



IBM DATA ANALYST CAPSTONE PROJECT

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OUTLINE



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EXECUTIVE SUMMARY



❖ IT Industry Trends & Gender Gap (2025)

- ❖ **Top Databases:** PostgreSQL, MongoDB, Redis, MySQL, Elasticsearch
- ❖ **Hot Programming Languages:** JavaScript, Python, HTML/CSS, SQL, TypeScript
- ❖ **Gender Disparity:** Significant gender gap persists (M: 93.7%, F: 6.3%)

❖ Deep Dive:

- ❖ Research methodology: Data gathering, analysis, and visualization
- ❖ Analyze trends and implications of IT skills and gender disparity
- ❖ Present findings with compelling visuals
- ❖ Conclude with actionable insights

INTRODUCTION



- ❖ Stack Overflow's annual developer survey is the largest and most comprehensive globally.
- ❖ It captures insights from nearly 90,000 developers worldwide.
- ❖ Results provide valuable trends for predicting the direction of developer communities.
- ❖ Conducted by Stack Overflow, a leading platform for developers.
- ❖ Surveys various technology trends including programming languages, databases, and demographics.

METHODOLOGY



- **Collection:**
 - Utilize web scraping, APIs, and request libraries to gather survey data and explore its content.
- **Data Wrangling:**
 - Clean and prepare the collected data for analysis.
- **Exploratory Data Analysis (EDA):**
 - Analyze data distribution, handle outliers, and explore correlations within the dataset.
- **Data Visualization:**
 - Create visual representations to highlight data distribution, relationships, composition, and comparisons.
- **Dashboard Creation:**
 - Develop a dashboard for intuitive data presentation and exploration

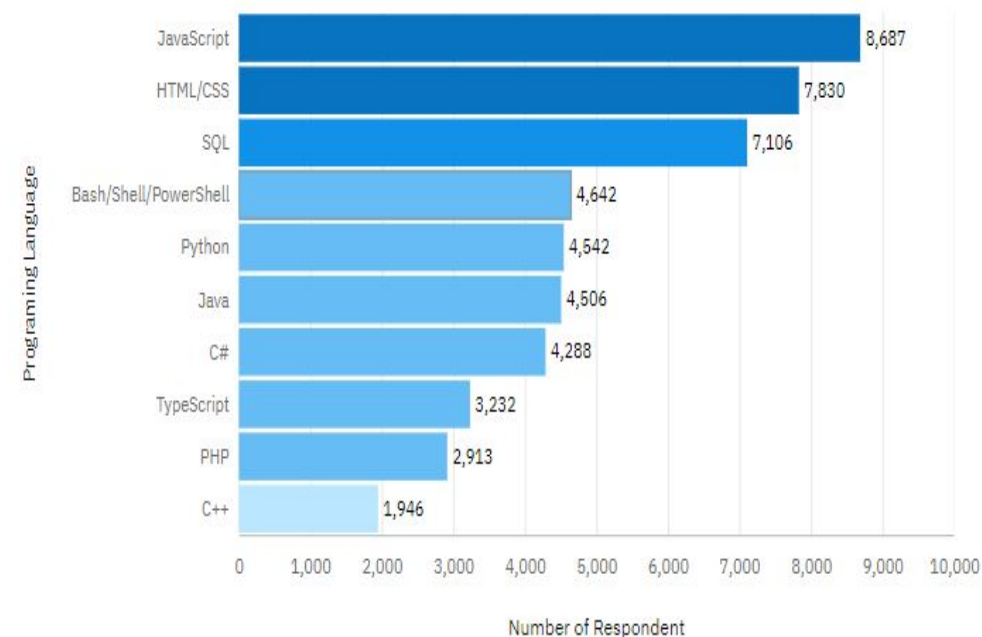
RESULTS



PROGRAMMING LANGUAGE TRENDS

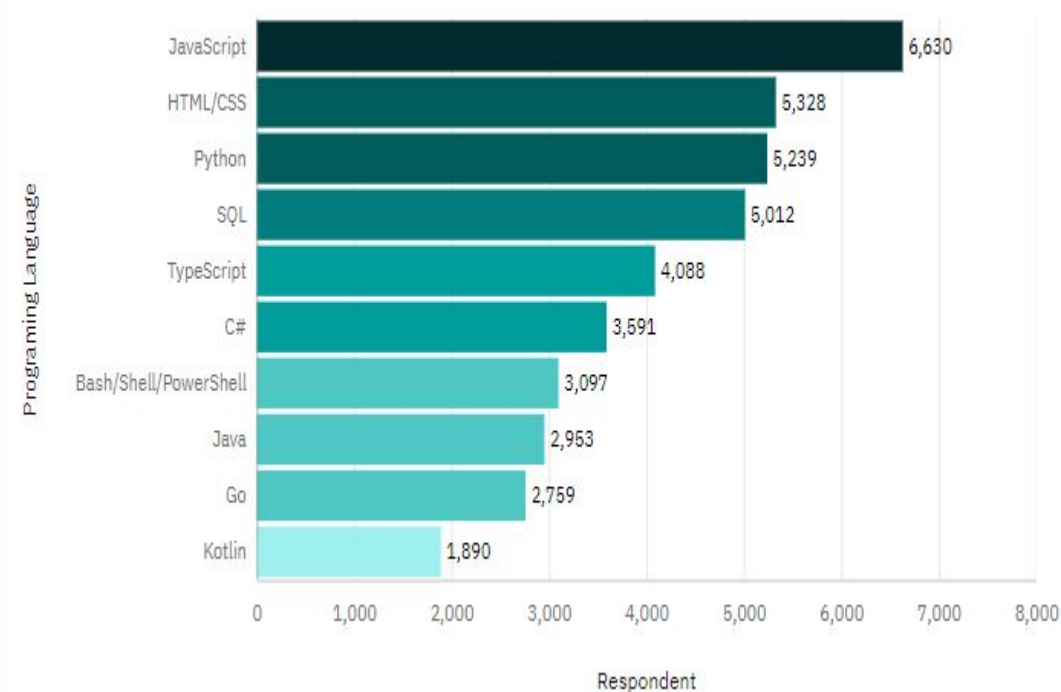
Current Year

Top 10 Language Worked With



Next Year

Language Desire Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript remains a top language.
- Python is the fastest-growing.
- JavaScript, HTML/CSS, and SQL are in high demand.

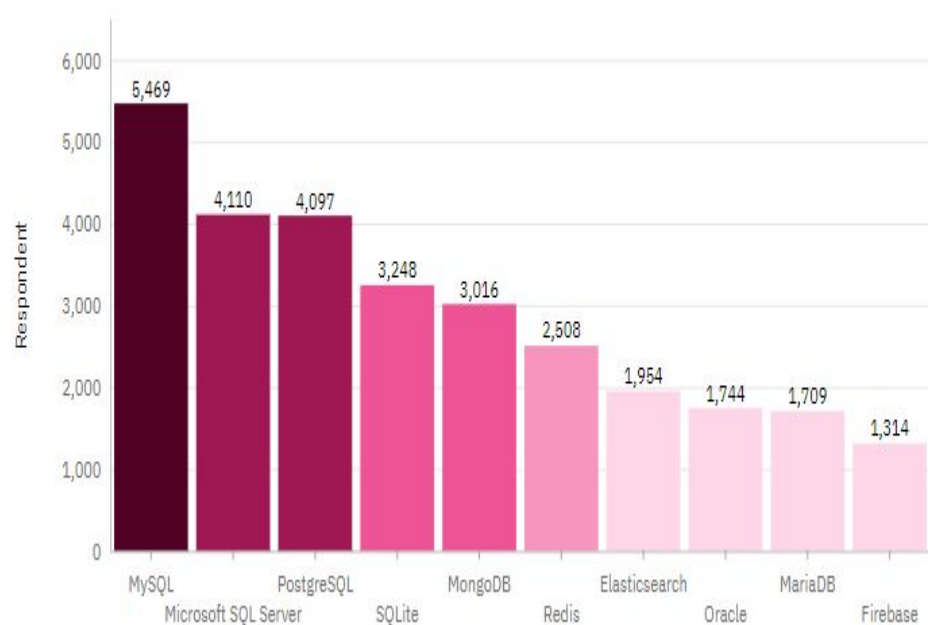
Implications

- Potential migration from JavaScript to Python.
- Python's rising demand could surpass JavaScript in the future.

DATABASE TRENDS

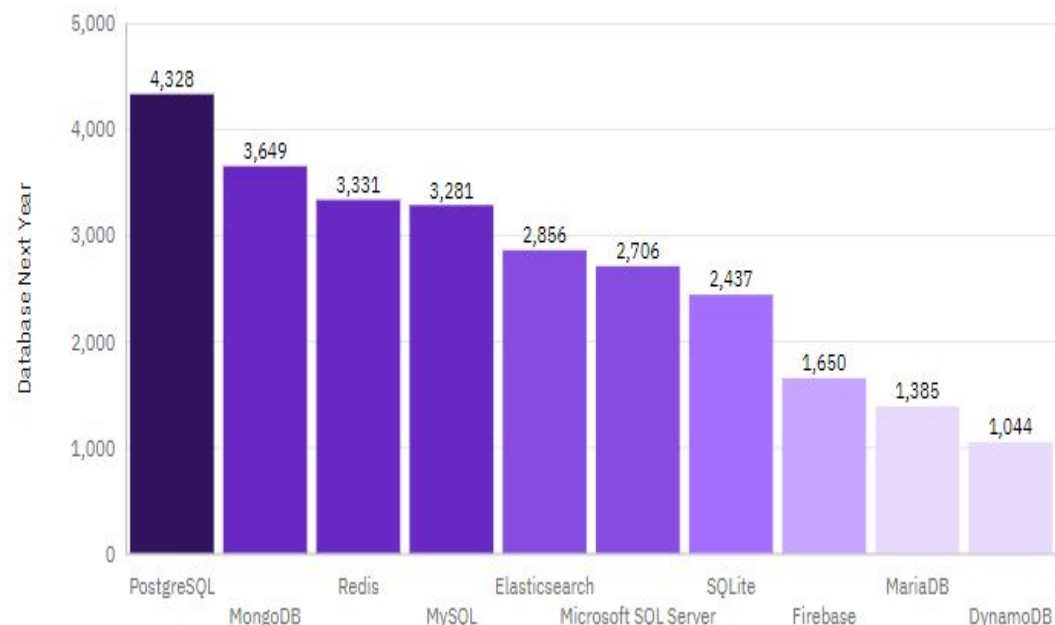
Current Year

Top 10 Database Worked With



Next Year

Database Desire Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL remains the top choice for databases.
- MySQL's demand is expected to decrease next year.
- PostgreSQL and MongoDB are gaining popularity.

Implications

- Microsoft SQL Server and SQLite are declining in market share.
- PostgreSQL and MongoDB are gaining traction.
- Open-source databases are preferred.

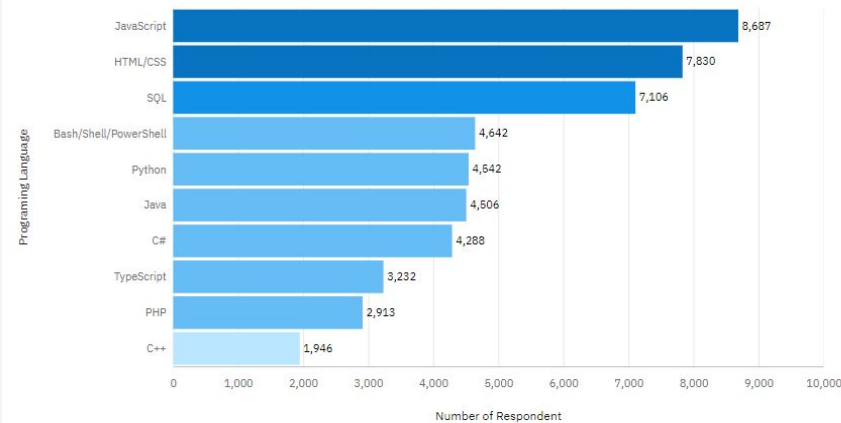
DASHBOARD



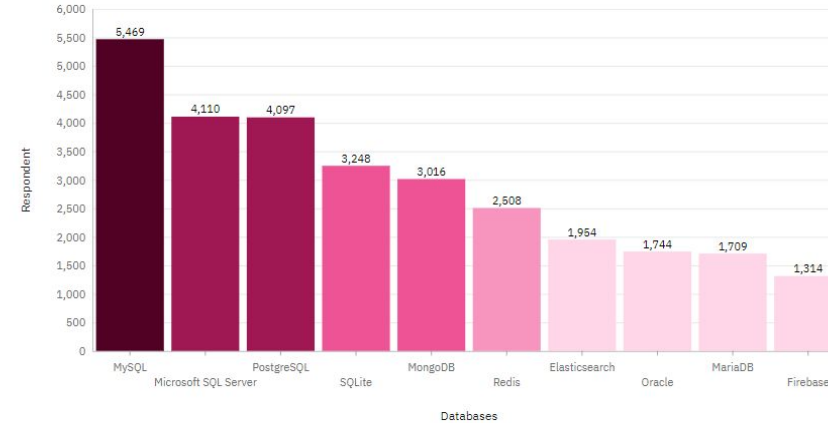
[https://github.com/Qiyi27/Qiyi/blob/4a86d4d954333ffa73f0ce7e19429c92e3f95663/Dashboard%20with%20IBM%20Cognos%20Analytics%20\(Coursera%20project\).pdf](https://github.com/Qiyi27/Qiyi/blob/4a86d4d954333ffa73f0ce7e19429c92e3f95663/Dashboard%20with%20IBM%20Cognos%20Analytics%20(Coursera%20project).pdf)

DASHBOARD TAB 1

Top 10 Language Worked With



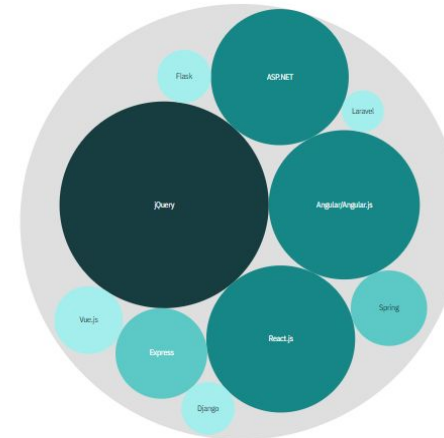
Top 10 Database Worked With



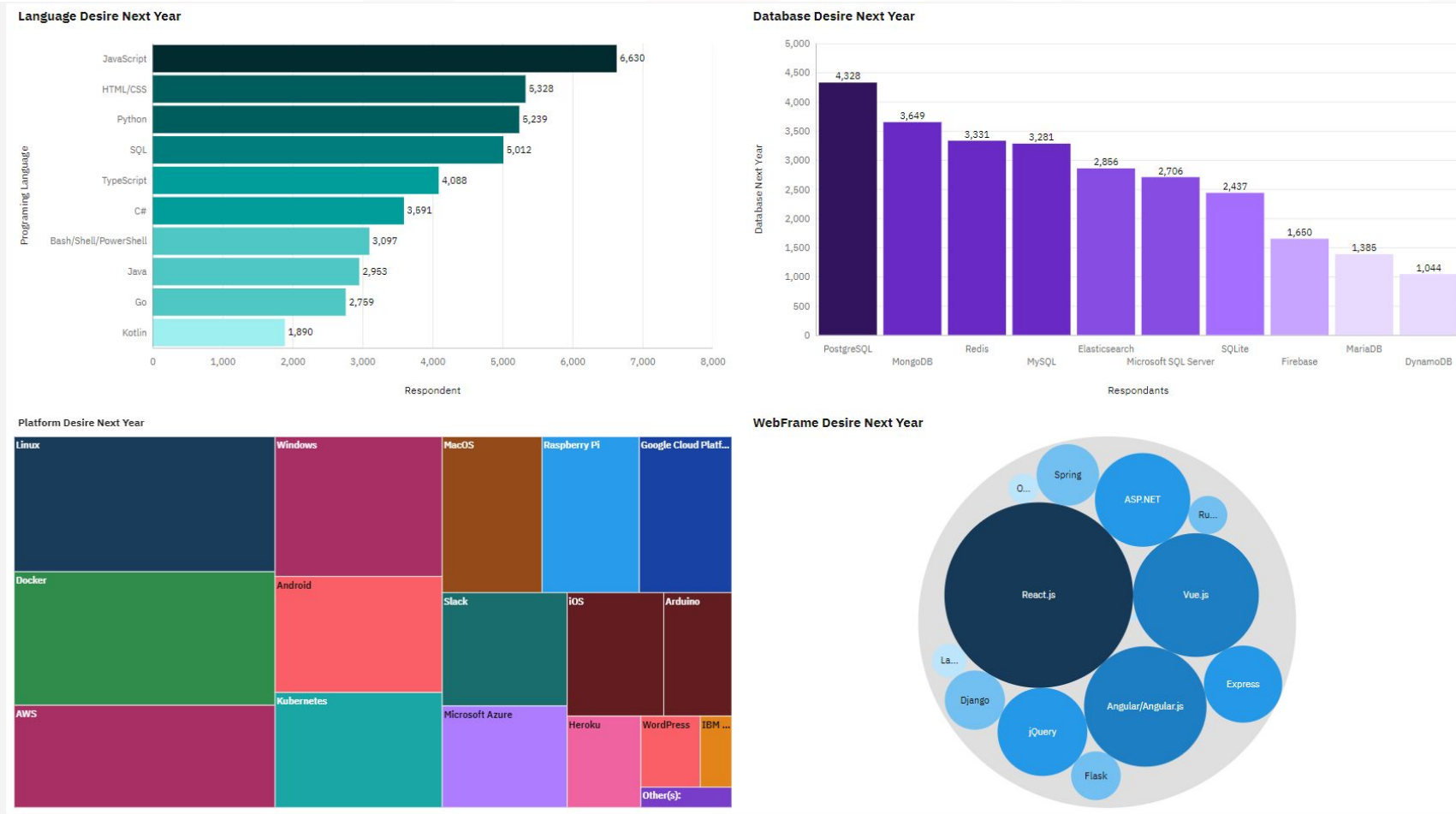
Platform Worked With



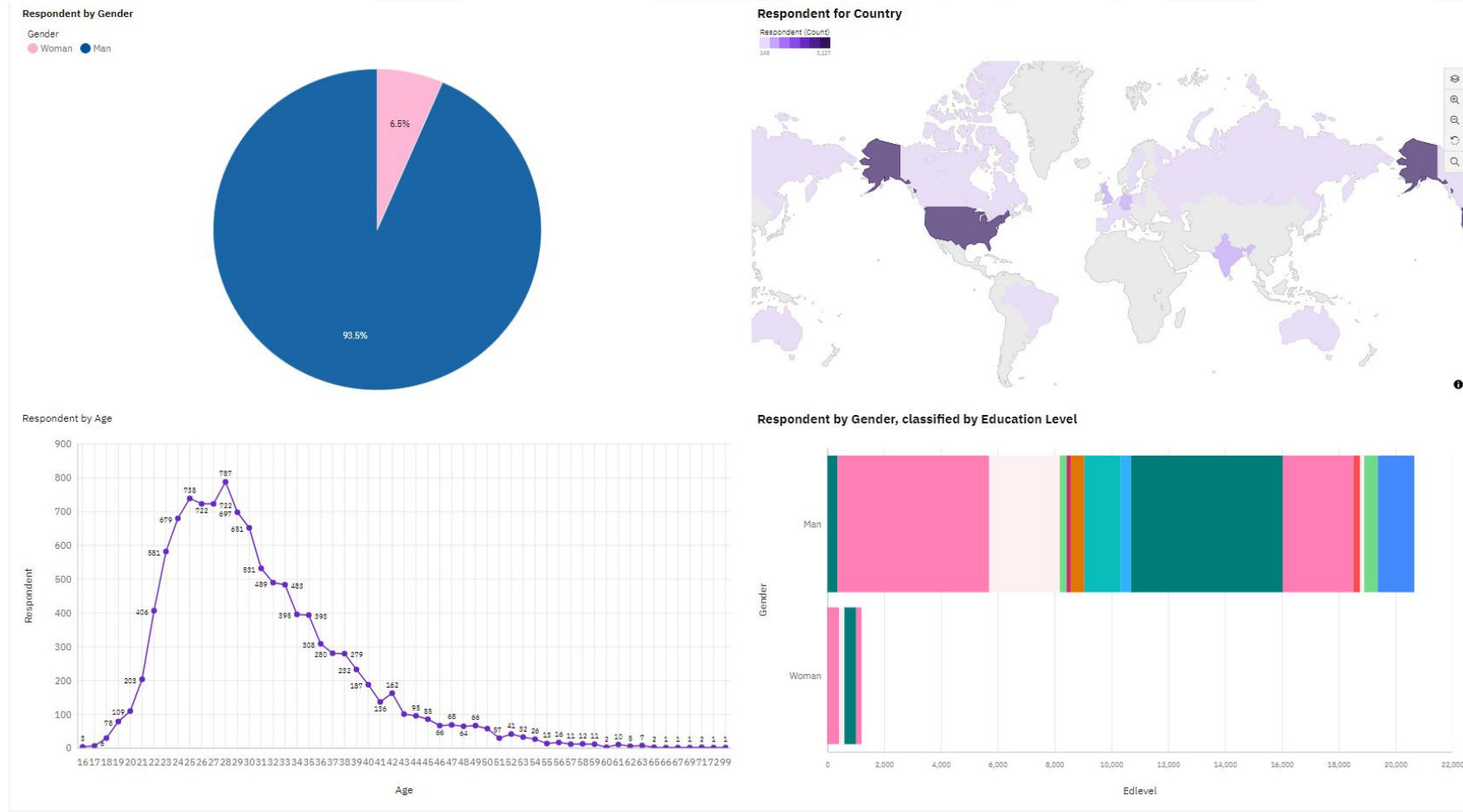
WebFrame Worked With



DASHBOARD TAB 2



DASHBOARD TAB 3



DISCUSSION



OVERALL FINDINGS & IMPLICATIONS

Findings

- JavaScript and Python reign as top languages.
- PostgreSQL leads among databases.
- Developers are mainly in developed nations.

Implications

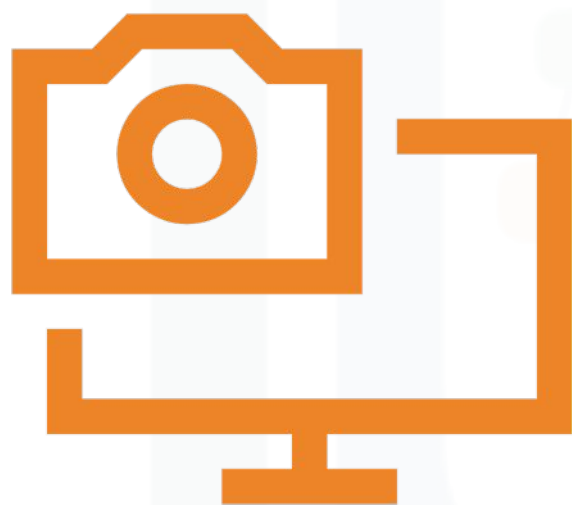
- JavaScript and TypeScript frameworks are growing in popularity.
- High-demand skills offer more job opportunities.
- IT pros and companies must adapt to new demands.

CONCLUSION

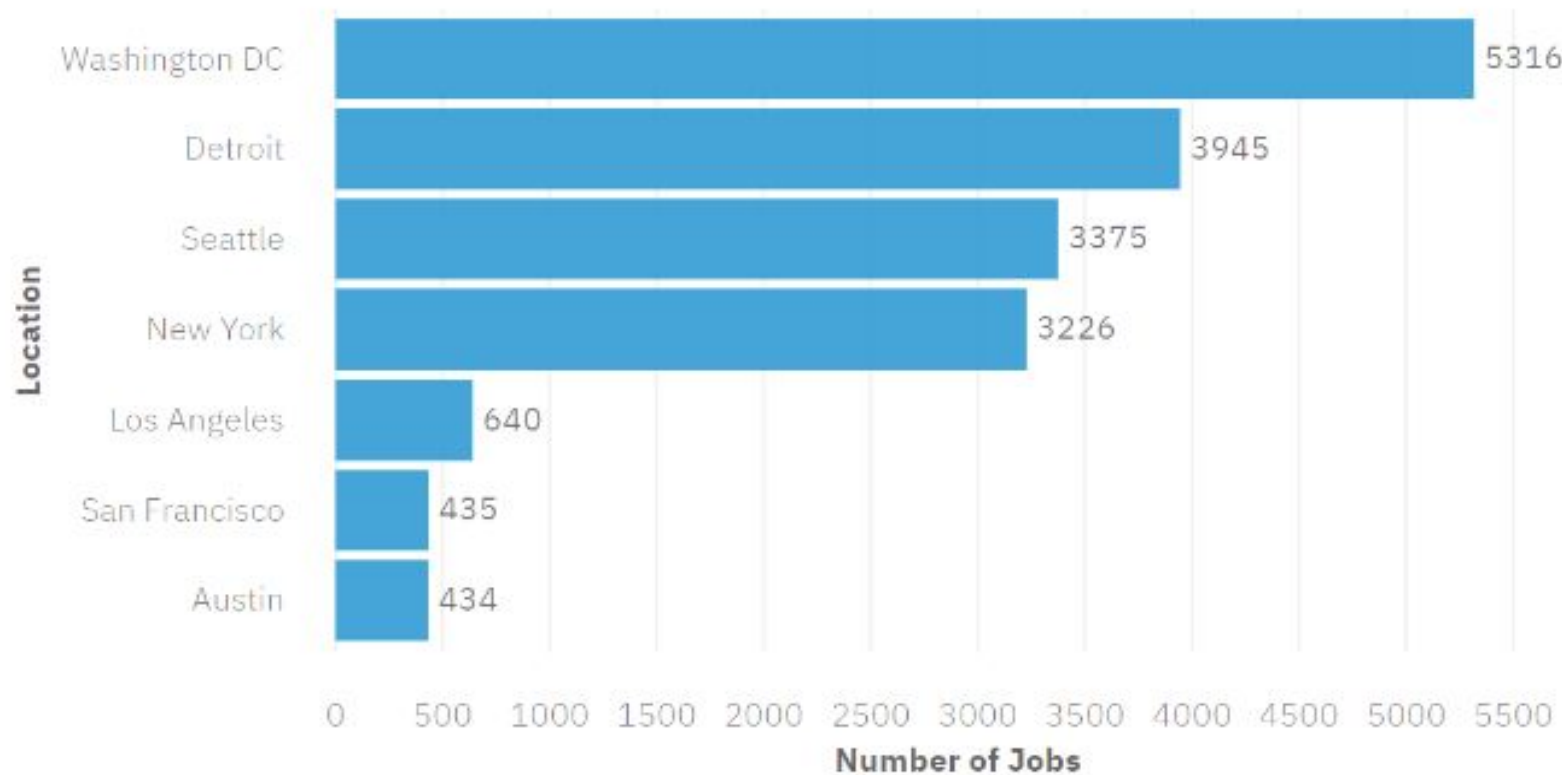


- Trends in tools, platforms, and languages are easy to grasp.
- New tech shapes trends and demands.
- Diversity is essential in the IT sector.
- Work is needed to open up tech job opportunities in developing countries.

APPENDIX



JOB POSTINGS



POPULAR LANGUAGES

