Report: Power BI Analysis of Atlas Labs HR Data

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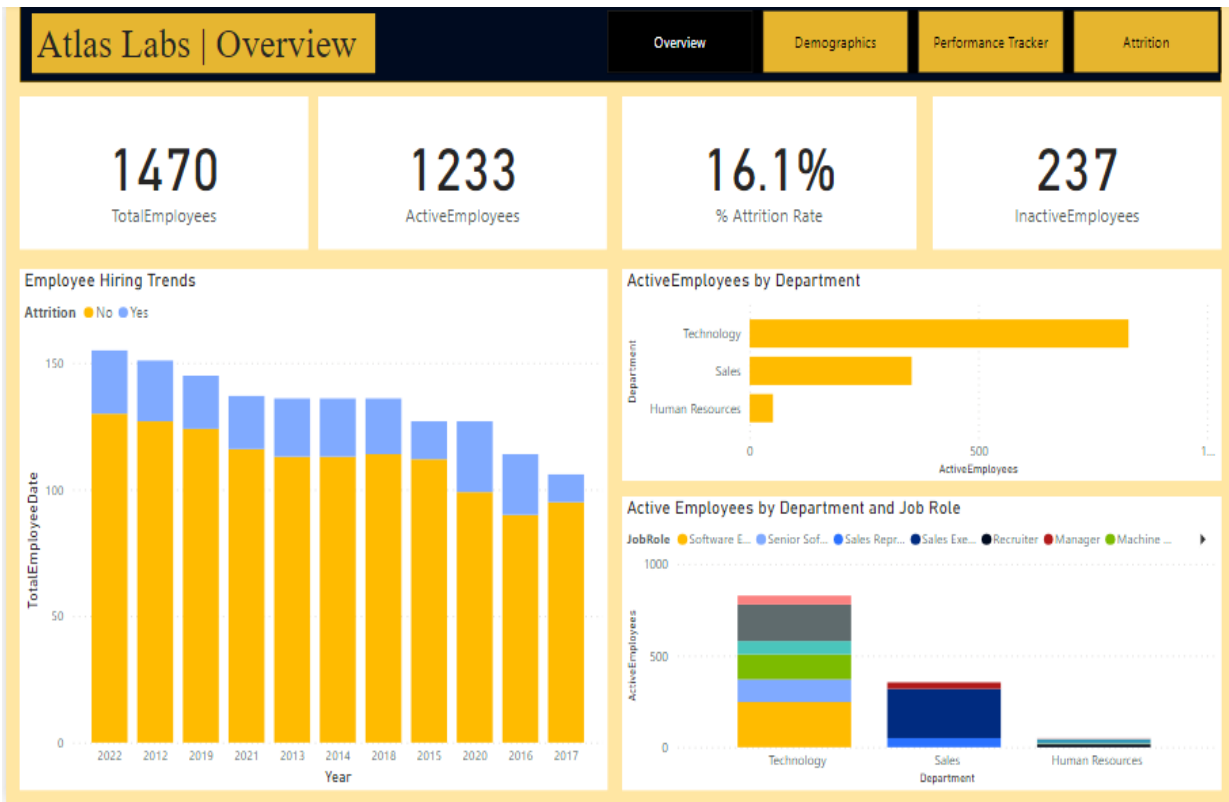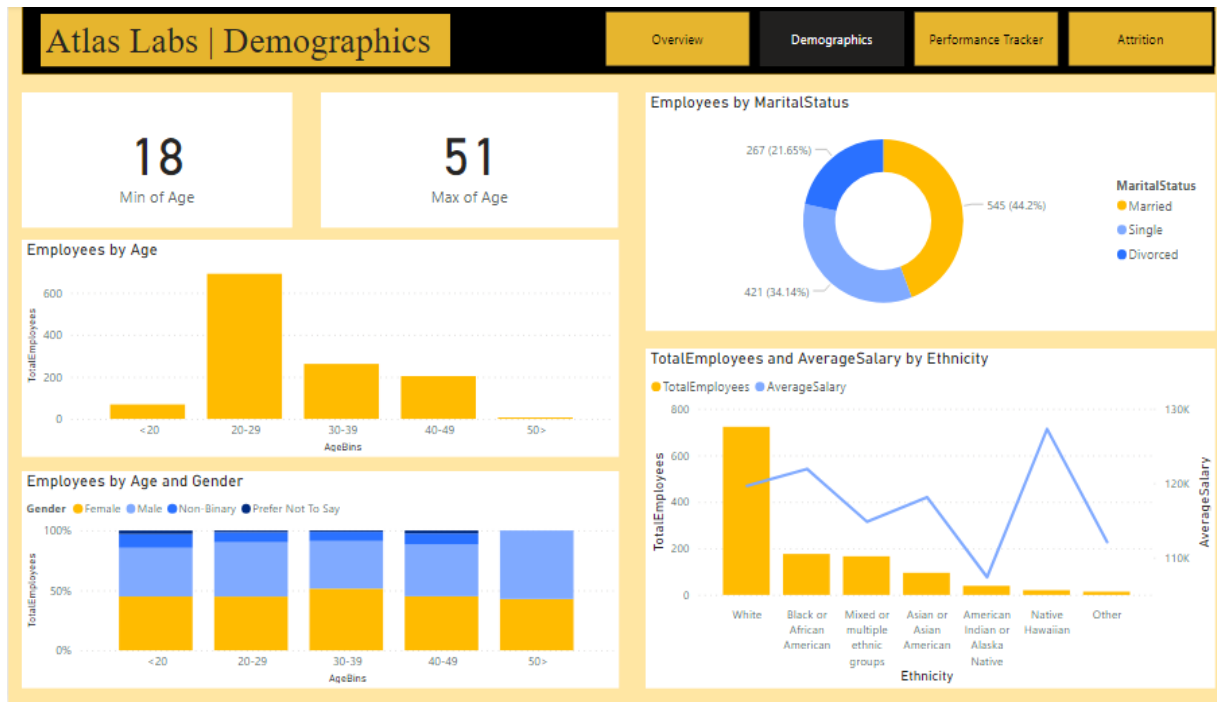
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Abstract

This comprehensive report presents the methodology and outcomes of a detailed Power BI report I undertook for a fictitious software company, Atlas Labs. The purpose of the report was to enable the company to derive in-depth insights from their Human Resources data, specifically regarding employee demographics, performance tracking, and attrition. I have copied report pages to showcase the visualizations done in Power BI. This is followed up by a write-up on the complete process of how those report pages were created.
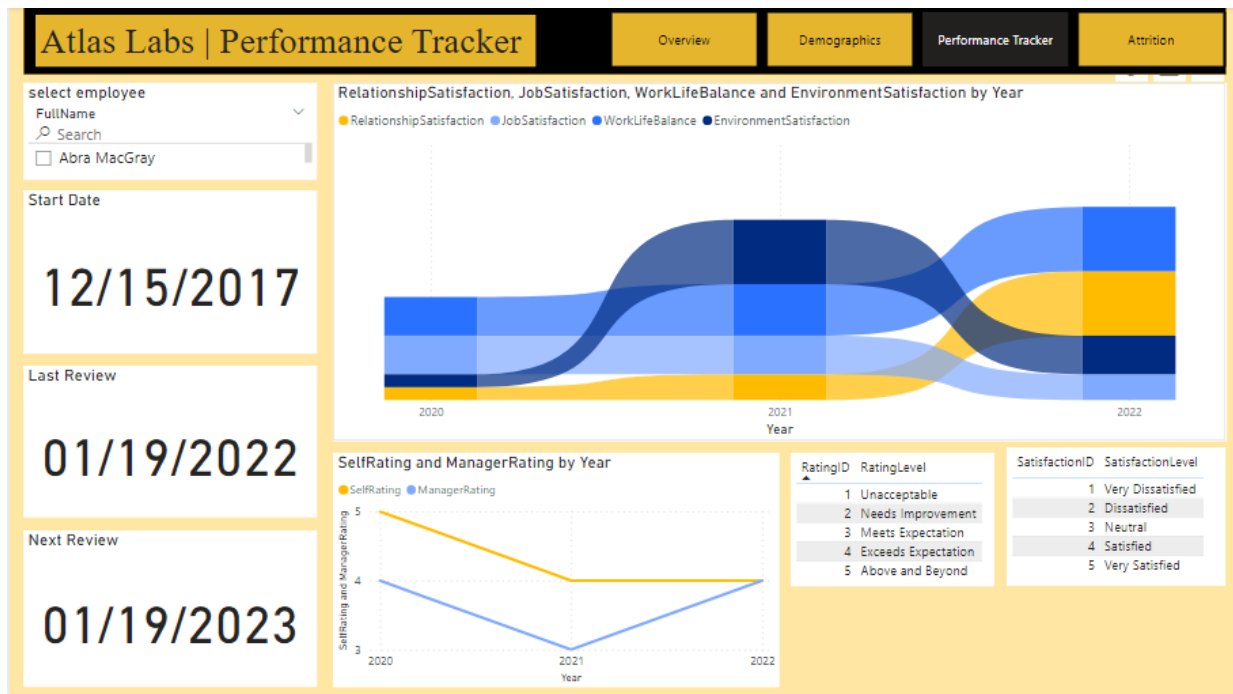
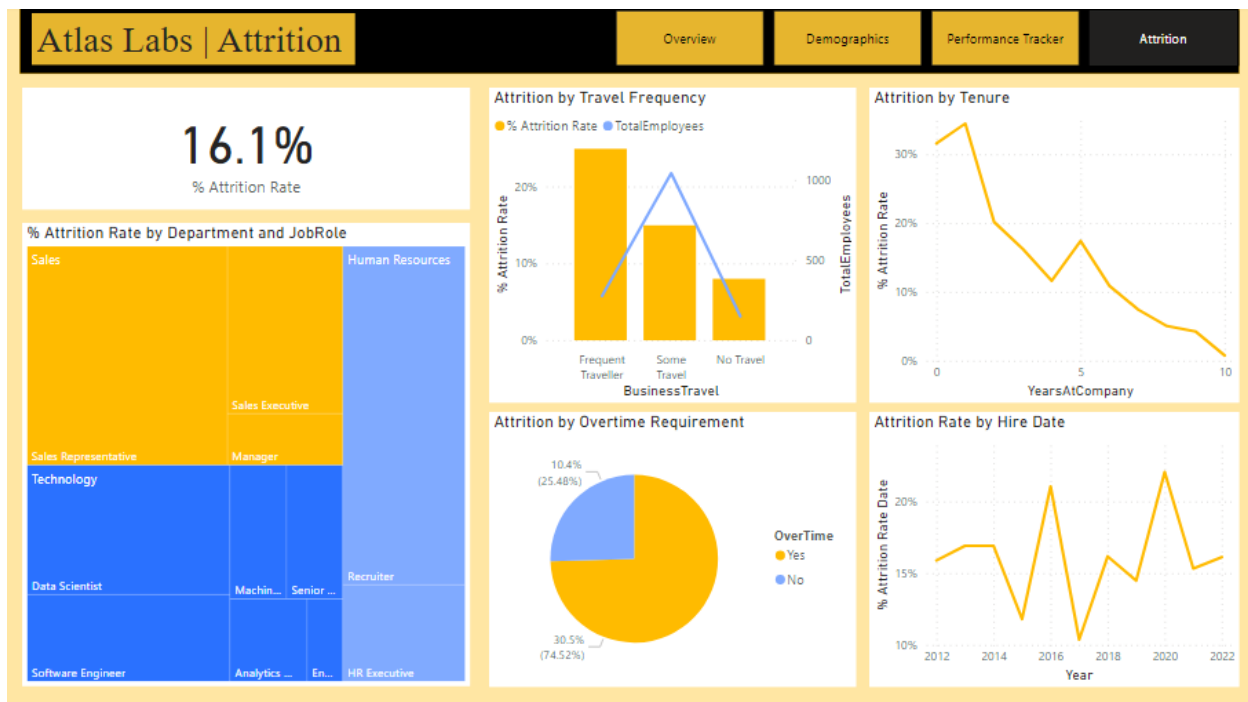## Power BI Report

Report Page 1

Report Page 2

Atlas Labs | Demographics

Overview | Demographics | Performance Tracker | Attrition

18 Min of Age

51 Max of Age

Employees by MaritalStatus

267 (21.65%)
545 (44.2%)
421 (34.14%)

MaritalStatus
- Married
- Single
- Divorced

Employees by Age (bar chart, TotalEmployees vs AgeBins: <20, 20-29, 30-39, 40-49, 50>)

Employees by Age and Gender
Gender: Female, Male, Non-Binary, Prefer Not To Say

TotalEmployees and AverageSalary by Ethnicity
- TotalEmployees
- AverageSalary

Ethnicity: White, Black or African American, Mixed or multiple ethnic groups, Asian or Asian American, American Indian or Alaska Native, Native Hawaiian, Other

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Report Page 3

Atlas Labs | Performance Tracker

Overview | Demographics | Performance Tracker | Attrition

select employee
FullName
Search
☐ Abra MacGray

Start Date
12/15/2017

Last Review
01/19/2022

Next Review
01/19/2023

RelationshipSatisfaction, JobSatisfaction, WorkLifeBalance and EnvironmentSatisfaction by Year
- RelationshipSatisfaction
- JobSatisfaction
- WorkLifeBalance
- EnvironmentSatisfaction

Year: 2020, 2021, 2022

SelfRating and ManagerRating by Year
- SelfRating
- ManagerRating

Year: 2020, 2021, 2022

RatingID	RatingLevel
1	Unacceptable
2	Needs Improvement
3	Meets Expectation
4	Exceeds Expectation
5	Above and Beyond

SatisfactionID	SatisfactionLevel
1	Very Dissatisfied
2	Dissatisfied
3	Neutral
4	Satisfied
5	Very Satisfied

Report Page 4

Procedural Write-up

Data Import

The project started by importing five distinct Excel tables, demonstrating my ability to combine complex, multi-dimensional datasets into a single, robust reporting tool.

Data Preparation

Once the data was imported into Power BI, I utilized POWER QUERY to expertly clean the data. By promoting headers, renaming, and reordering columns, I created a foundation for effective analysis. Ensuring the correct data types via a Metadata sheet and creating computed columns using the Advanced Editor's M language further demonstrated my skills in data manipulation.

The data preview phase used Column Distribution, Quality, and Profile to rigorously check for duplicates, missing values, and anomalies. My expertise in data management was evident when I applied universal transformations, merged necessary columns, and ensured the correct labeling

and formatting of date columns. Numeric columns were cleaned using techniques like absolute value and rounding off, ensuring consistency and reliability in the data.

Data Modeling

Through expert use of DAX, I constructed a comprehensive date dimension table, allowing for accurate temporal analysis. My strategic decision to utilize a snowflake schema underlines my ability to choose the appropriate model based on the data's structure.

I also expertly managed the relationships between tables, ensuring appropriate cardinality and cross-filtering. Though Power BI can only manage one active relationship between tables, I skillfully maintained a few inactive relationships to preserve the integrity of the data.

As this report was specifically designed for a single department with full data access, I didn't implement Row-level security or sensitivity labels. This bespoke tailoring of the report to the user's requirements reflects my client-focused approach.

Exploratory Data Analysis

This phase allowed me to showcase my creativity and deep analytical skills.
The Overview page I designed presents a quick snapshot of the company, using multiple measures and varied visualizations. I showcased key metrics such as the number of active and inactive employees, attrition rates, and department-wise distribution - highlighting my ability to present complex data in a digestible manner.

In the Demographics section, I applied my comprehensive understanding of diverse visualization tools to present details on the employees' marital status, age, gender, and ethnicity-based salary distributions.

The Performance Tracking page shows my ability to turn raw data into actionable insights. With this page, I ensured that all important performance-related aspects were covered.

In the Attrition section, I delved deep into the data, exploring potential causes of attrition and presenting these insights in an accessible way.

Report Customization

Finally, I polished the report by customizing its layout and theme. This crucial step, often overlooked, demonstrates my attention to detail and understanding of the importance of aesthetics in data presentation. The report was neatly organized, with each page titled appropriately, and a navigation bar added for smooth transitions.

This comprehensive report underlines my proficiency in Power BI, showcasing my ability to handle large datasets, manipulate and model data effectively, and provide meaningful insights through expert data visualization. It is my firm belief that these skills would be a valuable asset in any data-driven role.