Advanced JS assignment

Use this data Json and build the following web page

[

  {

    "id": 1,

    "imageUrl": "https://images.unsplash.com/photo-1501386761578-eac5c94b800a?ixlib=rb-4.0.3&ixid=MnwxMjA3fDB8MHxwaG90by1wYWdlfHx8fGVufDB8fHx8&auto=format&fit=crop&w=1170&q=80",

    "title": "Summer Music Festival",

    "price": 50,

    "date": "August 20, 2021",

    "location": "Central Park, New York City",

    "company": "Music Festivals Inc."

  },

  {

    "id": 2,

    "imageUrl": "https://images.unsplash.com/photo-1495147466023-ac5c588e2e94?ixlib=rb-4.0.3&ixid=MnwxMjA3fDB8MHxwaG90by1wYWdlfHx8fGVufDB8fHx8&auto=format&fit=crop&w=687&q=80",

    "title": "Food and Wine Expo",

    "price": 75,

    "date": "September 25, 2021",

    "location": "Moscone Center, San Francisco",

    "company": "Food and Wine Events LLC"

  },

  {

    "id": 3,

    "imageUrl": "https://images.unsplash.com/photo-1618519764620-7403abdbdfe9?ixlib=rb-

4.0.3&ixid=MnwxMjA3fDB8MHxwaG90by1wYWdlfHx8fGVufDB8fHx8&auto=format&fit=crop&w=1170&q=80",

  "title": "Comic Con",

  "price": 35,

  "date": "October 15, 2021",

  "location": "Los Angeles Convention Center",

  "company": "Comic Con International"

},
{

  "id": 4,

  "imageUrl": "https://images.unsplash.com/photo-1460661419201-fd4cecdf8a8b?ixlib=rb-4.0.3&ixid=MnwxMjA3fDB8MHxzZWFyY2h8Mnx8YXJ0JTIwYW5kJTIwZGVzaWduJTIwZmFpcnxlbnwwfHwwfHw%3D&auto=format&fit=crop&w=500&q=60",

  "title": "Art and Design Fair",

  "price": 20,

  "date": "November 12, 2021",

  "location": "Navy Pier, Chicago",

  "company": "Art and Design Expo LLC"

},
{

  "id": 5,

  "imageUrl": "https://plus.unsplash.com/premium_photo-1661766479722-ddedc5dce339?ixlib=rb-4.0.3&ixid=MnwxMjA3fDB8MHxwaG90by1wYWdlfHx8fGVufDB8fHx8&auto=format&fit=crop&w=1171&q=80",
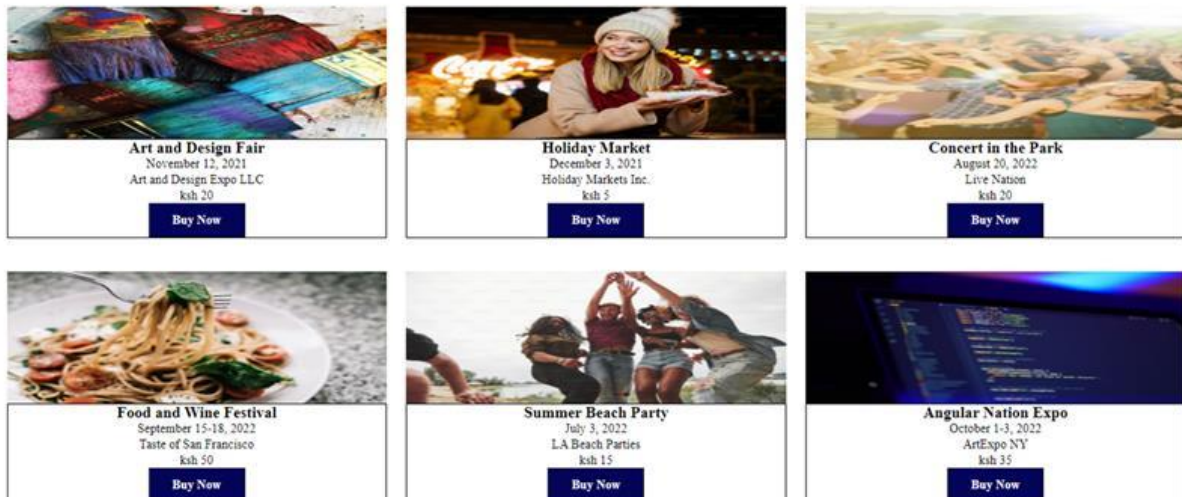
  "title": "Holiday Market",

  "price": 5,

  "date": "December 3, 2021",

  "location": "Union Square, New York City",

  "company": "Holiday Markets Inc."

        },
        {
            "id": 6,
            "imageUrl": "https://plus.unsplash.com/premium_photo-1661290419867-79072e8d5f00?ixlib=rb-4.0.3&ixid=MnwxMjA3fDB8MHxzZWFyY2h8MXx8Y29uY2VydCUyMHBhcmt8ZW58MHx8MHx8&auto=format&fit=crop&w=500&q=60",
            "title": "Concert in the Park",
            "price": 20,
            "date": "August 20, 2022",
            "location": "Central Park, New York City",
            "company": "Live Nation"
        },
        {
            "id": 7,
            "imageUrl": "https://images.pexels.com/photos/1279330/pexels-photo-1279330.jpeg?auto=compress&cs=tinysrgb&dpr=2&h=750&w=1260",
            "title": "Food and Wine Festival",
            "price": 50,
            "date": "September 15-18, 2022",
            "location": "Union Square, San Francisco",
            "company": "Taste of San Francisco"
        },
        {
            "id": 8,
            "imageUrl": "https://plus.unsplash.com/premium_photo-1661602441396-67b89b6ac4d8?ixlib=rb-4.0.3&ixid=MnwxMjA3fDB8MHxwaG90by1wYWdlfHx8fGVufDB8fHx8&auto=format&fit=crop&w=1170&q=80",
            "title": "Summer Beach Party",
            "price": 15,

```json
    "date": "July 3, 2022",

    "location": "Venice Beach, Los Angeles",

    "company": "LA Beach Parties"

  },

  {

    "id": 9,

    "imageUrl": "https://images.unsplash.com/photo-1607799279861-4dd421887fb3?ixlib=rb-4.0.3&ixid=MnwxMjA3fDB8MHxwaG90by1wYWdlfHx8fGVufDB8fHx8&auto=format&fit=crop&w=1170&q=80",

    "title": "Angular Nation Expo",

    "price": 35,

    "date": "October 1-3, 2022",

    "location": "Google Hall, San Fransico",

    "company": "ArtExpo NY"

  },

  {

    "id": 10,

    "imageUrl": "https://images.unsplash.com/photo-1465310477141-6fb93167a273?ixlib=rb-4.0.3&ixid=MnwxMjA3fDB8MHxwaG90by1wYWdlfHx8fGVufDB8fHx8&auto=format&fit=crop&w=1170&q=80",

    "title": "Sports and Adventure Expo",

    "price": 20,

    "date": "May 20-22, 2022",

    "location": "McCormick Place, Chicago",

    "company": "Google"

  }

]
```

1. **DOM Manipulation Complexity**:

   o   Utilize JavaScript to create a dynamic filtering mechanism for the events based on their properties like date, price, or location. Implement at least two filtering options.

   o   Implement a feature that allows users to add events to their favorites list. Include functionality to add and remove events from this list dynamically.

2. **Iteration and Data Manipulation**:

   o   Use array methods such as map, filter, or reduce in addition to forEach to manipulate the event data in various ways. For example, you could create a new array with modified event objects or calculate aggregate statistics like the total revenue from all events.

   o   Implement a feature that dynamically updates the event list based on user interactions, such as sorting the events by price or date in ascending or descending order.

3. **Styling Complexity**:

   o   Implement a responsive design that adapts gracefully to different screen sizes using CSS media queries. Ensure that the layout remains visually appealing and functional on both desktop and mobile devices.

   o   Utilize advanced CSS techniques such as CSS animations or transitions to enhance the user experience. For example, you could animate the appearance of event cards when they are dynamically added to the page.

4. **Asynchronous Data Loading**:

- o Implement lazy loading for the event images to improve page loading performance. Load the images asynchronously as the user scrolls down the page to minimize initial load time.

- o Enhance the asynchronous data fetching process by implementing error handling and retry mechanisms in case the initial fetch request fails due to network issues or server errors.

5. **Performance Optimization**:

- o Optimize the rendering performance by minimizing DOM manipulation operations and reducing reflows and repaints. Use techniques such as document fragment or virtual DOM to batch DOM updates and improve rendering efficiency.

- o Implement caching mechanisms to store previously fetched event data locally in the browser and only fetch updated data from the server when necessary. This can help reduce network traffic and improve overall application responsiveness.