# EXPERIMENT-10

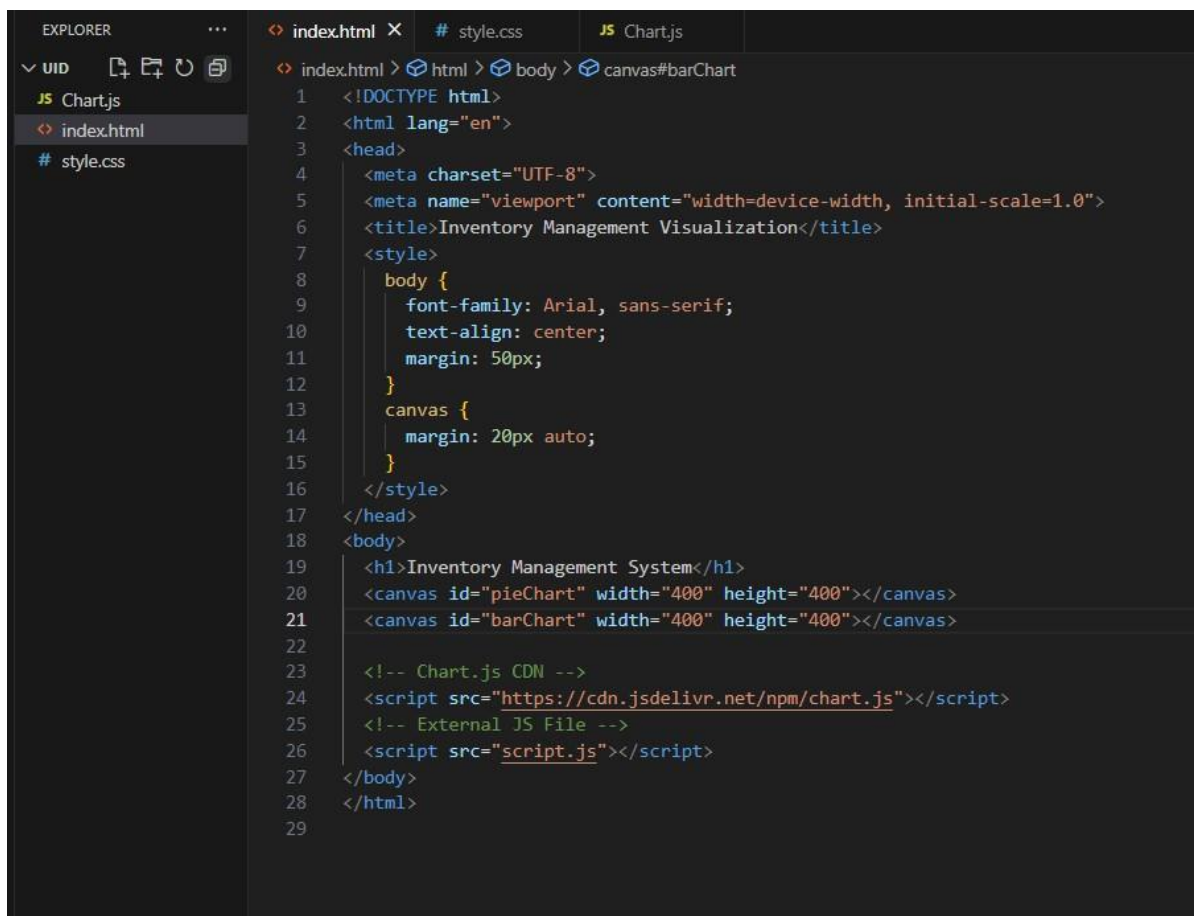ROLL NO:230701311                                    NAME:SHRADHA S

## Create a data visualization (e.g., pie charts, bar graphs) for an inventory management system using javascript

**AIM:**

The aim is to create data visualizations, such as pie charts and bar graphs, for an inventory management system using JavaScript.

**PROCEDURE:**

Step 1: Set Up Your HTML File First, create an HTML file to hold your canvas for the chart and include Chart.js.

```html
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Inventory Management Visualization</title>
  <style>
    body {
      font-family: Arial, sans-serif;
      text-align: center;
      margin: 50px;
    }
    canvas {
      margin: 20px auto;
    }
  </style>
</head>
<body>
  <h1>Inventory Management System</h1>
  <canvas id="pieChart" width="400" height="400"></canvas>
  <canvas id="barChart" width="400" height="400"></canvas>

  <!-- Chart.js CDN -->
  <script src="https://cdn.jsdelivr.net/npm/chart.js"></script>
  <!-- External JS File -->
  <script src="script.js"></script>
</body>
</html>
```

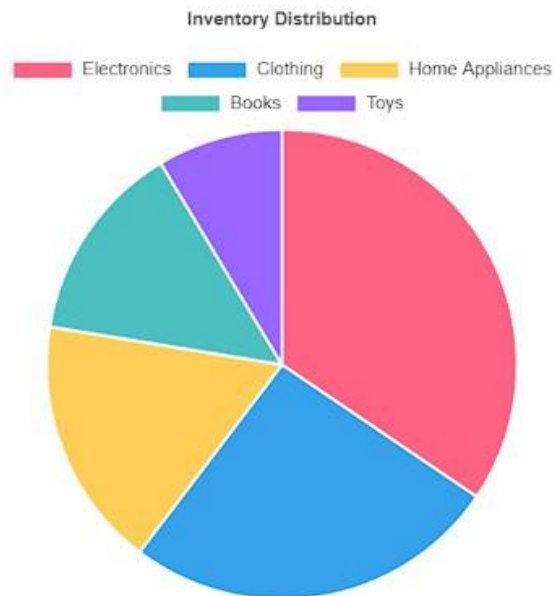Step 2: Create the JavaScript File for Charts Next, create a JavaScript file (script.js) to handle the data visualization logic.

```js
// Data for the inventory
const inventoryData = {
  labels: ['Electronics', 'Clothing', 'Home Appliances', 'Books', 'Toys'],
  datasets: [
    {
      label: 'Items in Stock',
      data: [200, 150, 100, 80, 50],
      backgroundColor: [
        '#FF6384',
        '#36A2EB',
        '#FFCE56',
        '#4BC0C0',
        '#9966FF'
      ],
    }
  ]
};

// Creating the Pie Chart
const ctxPie = document.getElementById('pieChart').getContext('2d');
const pieChart = new Chart(ctxPie, {
  type: 'pie',
  data: inventoryData,
  options: {
    responsive: true,
    plugins: {
      title: {
        display: true,
        text: 'Inventory Distribution'
      }
    }
  }
});

// Creating the Bar Chart
const ctxBar = document.getElementById('barChart').getContext('2d');
const barChart = new Chart(ctxBar, {
  type: 'bar',
  data: inventoryData,
  options: {
    responsive: true,
    plugins: {
      title: {
        display: true,
        text: 'Items in Stock by Category'
      }
    },
    scales: {
      y: {
        beginAtZero: true
      }
    }
  }
});
```

OUTPUT:

**1. Inventory Distribution – Pie Char:**



**Description:**
The pie chart visually represents the proportional distribution of inventory items across various categories. It is a high-level summary used for understanding the overall stock makeup at a glance.

**Chart Components:**

- **Title:** *Inventory Management System*

- **Legend:** Shows the color codes for each category:
    - Electronics (Pink)
    - Clothing (Blue)
    - Home Appliances (Yellow)
    - Books (Teal)
    - Toys (Purple)

- **Purpose:** Helps in quickly identifying the dominant inventory category and overall allocation of stock.

**Insight Example:**
From the chart, Electronics and Clothing appear to occupy the largest sections, indicating these categories have the most inventory.

**2. Items in Stock by Category – Bar Chart**



**Description:**
The bar chart provides a detailed count of items available in stock for each product category. It is helpful for inventory tracking and restocking decisions.

**Chart Components:**

- **Title:** *Items in Stock by Category*

- **Legend:** Indicates that the bars represent the number of items in stock.

- **Axes:**

    - X-axis: Categories – Electronics, Clothing, Home Appliances, Books, Toys.

      o  Y-axis: Quantity of items (0 to 200 scale).

- **Purpose:** Allows comparison between the stock levels of different categories.

**Insight Example:**

The bar chart clearly shows:

- **Electronics** has the highest stock (~200 items).

- **Toys** has the lowest (~50 items).
  This highlights areas of potential overstock or the need for replenishment.