Internship Report: Dashboard Project

1. Introduction

This project involved the development of an interactive dashboard website to visualize job analytics. The primary aim was to integrate multiple charts into a cohesive, responsive web application deployed on Netlify. The dashboard features dynamic visualizations that include time-based display logic—certain graphs are visible only between 3 PM IST and 5 PM IST.

2. Background

During the internship, I was tasked with designing and implementing a dashboard that meets specific business requirements. The key components included:

- **Chart 1:** Illustrating the relationship between country, job title, and role.
- **Chart 2:** Displaying the top 10 companies based on maximum Data Engineer roles and Data Scientist job titles. This chart applies multiple filters—excluding Asian countries, countries starting with "C," and those with latitude below 10; including only job postings from 01/01/2023 to 06/01/2023; considering only B.Tech qualifications and female preferences—and is visible only between 3 PM and 5 PM IST.
- **Chart 3:** Focusing on job listings from India and Germany (with India's data highlighted in orange and Germany's in green), filtered by qualification (B.Tech), work type (Full time), experience (>2 years), specified job roles, salary (> $10k), posting date before 08/01/2023, and posted on Indeed with female preference. This chart also appears only between 3 PM IST and 5 PM IST.

3. Learning Objectives

- **Technical Skills:** Enhance proficiency in HTML, CSS, JavaScript, and responsive design.
- **Data Visualization:** Learn to integrate complex data filtering and visualization techniques.
- **Time-based Logic:** Implement conditional display of elements using JavaScript.
- **Deployment:** Gain hands-on experience in deploying responsive websites using Netlify.

4. Activities and Tasks

- **Task 1:**
    - Developed a chart that illustrates the relationship between country, job title, and role using relevant visualization tools.
- **Task 2:**
    - Created a visualization for the top 10 companies having maximum Data Engineer roles and Data Scientist job titles.
    - Applied filters to exclude Asian countries, ignore countries starting with the letter "C," and those with a latitude below 10.
    - Filtered job postings within the date range 01/01/2023 to 06/01/2023, focused solely on B.Tech qualifications and female preferences.
    - Incorporated JavaScript logic to display this chart only between 3 PM and 5 PM IST.
- **Task 3:**
    - Designed a chart highlighting job postings from India and Germany, with additional filters including qualification (B.Tech), work type (Full time), experience (more than 2 years), job roles (Data Scientist, Art Teacher, Aerospace Engineer), salary (above $10k), and job posting date (before 08/01/2023) with a preference for female candidates.
    - Used color coding (orange for India and green for Germany) and ensured the chart is visible only between 3 PM and 5 PM IST.
- **Website Integration & Deployment:**
    - Integrated all the tasks into a single, responsive dashboard.
    - https://nullclass0task.netlify.app/
    - ensuring compatibility across mobile devices and tablets.

5. Skills and Competencies

- **Web Development:** Advanced HTML, CSS, and JavaScript skills were applied to create dynamic web pages.
- **Data Visualization:** Utilized various libraries and tools to generate insightful, interactive charts.

- **Responsive Design:** Implemented responsive design principles to ensure usability on desktops, tablets, and mobile devices.
- **Problem Solving:** Tackled challenges related to time-based logic and complex data filtering.
- **Deployment:** Gained practical experience in deploying modern web applications on Netlify.

6. Feedback and Evidence

- **User Feedback:** Received positive feedback on the clarity and interactivity of the dashboard.
- **Documentation:** Detailed screenshots and a well-documented GitHub repository serve as evidence of the work completed.
- **Live Demo:** The deployed website (https://nullclass0task.netlify.app/) demonstrates real-time functionality and responsiveness.

7. Challenges and Solutions

- **Time-based Display:**
    - **Challenge:** Ensuring that specific charts are only visible between 3 PM IST and 5 PM IST.
    - **Solution:** Employed JavaScript's Date object to perform accurate timezone conversions and conditional rendering.
- **Complex Filtering:**
    - **Challenge:** Implementing multiple, complex filter conditions for the data visualizations.
    - **Solution:** Structured the data processing logic in a modular manner to ensure each condition was effectively applied.
- **Responsive Design:**
    - **Challenge:** Making the website fully responsive across various devices.
    - **Solution:** Utilized CSS media queries and flexible layout techniques to adapt the design to different screen sizes.

8. Outcomes and Impact

- **Successful Integration:** Developed a fully functional dashboard with dynamic, time-based visualizations.
- **Enhanced Skill Set:** Improved technical abilities in web development, data visualization, and responsive design.
- **Professional Growth:** Overcame significant challenges related to data filtering and display logic, contributing to my professional development.
- **User Engagement:** The project delivered a clear, interactive experience for end users, aiding data-driven decision-making.

9. Conclusion

This internship project provided a robust platform to apply and expand my technical skills in web development and data visualization. The challenges faced, particularly around implementing time-sensitive display logic and complex data filtering, were instrumental in deepening my problem-solving abilities. The final deployment on Netlify not only demonstrates the project's technical success but also highlights its practical impact. Overall, the project has been a rewarding experience, laying a strong foundation for future work in data analytics and interactive dashboard development.