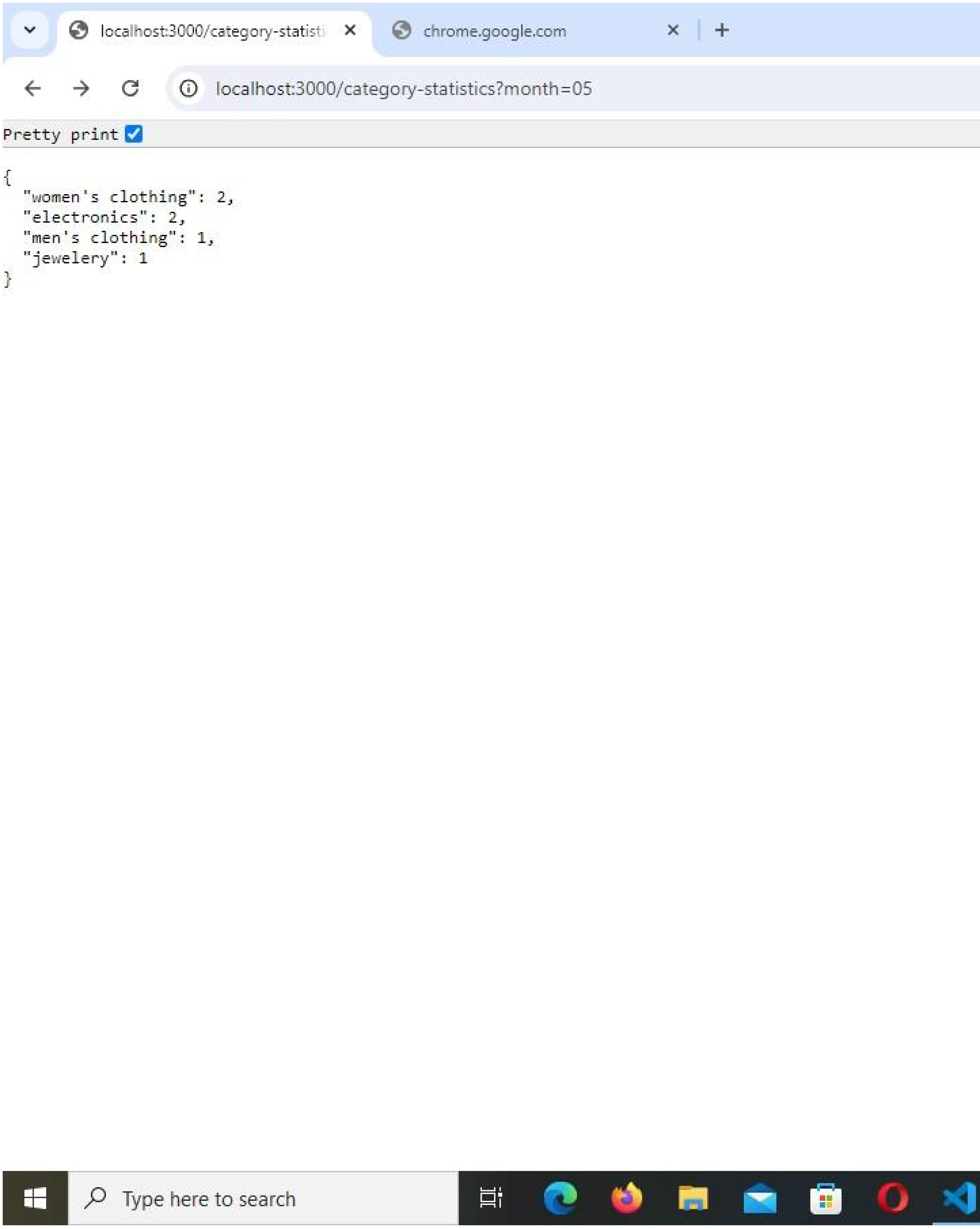
**BACKEND TASK:**

**Create an API to list the all transactions - API should support search and pagination on product transactions - Based on the value of search parameters, it should match search text on product title/description/price and based on matching result it should return the product transactions - If search parameter is empty then based on applied pagination it should return all the records of that page number - Default pagination values will be like page = 1, per page = 10:**

```
const express = require('express');
const axios = require('axios');

const app = express();
const PORT = 3000;

app.get('/api/transactions', async (req, res) => {
  const month = req.query.month; // Expected format: 'January', 'February', etc.
  const page = parseInt(req.query.page) || 1; // Default page is 1
  const perPage = parseInt(req.query.perPage) || 10; // Default per page is 10
  const search = req.query.search || ''; // Search term

  try {
    const response = await
axios.get('https://s3.amazonaws.com/roxiler.com/product_transaction.json');
    const items = response.data;

    // Filter by month
    const filteredItems = items.filter(item => {
      const itemDate = new Date(item.dateOfSale);
      return itemDate.toLocaleString('default', { month: 'long' }) === month;
    });

    // Search functionality
    const searchResults = filteredItems.filter(item => {
      return (
        item.title.toLowerCase().includes(search.toLowerCase()) ||
        item.description.toLowerCase().includes(search.toLowerCase()) ||
        item.price.toString().includes(search)
      );
    });

    // Pagination
    const startIndex = (page - 1) * perPage;
    const paginatedItems = searchResults.slice(startIndex, startIndex + perPage);

    res.json({
            totalItems: searchResults.length,
            currentPage: page,
            totalPages: Math.ceil(searchResults.length / perPage),
            items: paginatedItems,
        });
    } catch (error) {
        res.status(500).send('Error fetching data');
    }
});

app.listen(PORT);
```

**Create an API for pie chart Find unique categories and number of items from that category for the selected month regardless of the year.:**

```
const express = require('express');
const axios = require('axios');

const app = express();

app.get('/category-statistics', async (req, res) => {
  const month = req.query.month;
  const url = "https://s3.amazonaws.com/roxiler.com/product_transaction.json";

  try {
    const response = await axios.get(url);
    const data = response.data;

    const categoryCounts = {};

    data.forEach(item => {
      const dateOfSale = new Date(item.dateOfSale);
      const itemMonth = String(dateOfSale.getMonth() + 1).padStart(2, '0');
      if (itemMonth === month) {
        const category = item.category;
        if (categoryCounts[category]) {
          categoryCounts[category]++;
        } else {
          categoryCounts[category] = 1;
        }
      }
    });

    res.json(categoryCounts);
  } catch (error) {
    console.error(error);
    res.status(500).json({ error: 'Internal server error' });
  }
});

const port = process.env.PORT || 3000;
app.listen(port);
```

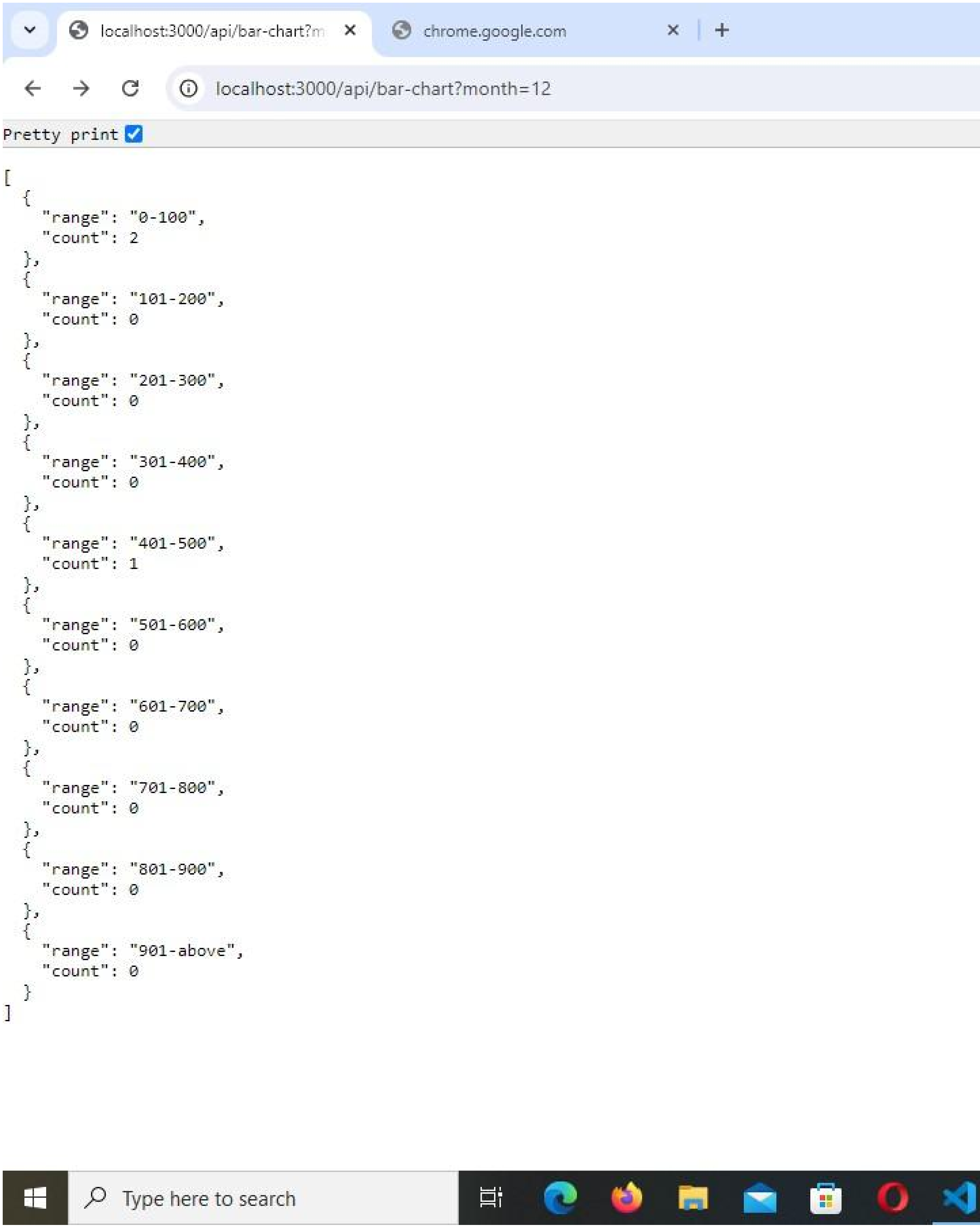

localhost:3000/category-statisti
chrome.google.com
localhost:3000/category-statistics?month=05
Pretty print
Type here to search

```
{
  "women's clothing": 2,
  "electronics": 2,
  "men's clothing": 1,
  "jewelery": 1
}
```

**Create an API for bar chart ( the response should contain price range and the number of items in that range for the selected month regardless of the year ) :**

```
const express = require('express');
const axios = require('axios');

const app = express();
const PORT = 3000;

app.get('/api/bar-chart', async (req, res) => {
   const month = parseInt(req.query.month); // Expected format: 'MM'
   const priceRanges = [
      { range: '0-100', count: 0 },
      { range: '101-200', count: 0 },
      { range: '201-300', count: 0 },
      { range: '301-400', count: 0 },
      { range: '401-500', count: 0 },
      { range: '501-600', count: 0 },
      { range: '601-700', count: 0 },
      { range: '701-800', count: 0 },
      { range: '801-900', count: 0 },
      { range: '901-above', count: 0 },
   ];

   try {
      const response = await
axios.get('https://s3.amazonaws.com/roxiler.com/product_transaction.json');
      const items = response.data;

      items.forEach(item => {
         const itemDate = new Date(item.dateOfSale);
         if (itemDate.getMonth() + 1 === month) {
            const price = item.price;

            if (price <= 100) priceRanges[0].count++;
            else if (price <= 200) priceRanges[1].count++;
            else if (price <= 300) priceRanges[2].count++;
            else if (price <= 400) priceRanges[3].count++;
            else if (price <= 500) priceRanges[4].count++;
            else if (price <= 600) priceRanges[5].count++;
            else if (price <= 700) priceRanges[6].count++;
            else if (price <= 800) priceRanges[7].count++;
            else if (price <= 900) priceRanges[8].count++;
            else priceRanges[9].count++;
         }
      });
```

```
        res.json(priceRanges);
    } catch (error) {
        res.status(500).send('Error fetching data');
    }
});

app.listen(PORT);
```



localhost:3000/api/bar-chart?m
chrome.google.com
localhost:3000/api/bar-chart?month=12

Pretty print ✓

```
[
  {
    "range": "0-100",
    "count": 2
  },
  {
    "range": "101-200",
    "count": 0
  },
  {
    "range": "201-300",
    "count": 0
  },
  {
    "range": "301-400",
    "count": 0
  },
  {
    "range": "401-500",
    "count": 1
  },
  {
    "range": "501-600",
    "count": 0
  },
  {
    "range": "601-700",
    "count": 0
  },
  {
    "range": "701-800",
    "count": 0
  },
  {
    "range": "801-900",
    "count": 0
  },
  {
    "range": "901-above",
    "count": 0
  }
]
```

**Create an API which fetches the data from all the 3 APIs mentioned above, combines the response and sends a final response of the combined JSON:**

```
const express = require('express');
const axios = require('axios');

const app = express();
const port = 3000;

app.get('/data', async (req, res) => {
  try {
    const [response1, response2, response3] = await Promise.all([
      axios.get('http://localhost:3000/statistics?month=2022-01'),
      axios.get('http://localhost:3000/category-statistics?month=01'),

axios.get('http://localhost:3000/api/transactions?month=January&page=1&perPage=10
&search=backpack'),
    ]);

    const combinedData = {
      data1: response1.data,
      data2: response2.data,
      data3: response3.data,
    };

    res.json(combinedData);
  } catch (error) {
    console.error(error);
    res.status(500).json({ error: 'Internal server error' });
  }
});

app.listen(port);
```

**FRONTEND TASK:**

**1.Ts-analyticsApi-client:**

```
import axios from "axios;
import {
  STATISTICS_URL,
  BAR_CHART_URL,
  PIE_CHART_URL,
  COMBINED_CHART_URL,
} from "../config/config";
import { PieChartType } from "../types/types";

export const getStatisticsData = async (month: string) => {
  try {

    const queryParams = new URLSearchParams();
    queryParams.append('month', month || '');

    const response = await axios.get(`${STATISTICS_URL}?${queryParams}`);
    const { data } = response;

    // console.log("data", data.response)
    return data.response
  } catch (error) {
    console.error(error);
    throw error;
  }
};
export const getBarChartData = async (month: string) => {
  try {

    const queryParams = new URLSearchParams();
    queryParams.append('month', month || '');

    const response = await axios.get(`${BAR_CHART_URL}?${queryParams}`);
    const { data } = response;

    console.log("data", data.data)
    return data
  } catch (error) {
    console.error(error);
    throw error;
  }
};
export const getPieChartData = async (month: string) => {
  try {

    const queryParams = new URLSearchParams();
    queryParams.append('month', month || '');

    const response = await axios.get(`${PIE_CHART_URL}?${queryParams}`);
    const { data } = response;

    // console.log("data", data.data);

    const pieChartData: PieChartType = {
      data: data.data,
    };

    return pieChartData;

  } catch (error) {
    console.error(error);
    throw error;
  }
};


export const combinedDataAPI = async (month: string) => {
  try {

    const queryParams = new URLSearchParams();
    queryParams.append('month', month || '');

    const response = await axios.get(`${COMBINED_CHART_URL}?${queryParams}`);
    // const response = await axios.get(`${COMBINED_CHART_URL}?month=03`);
    const { data } = response;

    // console.log("data", data.data)
    return data.data
  } catch (error) {
    console.error(error);
    throw error;
  }
};
```

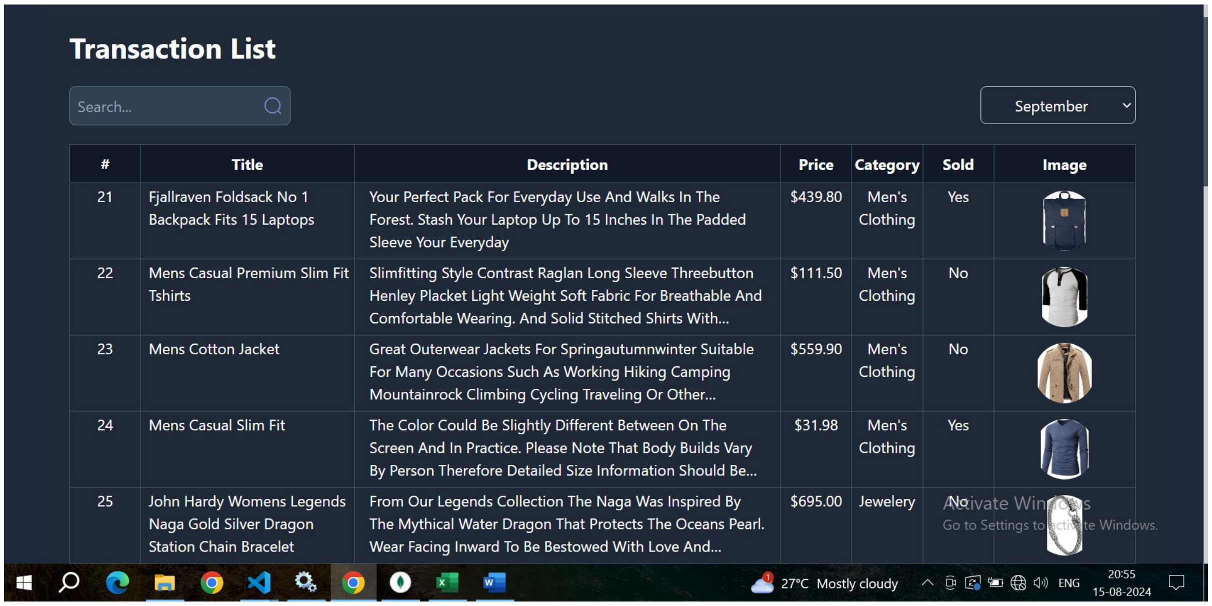
**2.productApiClients-Api:**

```
import axios from "axios";
import { GET_ALL_PRODUCT_URL, SEARCH_PRODUCT_URL } from
"../config/config";
import { ProductType } from "../types/types";

export const getAllProducts = async (): Promise<ProductType[]> => {
  try {
    const response = await axios.get(GET_ALL_PRODUCT_URL);
    const { data } = response;
    return data.data as ProductType[];
  } catch (error) {
    console.error(error);
    throw error;
  }
};

export const searchProducts = async (
  searchText: string,
  selectedMonth: string,

): Promise<ProductType[]> => {
  try {
    const queryParams = new URLSearchParams();
    queryParams.append('searchText', searchText || '');
    queryParams.append('selectedMonth', selectedMonth || '');
    const response = await axios.get(`${SEARCH_PRODUCT_URL}?${queryParams}`);

    // console.log(response)
    const { data } = response;

    // console.log(data.data.data)
    return data.data.data;
  } catch (error) {
    console.error(error);
    throw error;
  }
};
```

**3.Main.tsx:**

```
import React from 'react'
import ReactDOM from 'react-dom/client'
import App from './App.tsx'
import './index.css'
import { SearchContextProvider } from './contexts/SearchContext.tsx'
import { MonthProvider } from './contexts/MonthContext.tsx'

ReactDOM.createRoot(document.getElementById('root')!).render(
  <React.StrictMode>
    <SearchContextProvider>
      <MonthProvider>

        <App />
      </MonthProvider>
    </SearchContextProvider>
  </React.StrictMode>,
)
```

**OUTPUT**:



## Transaction List

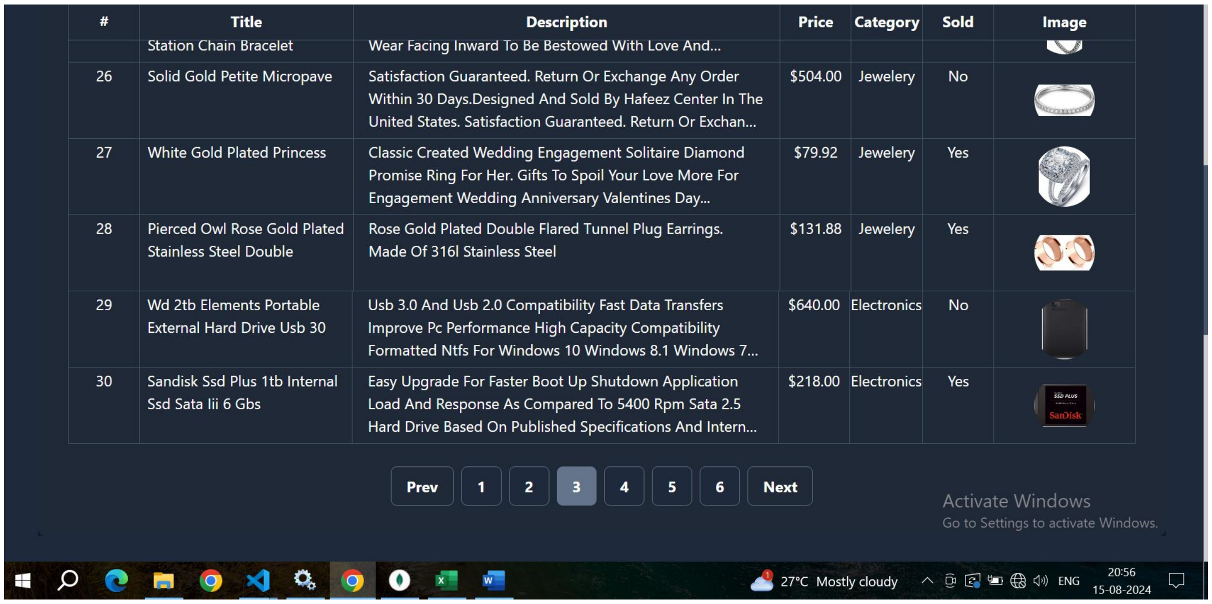
Search...

September

| # | Title | Description | Price | Category | Sold | Image |
|---|---|---|---|---|---|---|
| 21 | Fjallraven Foldsack No 1 Backpack Fits 15 Laptops | Your Perfect Pack For Everyday Use And Walks In The Forest. Stash Your Laptop Up To 15 Inches In The Padded Sleeve Your Everyday | $439.80 | Men's Clothing | Yes | |
| 22 | Mens Casual Premium Slim Fit Tshirts | Slimfitting Style Contrast Raglan Long Sleeve Threebutton Henley Placket Light Weight Soft Fabric For Breathable And Comfortable Wearing. And Solid Stitched Shirts With... | $111.50 | Men's Clothing | No | |
| 23 | Mens Cotton Jacket | Great Outerwear Jackets For Springautumnwinter Suitable For Many Occasions Such As Working Hiking Camping Mountainrock Climbing Cycling Traveling Or Other... | $559.90 | Men's Clothing | No | |
| 24 | Mens Casual Slim Fit | The Color Could Be Slightly Different Between On The Screen And In Practice. Please Note That Body Builds Vary By Person Therefore Detailed Size Information Should Be... | $31.98 | Men's Clothing | Yes | |
| 25 | John Hardy Womens Legends Naga Gold Silver Dragon Station Chain Bracelet | From Our Legends Collection The Naga Was Inspired By The Mythical Water Dragon That Protects The Oceans Pearl. Wear Facing Inward To Be Bestowed With Love And... | $695.00 | Jewelery | No | |

Activate Windows
Go to Settings to activate Windows.

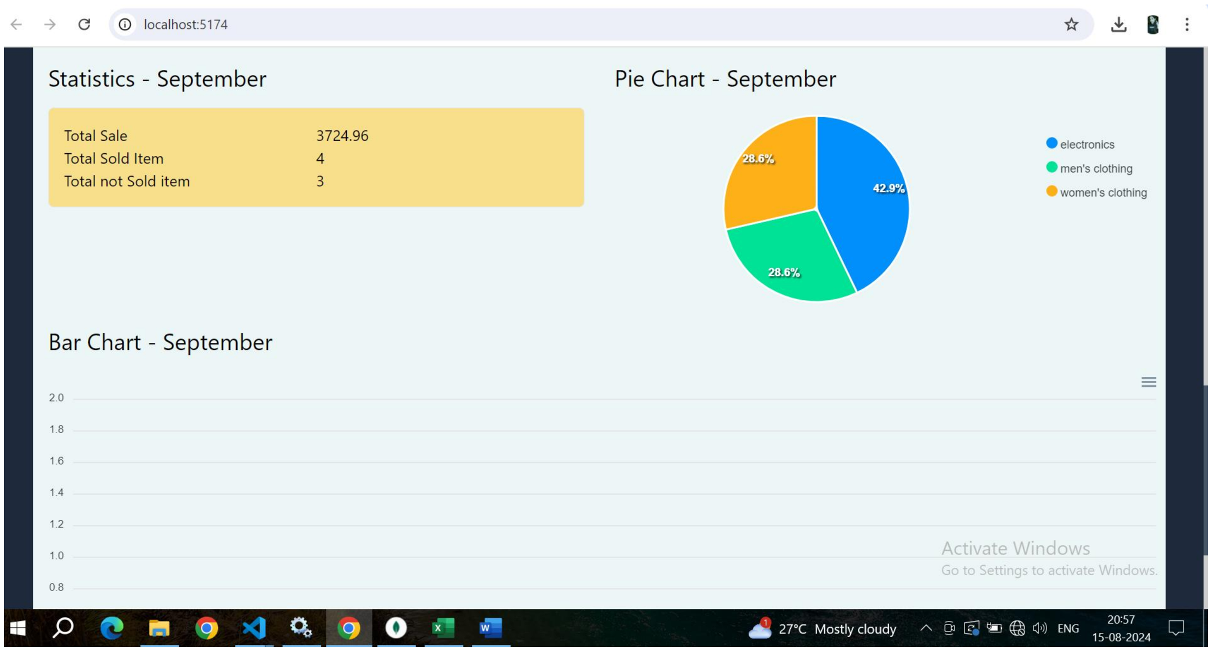
27°C Mostly cloudy ENG 20:55 15-08-2024



| # | Title | Description | Price | Category | Sold | Image |
|---|---|---|---|---|---|---|
| | Station Chain Bracelet | Wear Facing Inward To Be Bestowed With Love And... | | | | |
| 26 | Solid Gold Petite Micropave | Satisfaction Guaranteed. Return Or Exchange Any Order Within 30 Days.Designed And Sold By Hafeez Center In The United States. Satisfaction Guaranteed. Return Or Exchan... | $504.00 | Jewelery | No | |
| 27 | White Gold Plated Princess | Classic Created Wedding Engagement Solitaire Diamond Promise Ring For Her. Gifts To Spoil Your Love More For Engagement Wedding Anniversary Valentines Day... | $79.92 | Jewelery | Yes | |
| 28 | Pierced Owl Rose Gold Plated Stainless Steel Double | Rose Gold Plated Double Flared Tunnel Plug Earrings. Made Of 316l Stainless Steel | $131.88 | Jewelery | Yes | |
| 29 | Wd 2tb Elements Portable External Hard Drive Usb 30 | Usb 3.0 And Usb 2.0 Compatibility Fast Data Transfers Improve Pc Performance High Capacity Compatibility Formatted Ntfs For Windows 10 Windows 8.1 Windows 7... | $640.00 | Electronics | No | |
| 30 | Sandisk Ssd Plus 1tb Internal Ssd Sata Iii 6 Gbs | Easy Upgrade For Faster Boot Up Shutdown Application Load And Response As Compared To 5400 Rpm Sata 2.5 Hard Drive Based On Published Specifications And Intern... | $218.00 | Electronics | Yes | |

Activate Windows
Go to Settings to activate Windows.

27°C Mostly cloudy ENG 20:56 15-08-2024



localhost:5174

## Statistics - September

| | |
|---|---|
| Total Sale | 3724.96 |
| Total Sold Item | 4 |
| Total not Sold item | 3 |

## Pie Chart - September

## Bar Chart - September