In-Demand Data Tech Skills: A Closer Look
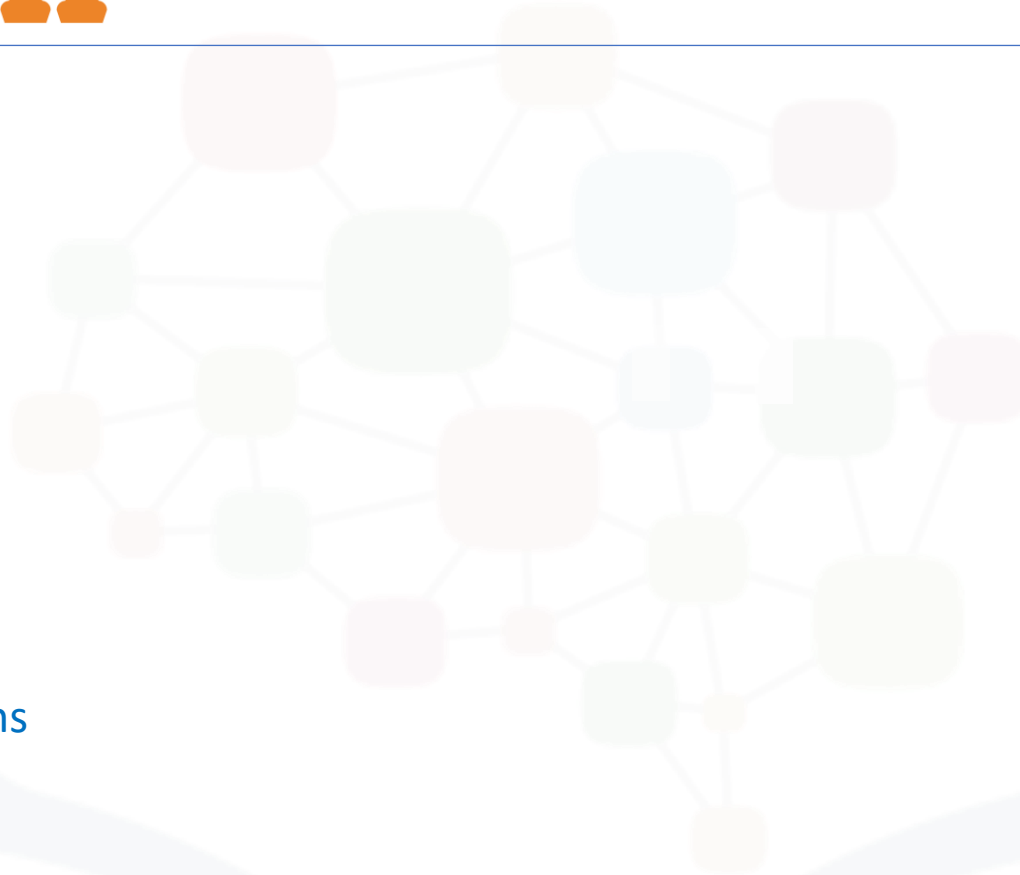
BUDDY MARTIN

February 26th, 2024

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EXECUTIVE SUMMARY

This report presents key findings from a survey conducted to assess hot tech skills relevant to job seekers in the current and future job market. The survey gathered insights from professionals across various industries to understand their current skill sets, anticipated future trends, and demographic characteristics.

- **Tech Skills Assessment and Future Outlook**

The survey analyzed the proficiency and anticipated demand for tech skills among job seekers. It covered areas such as programming languages, database technologies, platforms, frameworks, and development environments. By merging the assessment of current skills with future outlook, the report provides a comprehensive view of both present capabilities and anticipated trends.

- **Demographic Insights**

In addition to skill assessment, the report offers demographic insights into the surveyed population. It covers demographics such as age, gender, country of residence, educational background, and job titles. Understanding the demographic composition provides context for interpreting the skill data and identifying potential disparities or trends across different groups.

- **Findings in Data Analyst Specific**

The report delves into specific findings relevant to job seekers pursuing careers in data analysis. It highlights skill priorities, educational backgrounds, job titles, and salary trends specific to the data analyst role. These insights offer tailored guidance for individuals aspiring to enter or advance within the data analytics field.

By synthesizing data on current skill levels, future skill demand, demographics, and specialized findings for data analysts, this report equips job seekers with actionable insights to navigate the dynamic tech landscape and enhance their career prospects.

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INTRODUCTION

This report serves as a comprehensive guide for professionals navigating today's dynamic job market, offering insights into the ever-evolving landscape of tech skills. Tailored specifically for job seekers, the report explores both current and anticipated future tech trends, providing valuable information to individuals aiming to enhance their career prospects. By analyzing emerging skill demands and demographic trends, readers will gain actionable insights to strategically position themselves in their respective fields. Whether seeking to enter the job market, transition to a new role, or advance within their current career path, this report equips professionals with the knowledge and understanding needed to thrive in an increasingly competitive environment.

METHODOLOGY

Data Sources:

- Utilizing Stack Overflow's annual survey, a renowned platform within the technology industry, two datasets have been generated: one pertaining to Respondent Tech Skills and the other to Respondent Demographics.

Data Collection:

- Survey conducted online by Stack Overflow, covering a wide range of tech-related topics.
- Voluntary participation from professionals, ensuring diverse and comprehensive responses.
- Rigorous methodologies ensure data quality and reliability for industry insights.

Plan for Collected Data:

- Conduct thorough analysis of survey responses to identify key tech skills and trends.
- Segment data by demographics to understand variations across different groups.
- Extract specialized findings relevant to specific career paths, such as data analysis roles.
- Present actionable insights for job seekers to navigate the tech landscape effectively.
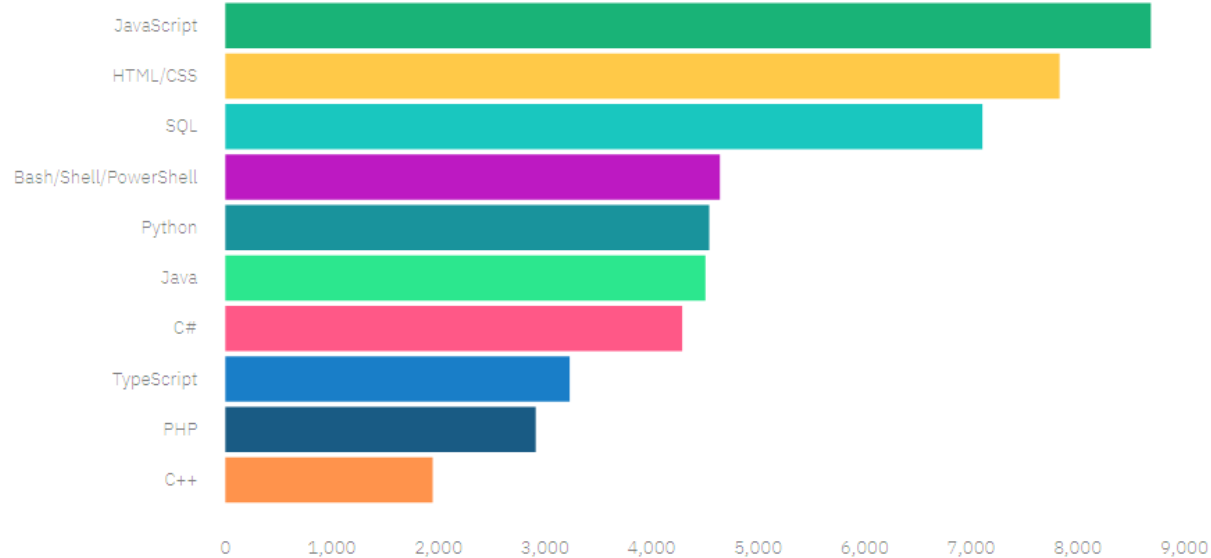
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RESULTS

This section unveils the findings from our analysis of the Stack Overflow survey data. Through visually engaging charts and graphs, we showcase insights into current tech skills, demographic trends, and specialized findings. These insights offer actionable guidance for professionals navigating the dynamic job market, covering key areas such as programming languages, database technologies, platform preferences, and salary trends.
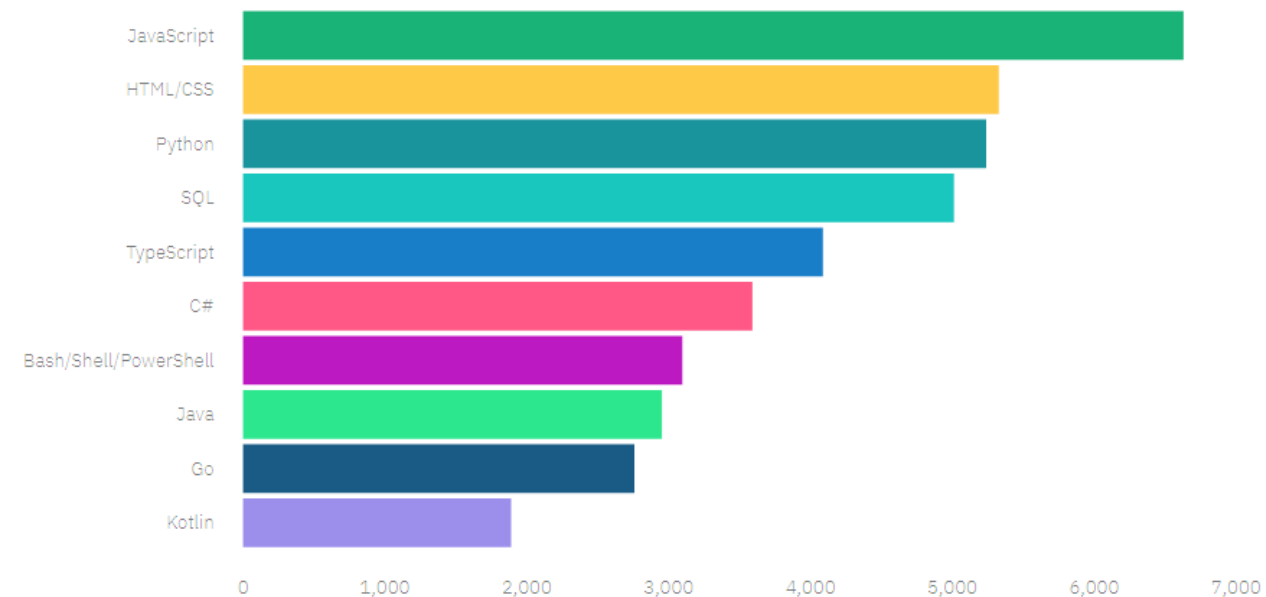
PROGRAMMING LANGUAGE TRENDS

Current Year

Top 10 Used Language

Language	
JavaScript	
HTML/CSS	
SQL	
Bash/Shell/PowerShell	
Python	
Java	
C#	
TypeScript	
PHP	
C++	

Next Years

Top 10 Desired Language

Language	
JavaScript	
HTML/CSS	
Python	
SQL	
TypeScript	
C#	
Bash/Shell/PowerShell	
Java	
Go	
Kotlin	

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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings:

Top 5 Programming Languages Used Currently:

- JavaScript, HTML/CSS, SQL, Bash/Shell/PowerShell, and Python are the most commonly used programming languages.
- JavaScript and HTML/CSS dominate web development, while SQL is vital for database management.
- Bash/Shell/PowerShell and Python are essential for scripting and automation tasks.

Top 5 Programming Languages Desired in the Next Few Years:

- JavaScript remains highly desired, emphasizing its enduring relevance in future tech landscapes.
- Python's versatility makes it a sought-after language for various domains, including data science and web development.
- HTML/CSS, SQL, and TypeScript also maintain importance, reflecting continued emphasis on web development and data management.

Implications:

Current Landscape:

- Job seekers should prioritize mastering JavaScript, HTML/CSS, SQL, Bash/Shell/PowerShell, and Python for current job opportunities.
- Proficiency in JavaScript, HTML/CSS, and SQL is essential for web development and database management roles.
- Skills in Bash/Shell/PowerShell and Python are valuable for automation tasks and scripting.

Future Outlook:

- Continued demand for JavaScript and Python underscores their versatility and applicability across industries.
- Consider learning TypeScript to stay updated on emerging trends in web development.
- SQL proficiency remains crucial for data-driven decision-making, emphasizing the importance of data management skills.
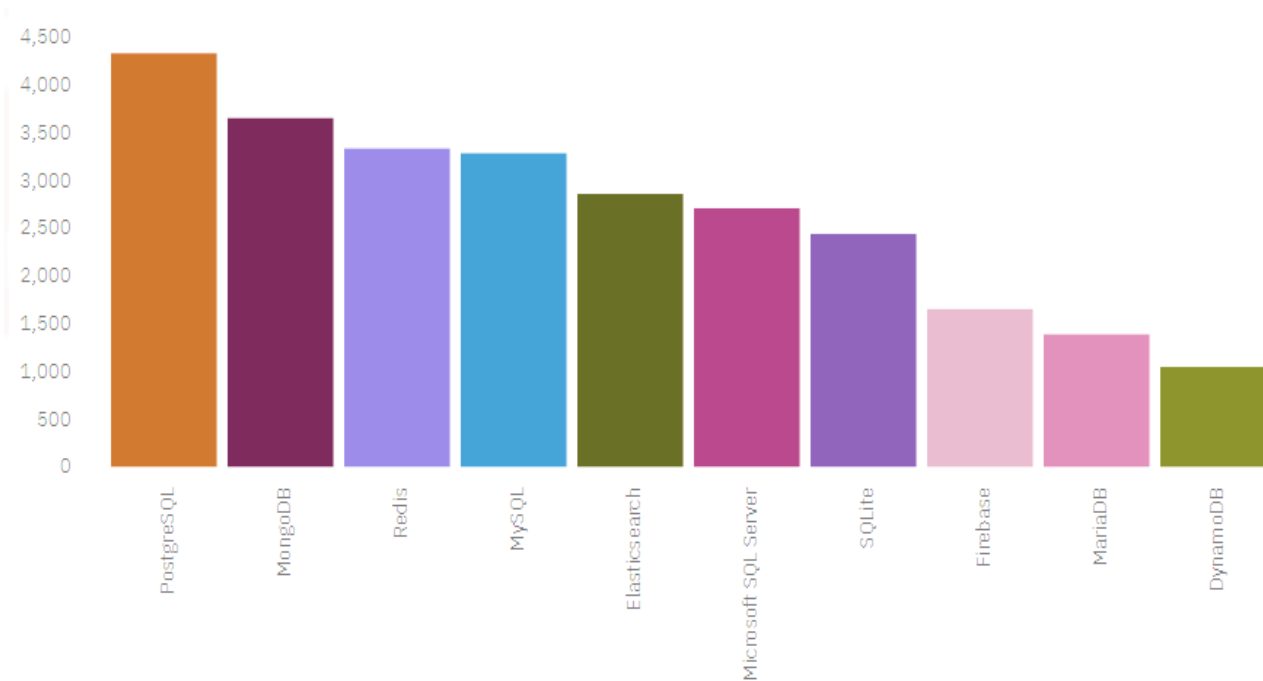
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DATABASE TRENDS

Current Year

Next Years

Top 10 Used Database
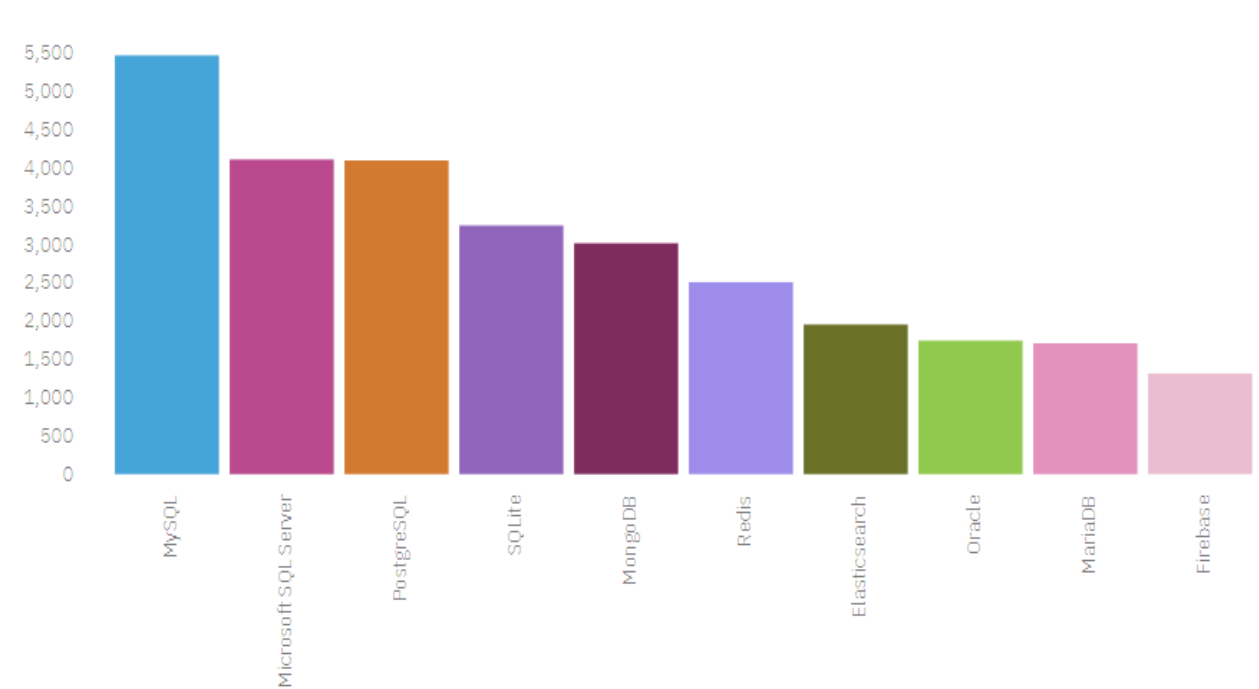
Top 10 Desired Database

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings:

Top 5 Databases Used Currently:

- MySQL, Microsoft SQL Server, PostgreSQL, SQLite, and MongoDB are the most commonly used databases.

- MySQL and Microsoft SQL Server are popular choices for traditional relational database management systems (RDBMS).

- PostgreSQL and SQLite also feature prominently, offering versatile solutions for various applications.

- MongoDB represents the growing adoption of NoSQL databases, particularly for flexible and scalable data storage.

Top 5 Databases Desired in the Next Few Years:

- PostgreSQL, MongoDB, Redis, MySQL, and Elasticsearch are the most desired databases for the future.

- PostgreSQL and MongoDB maintain their popularity, indicating continued interest in relational and NoSQL database solutions.

- Redis and Elasticsearch emerge as desired databases, reflecting growing demand for real-time data processing and search functionalities.

Implications:

Current Landscape:

- Job seekers should prioritize acquiring skills in MySQL, Microsoft SQL Server, PostgreSQL, SQLite, and MongoDB to align with current industry standards.

- Proficiency in traditional RDBMS like MySQL and Microsoft SQL Server is valuable for roles in data management and analytics.

- Understanding NoSQL databases like MongoDB is essential for positions involving large-scale data storage and retrieval.

Future Outlook:

- Anticipated demand for PostgreSQL and MongoDB underscores the importance of relational and NoSQL databases in future tech environments.

- Redis and Elasticsearch offer opportunities for professionals interested in real-time data processing and search functionality development.

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DASHBOARD

Dashboard permalink:

https://kudou88.github.io/In-Demand-Data-Tech-Skills/
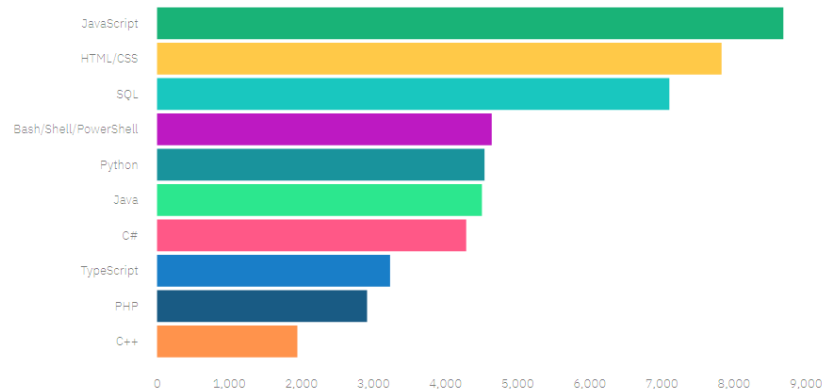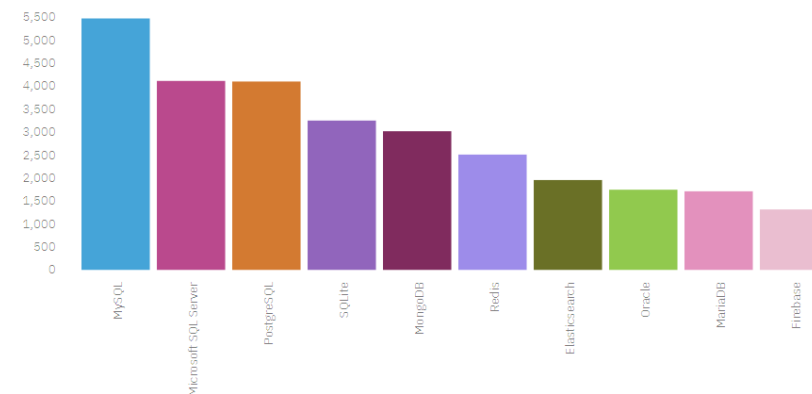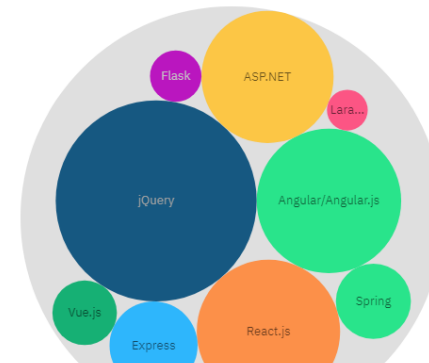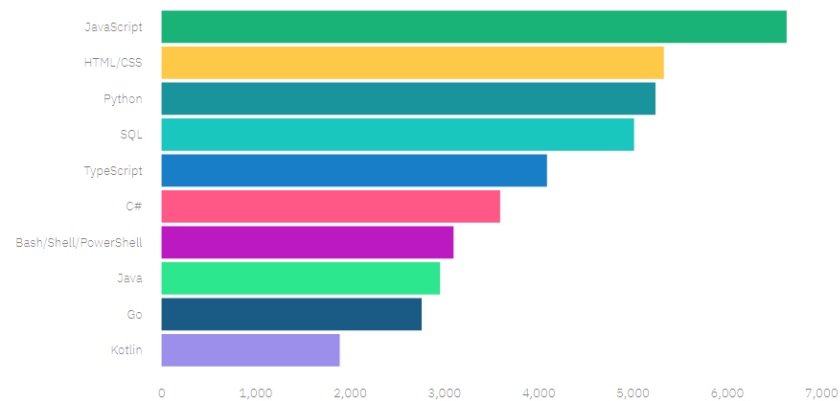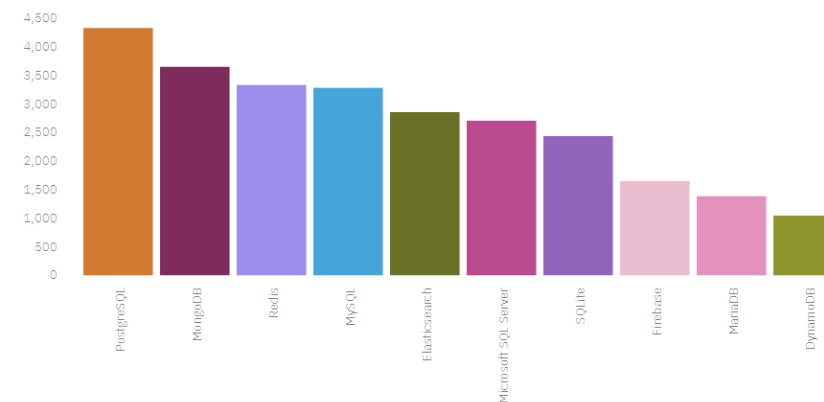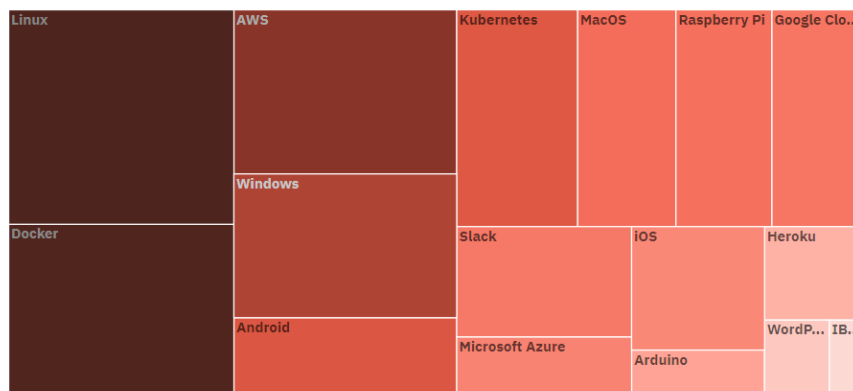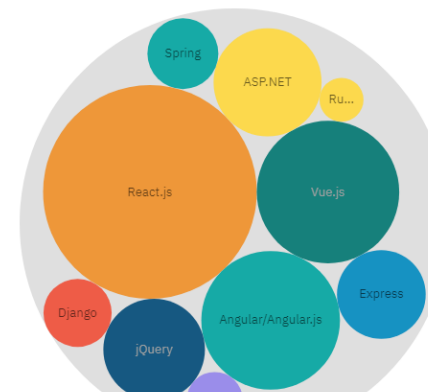
DASHBOARD TAB 1

DASHBOARD TAB 2

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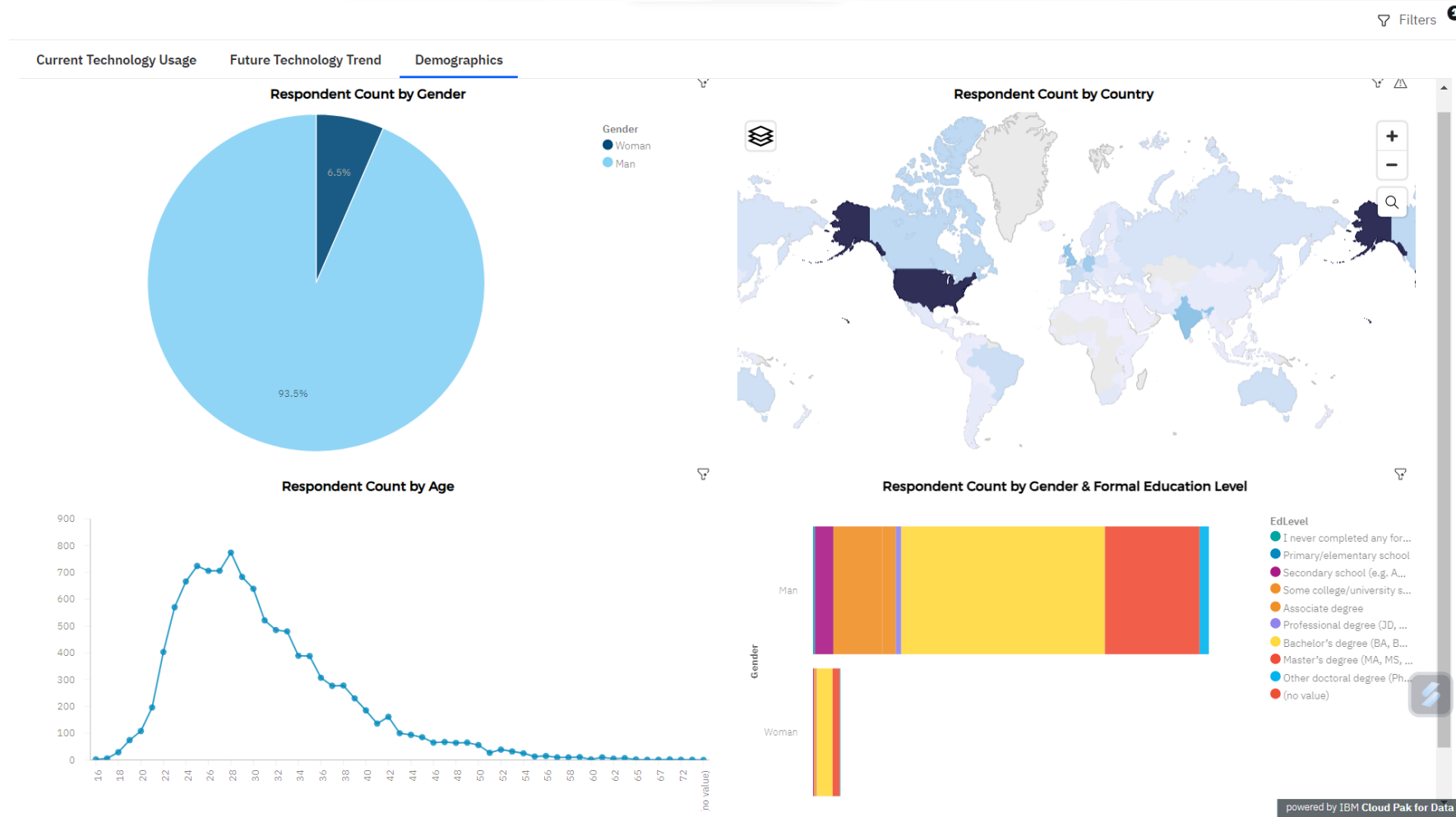
DISCUSSION, OVERALL FINDINGS & IMPLICATIONS

The findings reveal significant trends in tech skills and database usage, prompting several key considerations:

Tech Skills Landscape:

- JavaScript and Python remain dominant, highlighting their versatility and widespread use.

- HTML/CSS and SQL maintain importance, underscoring the enduring need for web development and database management skills.

Future Tech Trends:

- TypeScript's growth indicates a shift towards more robust web development practices.

Database Evolution:

- PostgreSQL and MongoDB are poised for future growth, driven by scalability and flexibility needs.

- Redis and Elasticsearch's rise signifies increasing demand for real-time data processing.

Implications for Job Seekers:

- Job seekers should focus on mastering current in-demand skills while staying abreast of emerging trends.

- Continuous learning is essential for staying competitive in a rapidly evolving tech landscape.

Future Research Directions:

- Further exploration of industry-specific skill demands and longitudinal studies on tech skill evolution can provide deeper insights.

These findings offer actionable insights for individuals and organizations navigating the dynamic tech industry, emphasizing the importance of adaptability and continuous learning in driving career success and industry innovation.

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CONCLUSION

Tech Skills

- The tech landscape reflects a blend of established and emerging technologies, with certain languages, databases, platforms, and web frameworks maintaining prominence while others rise in popularity.

- JavaScript and HTML/CSS remain foundational in web development, while MySQL and PostgreSQL continue to be favored for database management.

- Looking ahead, Python and modern web frameworks like React.js are gaining traction, indicating a shift towards versatile languages and scalable web development solutions.

- Platforms such as Linux and AWS remain essential in both current usage and future aspirations, underscoring the importance of cloud computing and open-source technologies.

- Professionals and organizations should prioritize staying abreast of emerging trends and acquiring skills relevant to future tech landscapes to remain competitive and innovative in the rapidly evolving tech industry.
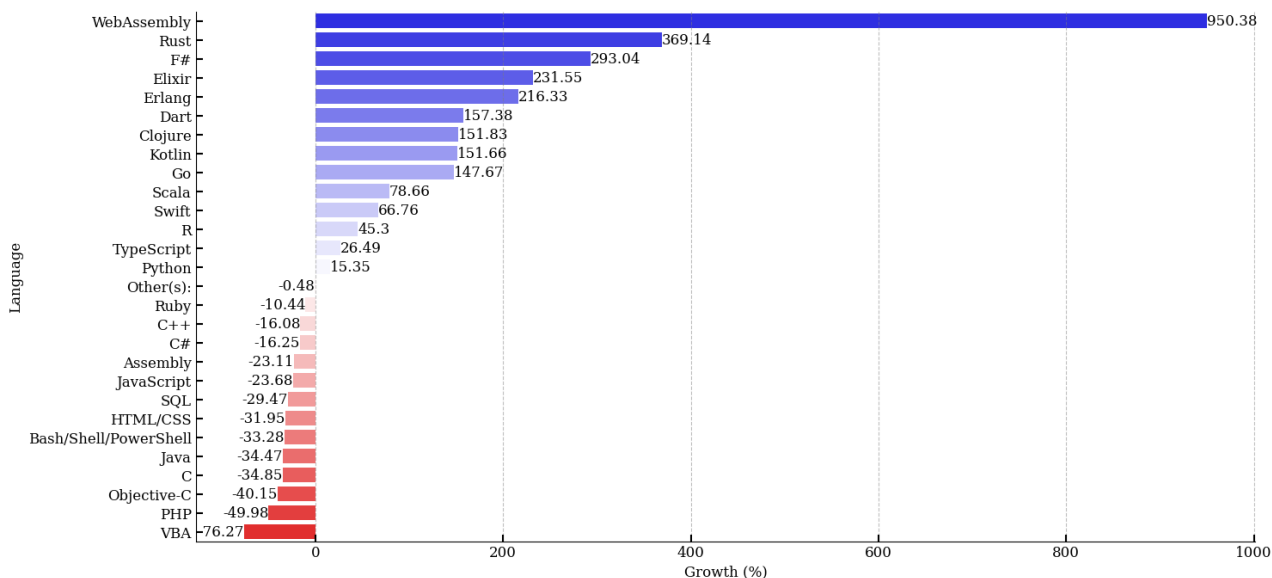
CONCLUSION

Demographic

- The survey demographics indicate a predominant age group of 25-35 years, suggesting that tech professionals in this age range are actively engaged in the industry.

- Despite efforts towards diversity, the developer profession is still predominantly male, highlighting ongoing challenges in achieving gender balance.

- The geographic distribution of respondents is skewed towards the United States, followed by India, UK, Germany, and Canada, reflecting the global nature of the tech industry.

- The educational background of respondents predominantly includes Bachelor's and Master's degrees, with a focus on computer science, engineering, and IT-related fields, indicating the importance of formal education in the industry.

- Non-degree education activities such as self-learning, online courses, and on-the-job training play a significant role in skill development and career advancement for tech professionals.

- The right-skewed distribution of annual salaries, with the majority falling in the range of $27,000-$100,000, suggests a varied income landscape within the tech industry, with opportunities for both entry-level and experienced professionals.
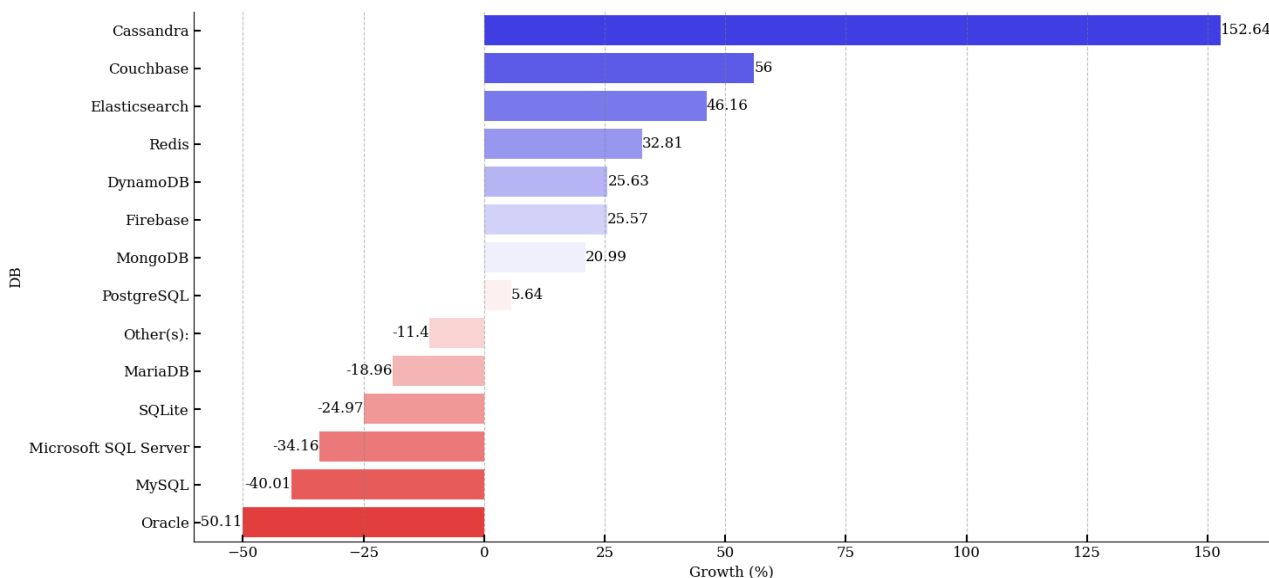
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APPENDIX

Programming Language Growth (Desired vs Worked With)

Language	Growth (%)
WebAssembly	950.38
Rust	369.14
F#	293.04
Elixir	231.55
Erlang	216.33
Dart	157.38
Clojure	151.83
Kotlin	151.66
Go	147.67
Scala	78.66
Swift	66.76
R	45.3
TypeScript	26.49
Python	15.35
Other(s):	-0.48
Ruby	-10.44
C++	-16.08
C#	-16.25
Assembly	-23.11
JavaScript	-23.68
SQL	-29.47
HTML/CSS	-31.95
Bash/Shell/PowerShell	-33.28
Java	-34.47
C	-34.85
Objective-C	-40.15
PHP	-49.98
VBA	-76.27

Database Growth (Desired vs Worked With)

DB	Growth (%)
Cassandra	152.64
Couchbase	56
Elasticsearch	46.16
Redis	32.81
DynamoDB	25.63
Firebase	25.57
MongoDB	20.99
PostgreSQL	5.64
Other(s):	-11.4
MariaDB	-18.96
SQLite	-24.97
Microsoft SQL Server	-34.16
MySQL	-40.01
Oracle	-50.11

Among the top 5 programming languages currently in use or sought after, **TypeScript** demonstrates the most significant growth at **26.49%**, while **Bash/Shell/ PowerShell** experiences the most notable decline at **-33.28%**.
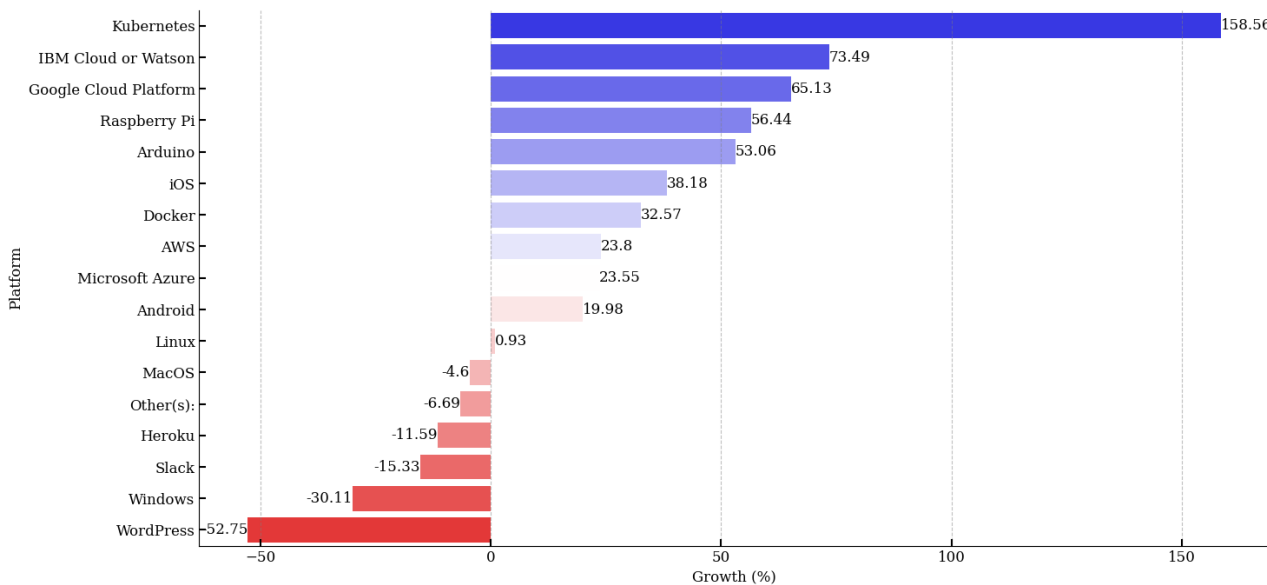
Among the top 5 databases presently in use or sought after, **Elasticsearch** exhibits the most substantial growth at **46.16%**, whereas **MySQL** experiences the most considerable decline at **-40.01%**.

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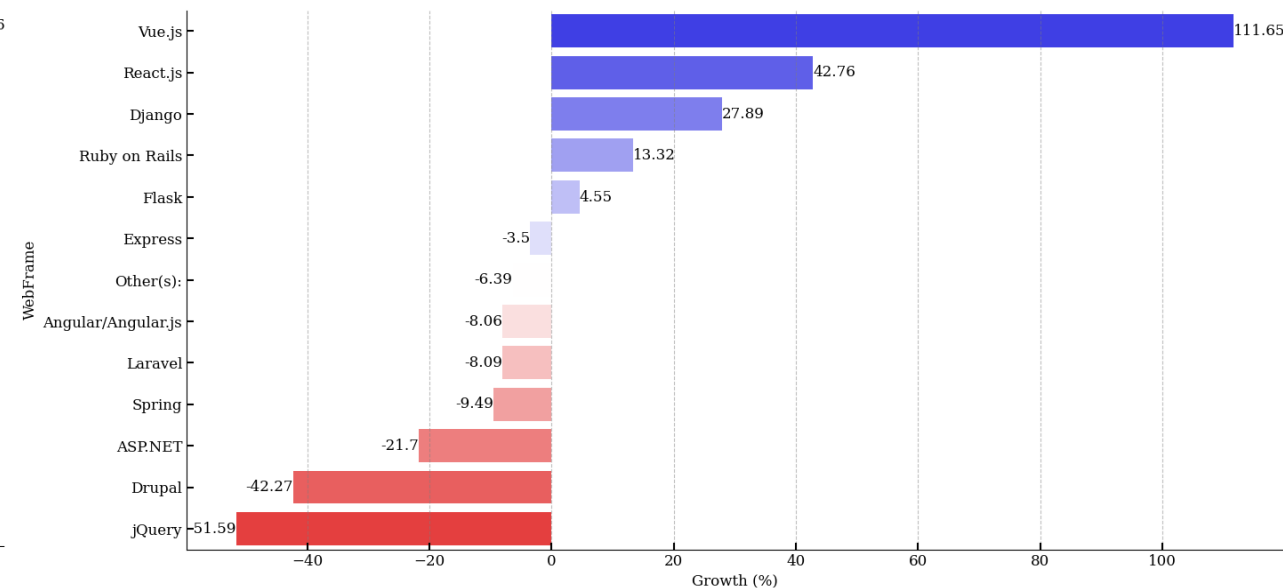
APPENDIX

Platform Growth (Desired vs Worked With)

WebFrame Growth (Desired vs Worked With)

Among the top 5 platforms currently utilized or aspired to, **Docker** demonstrates the most significant growth at **32.57%**, whereas **Windows** experiences the most notable decline at **-30.11%**.

Among the top 5 web frameworks currently utilized or sought after, **Vue.js** exhibits the most substantial growth at **111.65%**, whereas **jQuery** experiences the most significant decline at **-51.59%**.

APPENDIX

From the graph, it can be seen that the total number of tech skills (language, database, platform, web frame) possessed does not have a significant correlation with the annual salary of a data analyst. While it may appear that possessing numerous technical skills enhances one's value and competency, this finding suggests that several other variables exhibit a more substantial correlation with the annual salary.
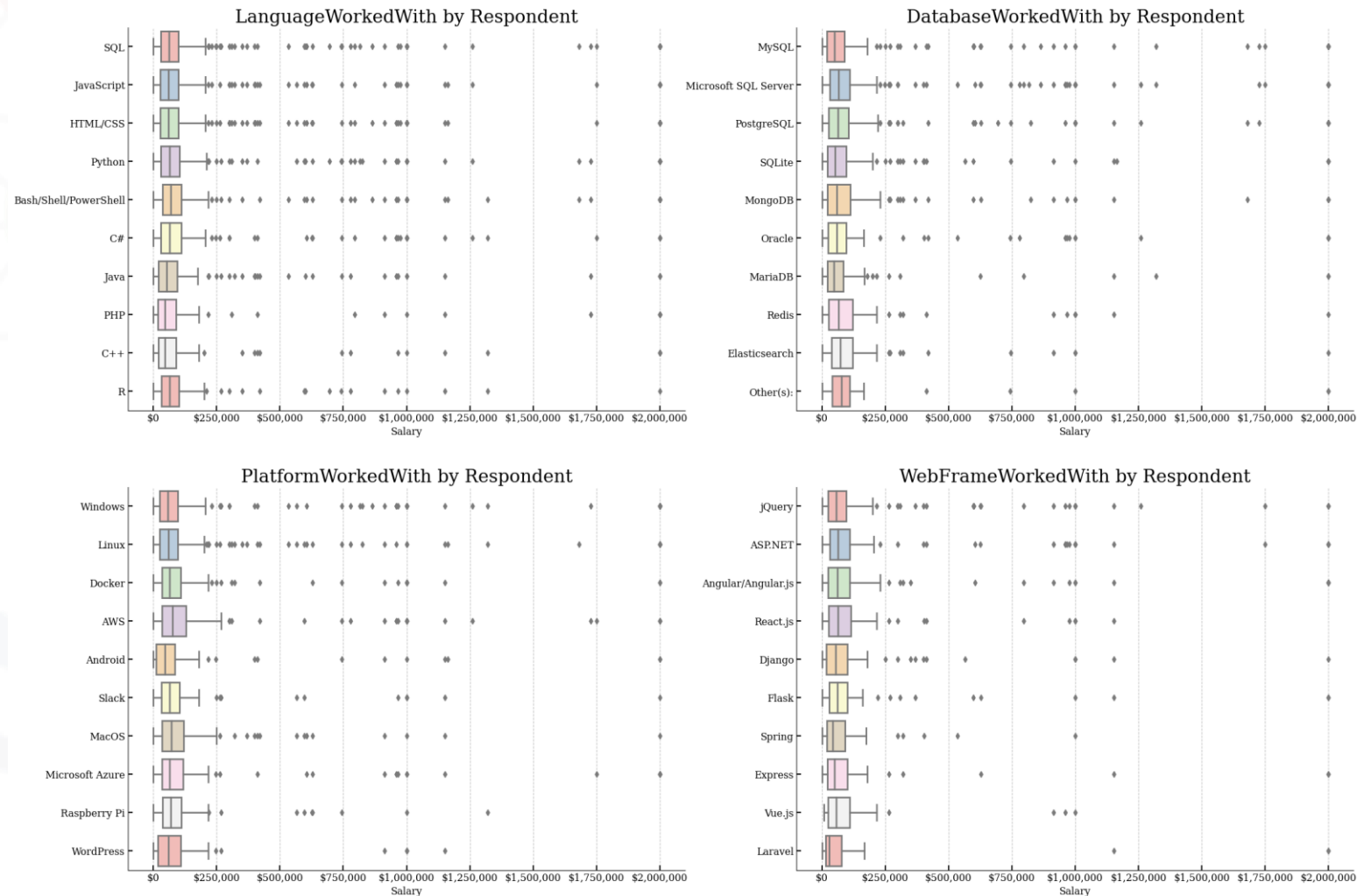
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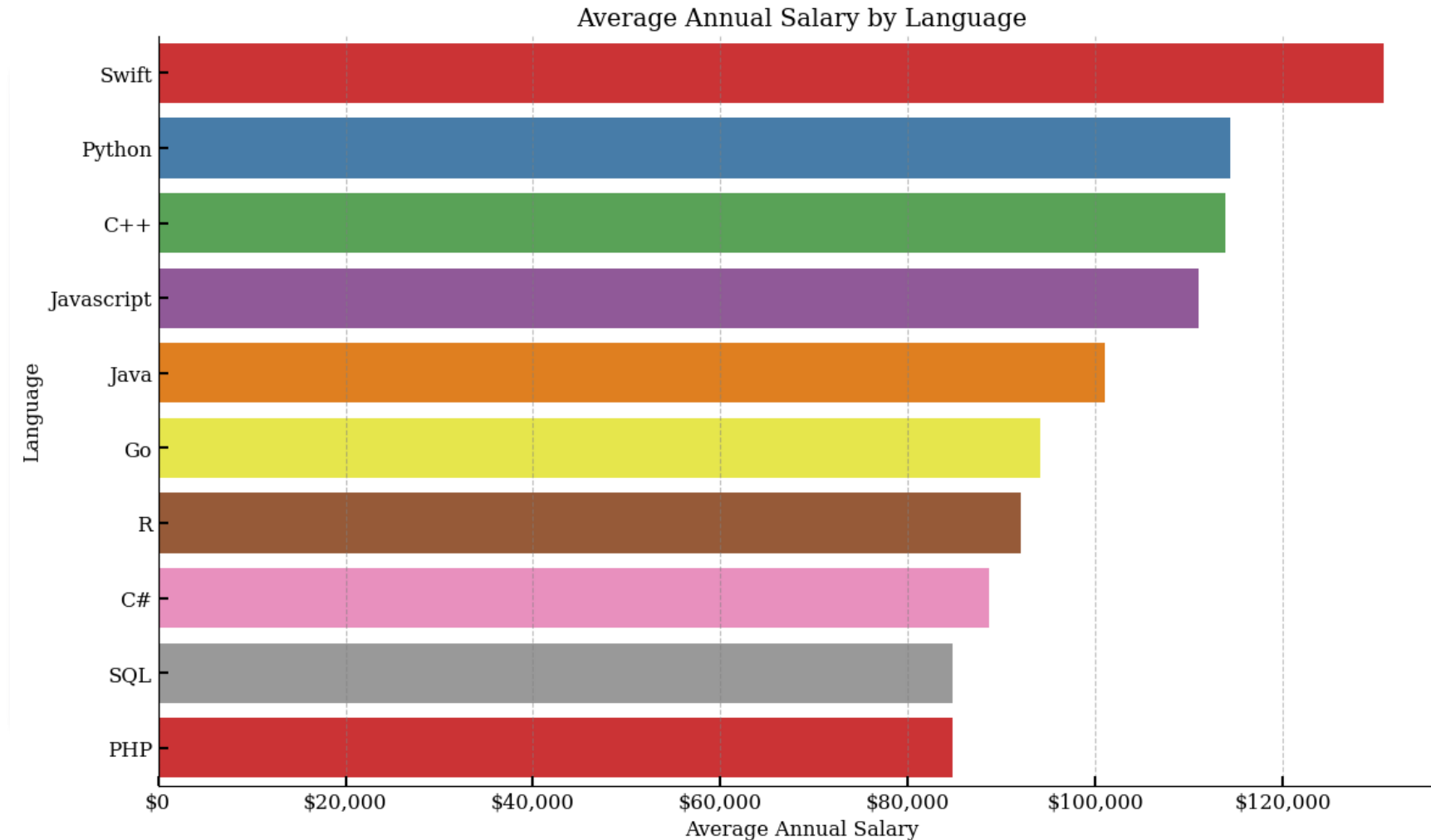Annual Salary Distribution For Total Skill(s) Used by Data Analyst
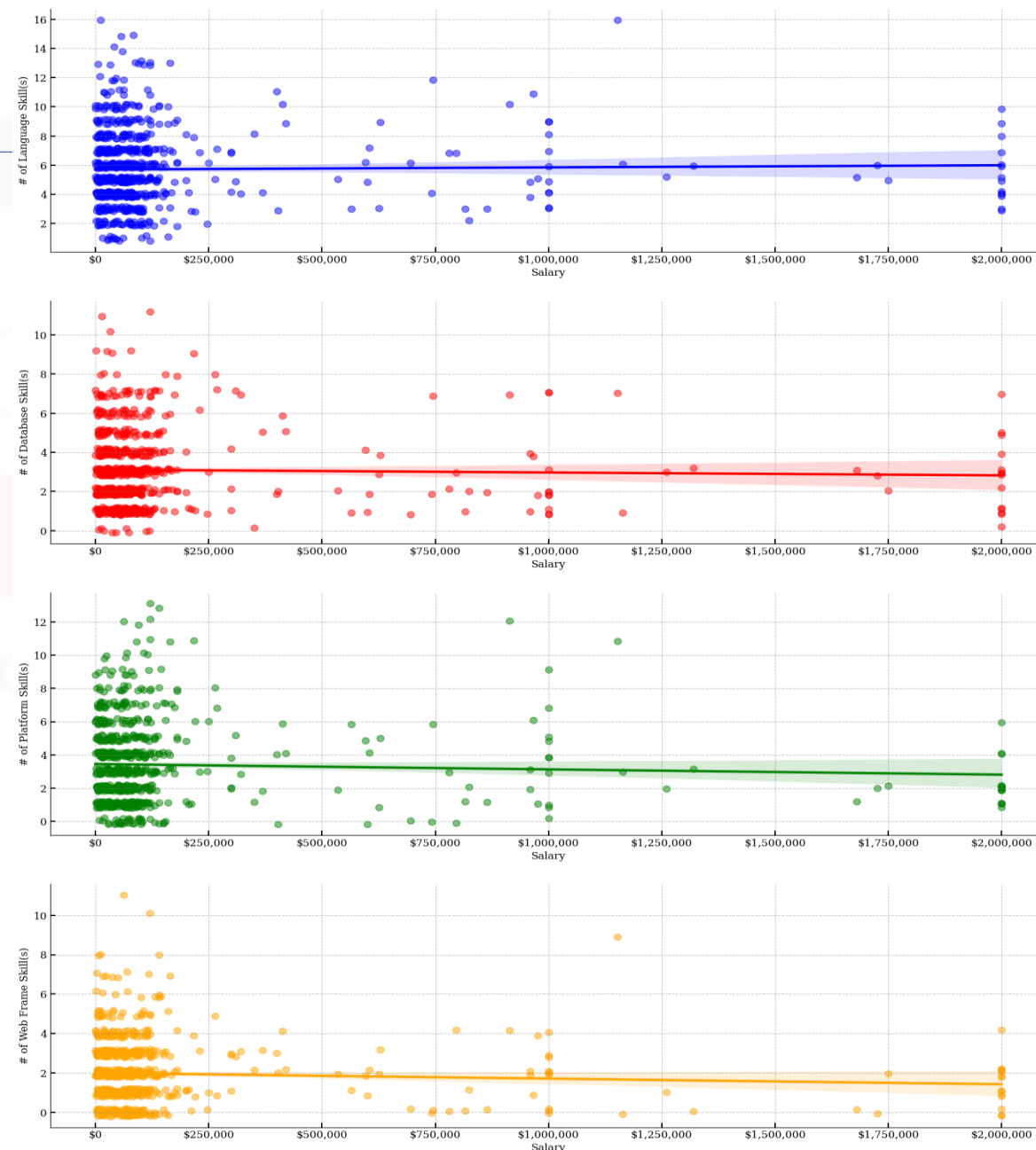
APPENDIX

From the graph, it can be seen that there is no significant difference in the annual salary distribution between each tech skill in the language, database, platform, and web frame features. Hence, it is prudent to select our technical skills based on employer demand, prevalent choices within the professional domain, industry preferences, and similar factors.

Annual Salary Distribution For Each Tech Skills

POPULAR LANGUAGES

Average Annual Salary by Language

JOB POSTINGS