DEVELOPER SURVEY

IBM DATA ANALYST CAPSTONE PROJECT

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SLIDES INCLUDED

- Summary
- Introduction
- Methodology
- Programming Languages Trends
- Database trends
- Dashboards
- Insights from dashboards
- Overall Findings and Implications
- Conclusion

SUMMARY

1. Identify a real-world problem, explain why it matters, and set a clear goal for the data analysis project.

2. Collect the necessary datasets from reliable sources. Clean, format, and prepare the data to make it analysis-ready.

3. Dive deep into the data — find patterns, spot anomalies, and build a basic understanding using statistics and visuals.

4. Translate the raw numbers into meaningful insights. Use graphs, trends, and narratives to make the findings easy to understand for a general audience.

5. Summarize the project's findings and suggest practical actions or business strategies based on your analysis.

INTRODUCTION

- **Stack Overflow’s Developer Survey** is one of the largest studies of the global coding community.
- It captures insights from **nearly 90,000 developers** across different countries and backgrounds.
- The dataset highlights **technologies used, career choices, learning habits, and future trends** in the developer world.
- While the data is extensive, it **may not fully represent** every group in the global developer population.
- Analyzing this data helps **characterize developers globally** and **predict shifts** in the tech industry.

METHODOLOGY

- **Acquire and Explore Survey Data**

  Gather data using methods like web scraping, APIs, and the Requests library.

  Perform an initial review to understand the dataset structure and key contents.

- **Data Cleaning and Preparation**

  Refine the raw data by correcting inconsistencies, handling missing values, and formatting fields for analysis.

- **Exploratory Data Analysis (EDA)**

  Study how data points are distributed across variables.

  Detect and manage outliers that could impact the analysis.

  Investigate relationships and correlations between different features.

- **Visual Representation of Data**

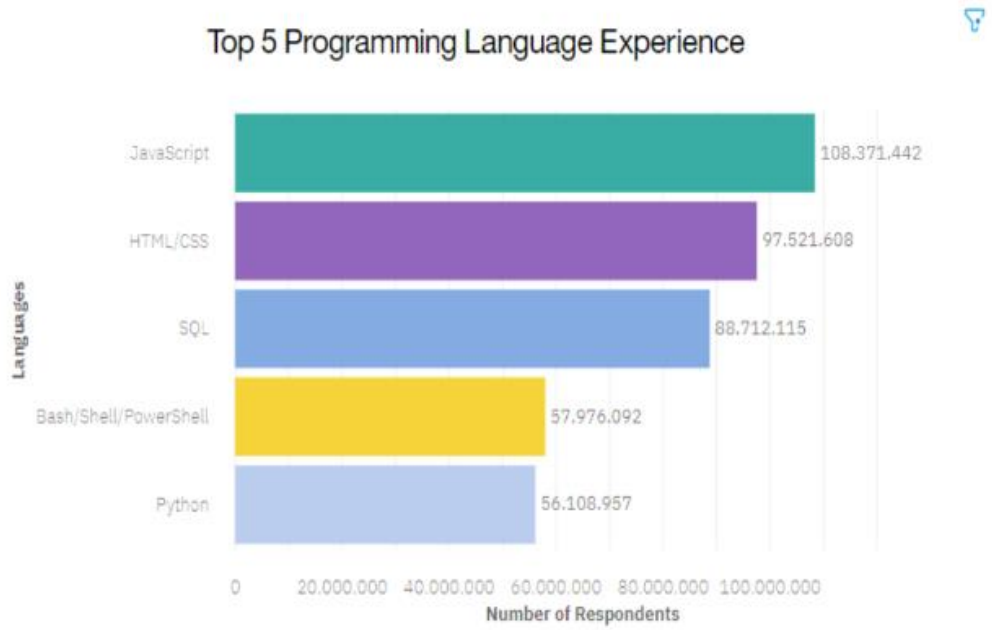
  Create visualizations to illustrate data distributions, relationships, and comparisons in a clear and engaging way.

- **Dashboard Development**

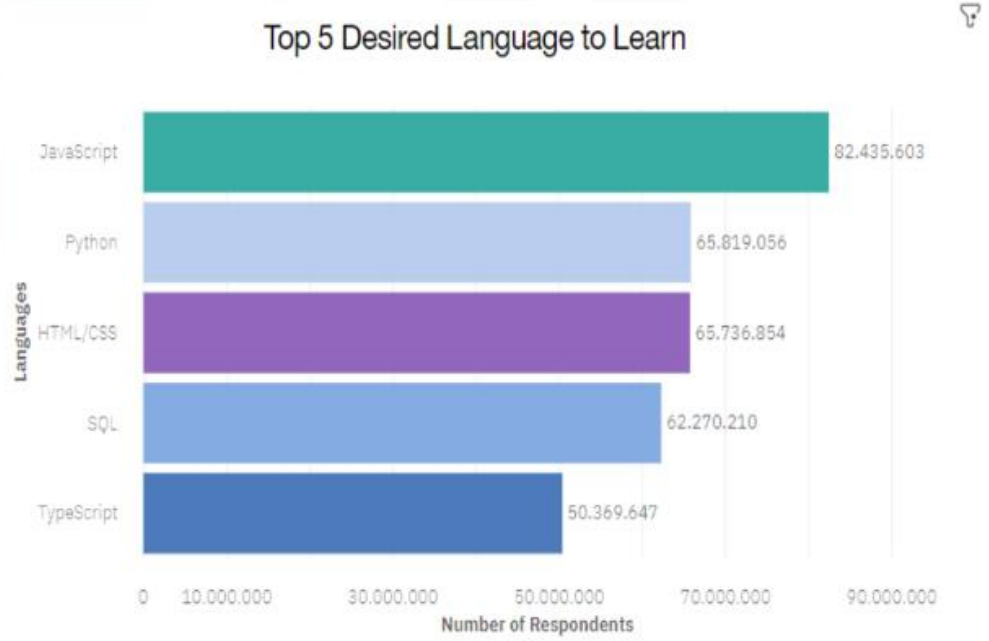
  Build interactive dashboards to effectively present findings and allow dynamic exploration of the data.

PROGRAMMING LANGUAGES TRENDS

Current Year



Next Year

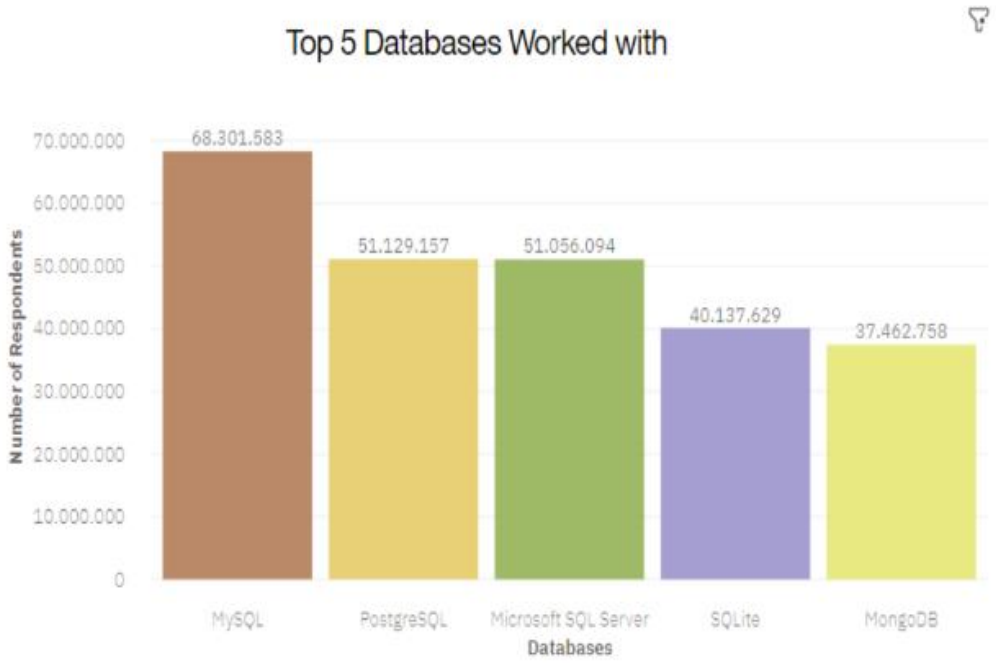


FINDINGS AND IMPLICATIONS

- Javascript is the Programming language in current trend.
- Python is the fastest growing language and is expected to have more demand in future.
- In future it is that typescript will be in demand.
- Possible migrations from Javescript to Typescript.

DATABASE TRENDS

Current Year



Next Year

FINDINGS AND IMPLICATIONS

- MySQL is the current database in trend among developers.
- PostgressSQL is the 2nd fastest growing Database language and it is expected to have a greater reach in upcomming years for learners.
- Devs who worked with MSSQL or SQL lite have more chances for learning reddis or MongoDB in the upcomming years.
- In future MSSQL or SQL Lite might lose its value in market.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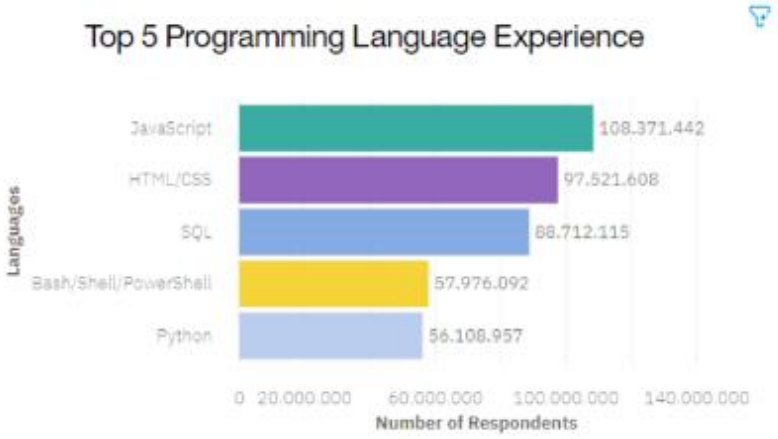
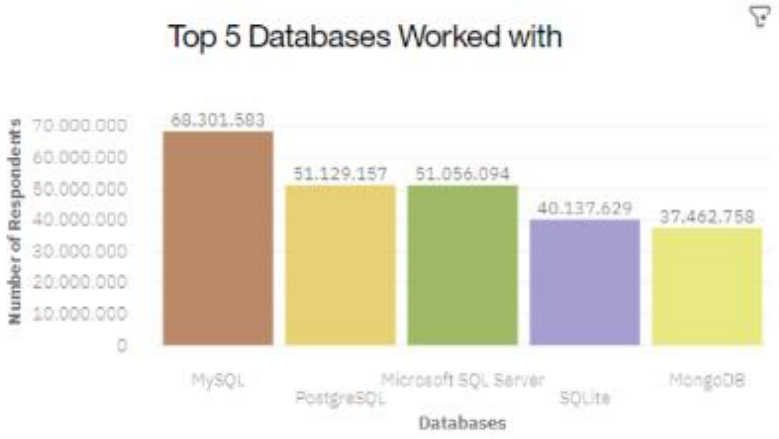
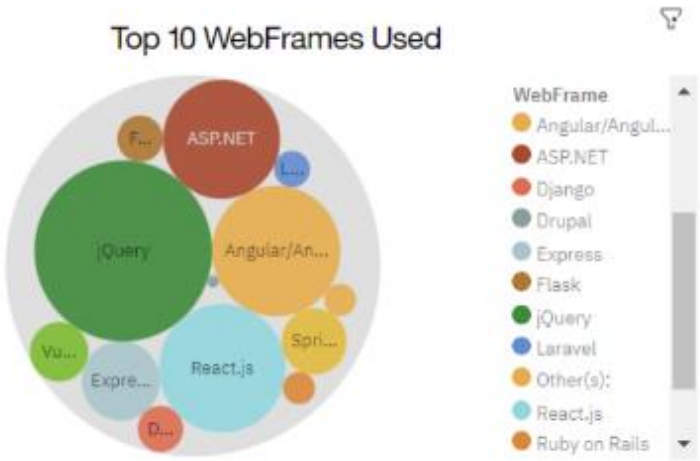
DASHBOARDS

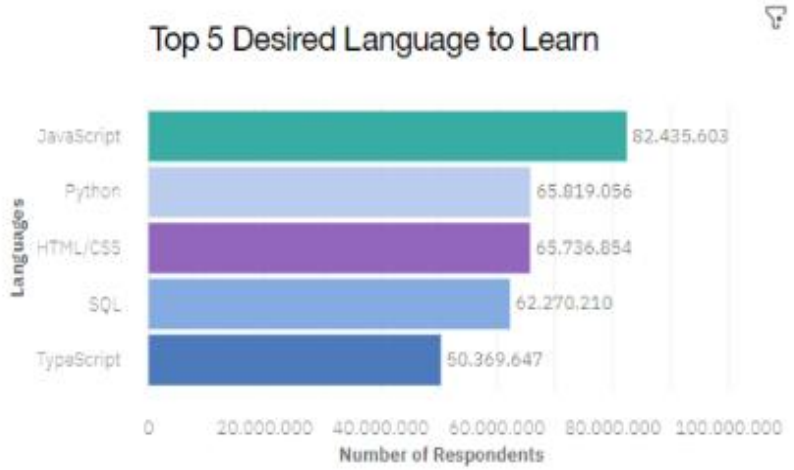
CURRENT TECHNOLOGY USAGE

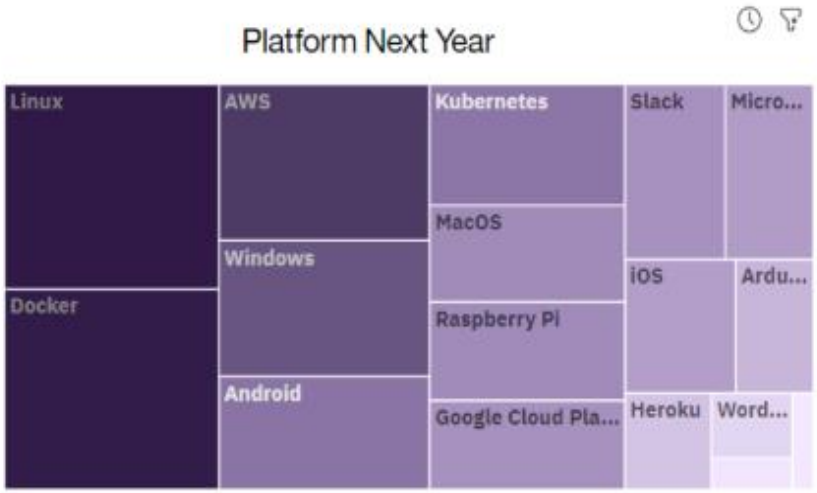


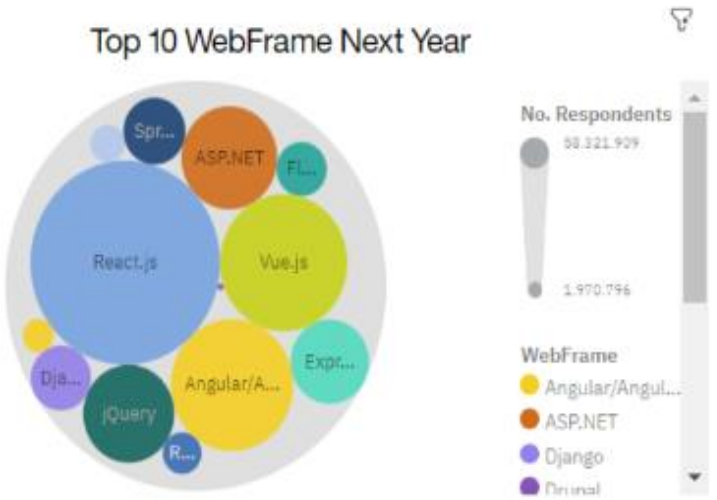




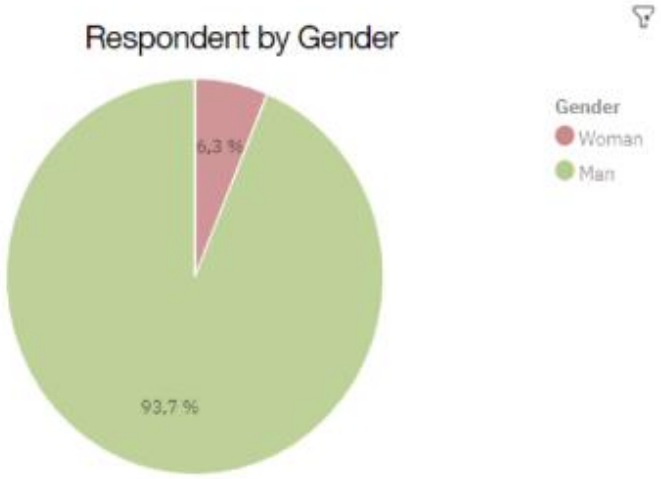
FUTURE TECHNOLOGY TREND

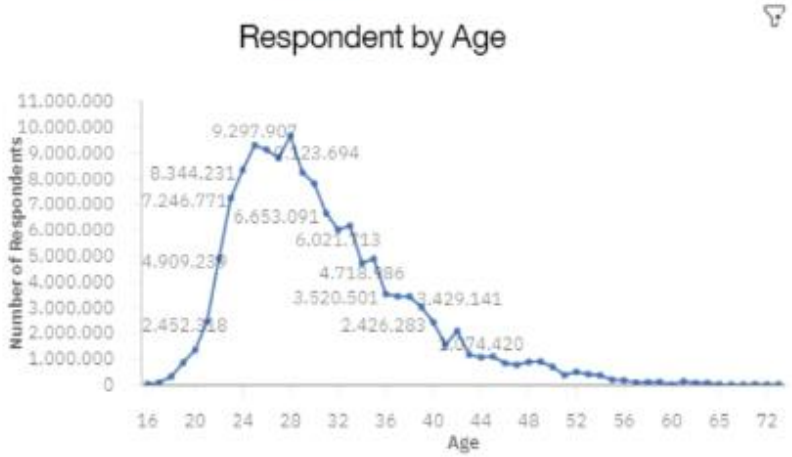


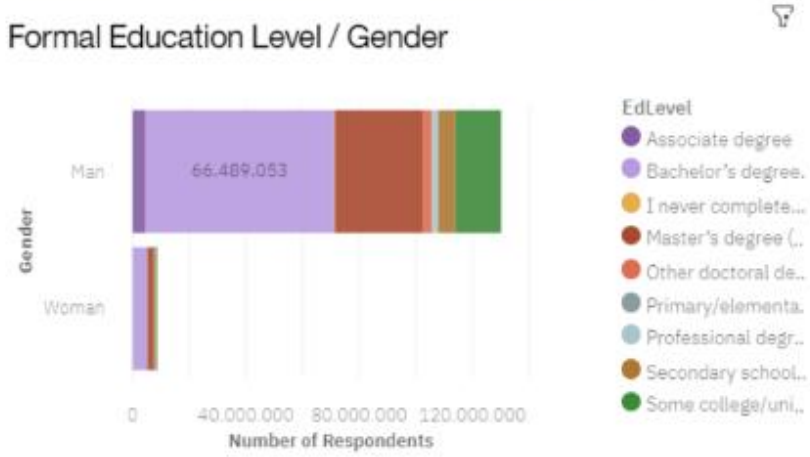




DEMOGRAPHICS





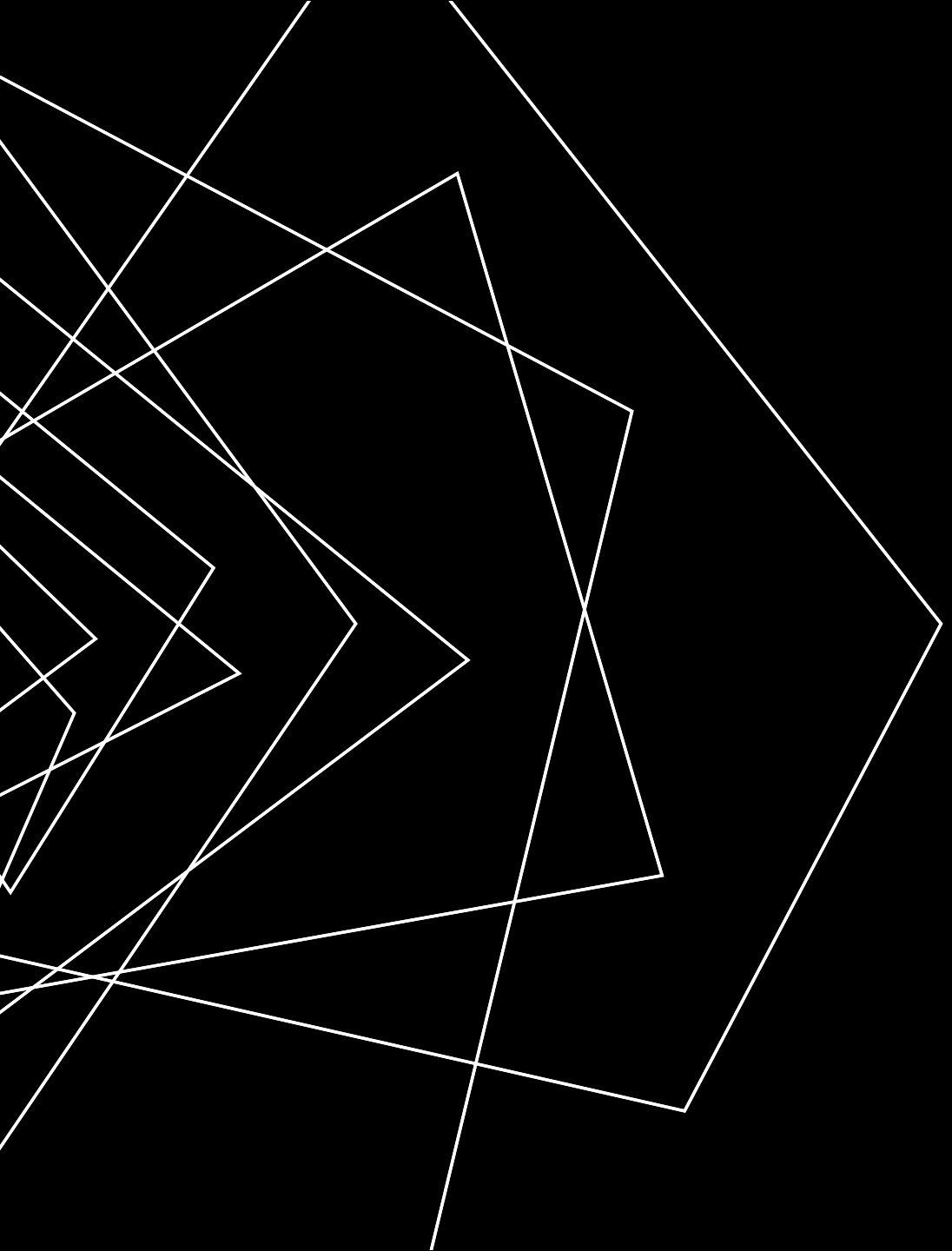


OVERALL FINDINGS & IMPLICATIONS

- **JavaScript is the most widely used programming language, with TypeScript rapidly gaining popularity.**
- **Over 90% of developers are young males, showing a major gender imbalance.**
- **Most developers are located in developed countries, highlighting regional concentration.**
- **The rise of JavaScript and TypeScript is driving the growth of modern web frameworks.**
- **There is global polarization among developers based on geographic location and gender.**
- **The majority of young developers do not hold postgraduate degrees.**

CONCLUSION

- **JavaScript remains dominant**, while **TypeScript's rapid growth** signals a strong shift towards modern, typed web development.
- **The developer community is heavily concentrated among young males in developed countries**, revealing a need for greater diversity and inclusion.
- **Global polarization** in developer demographics could impact future innovation and collaboration.
- **Despite lacking postgraduate degrees, young developers are driving technological advancements**, showing that skills and passion often outweigh formal education.



THANK YOU