

EXPERIMENT-10

ROLL NO:230701304

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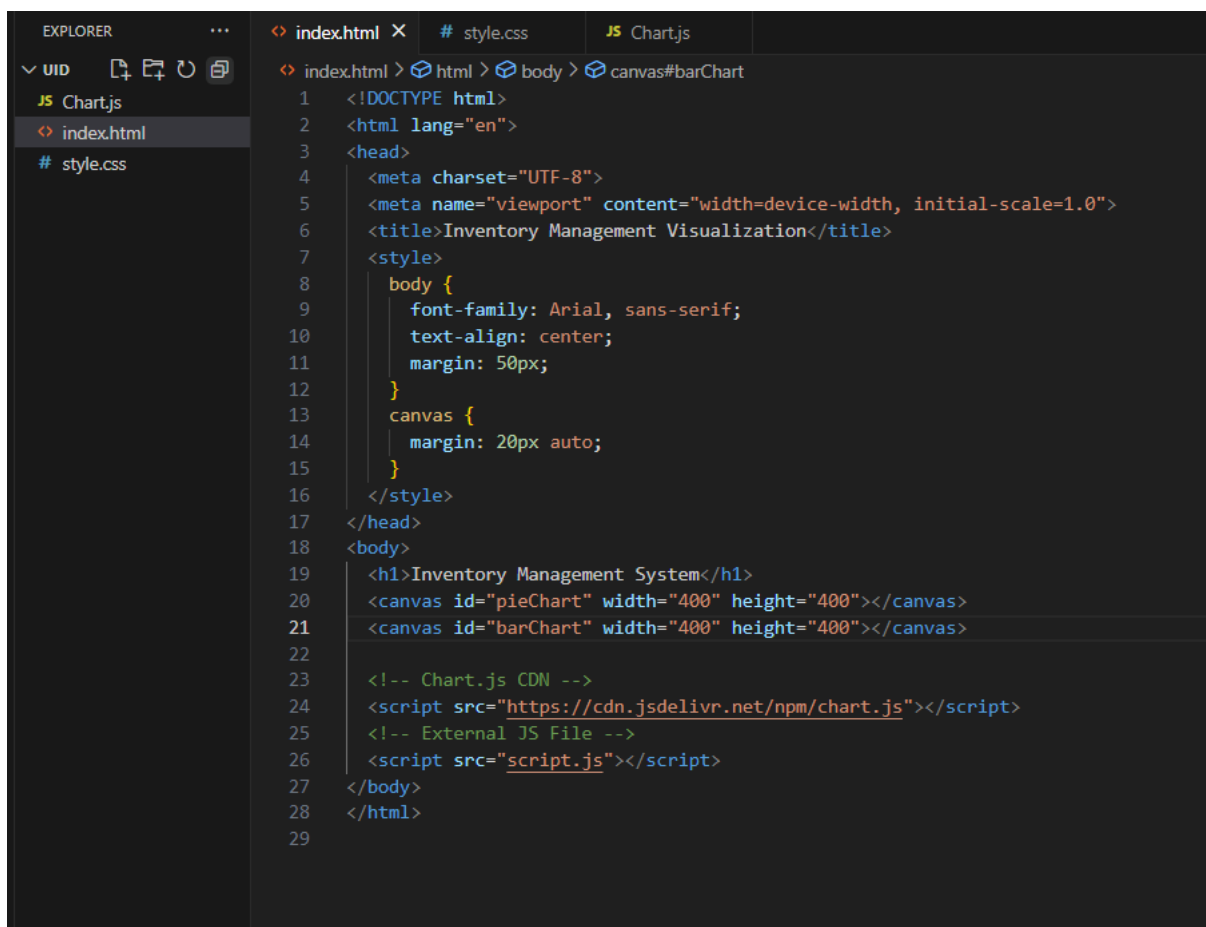
Create a data visualization (e.g., pie charts, bar graphs) for an inventory management system using javascript

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.



```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <meta charset="UTF-8">
5   <meta name="viewport" content="width=device-width, initial-scale=1.0">
6   <title>Inventory Management Visualization</title>
7   <style>
8     body {
9       font-family: Arial, sans-serif;
10      text-align: center;
11      margin: 50px;
12    }
13    canvas {
14      margin: 20px auto;
15    }
16  </style>
17 </head>
18 <body>
19   <h1>Inventory Management System</h1>
20   <canvas id="pieChart" width="400" height="400"></canvas>
21   <canvas id="barChart" width="400" height="400"></canvas>
22
23   <!-- Chart.js CDN -->
24   <script src="https://cdn.jsdelivr.net/npm/chart.js"></script>
25   <!-- External JS File -->
26   <script src="script.js"></script>
27 </body>
28 </html>
29
```

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

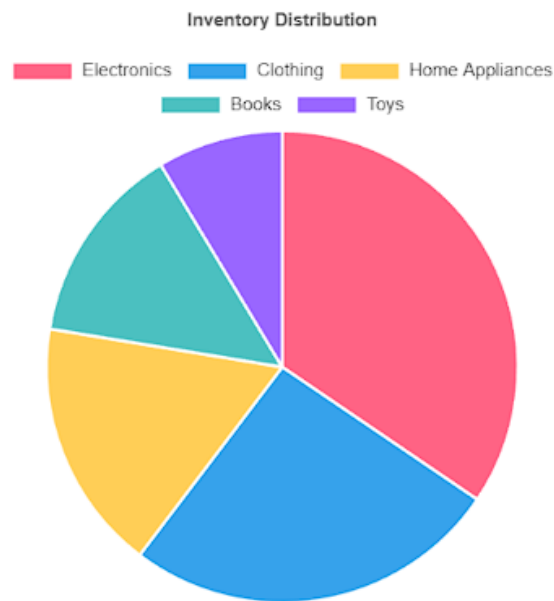
```
JS Chartjs
index.html
style.css

1 // Data for the inventory
2 const inventoryData = {
3   labels: ['Electronics', 'Clothing', 'Home Appliances', 'Books', 'Toys'],
4   datasets: [
5     {
6       label: 'Items in Stock',
7       data: [200, 150, 100, 80, 50],
8       backgroundColor: [
9         '#FF6384',
10        '#36A2EB',
11        '#FFCE56',
12        '#4BC0C0',
13        '#9966FF'
14      ],
15    },
16  ],
17 };
18
19 // Creating the Pie Chart
20 const ctxPie = document.getElementById('pieChart').getContext('2d');
21 const pieChart = new Chart(ctxPie, {
22   type: 'pie',
23   data: inventoryData,
24   options: {
25     responsive: true,
26     plugins: {
27       title: {
28         display: true,
29         text: 'Inventory Distribution'
30       }
31     }
32   }
33 });
34
35 // Creating the Bar Chart
36 const ctxBar = document.getElementById('barChart').getContext('2d');
37 const barChart = new Chart(ctxBar, {
38   type: 'bar',
39   data: inventoryData,
40   options: {
41     responsive: true,
42     plugins: {
43       title: {
44         display: true,
45         text: 'Items in Stock by Category'
46       }
47     },
48     scales: {
49       y: {
50         beginAtZero: true
51       }
52     }
53   }
54 });
55
```

OUTPUT:

1. Inventory Distribution – Pie Char:

Inventory Management System



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:

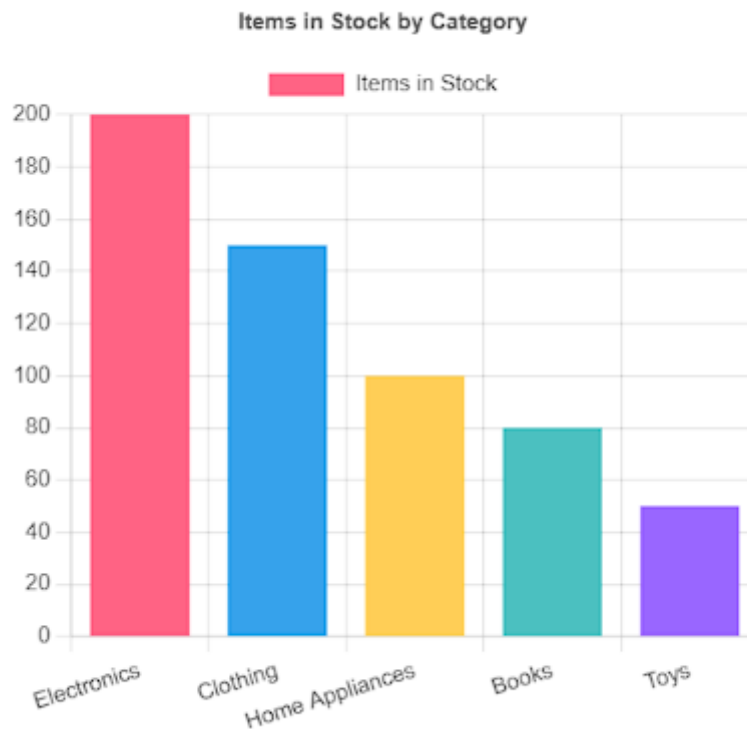
- **Title:** *Inventory Management System*
- **Legend:** Shows the color codes for each category:
 - Electronics (Pink)
 - Clothing (Blue)
 - Home Appliances (Yellow)
 - Books (Teal)
 - Toys (Purple)

- **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.

- 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.