchase": 120  },  2: {  "customerName": "Customer Two",  "monthlyTransaction": {  "February": {  "monthlyAmount": 70,  "monthlyReward": 20  }  },  "totalRewards": 20,  "totalPurchase": 70  },  } | **PASS** |
| **3** | Reward points calculation for multiple transaction of customer | [{  "transactionId": 1,  "customerId": 1,  "customerName": "Customer One",  "transactionDate": "2024-01-12",  "amount": 120  },  {  "transactionId": 11,  "customerId": 1,  "customerName": "Customer One",  "transactionDate": "2024-03-10",  "amount": 90  },  {  "transactionId": 2,  "customerId": 2,  "customerName": "Customer Two",  "transactionDate": "2024-02-14",  "amount": 70  }  ]; | {  1: {  "customerName": "Customer One",  "monthlyTransaction": {  "January": {  "monthlyAmount": 120,  "monthlyReward": 90  },  "March": {  "monthlyAmount": 90,  "monthlyReward": 40  }  },  "totalRewards": 130,  "totalPurchase": 210  },  2: {  "customerName": "Customer Two",  "monthlyTransaction": {  "February": {  "monthlyAmount": 70,  "monthlyReward": 20  }  },  "totalRewards": 20,  "totalPurchase": 70  },  } | {  1: {  "customerName": "Customer One",  "monthlyTransaction": {  "January": {  "monthlyAmount": 120,  "monthlyReward": 90  },  "March": {  "monthlyAmount": 90,  "monthlyReward": 40  }  },  "totalRewards": 130,  "totalPurchase": 210  },  2: {  "customerName": "Customer Two",  "monthlyTransaction": {  "February": {  "monthlyAmount": 70,  "monthlyReward": 20  }  },  "totalRewards": 20,  "totalPurchase": 70  },  } | **PASS** |
| **4** | Reward points calculation for multiple transaction with different customer with amount between 50 and 100 and amount below 50 | [{  "transactionId": 1,  "customerId": 1,  "customerName": "Customer One",  "transactionDate": "2024-01-12",  "amount": 60  },  {  "transactionId": 2,  "customerId": 2,  "customerName": "Customer Two",  "transactionDate": "2024-02-14",  "amount": 20  }  ]; | {  1: {  "customerName": "Customer One",  "monthlyTransaction": {  "January": {  "monthlyAmount": 60,  "monthlyReward": 10  }  },  "totalRewards": 10,  "totalPurchase": 60  },  2: {  "customerName": "Customer Two",  "monthlyTransaction": {  "February": {  "monthlyAmount": 20,  "monthlyReward": 0  }  },  "totalRewards": 0,  "totalPurchase": 20  },  } | {  1: {  "customerName": "Customer One",  "monthlyTransaction": {  "January": {  "monthlyAmount": 60,  "monthlyReward": 10  }  },  "totalRewards": 10,  "totalPurchase": 60  },  2: {  "customerName": "Customer Two",  "monthlyTransaction": {  "February": {  "monthlyAmount": 20,  "monthlyReward": 0  }  },  "totalRewards": 0,  "totalPurchase": 20  },  } | **PASS** |
| **5** | Reward points calculation for empty data set | [] | {} | {} | **PASS** |

**Test File :** CustomerTransactionDetails.test.js

**Test Scenario :** Test Customer Transaction Details component

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| **Test Case No** | **Test Case** | **Test Data** | **Expected Result** | **Actual Result** | **Status (PASS / FAIL)** |
| 1 | Test Customer Transaction Details component properly loaded |  | Customer Transaction Details component is properly loaded | Component is loaded | **PASS** |