

CHAPTER 1

ABSTRACT

The Job Trends Monitoring Dashboard is a comprehensive platform designed to track and analyze the evolving dynamics of the job market. By leveraging real-time data aggregation, interactive visualizations, and trend analysis, it provides actionable insights for a diverse range of stakeholders, including job seekers, employers, policymakers, and researchers. This dashboard integrates data from various sources, such as Kaggle datasets and industry reports, ensuring up-to-date and relevant information. It offers user-friendly features like interactive charts and graphs, enabling the exploration of trends by industry, location, skills, and more. Advanced functionalities like trend analysis, comparison tools, and customizable filtering options empower users to refine their search and focus on specific parameters, such as education requirements or job types. By utilizing cutting-edge technologies, including ETL tools for data integration, data visualization libraries like Plotly, and modern web development frameworks, the platform combines robust data processing with an intuitive interface. It is hosted on Netlify, allowing seamless access and sharing of insights. The Job Trends Monitoring Dashboard is a powerful tool tailored to address the ever-changing landscape of the job market. By harnessing data from diverse sources such as Kaggle datasets and industry reports, it provides a centralized platform for stakeholders to access and analyze critical trends. The dashboard features intuitive visualizations, including interactive charts and graphs, that enable users to explore key insights across industries, locations, skills, and more. Its advanced tools, such as customizable filters and trend comparison functionalities, ensure users can refine their analyses to specific needs like education requirements or job categories. Built with cutting-edge technologies such as ETL tools, Plotly for visualizations, and modern web frameworks, the platform ensures a seamless user experience. Hosted on Netlify, the dashboard offers reliable, on-demand access for job seekers, employers, and researchers, fostering informed decision-making and market preparedness.

INTRODUCTION

In today's rapidly evolving economy, the job market is subject to continuous change influenced by technological advancements, economic trends, and shifting industry demands. Keeping up with these dynamic changes is essential for various stakeholders, including job seekers striving to align their skills with market demands, employers looking to attract top talent, policymakers formulating labor strategies, and researchers analyzing workforce trends. The Job Trends Monitoring Dashboard is designed to address these needs by providing a centralized platform to track, analyze, and visualize job market trends in real time. By aggregating data from diverse sources such as Kaggle datasets and industry reports, the dashboard ensures timely and accurate insights into the labor market's complexities. Through interactive visualizations and customizable tools, users can explore key metrics such as industry-specific job growth, emerging skill demands, salary trends, and regional employment opportunities. The ability to compare historical and current data helps users identify patterns and make predictions about future developments. By consolidating data from trusted sources such as Kaggle and industry reports, it provides a robust foundation for insights into the labor market. Interactive tools, including visualizations and filters, enable users to delve into specific aspects like skill demand, job availability by region, and salary benchmarks. The dashboard also supports comparative analysis of historical and present data, offering clarity on emerging patterns and future predictions.

CHAPTER 2

SYSTEM ANALYSIS

2.1 EXISTING SYSTEM

- Data Quality and Accuracy
- Data Overload
- User Interface Challenges
- Limited Scope of Analysis
- Integration and Compatibility Issues
- Cost and Resource Implications

2.1.1 DRAWBACKS

The existing system has following disadvantages, The Job Trends Monitoring Dashboard has a few drawbacks. It depends heavily on the quality and availability of external data, which might sometimes be outdated or incomplete. Processing large volumes of real-time data can lead to delays, and advanced features may overwhelm non-technical users. Ensuring compatibility across devices, scalability, and localized insights can be challenging. Additionally, development and maintenance require significant resources, and handling data securely to protect privacy is essential. The Job Trends Monitoring Dashboard, while offering valuable insights, faces certain limitations. Firstly, its reliance on external data sources means the accuracy and relevance of insights are contingent upon the quality and timeliness of the data, which may occasionally be outdated or incomplete. Secondly, processing vast amounts of real-time data can introduce performance bottlenecks, leading to potential delays in analysis.

2.2 PROPOSED SYSTEM

The Job Trends Monitoring Dashboard provides a simple and efficient solution for analysing changes in the job market. It collects real-time data from sources like Kaggle and industry reports, presenting it through interactive charts, graphs, and maps. Users can explore trends by industry, location, job titles, and skills while filtering results based on criteria like job type, experience, and education requirements. The system offers tools to analyse trends, compare current data with historical patterns, and predict future changes. Built with technologies like Plotly for visualizations and deployed on Netlify, it ensures easy access and user-friendly navigation. The proposed system is designed to help job seekers, employers, policymakers, and researchers make informed decisions with comprehensive, up-to-date insights into the job market.

2.2.1 FEATURES

The Job Trends Monitoring Dashboard offers several advantages, including real-time data aggregation from sources like Kaggle and industry reports, ensuring up-to-date job market insights. It features interactive visualizations—charts, graphs, and maps—that simplify complex data, allowing users to explore trends by industry, job title, location, and skills. The system provides tools for trend analysis, helping users identify emerging patterns, skill demands, and job growth or decline. Customizable filters enable refined searches based on job type, experience, and education. Built with HTML and CSS for an intuitive interface and deployed on Netlify for easy access, the system supports decision-making for job seekers, employers, policymakers, and researchers. The Job Trends Monitoring Dashboard is equipped with numerous advanced features to cater to the needs of various stakeholders. It offers real-time data aggregation from trusted sources such as Kaggle and industry reports, ensuring users access the most current job market insights. The dashboard includes interactive visualizations like charts, graphs, and maps, which simplify data interpretation and enable exploration of trends by parameters such as industry, job title, location, and skill requirements.

CHAPTER 3

SYSTEM SPECIFICATION

3.1 HARDWARE CONFIGURATION

Processor	:	Intel(R) Core (TM) i5
Installed memory (RAM)	:	8 GB
Hard Disk	:	512 GB
Operating System	:	Windows 11

3.2 SOFTWARE SPECIFICATION

Front-End	:	HTML, CSS
Tool	:	Tableau

CHAPTER 4

SOFTWARE DESCRIPTION

4.1 FRONT END

HTML (Hyper Text Markup Language) is a core technology of the World Wide Web, designed to structure and present content effectively on web pages. It utilizes a system of tags to organize various elements, such as headings, paragraphs, images, and hyperlinks, into a cohesive and logical format. HTML is not only essential for creating visually engaging web pages but also ensures they are accessible and compatible across different devices and browsers. By defining the semantic structure of a webpage, HTML improves search engine optimization and user experience, making it an indispensable tool for web development. With its clear syntax and widespread browser support, HTML forms the foundation of all websites, ensuring seamless display and accessibility across devices. Its semantic elements, like `<header>`, `<section>`, and `<footer>`, enhance readability and improve search engine optimization, making HTML not only functional but also crucial for effective digital communication.

CSS (Cascading Style Sheets) is a powerful styling language used to enhance the presentation of a web page. It defines how the elements within an HTML document should be displayed, such as their layout, colors, fonts, sizes, and spacing. By separating the structure of a webpage (HTML) from its visual design (CSS), developers can create more efficient and maintainable websites. CSS allows for a wide range of creative possibilities, from simple color adjustments to complex animations, enabling the creation of visually stunning and responsive websites that work across different devices and screen sizes. CSS is a versatile styling language that plays a crucial role in web development by defining the visual appearance and layout of HTML elements. It enables developers to control various design aspects, such as colors, fonts, spacing, alignment, and overall structure, ensuring that web pages are visually appealing and user-friendly. By separating content (HTML) from presentation (CSS), it promotes cleaner, more maintainable code, allowing for easier updates and consistent styling across multiple pages. CSS also supports responsive design, ensuring websites adapt seamlessly to different screen sizes and devices.

4.2 FEATURES

1. REAL-TIME DATA AGGREGATION:

The dashboard collects real-time job market data from multiple sources, including Kaggle datasets, industry reports, and other reliable data streams. This feature ensures that the information provided is always up-to-date, which is crucial in today's fast-paced job market. It allows stakeholders to access accurate and timely insights to make informed decisions, whether it's for hiring, career planning, or policy-making. This ensures that users receive the most current and relevant insights, which is vital in the ever-evolving job market. By providing up-to-date information, the dashboard empowers stakeholders—including job seekers, employers, policymakers, and researchers—to make informed decisions in areas like hiring strategies, career planning, and labor policy development.

2. INTERACTIVE VISUALIZATION:

The dashboard collects real-time job market data from multiple sources, including Kaggle datasets, industry reports, and other reliable data streams. This feature ensures that the information provided is always up-to-date, which is crucial in today's fast-paced job market. It allows stakeholders to access accurate and timely insights to make informed decisions, whether it's for hiring, career planning, or policy-making.

3. TREND ANALYSIS:

The system analyses job market trends, helping users identify emerging sectors, skill demands, and shifts in salary and job growth or decline. For instance, it can show if demand for specific skills, such as data science or artificial intelligence, is increasing across particular regions. The trend analysis also helps spot opportunities and workforce planning, and policy decisions.

4. COMPARISON TOOLS:

The ability to compare current job trends with historical data is a powerful feature of the dashboard. Users can benchmark present job market conditions against past trends to observe how specific industries, job roles, or skills have evolved over time. This feature allows for the identification of long-term trends and patterns, giving users insights into how the job market may change in the future. For example, it could highlight whether the demand for remote jobs is increasing over the years or if certain industries are on the decline.

5. FILTERING AND CUSTOMIZATION:

The dashboard is highly customizable, allowing users to filter and refine the data based on criteria. Users can filter by job type (e.g., full-time, part-time, remote), education level, experience, industry, location, and more. This ensures to their unique needs. For instance, a job seeker might be interested within a specific city, while a policymaker might focus on regional employment trends based on education requirements.

6. USER-FRIENDLY INTERFACE:

Built with web technologies like HTML and CSS, the dashboard features an intuitive, easy-to-navigate interface. Whether a user is a tech-savvy researcher or someone with minimal technical skills, they can easily interact with the platform. The design is simple, clean, and responsive, ensuring that users can access the information they need without unnecessary complexity.

4.3 TABLEAU: A POWERFUL DATA VISUALIZATION TOOL

Tableau is a powerful, versatile data visualization tool that helps individuals and organizations analyse, visualize, and interpret large datasets. It is widely recognized for its user-friendly interface, robust analytical capabilities, and ease of use, making it a preferred choice for both beginner and advanced data analysts. Tableau's primary strength lies in its ability to transform raw data into meaningful, interactive visualizations, helping users understand trends, patterns, and relationships within the data.

The software operates on the principle of connecting to various data sources, including spreadsheets, databases, cloud services, and even real-time data streams. Tableau's drag-and-drop interface allows users to quickly and easily create interactive charts, graphs, maps, and dashboards. Users can connect to a wide array of data formats such as Excel, SQL databases, Google Analytics, and web data connectors, enabling seamless integration of data from diverse sources. Once the data is loaded into Tableau, users can explore it through an intuitive interface, creating interactive visualizations to meet specific business or research objectives.

One of Tableau's standout features is its ability to produce real-time visualizations. This capability is particularly useful for businesses that rely on up-to-the-minute data to make decisions. With Tableau, users can set up automatic refresh intervals, allowing dashboards to update themselves with the latest data, ensuring that decision-makers are always working with the most current information. For industries like finance, marketing, and operations, real-time dashboards provide critical insights, enabling faster response times and better strategic planning.

In terms of data visualization, Tableau excels in offering a wide range of options. It includes everything from simple bar charts and line graphs to more advanced visualizations like heat maps, scatter plots, and tree maps. This variety allows users to present their data in the format that best tells the story they are trying to convey. Tableau's visualizations are highly interactive, enabling users to filter data, drill down into specific subsets, and zoom in on the details they care about, making it easy to explore and analyse the data in depth.

Another important feature of Tableau is its dashboard functionality. Dashboards are a collection of visualizations combined into a single, interactive display. Tableau dashboards allow users to combine multiple charts and graphs to get a comprehensive view of their data. These dashboards can be customized with filters, date selectors, and parameters, making them flexible and adaptable to various needs. Additionally, Tableau dashboards can be shared and published to Tableau Server or Tableau Online, allowing users to collaborate and access them from any location.

Tableau also provides strong analytical tools that allow users to perform complex calculations, create trend lines, and apply statistical models to their data. With built-in functions like calculated fields, table calculations, and forecasting, users can perform advanced data analysis directly within the tool. Moreover, Tableau's integration with R and Python allows for the incorporation of even more advanced analytics, making it a powerful choice for those who require statistical modelling, machine learning, or other complex data analyses.

The ease of sharing and collaborating with Tableau is another key advantage. Tableau allows users to publish visualizations and dashboards to Tableau Server or Tableau Online, where they can be shared with other users within an organization or with the general public. The platform also supports interactive dashboards that can be embedded into websites or applications, enabling users to access insights on-the-go. Furthermore, Tableau's integration with cloud platforms like Amazon Web Services (AWS) and Google Cloud Platform (GCP) allows for scalable data storage and collaboration across large teams.

In addition to its impressive technical capabilities, Tableau has a strong community of users and resources. Tableau has created a vast ecosystem of online tutorials, forums, user groups, and documentation, helping users troubleshoot problems and learn best practices. Its user community is active and supportive, which makes learning Tableau easier for beginners and offers opportunities for networking and sharing insights.

Tableau has also expanded its capabilities with the development of Tableau Prep, a tool designed to simplify the data cleaning and preparation process. Data preparation is often one of the most time-consuming aspects of working with data, and Tableau Prep addresses this by providing an intuitive interface for shaping, cleaning, and transforming data before it is used for analysis. This tool complements Tableau's analytics by streamlining the data preparation process, making it more efficient and less prone to errors.

From a business perspective, Tableau's ability to connect to multiple data sources and create actionable insights in real time has made it a critical tool for organizations seeking to become more data-driven. Tableau empowers businesses to make better decisions, optimize operations, and deliver a more personalized customer experience by providing a visual understanding of their data. It is particularly valuable for industries that rely on large amounts of data, such as finance, healthcare, marketing, retail, and government.

In conclusion, Tableau is a comprehensive data visualization and analysis tool that excels at transforming complex data into easy-to-understand, interactive visualizations. Its intuitive interface, extensive capabilities, and robust analytical tools make it suitable for users at all levels of expertise, from beginners to seasoned data scientists. With its ability to handle real-time data, produce a variety of visualizations, and facilitate collaboration, Tableau has become one of the leading tools for data analysis and visualization in the business world. Whether for making quick business decisions, performing deep data analysis, or presenting insights to stakeholders, Tableau offers an effective and user-friendly solution for unlocking the potential of data.

CHAPTER 5

PROJECT DESCRIPTION

5.1 OVERVIEW OF THE PROJECT

The Job Trends Monitoring Dashboard aims to provide a dynamic and user-friendly platform that tracks and analyses trends in the job market. Its primary objective is to help stakeholders—such as job seekers, employers, policymakers, and researchers—make data-driven decisions by providing valuable insights into the ever-evolving job landscape. By aggregating real-time data from multiple trusted sources such as Kaggle and industry reports, the dashboard offers up-to-date information on job market trends, enabling users to make informed choices based on reliable data.

The dashboard's key feature is its interactive visualizations, which present complex data in the form of charts, graphs, and maps. These visualizations are designed to be easily navigable and customizable, allowing users to explore trends across various dimensions such as industry, job title, location, and skill requirements. The platform also includes powerful trend analysis tools that help users understand shifts in skill demands, salary fluctuations, and the growth or decline of jobs across different sectors and regions.

To implement these features, the project uses a combination of ETL (Extract, Transform, Load) tools for data integration, data visualization frameworks like Plotly or Tableau for generating interactive visual content, and web development technologies such as HTML and CSS for building the interface. The system is deployed on Netlify, ensuring easy access and scalability for users.

5.2 MODULES

The Job Trends Monitoring Dashboard is divided into several key modules, each contributing to the overall functionality of the platform. These modules are designed to provide a seamless experience for users while enabling them to access and analyze job market data effectively.

1. DATA AGGREGATION AND INTEGRATION MODULE

This module is responsible for collecting data from various sources such as Kaggle datasets, industry reports, job listings, and other third-party data sources. It uses ETL (Extract, Transform, Load) tools to fetch, process, and load the data into a centralized system, ensuring that the data is current, relevant, and accurate. The data aggregation process makes sure that users receive real-time job market trends from reliable sources.

2. INTERACTIVE VISUALIZATION MODULE

The Interactive Visualization Module is responsible for presenting data in a visually appealing manner. Using tools like Plotly or Tableau, this module generates charts, graphs, and maps that are interactive, allowing users to explore job market trends based on parameters such as location, industry, job titles, salary trends, and skills. Users can hover over, click on, and zoom in to get detailed insights, making complex data more understandable and actionable.

3. TREND ANALYSIS MODULE

This module analyses the data over time to identify emerging trends in the job market. It helps to highlight the growing demand for certain skills, job roles, and industries. The module also tracks salary variations and employment patterns, identifying sectors and regions with the highest job growth or decline. By utilizing historical data, the module offers insights into how the job market has evolved and predicts future trends.

4. COMPARISON TOOLS MODULE

The Comparison Tools Module allows users to compare job trends over different time periods. Users can benchmark current data against past trends to identify patterns, making it easier to understand how certain factors have changed over time. This module provides a critical feature for forecasting future job market shifts and helps users plan their career development or recruitment strategies accordingly.

5. FILTERING AND CUSTOMIZATION MODULE

This module enables users to filter and customize the job market data based on specific criteria. Users can refine search results by factors such as experience level, education requirements, and job type (e.g., full-time, part-time, remote). The customization options make the platform more flexible and tailored to the needs of different stakeholders, allowing them to narrow down data according to their specific requirements.

6. USER INTERFACE MODULE

This module provides the dashboard interface, designed using HTML and CSS, to ensure a user-friendly experience. It focuses on easy navigation, clear display of data, and responsive design. This module makes sure that the dashboard is accessible on different devices, for both technical and non-technical users. The module also integrates Netlify for hosting the platform, ensuring reliable access and performance.

7. SECURITY AND AUTHENTICATION MODULE

To ensure that user data is protected, this module provides necessary security features. It implements user authentication and authorization, ensuring that only authorized users can access sensitive data or modify settings. This module helps safeguard the platform and protects the integrity of the data it processes.

8. REPORTING AND EXPORT MODULE

The Reporting and Export Module allows users to download and export reports on job trends and analysis. These reports can be exported in various formats, such as CSV, Excel, or PDF, making it easier for users to share insights or use the data offline for further analysis.

9. REAL-TIME DATA UPDATES MODULE

This module ensures that the data displayed on the dashboard is always up-to-date by regularly fetching the latest data from the integrated sources. It ensures that job trends and market insights are refreshed at regular intervals, keeping users informed about the latest developments in the job market.

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5.3 DATA FLOW DIAGRAM

A data flow diagram (DFD) is a graphical representation of the “Flow” of data through an information system, modeling its process aspects. A DFD is often used as a preliminary step to create an overview of the system without going into great detail, which can later be elaborated. DFDs can also be used for the visualization of data processing (structured design). A DFD shows what kind of information will be input to and output from the system, how the data will advance through the system, and where the data will be stored.

DFD shows how the information moves through the system and how it’s modified by a series of transformations. It is a graphical technique that depicts information flow and the transformation that are applied as data moves from input to output.

The data flow diagram (DFD) is one of the most important modeling tools. It is used to model the system components. These components are the system process, the data used by the process, an external entity that interacts with the system and the information flows in the system.

A Data Flow Diagram (DFD) is a graphical tool used to represent the flow of data through an information system, focusing on its processes and transformations. It serves as a high-level blueprint, offering an overview of the system's functionality without delving into implementation details. DFDs are valuable in understanding and designing how data is processed and transferred within the system.

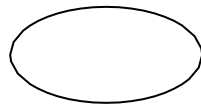
The diagram illustrates how data is input into the system, processed by different operations, and stored or output. Processes are shown as activities where data is manipulated, while data flows represent the pathways that data follows between these processes, external users or systems, and storage units. External entities are users or systems that interact with the system but are not part of it. Data stores depict places where information is retained for future use.

By mapping the data flow, the DFD helps to visualize the system’s functionality without delving into implementation details. This makes it a crucial tool for system design and analysis, as it clarifies the interactions, dependencies, and potential bottlenecks within the system.

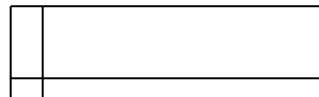
Basic DFD Notations



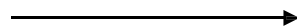
- Destination



- Process



- Data
Storage

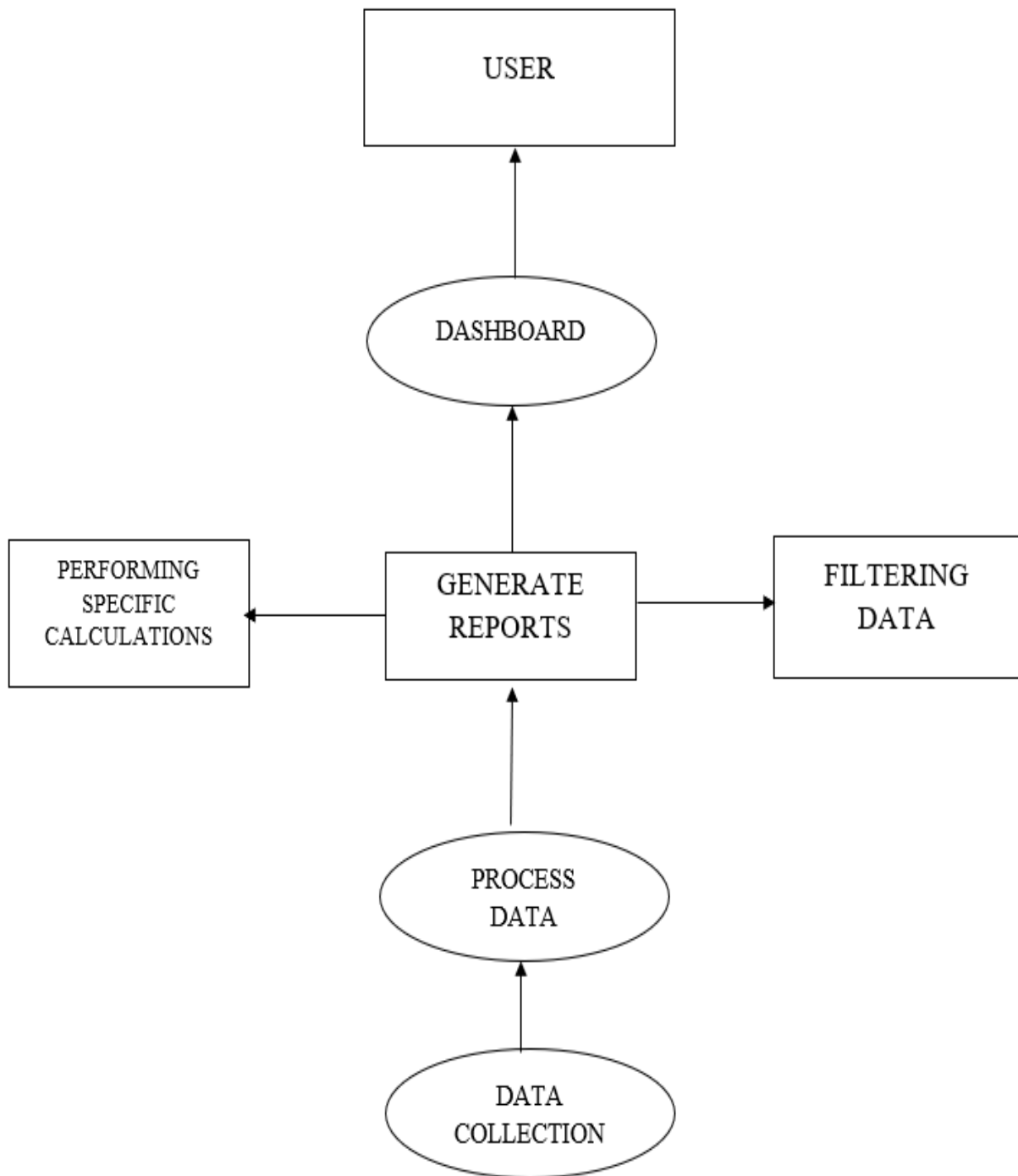


- Data Flow

LEVEL 0:



LEVEL 1



5.4. DATABASE DESIGN

Database design is the organization of data according to a database model. The designer determines what data must be stored and how the data elements interrelate Database management system manages the data accordingly. Database design involves classifying data and identifying interrelationships.

- System Design
- Input design
- Output design

SYSTEM DESIGN

System design is "the process of studying a procedure or business to identify its goals, purposes and create systems and procedures that will efficiently achieve them". Another view sees system analysis as a problem- solving technique that breaks down a system into its component pieces for the study of how well those parts work and interact to accomplish their purpose.

The field of system analysis relates closely to requirements analysis or operations research. It is also "an explicit formal inquiry carried out to help a decision maker identify a better course of action and make a better decision than they might otherwise have made.

INPUT DESIGN

The Input design is the main feature of the system. Input design determines the format and validation criteria for data entering the system. Inputs originate with end-users; human factors play a significant role in input design. The input design is designed to control the input, avoid delay, and errors in data, avoid extra steps, to keep the process simple. The design of input focuses on controlling the amount of input required, controlling the errors, avoiding delay, avoiding extra steps, and keeping the process simple. The input is designed in such a way that it provides security and ease of use while retaining privacy.

The following are the general principles, that are considered in designing inputs,

- Enter only variable data
- Do not input data that can be calculated
- List of values
- Sequence entry

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The field of system analysis relates closely to requirements analysis or operations research. It is also "an explicit formal inquiry carried out to help a decision maker identify a better course of action and make a better decision than they might otherwise have made.

System design is a comprehensive process that involves creating systems and procedures to meet specific goals and objectives efficiently. It starts with understanding the problem or opportunity and identifying the needs of the stakeholders, followed by gathering detailed requirements. The system design process typically progresses through several stages: high-level architectural design, where the overall structure and components are defined; low-level design, which refines those components into detailed specifications; implementation, where the system is built and coded; rigorous testing to ensure quality and performance; deployment to the live environment; and ongoing maintenance to address issues and improvements over time.

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- Do not input data that can be calculated
- List of values
- Sequence entry

OUTPUT DESIGN

Designing the output is more important than working up with a few layout charts and reports. The outputs are designed based on the issue encountered. It will also take care of who will receive the output, what for it is produced how many details are needed, when it is needed, and by what method. The outputs designed in this system are easy to use and useful for their jobs. The outputs are simple to read and interpret. The outputs obtained from this system are designed by using a few guidelines, which are given below. The information should be clear and accurate, yet concise and restricted to relevant data. Reports should have titles, data, and descriptive headings for columns of data, numbered pages, and so on.

CHAPTER 6

SYSTEM TESTING

System testing is a stage of implementation which is aimed at ensuring that system works accurately and efficiently. The primary goal of the test process is to make sure that the application performs as discussed in the requirement and specifications. Testing begins at the module level and works towards the integration of the entire computer based system.

Testing methodologies

- Functionality Testing
- Performance Testing
- Compatibility Testing
- Usability Testing

6.1 FUNCTIONALITY TESTING

This testing ensures that the dashboard effectively collects, processes, and displays job market data from various sources. It verifies that filtering and customization options—such as job type, experience level, and educational requirements—function accurately and deliver relevant search results. Additionally, it examines the usability and responsiveness of interactive visualizations, including charts, graphs, and maps, ensuring they dynamically adapt to user input and display data correctly.

6.2 COMPATIBILITY TESTING

This testing ensures that the dashboard is accessible to a diverse range of users by verifying its compatibility with various platforms, operating systems, and devices. It includes testing on multiple web browsers, such as Chrome, Firefox, Safari, and Edge, to ensure uniform performance and functionality. Device testing is performed on desktops, tablets, and mobile phones, with a focus on ensuring a responsive design that adapts seamlessly to different screen sizes and resolutions. The aim is to provide a consistent and intuitive user experience, regardless of how the dashboard is accessed.

6.3 PERFORMANCE TESTING

Performance testing aims to ensure that the dashboard can handle real-world scenarios effectively. This includes testing its ability to aggregate and process large datasets quickly, even under high traffic conditions, such as during peak usage times by multiple concurrent users. The rendering speed of interactive visualizations is evaluated to ensure users experience minimal latency. Additionally, it tests the responsiveness of filters and queries, ensuring that users can access refined results without noticeable delays. Stress and load tests are conducted to measure system behavior under extreme conditions, ensuring the dashboard remains stable and functional even under heavy loads.

6.4 USABILITY TESTING

UI testing ensures that the dashboard's design is visually consistent, user-friendly, and aligned with usability standards. Every interactive element, such as buttons, dropdown menus, sliders, and input fields, is tested for proper functionality and responsiveness. It also evaluates the overall layout and navigation to ensure users can easily locate features and access information. Special attention is given to cross-device compatibility, ensuring that the dashboard maintains its visual appeal and functionality on both smaller screens, like smartphones, and larger ones, like desktop monitors. Accessibility testing is also included to ensure that the dashboard is intuitive and usable for people with disabilities, adhering to WCAG (Web Content Accessibility Guidelines) standards.

6.5 SYSTEM TESTING

This is to verify that all the system elements have been properly integrated and perform allocated functions. Testing is executing a program to test the logic changes made in it to find errors. Tests are also conducted to find discrepancies between the system and its original objective, current specifications, and documents.

CHAPTER 7

SYSTEM IMPLEMENTATION

Implementation is the stage in the project where the theoretical design is turned into a working system. The most crucial stage is achieving a successful new system & and giving the user confidence that the new system will work efficiently & and effectively in the implementation stage.

The stage consists of

6.5.1 Testing the developed program with simple data.

6.5.2 Detections and correction of errors.

6.5.3 Creating whether the system meets user requirements.

6.5.4 Testing whether the system.

6.5.5 Making necessary changes as desired by the user.

6.5.6 Training user personnel.

Implementation Procedures

The implementation phase involves transforming the theoretical design into a fully operational system. While less creative than system design, it is a critical step that ensures the success of the system. This phase includes preparing detailed procedural flowcharts, record layouts, and report templates, along with a clear implementation plan to guide the transition from design to operation. Conversion methods, such as parallel running, direct cutover, or phased implementation, are applied to shift from the old system to the new one seamlessly. Proper testing and verification at this stage ensure that the system meets user requirements and functions as expected.

System Maintenance

System maintenance is a continuous process to keep the system functional, efficient, and up-to-date post-implementation. It includes activities like fixing bugs, adapting to changing requirements, and optimizing performance. Maintenance accounts for 50-80% of the total system development effort and is crucial yet often undervalued. Challenges such as poor documentation, lack of standards, and insufficient tools can make maintenance costly and inefficient. To address these, structured maintenance management, regular audits, thorough documentation, and clear procedures are essential. A well-maintained system ensures long-term reliability, cost-effectiveness, and user satisfaction. Maintenance is not as rewarding or exciting as developing systems. It is perceived as requiring neither skill nor experience.

- Maintenance is less engaging than system development, making it less appealing to programmers.
- Lack of sufficient tools, techniques, and test plans for maintenance.
- Poorly defined standards, procedures, and guidelines.
- Inadequate documentation and care for program structure during updates.
- Programmers often expect not to handle the system during its maintenance phase.

CHAPTER 8

CONCLUSION

The Job Trends Monitoring Dashboard is a comprehensive solution designed to address the dynamic and evolving needs of the job market. By integrating data from diverse sources such as Kaggle and industry reports, the dashboard ensures real-time insights into key metrics like skill demands, salary trends, and job growth patterns across various sectors and regions. Its interactive visualizations, filtering capabilities, and comparison tools provide an intuitive and customizable user experience, empowering stakeholders—job seekers, employers, researchers, and policymakers—to make data-driven decisions.

Built on robust technologies, including ETL processes for seamless data integration, and advanced frameworks like Plotly for dynamic visualizations, the system combines efficiency with innovation. The use of web development tools ensures compatibility across devices and platforms, making the dashboard accessible to a broad audience. Beyond offering a snapshot of the current job market, it equips users with predictive insights to anticipate future trends, bridging the gap between industry demands and workforce readiness.

By fostering a deeper understanding of the job landscape, the Job Trends Monitoring Dashboard supports better planning, strategic decision-making, and workforce development. It is not only a tool for analysis but also a catalyst for aligning educational, corporate, and governmental efforts towards a more resilient and adaptive labour market ecosystem.

FUTURE ENHANCEMENT

The Job Trends Monitoring Dashboard holds immense potential for future developments to enhance its functionality and adaptability to evolving market needs. Integrating machine learning models can enable predictive analytics, offering insights into future job market trends and personalized recommendations for career paths and skill development. Expanding data sources to include additional APIs, social media platforms, and global job boards would improve the comprehensiveness of the data.

Advanced visualization techniques, such as heatmaps and 3D charts, could provide deeper insights into geographic trends and complex datasets. Additionally, incorporating multilingual support would make the dashboard accessible to a global audience, while features like real-time notifications on emerging trends and mobile app compatibility would improve user convenience and engagement. These enhancements would further establish the dashboard as a versatile and indispensable tool for navigating the dynamic job market.

CHAPTER 9

APPENDIX

9.1 SOURCE CODE

HTML

```
<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="UTF-8">

  <meta name="viewport" content="width=device-width, initial-scale=1.0">

  <title>Job Description</title>

</head>

<body>

  <div class='tableauPlaceholder' id='viz1716881005052' style='position: relative'>

    <noscript><a href='#'>

      <img alt='Dashboard 1 '
src='https://public.tableau.com/static/images/Bo/Book1_17
143182107420/Dashboard1/1_rss.png' style='border: none' />

    </a>

  </noscript>

  <object class='tableauViz' style='display:none;'>

    <param name='host_url' value='https%3A%2F%2Fpublic.tableau.com%2F' />

    <param name='embed_code_version' value='3' />
```

```

<param name='site_root' value='' />

<param name='name' value='Book1_17143182107420&#47;Dashboard1' />

<param name='tabs' value='no' />

<param name='toolbar' value='yes' />

<param name='static_image'
value='https:&#47;&#47;public.tableau.com&#47;static&#47;images&#47;Bo&#47;Book1_
17143182107420&#47;Dashboard1&#47;1.png' />

<param name='animate_transition' value='yes' />

<param name='display_static_image' value='yes' />

<param name='display_spinner' value='yes' />

<param name='display_overlay' value='yes' />

<param name='display_count' value='yes' />

<param name='language' value='en-US' />

<param name='filter' value='publish=yes' />

</object>

</div>

<script type='text/javascript'>

    var divElement = document.getElementById('viz1716881005052');

    var vizElement = divElement.getElementsByTagName('object')[0];

    if ( divElement.offsetWidth > 800 )

    { vizElement.style.width='100%';vizElement.style.height=(divElement.offsetWidth*0.75)+'p
x';}

    else if ( divElement.offsetWidth > 500 )

```

```

{ vizElement.style.width='100%';vizElement.style.height=(divElement.offsetWidth*0.75)+'p
x';}

else

{ vizElement.style.width='100%';vizElement.style.height='2027px';}

var scriptElement = document.createElement('script');

scriptElement.src = 'https://public.tableau.com/javascripts/api/viz\_v1.js';

vizElement.parentNode.insertBefore(scriptElement, vizElement);

</script>

</body>

</html>

```

XML

```

<?xml version='1.0' encoding='utf-8' ?>

<!-- build 20233.24.0112.1233 -->

<workbook original-version='18.1' source-build='2023.3.2 (20233.24.0112.1233)' source-
platform='win' version='18.1' xmlns:user='http://www.tableausoftware.com/xml/user'>

  <document-format-change-manifest>

    <_fcp.AccessibleZoneTabOrder.true...AccessibleZoneTabOrder />

    <_fcp.AnimationOnByDefault.true...AnimationOnByDefault />

    <AutoCreateAndUpdateDSDPhoneLayouts />

    <IntuitiveSorting />

    <IntuitiveSorting_SP2 />

    <_fcp.MarkAnimation.true...MarkAnimation />

```

```

    <_.fcp.ObjectModelEncapsulateLegacy.true...ObjectModelEncapsulateLegacy />
    <_.fcp.ObjectModelTableType.true...ObjectModelTableType />
    <_.fcp.SchemaViewerObjectModel.true...SchemaViewerObjectModel />
    <SetMembershipControl />
    <SheetIdentifierTracking />
    <WindowsPersistSimpleIdentifiers />
</document-format-change-manifest>

<preferences>
    <preference name='ui.encoding.shelf.height' value='24' />
    <preference name='ui.shelf.height' value='26' />
</preferences>

<_.fcp.AnimationOnByDefault.false...style>
    <.fcp.AnimationOnByDefault.false....fcp.MarkAnimation.true...style-rule
element='animation'>
        <_.fcp.AnimationOnByDefault.false...format attr='animation-on' value='ao-on' />
    </.fcp.AnimationOnByDefault.false....fcp.MarkAnimation.true...style-rule>
</_.fcp.AnimationOnByDefault.false...style>

<datasources>
    <datasource caption='customer_table' inline='true'
name='federated.0avuh4w1y4z0er17dfax00cqda3y' version='18.1'>
        <connection class='federated'>
            <named-connections>

```

```

    <named-connection caption='customer_table'
name='textscan.0s0vwyr0g32zyj13541he0wx32gl'>

        <connection class='textscan' directory='C:/Personal/Dhruva/F/Bhavya/Data science
practice/New folder' filename='customer_table.csv' password="" server="" />

    </named-connection>

</named-connections>

<_.fcg.ObjectModelEncapsulateLegacy.false...relation
connection='textscan.0s0vwyr0g32zyj13541he0wx32gl' name='Internetsales (1).csv'
table='[Internetsales (1)#csv]' type='table'>

    <columns character-set='UTF-8' header='yes' locale='en_IN' separator=','>

        <column datatype='integer' name='productkey' ordinal='0' />

        <column datatype='date' name='orderdatekey' ordinal='1' />

        <column datatype='date' name='duedatekey' ordinal='2' />

        <column datatype='date' name='shipdatekey' ordinal='3' />

        <column datatype='integer' name='customerkey' ordinal='4' />

        <column datatype='integer' name='promotionkey' ordinal='5' />

        <column datatype='integer' name='currencykey' ordinal='6' />

        <column datatype='string' name='salesordernumber' ordinal='7' />

        <column datatype='real' name='totalproductcost' ordinal='8' />

        <column datatype='real' name='salesamount' ordinal='9' />

        <column datatype='datetime' name='orderdate' ordinal='10' />

        <column datatype='datetime' name='duedate' ordinal='11' />

        <column datatype='datetime' name='shipdate' ordinal='12' />

    </columns>

```



```

</_fcp.ObjectModelEncapsulateLegacy.false...relation>

<_fcp.ObjectModelEncapsulateLegacy.true...relation type='collection'>

  <relation connection='textscan.0s0vwyr0g32zyj13541he0wx32gl' name='Internetsales
(1).csv' table='[Internetsales (1)#csv]' type='table'>

    <columns character-set='UTF-8' header='yes' locale='en_IN' separator=','>

      <column datatype='integer' name='productkey' ordinal='0' />

      <column datatype='date' name='orderdatekey' ordinal='1' />

      <column datatype='date' name='duedatekey' ordinal='2' />

      <column datatype='date' name='shipdatekey' ordinal='3' />

      <column datatype='integer' name='customerkey' ordinal='4' />

      <column datatype='integer' name='promotionkey' ordinal='5' />

      <column datatype='integer' name='currencykey' ordinal='6' />

      <column datatype='string' name='salesordernumber' ordinal='7' />

      <column datatype='real' name='totalproductcost' ordinal='8' />

      <column datatype='real' name='salesamount' ordinal='9' />

      <column datatype='datetime' name='orderdate' ordinal='10' />

      <column datatype='datetime' name='duedate' ordinal='11' />

      <column datatype='datetime' name='shipdate' ordinal='12' />

    </columns>

  </relation>

  <relation connection='textscan.0s0vwyr0g32zyj13541he0wx32gl'
name='SalesBudget.csv' table='[SalesBudget#csv]' type='table'>

    <columns character-set='UTF-8' header='yes' locale='en_IN' separator='&#9;'>

```

```

    <column datatype='date' name='Date ' ordinal='0' />

    <column datatype='integer' name='Budget' ordinal='1' />

</columns>

</relation>

<relation connection='textscan.0s0vwyr0g32zyj13541he0wx32gl'
name='customer_table.csv' table='[customer_table#csv]' type='table'>

    <columns character-set='UTF-8' header='yes' locale='en_IN' separator=','>

        <column datatype='integer' name='customerkey' ordinal='0' />

        <column datatype='integer' name='geographykey' ordinal='1' />

        <column datatype='string' name='customeralternatekey' ordinal='2' />

        <column datatype='string' name='title' ordinal='3' />

        <column datatype='string' name='firstname' ordinal='4' />

        <column datatype='string' name='middlename' ordinal='5' />

        <column datatype='string' name='lastname' ordinal='6' />

        <column datatype='integer' name='namestyle' ordinal='7' />

        <column datatype='date' name='birthdate' ordinal='8' />

        <column datatype='string' name='maritalstatus' ordinal='9' />

        <column datatype='string' name='suffix' ordinal='10' />

        <column datatype='string' name='gender' ordinal='11' />

        <column datatype='string' name='emailaddress' ordinal='12' />

        <column datatype='real' name='yearlyincome' ordinal='13' />

        <column datatype='integer' name='totalchildren' ordinal='14' />

        <column datatype='integer' name='numberchildrenathome' ordinal='15' />

```

<column datatype='string' name='englisheducation' ordinal='16' />
<column datatype='string' name='spanisheducation' ordinal='17' />
<column datatype='string' name='frencheducation' ordinal='18' />
<column datatype='string' name='englishoccupation' ordinal='19' />
<column datatype='string' name='spanishoccupation' ordinal='20' />
<column datatype='string' name='frenchoccupation' ordinal='21' />
<column datatype='integer' name='houseownerflag' ordinal='22' />
<column datatype='integer' name='numbervcarsowned' ordinal='23' />
<column datatype='string' name='addressline1' ordinal='24' />
<column datatype='string' name='addressline2' ordinal='25' />
<column datatype='string' name='phone' ordinal='26' />
<column datatype='date' name='datefirstpurchase' ordinal='27' />
<column datatype='string' name='commutedistance' ordinal='28' />
<column datatype='integer' name='geographykey-2' ordinal='29' />
<column datatype='string' name='city' ordinal='30' />
<column datatype='string' name='stateprovincecode' ordinal='31' />
<column datatype='string' name='stateprovincename' ordinal='32' />
<column datatype='string' name='countryregioncode' ordinal='33' />
<column datatype='string' name='englishcountryregionname' ordinal='34' />
<column datatype='string' name='spanishcountryregionname' ordinal='35' />
<column datatype='string' name='frenchcountryregionname' ordinal='36' />
<column datatype='string' name='postalcode' ordinal='37' />
<column datatype='integer' name='salesterritorykey' ordinal='38' />

```

    <column datatype='string' name='ipaddresslocator' ordinal='39' />

  </columns>

</relation>

<relation connection='textscan.0s0vwyr0g32zyj13541he0wx32gl' name='date_data.csv'
table='[date_data#csv]' type='table'>

  <columns character-set='UTF-8' header='yes' locale='en_IN' separator=','>

    <column datatype='date' name='datekey' ordinal='0' />

    <column datatype='date' name='fulldatealternatekey' ordinal='1' />

    <column datatype='integer' name='daynumberofweek' ordinal='2' />

    <column datatype='string' name='englishdaynameofweek' ordinal='3' />

    <column datatype='string' name='spanishdaynameofweek' ordinal='4' />

    <column datatype='string' name='frenchdaynameofweek' ordinal='5' />

    <column datatype='integer' name='daynumberofmonth' ordinal='6' />

    <column datatype='integer' name='daynumberofyear' ordinal='7' />

    <column datatype='integer' name='weeknumberofyear' ordinal='8' />

    <column datatype='string' name='englishmonthname' ordinal='9' />

    <column datatype='string' name='spanishmonthname' ordinal='10' />

    <column datatype='string' name='frenchmonthname' ordinal='11' />

    <column datatype='integer' name='monthnumberofyear' ordinal='12' />

    <column datatype='integer' name='calendarquarter' ordinal='13' />

    <column datatype='date' date-parse-format='yyyy' name='calendaryear' ordinal='14'
/>

    <column datatype='integer' name='calendarsemester' ordinal='15' />

```

```

<column datatype='integer' name='fiscalquarter' ordinal='16' />

<column datatype='integer' name='fiscalyear' ordinal='17' />

<column datatype='integer' name='fiscalsemester' ordinal='18' />

</columns>

</relation>

<relation connection='textscan.0s0vwyr0g32zyj13541he0wx32gl'
name='product_table.csv' table='[product_table#csv]' type='table'>

<columns character-set='UTF-8' header='yes' locale='en_IN' separator=', '>

<column datatype='integer' name='productkey' ordinal='0' />

<column datatype='string' name='productalternatekey' ordinal='1' />

<column datatype='integer' name='productsubcategorykey' ordinal='2' />

<column datatype='string' name='englishproductname' ordinal='3' />

<column datatype='string' name='color' ordinal='4' />

<column datatype='integer' name='safetystocklevel' ordinal='5' />

<column datatype='integer' name='reorderpoint' ordinal='6' />

<column datatype='string' name='size' ordinal='7' />

<column datatype='integer' name='daystomanufacture' ordinal='8' />

<column datatype='string' name='productline' ordinal='9' />

<column datatype='string' name='modelname' ordinal='10' />

<column datatype='string' name='englishdescription' ordinal='11' />

<column datatype='datetime' name='startdate' ordinal='12' />

<column datatype='datetime' name='enddate' ordinal='13' />

<column datatype='string' name='status' ordinal='14' />

```

```

<column datatype='integer' name='productcategorykey' ordinal='15' />
<column datatype='integer' name='productcategoryalternatekey' ordinal='16' />
<column datatype='string' name='englishproductcategoryname' ordinal='17' />
<column datatype='integer' name='productsubcategorykey-2' ordinal='18' />
<column datatype='integer' name='productsubcategoryalternatekey' ordinal='19' />
<column datatype='string' name='englishproductsubcategoryname' ordinal='20' />
<column datatype='integer' name='productcategorykey-2' ordinal='21' />

</columns>

</relation>

</_fcp.ObjectModelEncapsulateLegacy.true...relation>

<cols>

<map key='[Budget]' value='[SalesBudget.csv].[Budget]' />
<map key='[Date ]' value='[SalesBudget.csv].[Date ]' />
<map key='[addressline1]' value='[customer_table.csv].[addressline1]' />
<map key='[addressline2]' value='[customer_table.csv].[addressline2]' />
<map key='[birthdate]' value='[customer_table.csv].[birthdate]' />
<map key='[calendarquarter]' value='[date_data.csv].[calendarquarter]' />
<map key='[calendarsemester]' value='[date_data.csv].[calendarsemester]' />
<map key='[calendaryear]' value='[date_data.csv].[calendaryear]' />
<map key='[city]' value='[customer_table.csv].[city]' />
<map key='[color]' value='[product_table.csv].[color]' />
<map key='[commutedistance]' value='[customer_table.csv].[commutedistance]' />
<map key='[countryregioncode]' value='[customer_table.csv].[countryregioncode]' />

```

```

    <map key='[currencykey]' value='[Internetsales (1).csv].[currencykey]' />

    <map key='[customeralternatekey]'
value='[customer_table.csv].[customeralternatekey]' />

    <map key='[customerkey (customer_table.csv)]'
value='[customer_table.csv].[customerkey]' />

    <map key='[customerkey]' value='[Internetsales (1).csv].[customerkey]' />

    <map key='[datefirstpurchase]' value='[customer_table.csv].[datefirstpurchase]' />

    <map key='[datekey]' value='[date_data.csv].[datekey]' />

    <map key='[daynumberofmonth]' value='[date_data.csv].[daynumberofmonth]' />

    <map key='[daynumberofweek]' value='[date_data.csv].[daynumberofweek]' />

    <map key='[daynumberofyear]' value='[date_data.csv].[daynumberofyear]' />

    <map key='[daystomanufacture]' value='[product_table.csv].[daystomanufacture]' />

    <map key='[duedate]' value='[Internetsales (1).csv].[duedate]' />

    <map key='[duedatekey]' value='[Internetsales (1).csv].[duedatekey]' />

    <map key='[emailaddress]' value='[customer_table.csv].[emailaddress]' />

    <map key='[enddate]' value='[product_table.csv].[enddate]' />

    <map key='[englishcountryregionname]'
value='[customer_table.csv].[englishcountryregionname]' />

    <map key='[englishdaynameofweek]' value='[date_data.csv].[englishdaynameofweek]'
/>

    <map key='[englishdescription]' value='[product_table.csv].[englishdescription]' />

    <map key='[englisheducation]' value='[customer_table.csv].[englisheducation]' />

    <map key='[englishmonthname]' value='[date_data.csv].[englishmonthname]' />

    <map key='[englishoccupation]' value='[customer_table.csv].[englishoccupation]' />

```

```

    <map key='[englishproductcategoryname]'
value='[product_table.csv].[englishproductcategoryname]' />

    <map key='[englishproductname]' value='[product_table.csv].[englishproductname]' />

    <map key='[englishproductssubcategoryname]'
value='[product_table.csv].[englishproductssubcategoryname]' />

    <map key='[firstname]' value='[customer_table.csv].[firstname]' />

    <map key='[fiscalquarter]' value='[date_data.csv].[fiscalquarter]' />

    <map key='[fiscalsemester]' value='[date_data.csv].[fiscalsemester]' />

    <map key='[fiscalyear]' value='[date_data.csv].[fiscalyear]' />

    <map key='[frenchcountryregionname]'
value='[customer_table.csv].[frenchcountryregionname]' />

    <map key='[frenchdaynameofweek]' value='[date_data.csv].[frenchdaynameofweek]'
/>

    <map key='[frencheducation]' value='[customer_table.csv].[frencheducation]' />

    <map key='[frenchmonthname]' value='[date_data.csv].[frenchmonthname]' />

    <map key='[frenchoccupation]' value='[customer_table.csv].[frenchoccupation]' />

    <map key='[fulldatealternatekey]' value='[date_data.csv].[fulldatealternatekey]' />

    <map key='[gender]' value='[customer_table.csv].[gender]' />

    <map key='[geographykey-2]' value='[customer_table.csv].[geographykey-2]' />

    <map key='[geographykey]' value='[customer_table.csv].[geographykey]' />

    <map key='[houseownerflag]' value='[customer_table.csv].[houseownerflag]' />

    <map key='[ipaddresslocator]' value='[customer_table.csv].[ipaddresslocator]' />

    <map key='[lastname]' value='[customer_table.csv].[lastname]' />

    <map key='[maritalstatus]' value='[customer_table.csv].[maritalstatus]' />

```



```

<map key='[middlename]' value='[customer_table.csv].[middlename]' />

<map key='[modelname]' value='[product_table.csv].[modelname]' />

<map key='[monthnumberofyear]' value='[date_data.csv].[monthnumberofyear]' />

<map key='[namestyle]' value='[customer_table.csv].[namestyle]' />

<map key='[numbercarsowned]' value='[customer_table.csv].[numbercarsowned]' />

<map key='[numberchildrenathome]'
value='[customer_table.csv].[numberchildrenathome]' />

<map key='[orderdate]' value='[Internetsales (1).csv].[orderdate]' />

<map key='[orderdatekey]' value='[Internetsales (1).csv].[orderdatekey]' />

<map key='[phone]' value='[customer_table.csv].[phone]' />

<map key='[postalcode]' value='[customer_table.csv].[postalcode]' />

<map key='[productalternatekey]' value='[product_table.csv].[productalternatekey]' />

<map key='[productcategoryalternatekey]'
value='[product_table.csv].[productcategoryalternatekey]' />

<map key='[productcategorykey-2]' value='[product_table.csv].[productcategorykey-2]'
/>

<map key='[productcategorykey]' value='[product_table.csv].[productcategorykey]' />

<map key='[productkey (product_table.csv)]' value='[product_table.csv].[productkey]'
/>

<map key='[productkey]' value='[Internetsales (1).csv].[productkey]' />

<map key='[productline]' value='[product_table.csv].[productline]' />

<map key='[productsubcategoryalternatekey]'
value='[product_table.csv].[productsubcategoryalternatekey]' />

```

```

    <map key='[productsubcategorykey-2]'
value='[product_table.csv].[productsubcategorykey-2]' />

    <collation flag='0' name='LEN_RGB' />

    <.fcg.ObjectModelEncapsulateLegacy.true...object-
id>[customer_table.csv_789982B1DADB47CA9095608C9C05CB25]</.fcg.ObjectModelEn
capsulateLegacy.true...object-id>

</metadata-record>

<metadata-record class='column'>

    <remote-name>frencheducation</remote-name>

    <remote-type>129</remote-type>

    <local-name>[frencheducation]</local-name>

    <parent-name>[customer_table.csv]</parent-name>

    <remote-alias>frencheducation</remote-alias>

    <ordinal>33</ordinal>

    <local-type>string</local-type>

    <aggregation>Count</aggregation>

    <scale>1</scale>

    <width>1073741823</width>

    <contains-null>true</contains-null>

    <collation flag='0' name='LEN_RGB' />

    <.fcg.ObjectModelEncapsulateLegacy.true...object-
id>[customer_table.csv_789982B1DADB47CA9095608C9C05CB25]</.fcg.ObjectModelEn
capsulateLegacy.true...object-id>

</metadata-record>

```

```

<metadata-record class='column'>

  <remote-name>englishoccupation</remote-name>

  <remote-type>129</remote-type>

  <local-name>[englishoccupation]</local-name>

  <parent-name>[customer_table.csv]</parent-name>

  <remote-alias>englishoccupation</remote-alias>

  <ordinal>34</ordinal>

  <local-type>string</local-type>

  <aggregation>Count</aggregation>

  <scale>1</scale>

  <width>1073741823</width>

  <contains-null>true</contains-null>

  <collation flag='0' name='LEN_RGB' />

  <.fcp.ObjectModelEncapsulateLegacy.true...object-
id>[customer_table.csv_789982B1DADB47CA9095608C9C05CB25]</.fcp.ObjectModelEn
capsulateLegacy.true...object-id>

</metadata-record>

<metadata-record class='column'>

  <remote-name>spanishoccupation</remote-name>

  <remote-type>129</remote-type>

  <local-name>[spanishoccupation]</local-name>

  <parent-name>[customer_table.csv]</parent-name>

  <remote-alias>spanishoccupation</remote-alias>

```

```

<ordinal>35</ordinal>

<local-type>string</local-type>

<aggregation>Count</aggregation>

<scale>1</scale>

<width>1073741823</width>

<contains-null>true</contains-null>

<collation flag='0' name='LEN_RGB' />

<.fcp.ObjectModelEncapsulateLegacy.true...object-
id>[customer_table.csv_789982B1DADB47CA9095608C9C05CB25]</.fcp.ObjectModelEn
capsulateLegacy.true...object-id>

</metadata-record>

<metadata-record class='column'>

  <remote-name>frenchoccupation</remote-name>

  <remote-type>129</remote-type>

  <local-name>[frenchoccupation]</local-name>

  <parent-name>[customer_table.csv]</parent-name>

  <remote-alias>frenchoccupation</remote-alias>

  <ordinal>36</ordinal>

  <local-type>string</local-type>

  <aggregation>Count</aggregation>

  <scale>1</scale>

  <width>1073741823</width>

  <contains-null>true</contains-null>

```

```

    <collation flag='0' name='LEN_RGB' />

    <.fcf.ObjectModelEncapsulateLegacy.true...object-
id>[customer_table.csv_789982B1DADB47CA9095608C9C05CB25]</.fcf.ObjectModelEn
capsulateLegacy.true...object-id>

</metadata-record>

<metadata-record class='column'>

    <remote-name>houseownerflag</remote-name>

    <remote-type>20</remote-type>

    <local-name>[houseownerflag]</local-name>

    <parent-name>[customer_table.csv]</parent-name>

    <remote-alias>houseownerflag</remote-alias>

    <ordinal>37</ordinal>

    <local-type>integer</local-type>

    <aggregation>Sum</aggregation>

    <contains-null>true</contains-null>

    <.fcf.ObjectModelEncapsulateLegacy.true...object-
id>[customer_table.csv_789982B1DADB47CA9095608C9C05CB25]</.fcf.ObjectModelEn
capsulateLegacy.true...object-id>

</metadata-record>

    <aggregation>Count</aggregation>

    <scale>1</scale>

    <width>1073741823</width>

    <contains-null>true</contains-null>

    <collation flag='0' name='LEN_RGB' />

```

<.fc.ObjectModelEncapsulateLegacy.true...object-
id>[customer_table.csv_789982B1DADB47CA9095608C9C05CB25]</.fc.ObjectModelEn
capsulateLegacy.true...object-id>

</metadata-record>

<metadata-record class='column'>

<remote-name>geographykey-2</remote-name>

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<remote-alias>geographykey-2</remote-alias>

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    <remote-alias>stateprovincename</remote-alias>

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    <aggregation>Count</aggregation>

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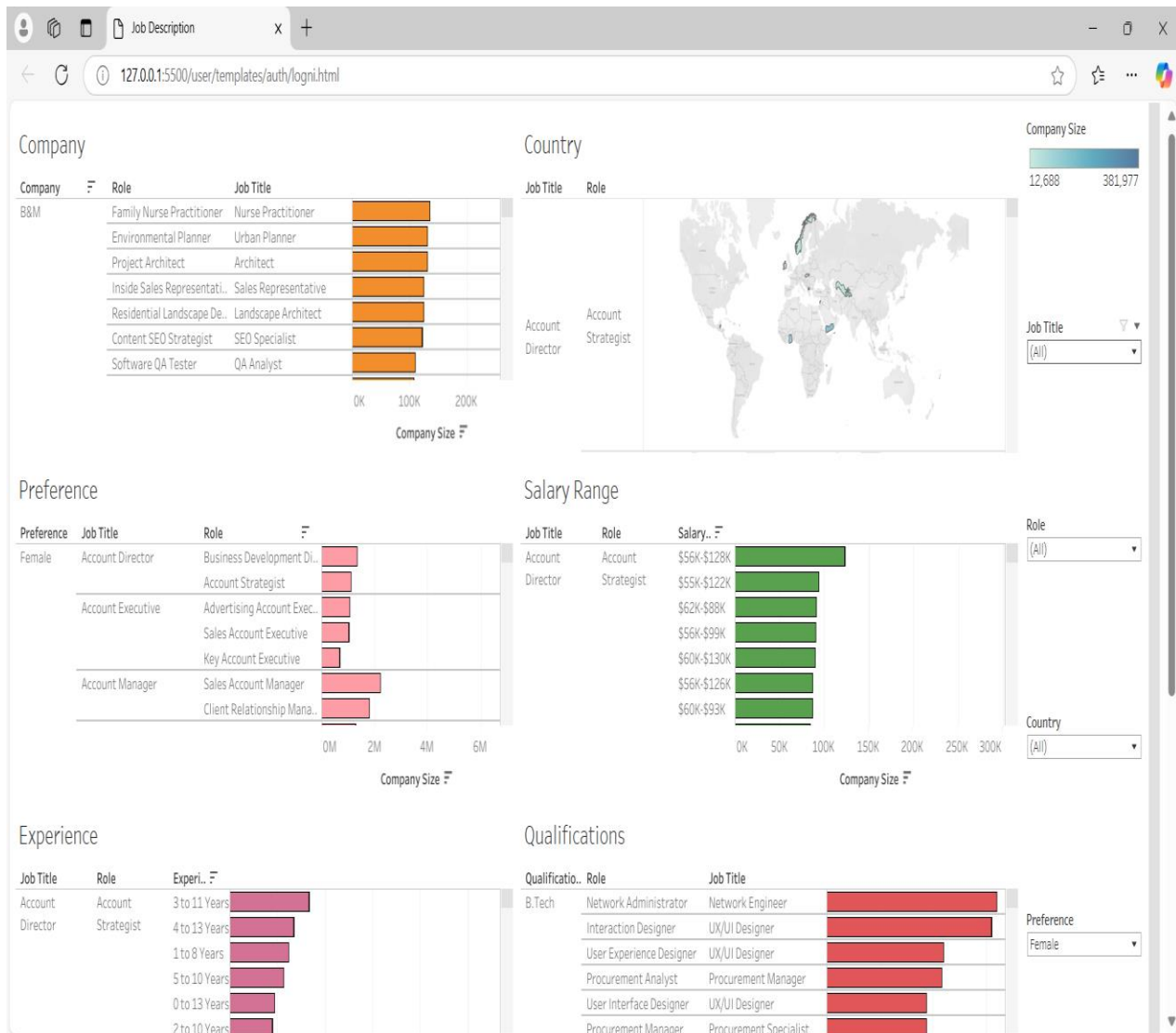
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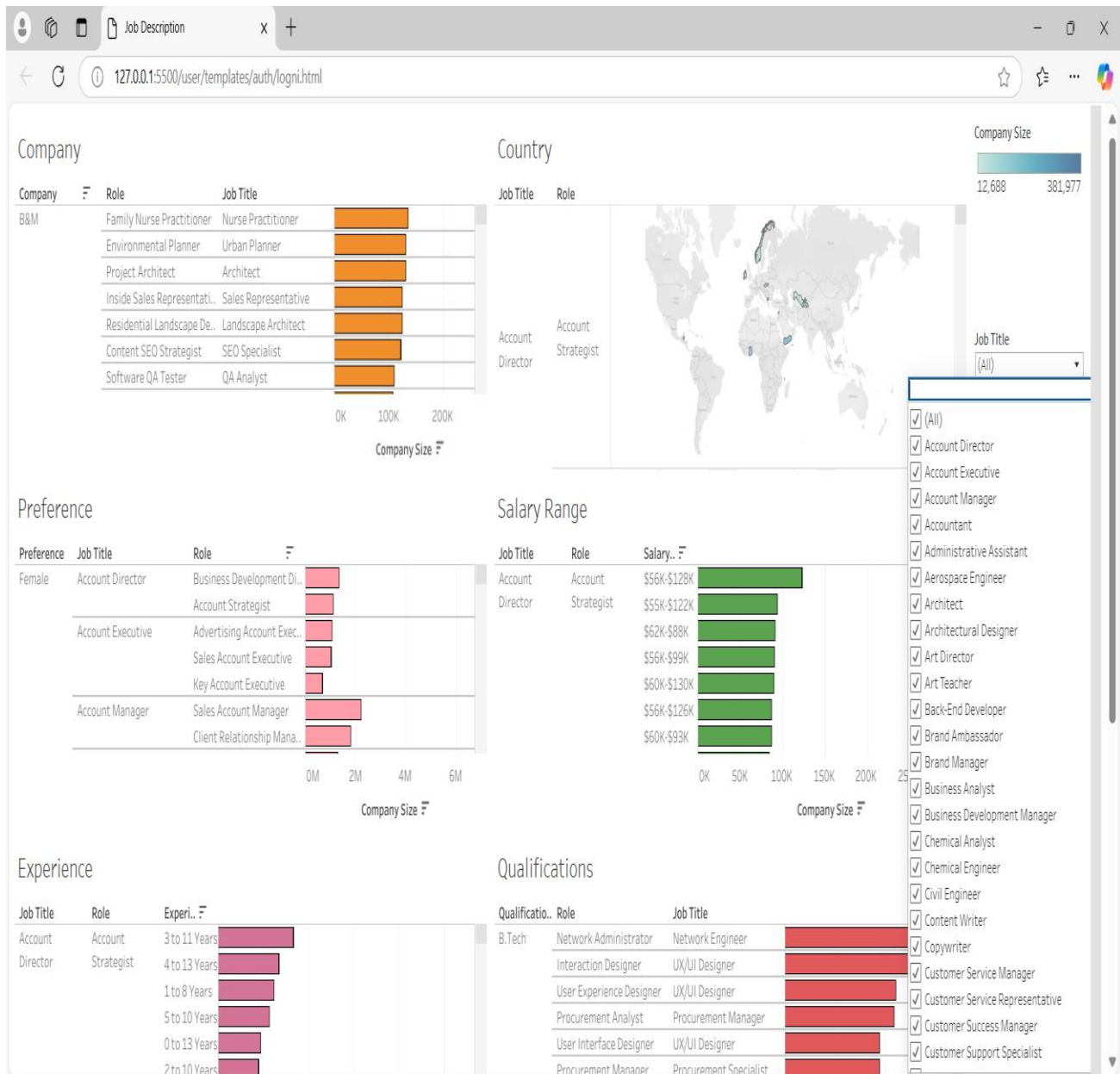
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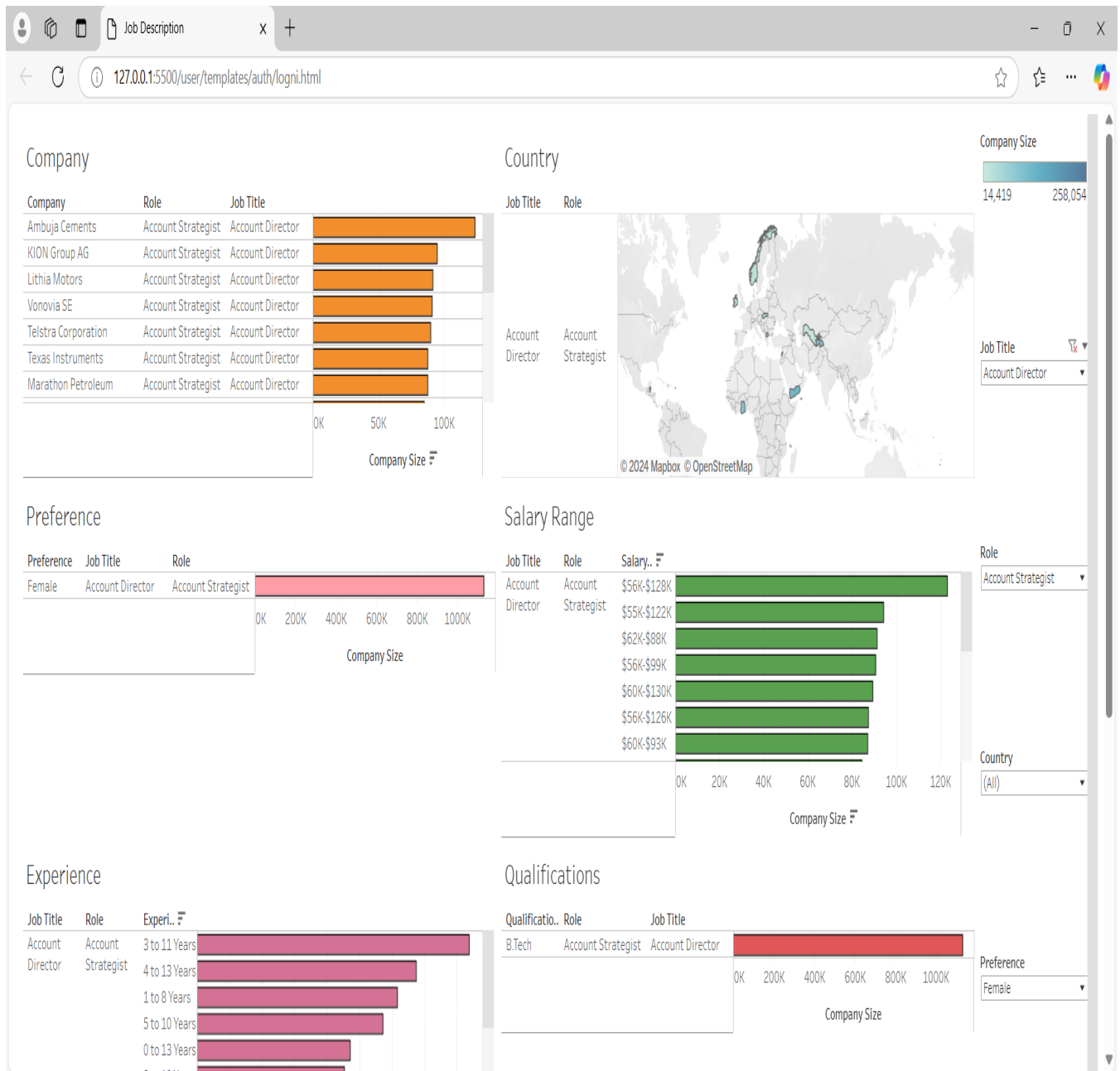
9.2 SCREENSHOTS



WORKFORCE INSIGHTS : JOB MONITORING DASHBOARD



FILTERING AND COMPREHENSION TOOLS TO CUSTOMISE DATA VIEW



JOB FILTERING DASHBOARD: INSIGHTS BY JOB TITLE..

CHAPTER 10

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