# Project Title: Data Professional Survey

## Project Overview

630 survey responses was collected from Twitter Poll / Online Survey in 2024. An end-to-end real-world survey analysis was carried out using Excel and Power BI for visualization and derivation of meaningful insight

## Project Objective

To analyze the landscape of data professionals by exploring their demographics, career paths, salary distribution, job satisfaction, and preferences, using real-world survey data collected via Twitter and other online platforms.

## Duration

The analysis was conducted over several weeks, involving phases of data preparation, exploration, modeling, and strategy development.

# Methodology and Approach

## Data Preprocessing

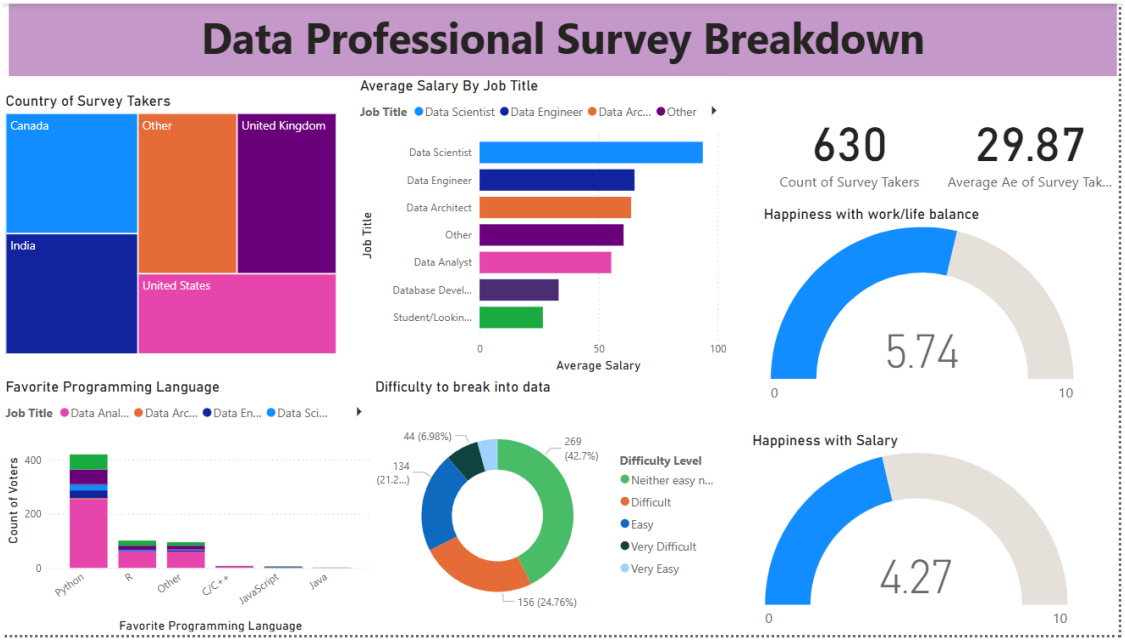
- Conducted a survey on Twitter targeting data professionals (Data Analysts, Data Scientists, Data Engineers, etc.)
- Exported the collected data to Excel, then imported it into Power BI for cleaning and analysis.
- Performed data cleaning tasks including:
- Standardizing job titles and programming language responses
- Handling missing values in satisfaction and difficulty ratings
- Converting rating scales to numerical values for analysis

## Exploratory Data Analysis (EDA)

- Analyzed the distribution of survey takers by country, job title, and experience level
- Evaluated average salary by role to uncover income disparities
- Measured perceived difficulty of breaking into data roles
- Captured job satisfaction regarding work/life balance and salary

## Visualization and Segmentation

- Built a responsive Power BI dashboard with:
- Treemap showing country distribution of respondents
- Bar chart of average salary by job title
- Gauge visuals displaying average happiness with salary and work/life balance
- Donut chart breaking down perceived entry difficulty into data careers
- Stacked column chart showing favorite programming languages by job role




## Key Insights:

- Python is the most popular programming language across all data roles.
- Data Scientists have the highest average salaries among the roles surveyed.

- A significant portion (43%) of respondents found it “difficult” to break into data.
- Work/life balance scored an average of 5.74/10, while salary satisfaction lagged behind at 4.27/10.
- Most respondents were from the United States, United Kingdom, India, and Canada.

### Challenges and Solutions

Challenges

- Unstructured Survey responses (e.g. job titles, programming languages)
- Uneven response rates across countries and role
- Measuring quantifiable satisfaction metrics
- Visual Overload

Solutions

- Grouped responses into defined categories for consistency
- Used visual proportion method (e.g. tree maps) to reflect true distribution
- Converted satisfaction scores into quantifiable 1-10 scale
- Designed clean layout using colour coded categories and group charts by topic

## End Results and Recommendations

### Recommendations

- Entry-level training programs and mentorship initiatives are essential to reduce perceived difficulty.
- Organizations should evaluate salary structures for data professionals to boost retention and satisfaction.
- Community-driven learning platforms should continue promoting Python, as it is the most widely adopted language across roles.

## Conclusion

This project offered actionable insights into the experiences and expectations of data professionals. The dashboard allows stakeholders, hiring managers, and educators to better understand the industry's pulse—from compensation trends to career entry barriers. It highlights areas where improvements can support a more inclusive and rewarding data community.