Data Analysis and Insights on Emerging Skills

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OUTLINE

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- Methodology
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  - Visualization – Charts
  - Dashboard
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EXECUTIVE SUMMARY

- Overview of data analysis process and findings
- Key insights on emerging skills
  - Collected data using APIs and web scraping
  - Cleaned and wrangled data for analysis
  - Performed exploratory data analysis to uncover trends
  - Created visualizations to highlight key findings
  - Developed a comprehensive dashboard

INTRODUCTION

- Purpose of the project:
  - To identify emerging skills and trends in demand
- Importance of analyzing current and future technology trends
- Overview of data collection and analysis process

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METHODOLOGY

- Data Collection:
  - APIs and web scraping techniques
- Data Wrangling:
  - Cleaning, deduplication, imputation, and normalization
- Exploratory Data Analysis:
  - Distribution analysis, outlier detection, and correlation analysis
- Data Visualization:
  - Creating various plots to highlight trends
- Dashboard Creation:
  - Assembling visualizations into an intuitive dashboard

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RESULTS

1. Current Technology Usage:
- Top languages: Bash/Shell, HTML/CSS, C#
- Top databases: MySQL, Microsoft SQL Server, PostgreSQL
- Top platforms: Windows, Linux, Docker
- Top web frameworks: React, Angular, Vue.js

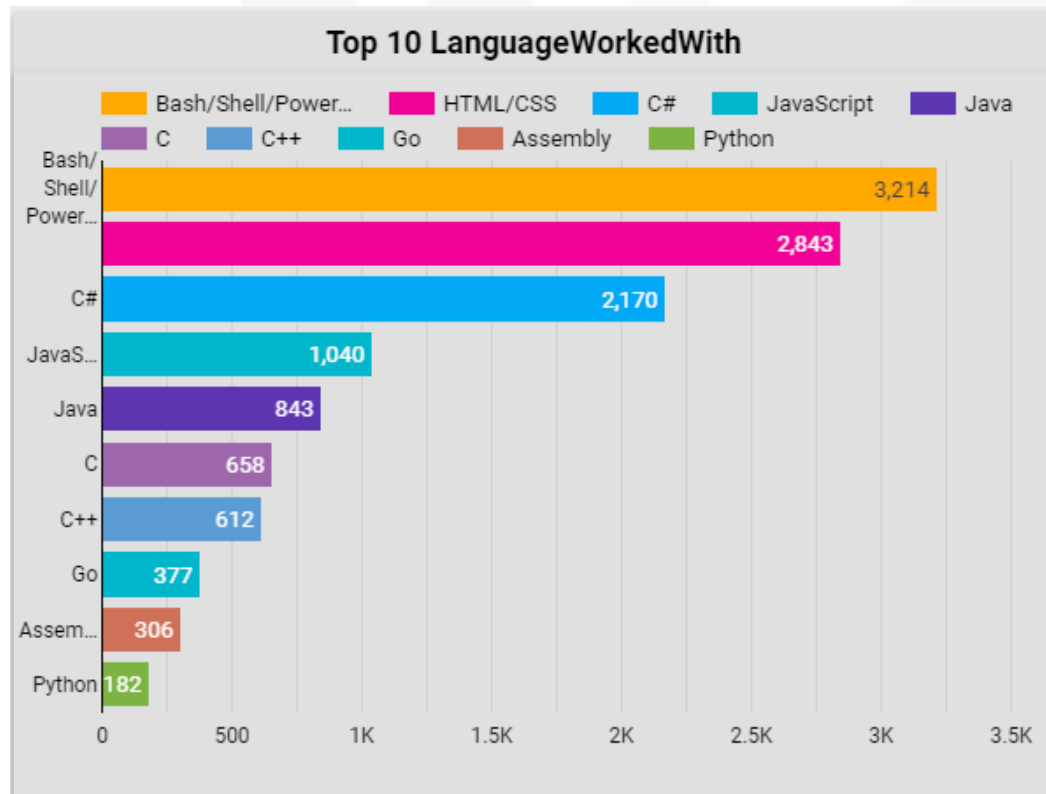**2. Future Technology Trends:**
- Top desired languages: JavaScript, Python, SQL
- Top desired databases: PostgreSQL, MongoDB, Redis
- Top desired platforms: Linux, MacOS, Docker
- Top desired web frameworks: React, Angular
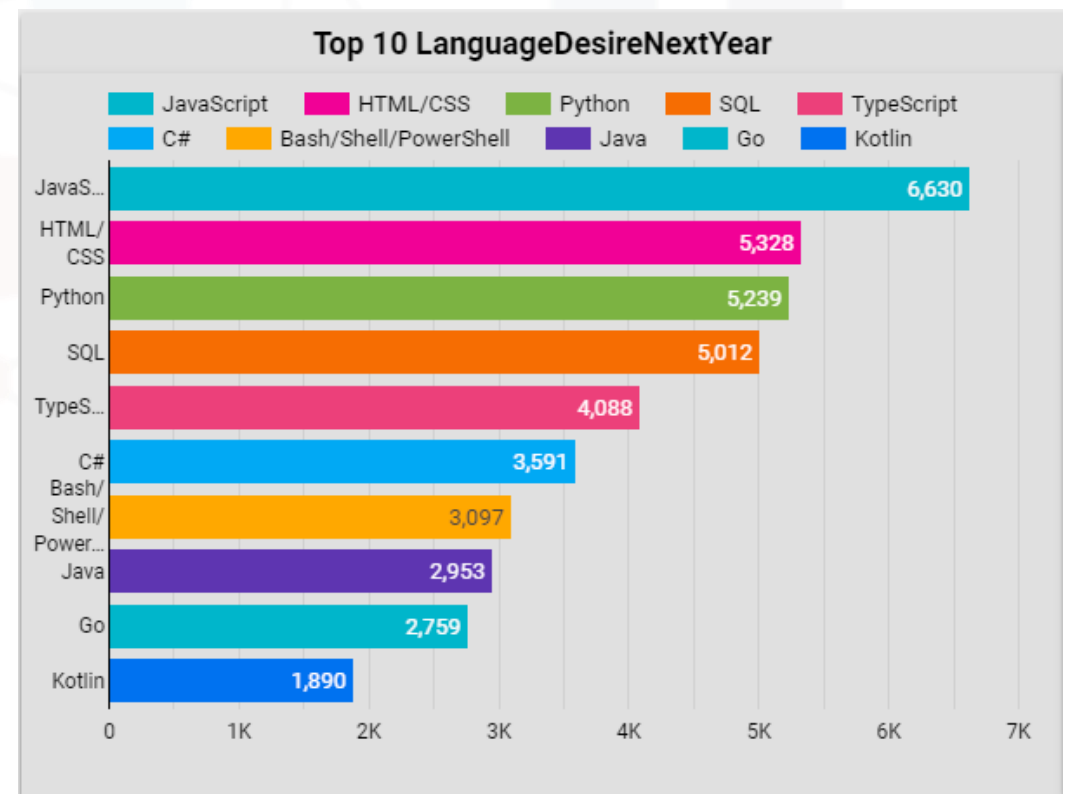
3. Demographics:
- Majority: Men
- Regions: North America, Europe
- Common age: Late 20s to early 30s
- Common Education: Bachelor's degree

PROGRAMMING LANGUAGE TRENDS

Current Year

Top 10 LanguageWorkedWith

Legend: Bash/Shell/Power... | HTML/CSS | C# | JavaScript | Java | C | C++ | Go | Assembly | Python

Language	Value
Bash/Shell/Power...	3,214
HTML/CSS	2,843
C#	2,170
JavaS...	1,040
Java	843
C	658
C++	612
Go	377
Assem...	306
Python	182

Next Year

Top 10 LanguageDesireNextYear

Legend: JavaScript | HTML/CSS | Python | SQL | TypeScript | C# | Bash/Shell/PowerShell | Java | Go | Kotlin

Language	Value
JavaS...	6,630
HTML/CSS	5,328
Python	5,239
SQL	5,012
TypeS...	4,088
C#	3,591
Bash/Shell/Power...	3,097
Java	2,953
Go	2,759
Kotlin	1,890

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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

- **JavaScript's Continued Reign**
  - **JavaScript is the top language both currently and for next year.**
  - **Implication: Keep investing in JavaScript projects and training.**

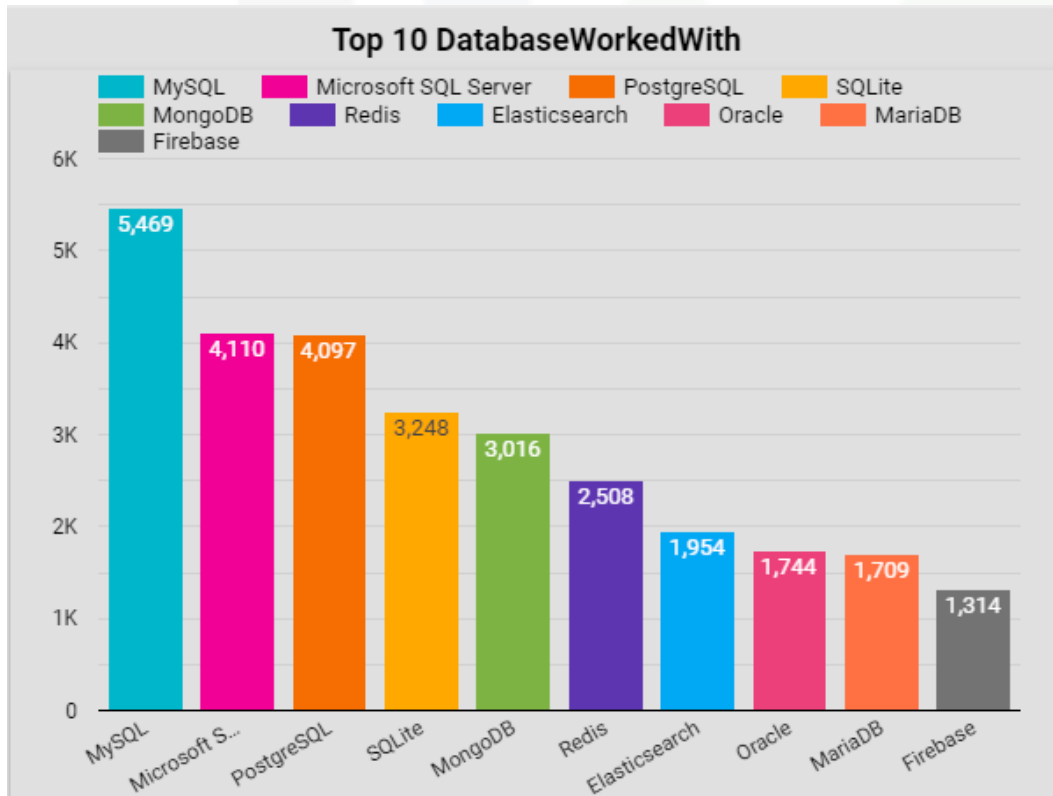- **Steady Popularity of HTML/CSS and Python**
  - **HTML/CSS and Python remain popular choices.**
  - **Implication: Focus on these skills for web development and data science.**
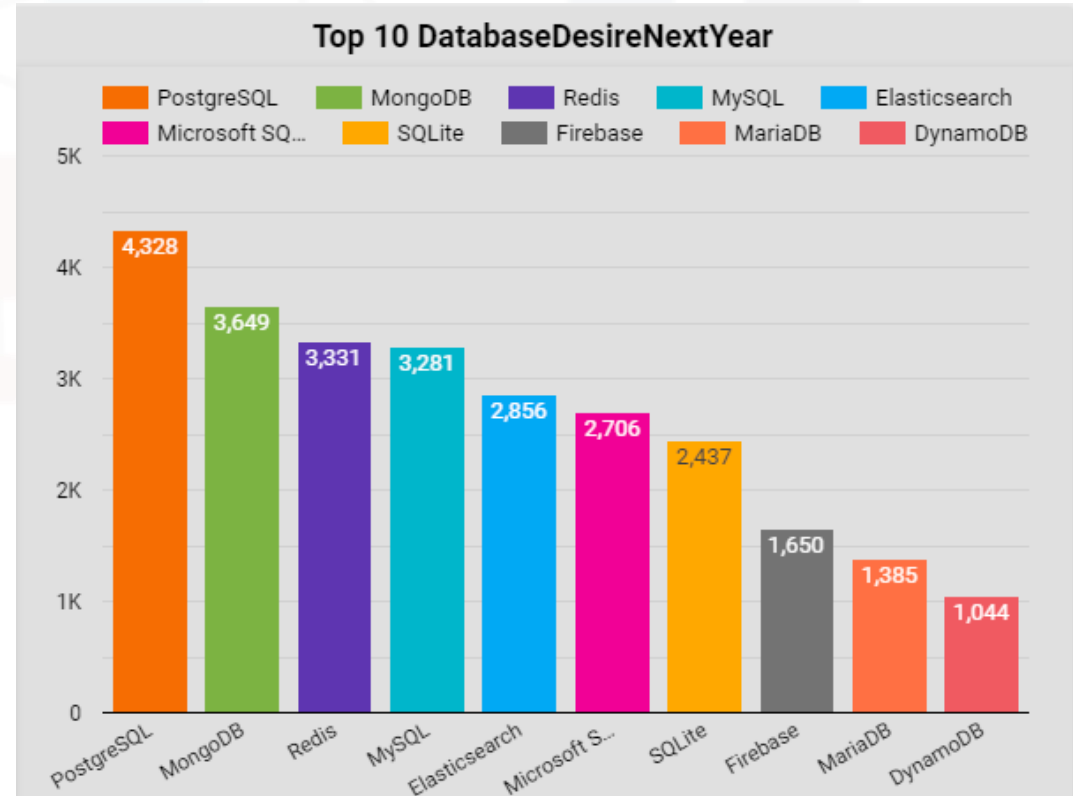
- **Growing Interest in TypeScript and SQL**
  - **TypeScript and SQL are becoming more desired.**
  - **Implication: Consider adopting these technologies for better project scalability and database management.**

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DATABASE TRENDS

Current Year

Next Year

Top 10 DatabaseWorkedWith

Legend: MySQL, Microsoft SQL Server, PostgreSQL, SQLite, MongoDB, Redis, Elasticsearch, Oracle, MariaDB, Firebase

Database	Value
MySQL	5,469
Microsoft S...	4,110
PostgreSQL	4,097
SQLite	3,248
MongoDB	3,016
Redis	2,508
Elasticsearch	1,954
Oracle	1,744
MariaDB	1,709
Firebase	1,314

Top 10 DatabaseDesireNextYear

Legend: PostgreSQL, MongoDB, Redis, MySQL, Elasticsearch, Microsoft SQ..., SQLite, Firebase, MariaDB, DynamoDB

Database	Value
PostgreSQL	4,328
MongoDB	3,649
Redis	3,331
MySQL	3,281
Elasticsearch	2,856
Microsoft S...	2,706
SQLite	2,437
Firebase	1,650
MariaDB	1,385
DynamoDB	1,044

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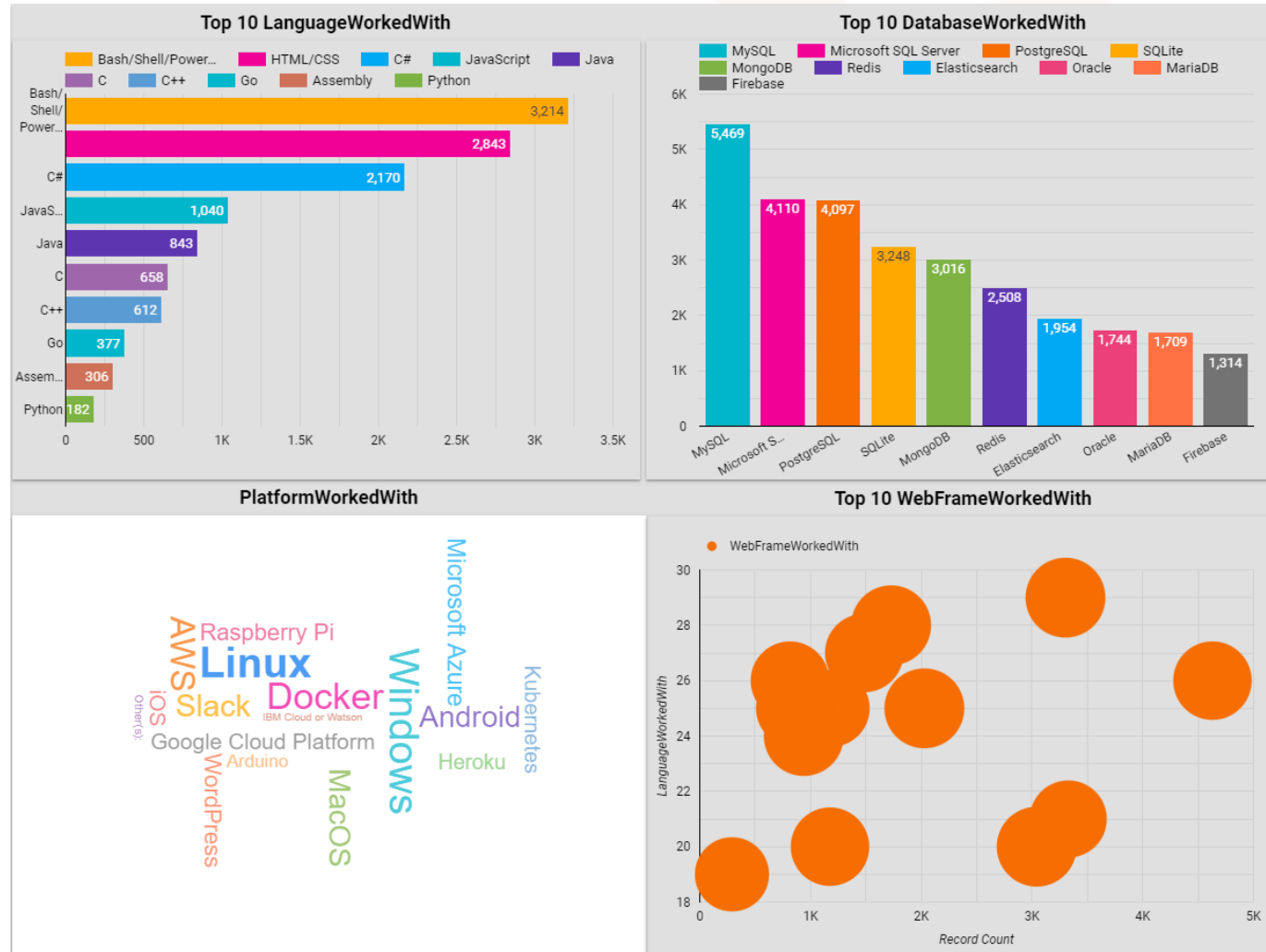
DATABASE TRENDS - FINDINGS & IMPLICATIONS

- Shift to PostgreSQL and MongoDB
  - Increasing preference for PostgreSQL and MongoDB.
  - Implication: Adopt these databases for their flexibility and scalability.
- Ongoing Use of MySQL and Microsoft SQL Server
  - MySQL and Microsoft SQL Server are widely used.
  - Implication: Continue leveraging these databases but stay open to new trends.
- Interest in Redis and Elasticsearch
  - Rising interest in Redis and Elasticsearch.
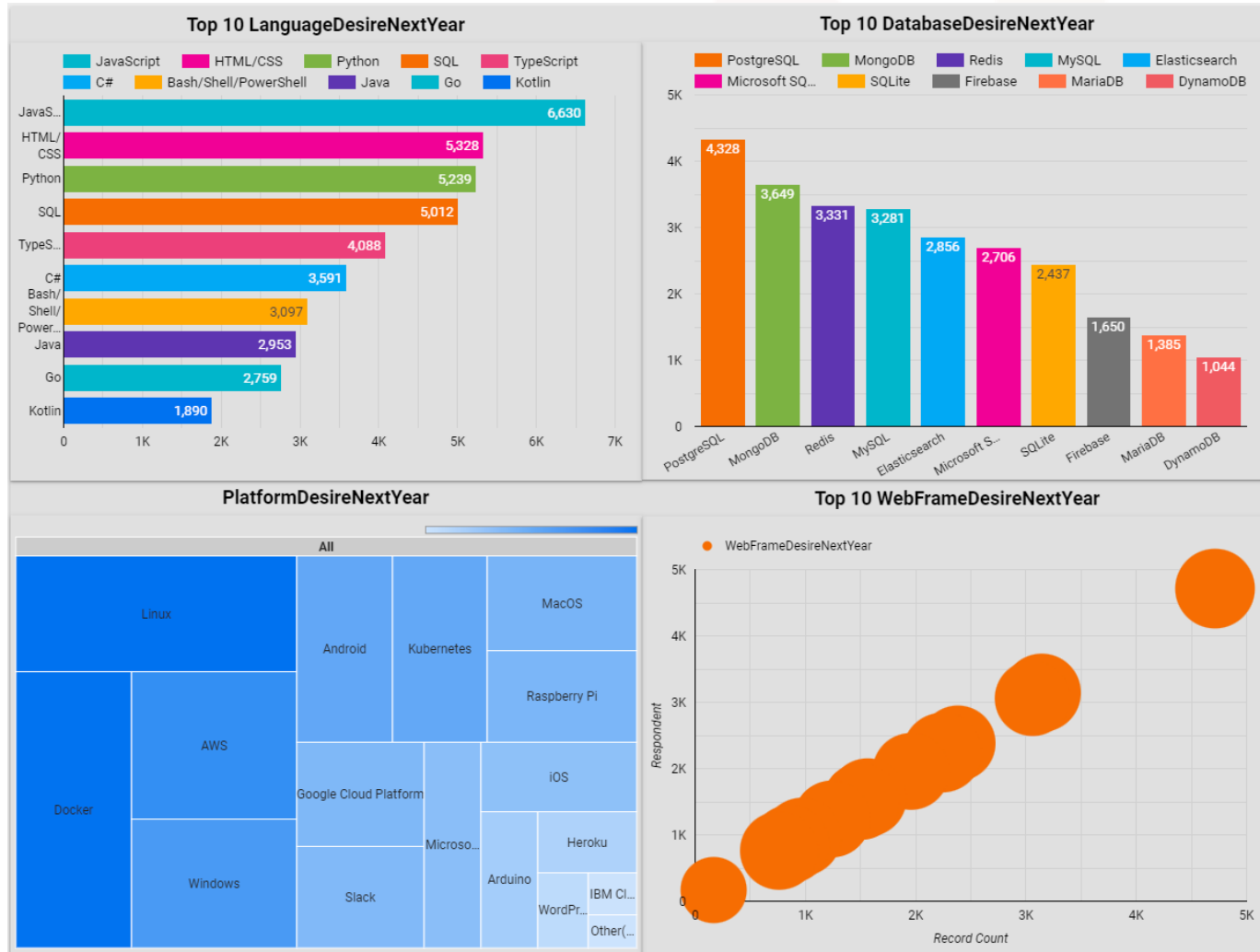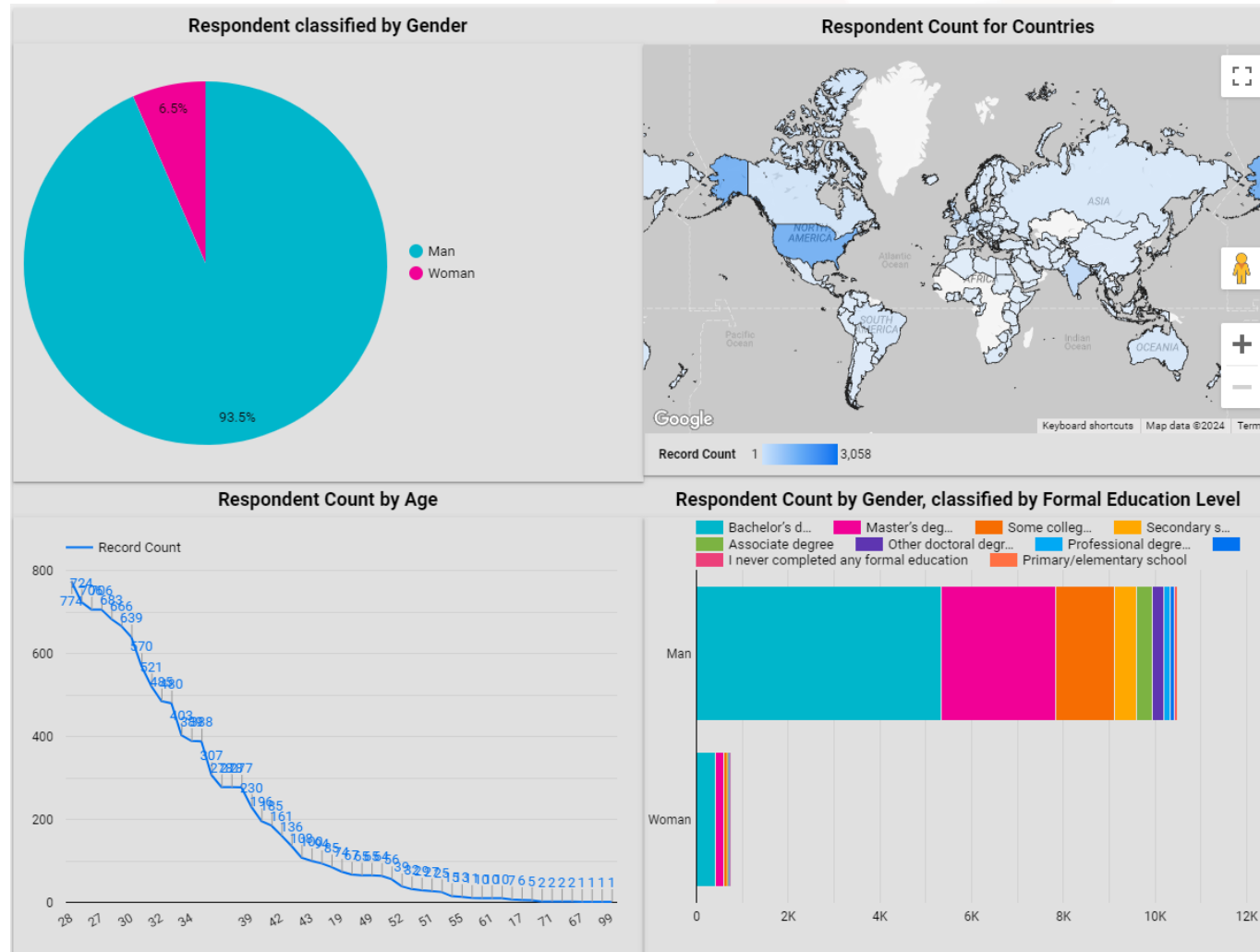 - Implication: Integrate these for real-time data processing and enhanced search capabilities.

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DASHBOARD

https://lookerstudio.google.com/reporting/ef10190f-6991-44a4-8313-2287aa6ee154

DASHBOARD TAB 1

DASHBOARD TAB 2

Top 10 LanguageDesireNextYear

Legend: JavaScript, HTML/CSS, Python, SQL, TypeScript, C#, Bash/Shell/PowerShell, Java, Go, Kotlin

Language	Value
JavaS...	6,630
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Top 10 DatabaseDesireNextYear

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PlatformDesireNextYear

All

Linux, MacOS, Android, Kubernetes, AWS, Raspberry Pi, Docker, Google Cloud Platform, iOS, Microso..., Heroku, Windows, Slack, Arduino, WordPr..., IBM Cl..., Other(...)

Top 10 WebFrameDesireNextYear

WebFrameDesireNextYear

Axes: Respondent (0–5K) vs Record Count (0–5K)

DASHBOARD TAB 3

DISCUSSION

- **Emerging Technology Trends**: The analysis reveals a shift towards emerging technologies like TypeScript, PostgreSQL, and MongoDB. Organizations should consider integrating these technologies to stay competitive and meet future demands.

- **Skill Development Focus**: Consistent interest in languages like JavaScript and Python underscores the need for ongoing skill development in these areas. Investing in training programs for these technologies will ensure the workforce remains adept and versatile.

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OVERALL FINDINGS & IMPLICATIONS

- Adoption of Modern Technologies
  - Technologies like JavaScript, Python, PostgreSQL, and MongoDB are both popular now and desired for the future.
  - Implication: Invest in these technologies to stay competitive.

- Focus on Real-Time Data and Cloud Integration
  - Growing interest in real-time data processing (e.g., Redis, Elasticsearch) and cloud platforms (e.g., AWS, Google Cloud).
  - Implication: Develop strategies for real-time data and cloud integration to enhance decision-making and scalability.

- Web Development and Data Security
  - Web development technologies (e.g., HTML/CSS, JavaScript) and data security remain critical.
  - Implication: Prioritize web development skills and invest in robust data security measures to protect sensitive information.

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CONCLUSION

Adopt Modern Technologies
- Invest in versatile technologies like JavaScript, Python, PostgreSQL, and MongoDB to stay competitive.

Focus on Cloud and Real-Time Data
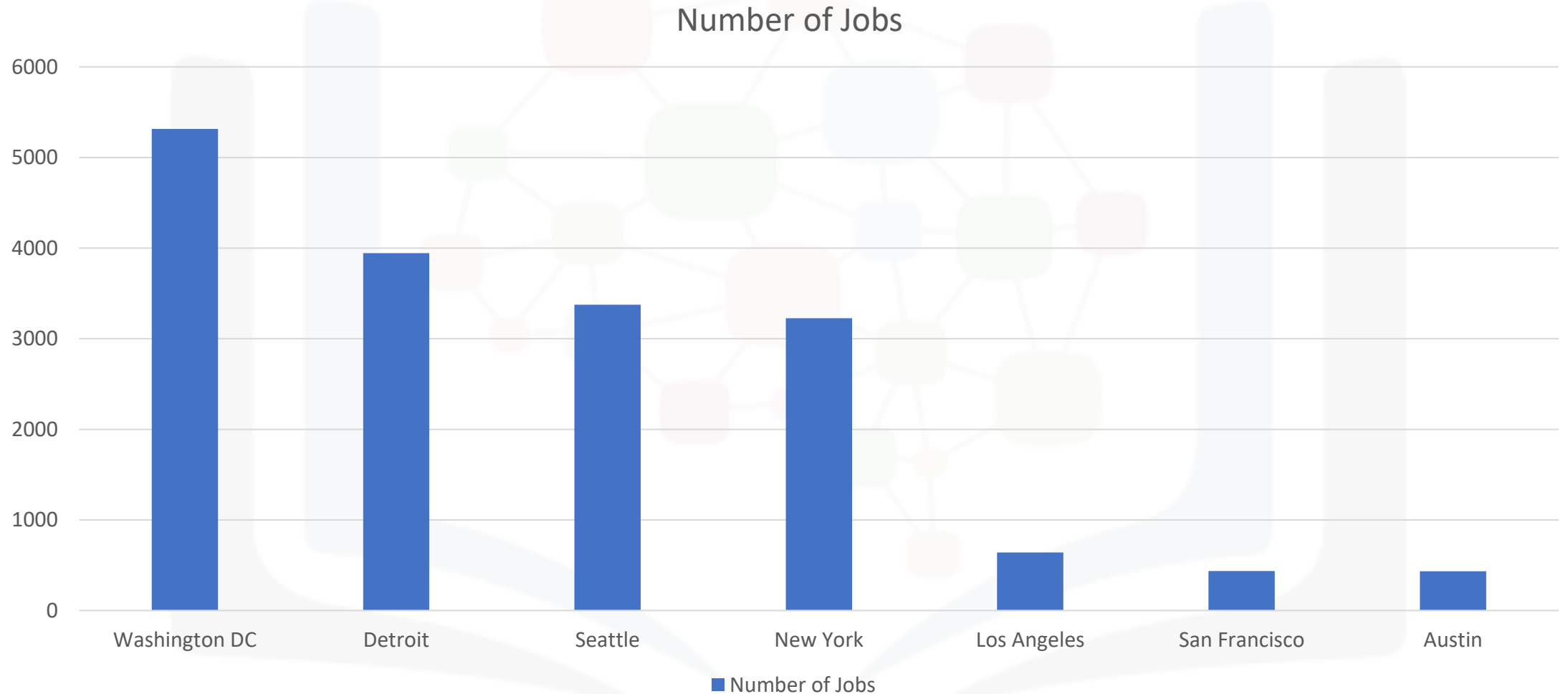- Implement cloud-native databases and real-time analytics for better decision-making and scalability.

Strengthen Web Development and Security
- Maintain strong web development skills and invest in data protection practices.

Stay Informed and Adapt
- Keep up with tech trends to make informed decisions and stay competitive.

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POPULAR LANGUAGES

Average Annual Salary