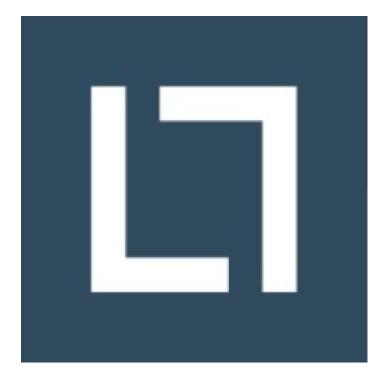# INTERNSHIP REPORT

DATA ANALYST TASK

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1. Introduction

The Real-Time Job Analytics Portal attempts to provide dynamic insights into hiring trends by displaying job posts using filters such as job title, firm size, credentials, work type, and geographical distribution. Unlike static job boards, this technology uses real-time data processing and interactive dashboards to enable job seekers and recruiters make informed decisions.
Key features include geolocation mapping, time-sensitive visibility, and extensive filtering based on gender preference, experience, pay, and job portal parameters. Using Tableau, the site improves employment transparency, decreases uncertainty, and provides useful insights into market dynamics.

2. Background

Technological improvements, fluctuating industrial demands, and economic volatility all contribute to an ever-changing work market. Traditional job sites frequently display static postings without analytical information that may assist visitors comprehend wider employment patterns. The Real-Time Job Analytics Portal bridges this gap by offering dynamic dashboards that show hiring trends based on job positions, qualifications, firm size, geographic preferences, and salary standards.

Using tools such as Tableau, real-time data processing, and interactive geospatial mapping, the platform allows recruiters, job seekers, and researchers to make informed judgments. Advanced filtering approaches, such as time-sensitive visibility conditions and preference-based job recommendations, let the site better analyze employment patterns.

This project combines big data approaches, visual analytics, and real-time processing to turn job ads into actionable information, allowing users to navigate the ever-changing employment market with ease and confidence.

3. Learning Objectives

This initiative intends to provide learners with the necessary data analytics and visualization abilities to analyze employment market trends in real time.

1. Working on the Real-Time Job Analytics Portal enables learners to develop data preparation strategies for reliable insights.

2. Improve Tableau skills: Create interactive dashboards with dynamic filtering and geospatial mapping.
3. Use geospatial analytics using latitude and longitude data to gain location-based job insights.
4. Use time-sensitive visualization to conditionally render graphs based on certain time windows.
5. Analyze hiring patterns by industry, job role, and country.
6. Improve database administration by using structured datasets for ETL workflows.
7. Improve problem-solving and analytical skills by translating complex employment statistics into valuable business insights.

These objectives gives hands-on experience with real-world business analytics, allowing them to build strong technical abilities while working with complex job market data. Interns might acquire significant insights into strategic recruiting decisions by evaluating recruitment trends and labor patterns. This hands-on experience connects academic learning with industry requirements, allowing learners to effectively contribute to workforce planning, recruiting analysis, and data-driven decision-making in professional settings.

4. Activities and Tasks

Tasks:

1. Role, Job Title vs Job Posting Date Chart: Displayed chart for job roles and titles posted between '30-11-2021' to '30-03-2022' with conditional work types based on gender preference.

2. Country vs Job Title and Role Chart: Visualized the relationship between countries, job titles, and roles.

3. Preference vs Work Type Chart: Created a time-sensitive (3PM–5PM IST) chart for 'Intern' work type.

4. Advanced Qualification-Based Chart: Developed a time-restricted chart (3PM–6PM IST) for B.Tech, M.Tech, or PhD holders in African countries.

5. Top 10 Companies for Data Engineer/Data Scientist: Generated a chart restricted to 3PM–5PM IST, excluding Asian countries, filtered by qualifications and preferences.

6. Company Size vs Company Name Chart: Built a chart for company size <50,000, mechanical engineer roles, and salary >$50k.

7. India vs Germany Job Insights: Designed a colored chart filtered by job title, salary, qualification, and experience.

Activities:

1. Data Collection and Cleaning: Collecting job market data, removing inconsistencies, and standardizing analysis formats.
2. Developed interactive Tableau dashboards with dynamic filters based on job role, company size, and preferences.
3. Geospatial Visualization involves mapping job locations using latitude and longitude data and integrating interactive maps.
4. Time-Based Filtering allows for focused analysis by only displaying specific graphs between 3 PM and 6 PM IST.
5. Advanced Analytics and Insights - Tracking hiring trends by qualifications, salary ranges, industry preferences, and job type.
6. Validation and testing ensure accurate, responsive, and real-time updates for dashboard components.
7. Compilation of Final Report: Document internship results, methodology, and insights.

5. Skills and Competencies

Technical Skills:

1. Data cleaning with Excel and Tableau Prep.
2. Create advanced Tableau dashboards with multi-field filters.
3. Using conditional logic and calculated fields
4. Time-based visualizations with time zone support
5. Geospatial mapping with latitude and longitude.

Analytical Skills:

1. Interpreting trends and user behavior through charts.
2. Building dashboards that are aligned with business logic.
3. Designing queries to meet complex filtering requirements

Soft skills:

1. Task scheduling and deadline management.
2. Communication using written documentation and visuals.
3. Adaptability in addressing dashboard logic issues.

6. Feedback and Evidence

Key feedback:

- Strong dashboard design with multi-layered filtering and real-time analytics.
- Users can use geospatial integration to find exact job locations by clicking latitude/longitude coordinates.
- Time-based filtering limits visibility to 3 PM to 6 PM IST, improving relevance.
- Implemented advanced Tableau features, including interactive elements, industry trends, and dynamic data analysis.

Supporting evidence:

- Dashboard snapshots show job trends and hiring patterns.
- Validation tests to ensure accurate filtering and dynamic updates.
- Approved internships and mentors promote skill development and project success.

7. Challenges and Solutions

- Complex Filter Combinations: Solved using calculated fields and parameters.
- Time-Based Graph Visibility: System time was used to create calculated fields.
- Geospatial Integration: Latitude and longitude action filters were used.

8. Outcomes and Impact

Key Outcomes:

- One of the main results was the creation of interactive Tableau dashboards with sophisticated filtering.
- Time-based visibility was introduced (3 PM to 6 PM IST).
- Better decision-making thanks to up-to-date job market information.

Impact:

- Data-driven recruitment: Assists recruiters and job seekers in making well-informed decisions.
- User-friendly and scalable: Job analytics have been simplified for wider accessibility.
- Professional development: Improved analytical and data visualization abilities for career progression.

9. Conclusion

During my internship, I developed the Real-Time Job Analytics Portal, which uses geospatial mapping, dynamic filtering, and interactive dashboards to greatly enhance job market analysis. It enables both recruiters and job seekers to make well-informed decisions by integrating real-time job insights and time-sensitive visualizations (active between 3 PM and 6 PM IST). My grasp of analytics and employment trends has grown as a result of this practical project, which also improved my data visualization abilities.