



Tech Trends Unveiled

Chris V.
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OUTLINE



- Executive Summary
- Introduction
- Methodology
- Results
 - Visualization – Charts
 - Dashboard
- Discussion
 - Findings & Implications
- Conclusion
- Appendix

EXECUTIVE SUMMARY



- Analysis of in demand skills
- Key findings:
 - Top programming languages
 - Top database skills
 - Current and future trends
- Job demands in US
- Most sought after technologies
- Recommendations

INTRODUCTION



- Context: The rapid evolution of technology requires continuous analysis of skill demands to remain competitive in the IT industry
- Objectives: To identify and analyze the top programming skills that are in demand
- Significance: This analysis helps inform training and hiring strategies for IT professionals and organizations

METHODOLOGY



- **Data Collection:** Gathered using web scraping and APIs.
- **Data Wrangling:** Cleaned and transformed data, addressing any missing information.
- **Exploratory Data Analysis:** Identified key patterns and anomalies.
- **Data Visualization:** Developed clear, impactful visual insights.
- **Interactive Dashboards:** Leveraged IBM Cognos Analytics for dynamic dashboards.
- **Tools Used:** Python, Excel, IBM Cognos, SQL

RESULTS

Trends in Programming Languages: Identified the most in-demand languages and emerging trends.

Database Preferences: Uncovered a shift towards modern database technologies.

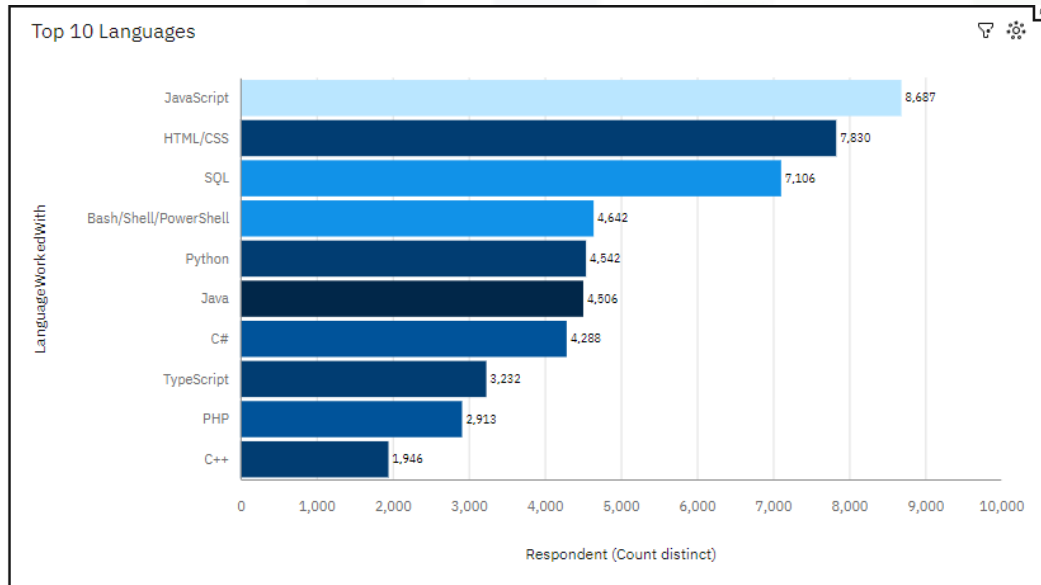
Regional Focus: Examined the geographic distribution of tech skills.

Gender Diversity: Assessed the gender composition within the tech industry.

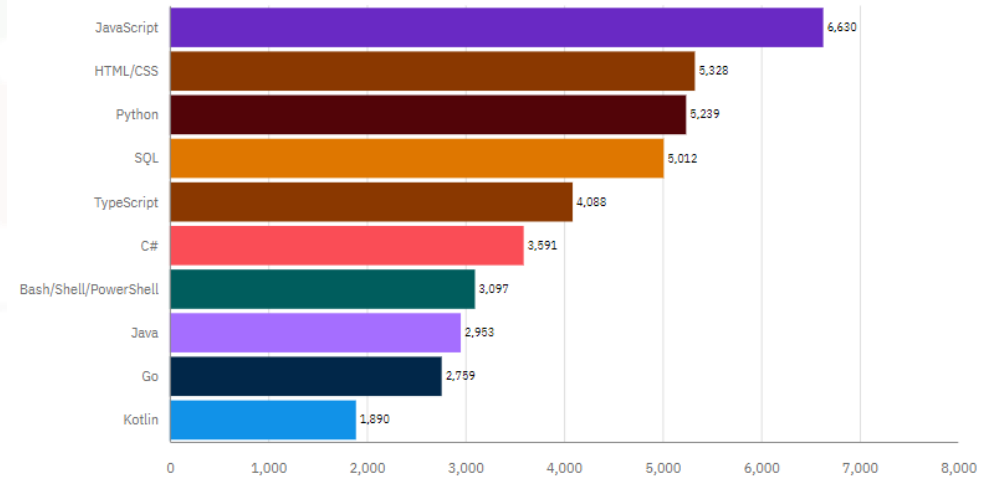
Age and Education Trends: Analyzed the age distribution and educational attainment of respondents

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

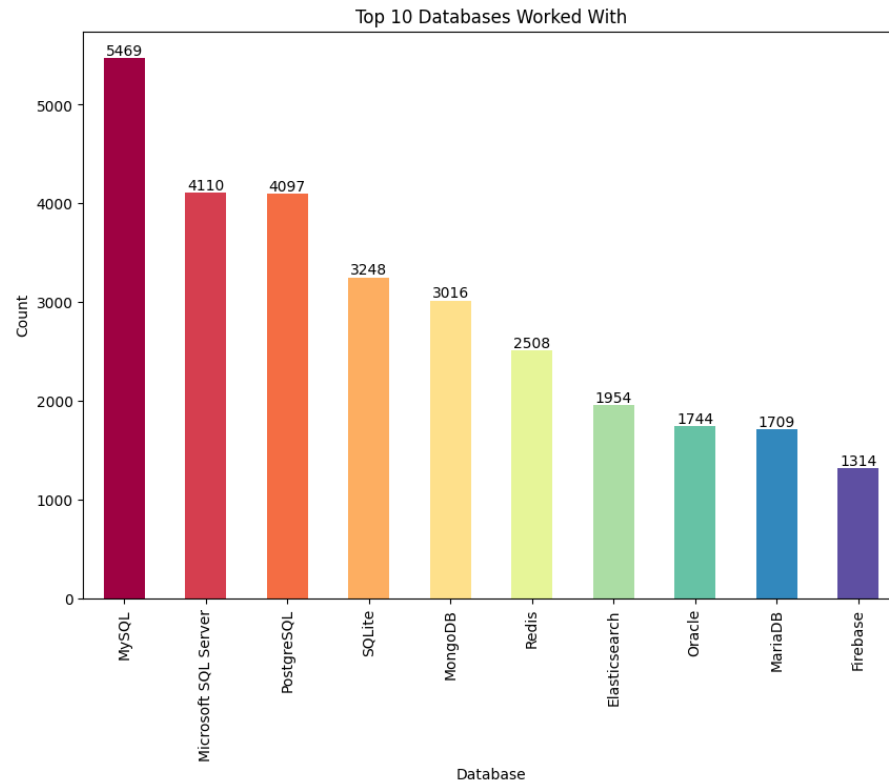
- Current top languages:
 - JavaScript, HTML/CSS, SQL
- Top languages desired next year:
 - JavaScript, HTML/CSS, Python
- Significant increase:
 - Go, Kotlin, Typescript

Insights

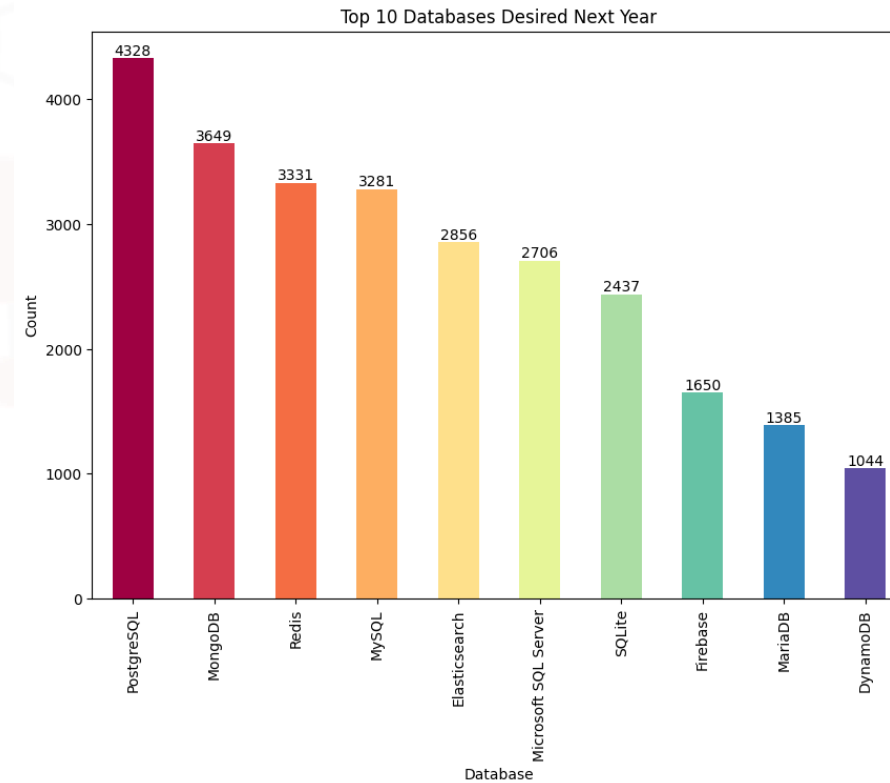
- **Emerging Technologies:**
 - The surge in demand for Go and Kotlin indicates a shift towards newer and more efficient programming paradigms
- **Continued Relevance of JavaScript and Python:**
 - Despite minor declines, JavaScript and Python remain highly relevant and continue to be in demand
- **Decline of Legacy Languages:**
 - The decrease in demand for PHP and SQL suggests a move away from older technologies
- **Strategic Skill Development:**
 - Focusing on emerging and growing languages like Go, Kotlin, and TypeScript can provide a strategic advantage

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

Current Top Databases:

The most commonly worked with databases are MySQL, Microsoft SQL Server, and PostgreSQL

Top Databases Desired Next Year:

The most desired databases for the next year are PostgreSQL, MongoDB, and Redis

Significant Increases:

DynamoDB shows the highest increase in demand. Elasticsearch and Redis also exhibit significant growth

Significant Decreases:

MySQL, Oracle, and Microsoft SQL Server are experiencing a decline in demand

Implications

Rising Popularity of Modern Databases:

The increasing demand for DynamoDB and Elasticsearch suggests a growing trend towards modern databases capable of handling large-scale, unstructured data efficiently

Strengthening Position of PostgreSQL and Redis:

The continued rise of PostgreSQL and Redis highlights their robustness and versatility

Shift Away from Traditional Relational Databases:

The declining demand for MySQL, Oracle, and Microsoft SQL Server indicates a shift towards more contemporary database solutions

Strategic Skill Development:

To stay competitive, professionals should focus on gaining expertise in PostgreSQL, MongoDB, Redis, and Elasticsearch

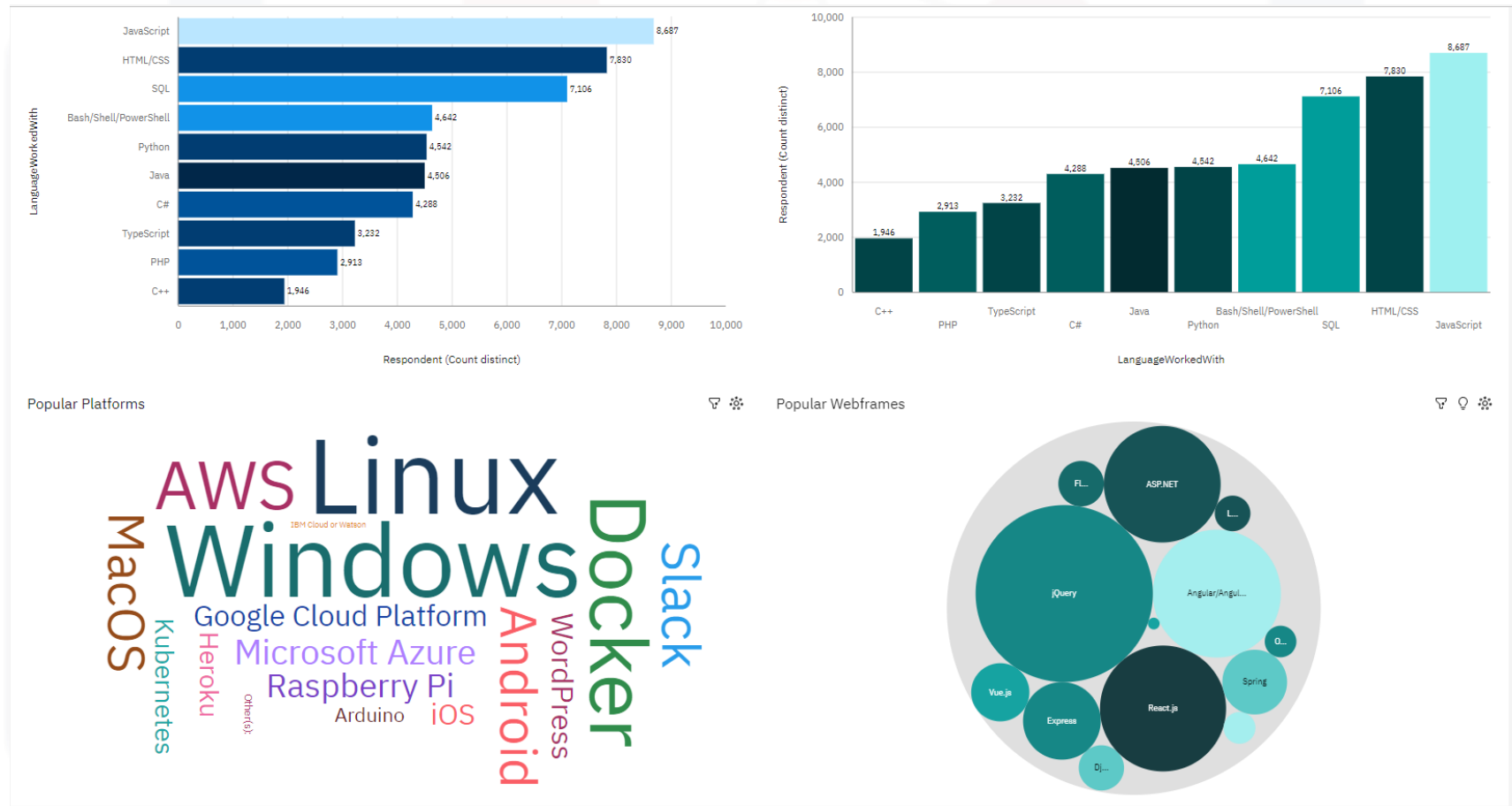
DASHBOARD



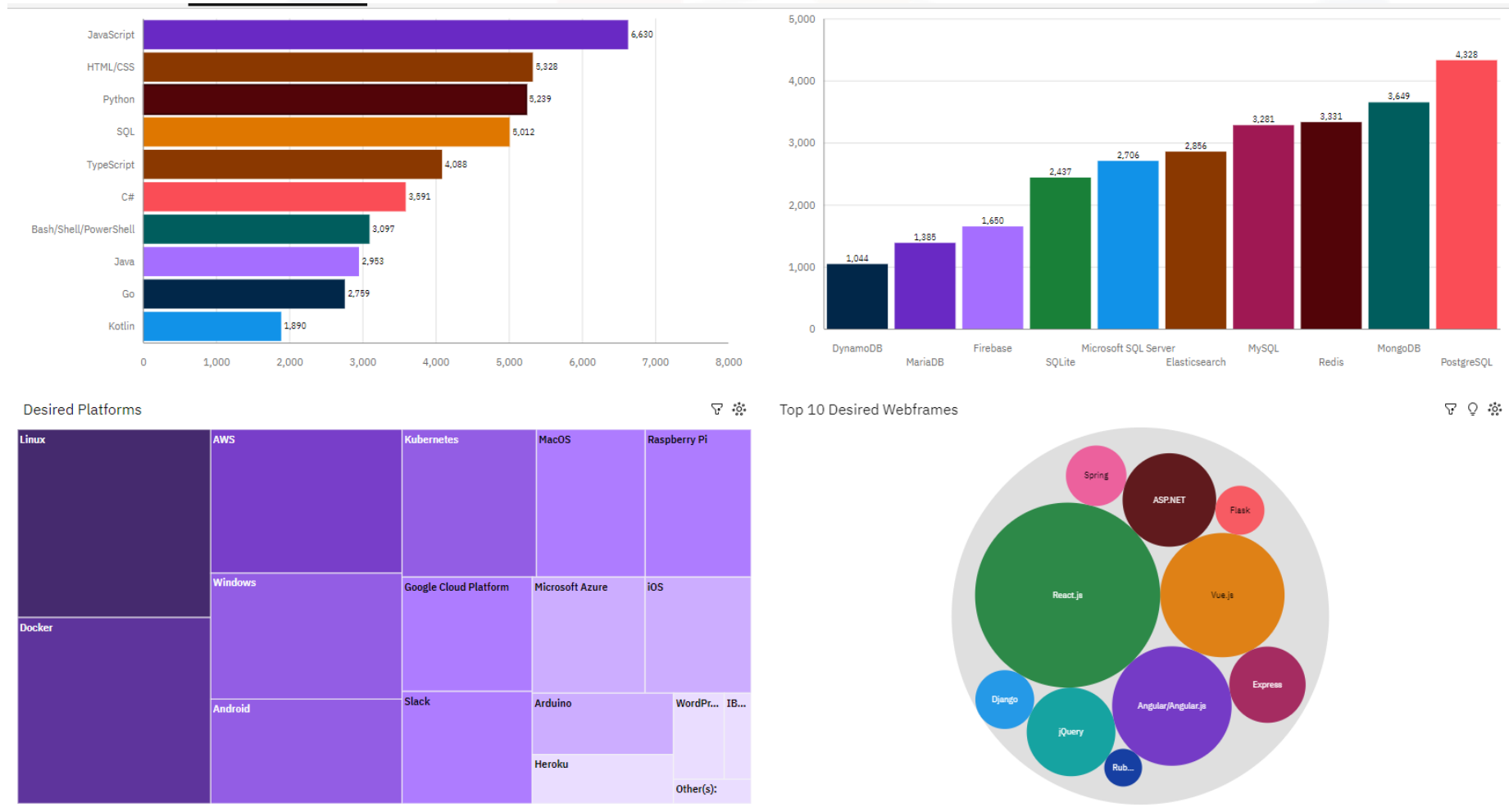
Link to interactive dashboard:

<https://github.com/KnockOutIce/IBM-Capstone/blob/main/README.md>

DASHBOARD TAB 1



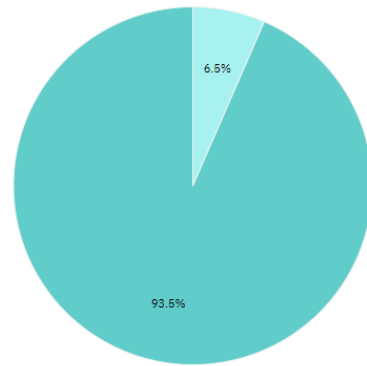
DASHBOARD TAB 2



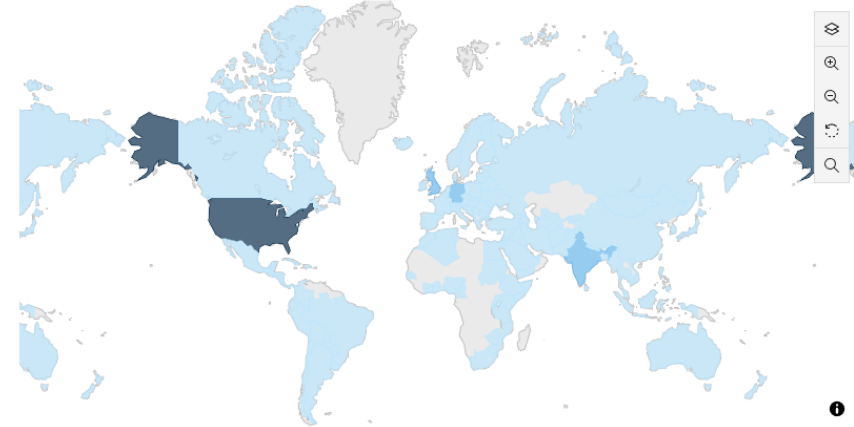
DASHBOARD TAB 3

Genders

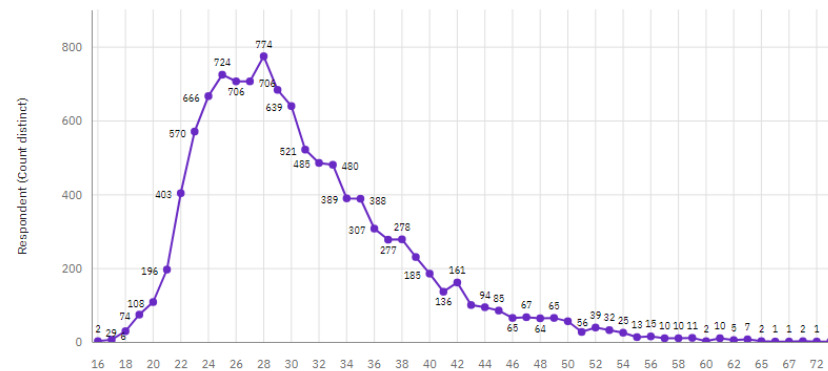
Gender
Woman Man



Countries

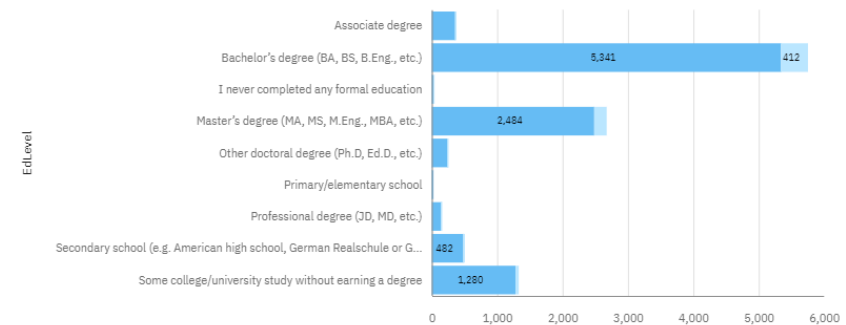


Ages




Respondent by EdLevel colored by Gender

Gender
Man Woman



DISCUSSION



Modern programming languages such as Go, Kotlin, TypeScript, and Python are in increasing demand, while traditional languages like PHP, HTML, and CSS are declining.

NoSQL and search databases, particularly DynamoDB and Elasticsearch, are gaining popularity.

Additionally, there is a significant gender imbalance in the workforce, with men predominantly outnumbering women, especially in the US.

OVERALL FINDINGS & IMPLICATIONS

Findings

Programming Languages: Go, Kotlin, TypeScript, and Python are increasingly in demand with High demand for C, Java, Python across key cities.

Database Technologies: DynamoDB and Elasticsearch are gaining traction, while traditional databases like MySQL and Oracle are declining.

Regional Dominance: The US has the highest number of respondents, indicating a regional concentration. Cities with the highest demand include Washington DC, Detroit, Seattle, Houston, New York, and Boston.

Age Distribution: The workforce skews younger, with an average age around 28.

Educational Attainment: A high number of respondents hold Bachelor's degrees.

Insights

Skill Development: Targeted training programs are needed for modern programming languages, NoSQL databases, and key languages like C, Java, and Python.

Regional Focus: Prioritize recruitment in Washington DC, Detroit, Seattle, Houston, New York, and Boston to leverage tech ecosystems.

Global Expansion: Diversify recruitment and training globally to reduce regional dependency and access new talent pools.

Retention and Education: Create career development programs and promote further education and certification in C, Java, Python, and Oracle to maintain a skilled workforce.

CONCLUSION

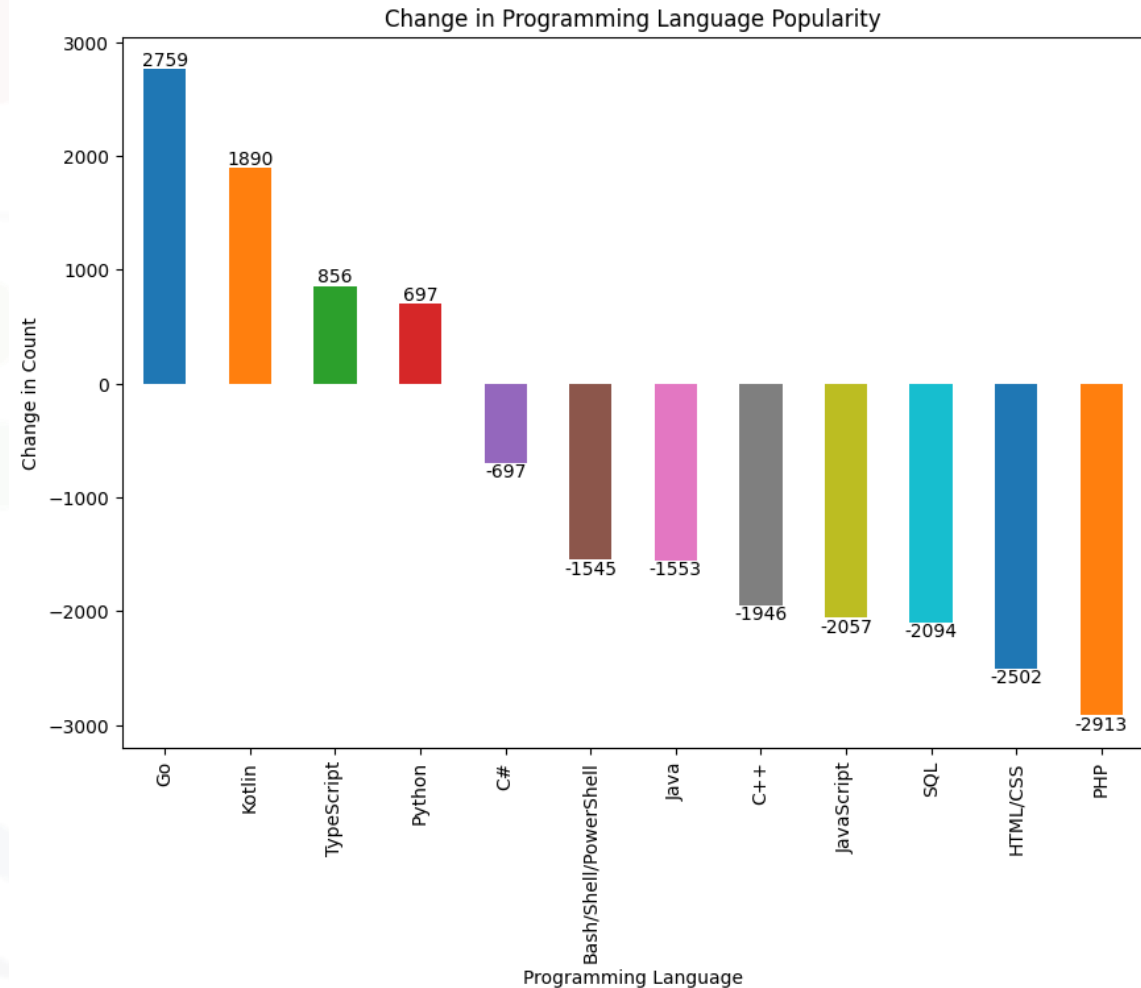
To maintain competitiveness and drive innovation in the evolving IT landscape, it is essential to focus on emerging technologies and expand global recruitment efforts.

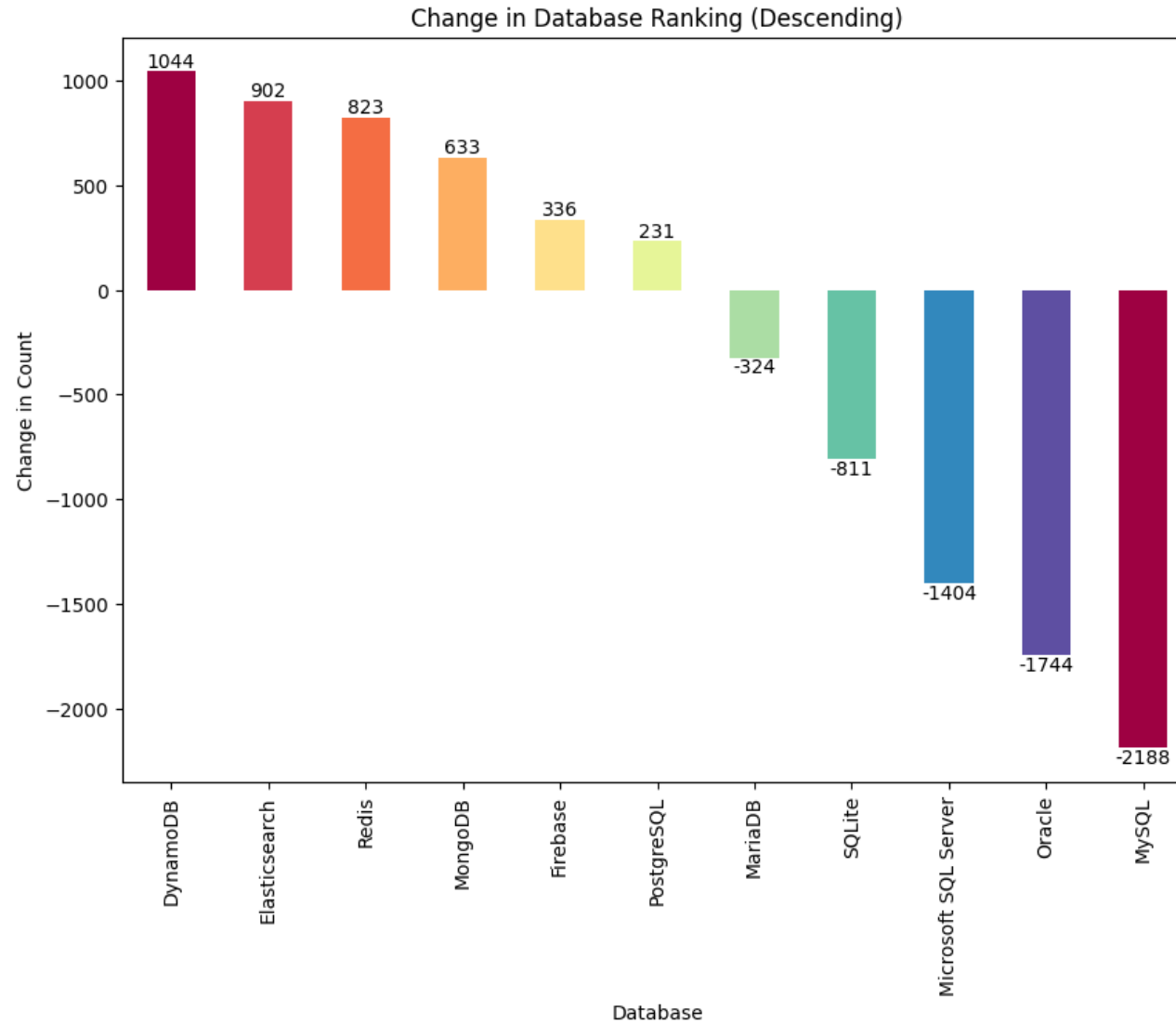
Investing in skill development for modern programming languages, databases, and key technologies like C, Java, Python, and Oracle will position the organization for future success.

Additionally, supporting continuous learning and career development along with promoting diversity and inclusion will ensure the workforce remains capable and adaptable to meet future demands.

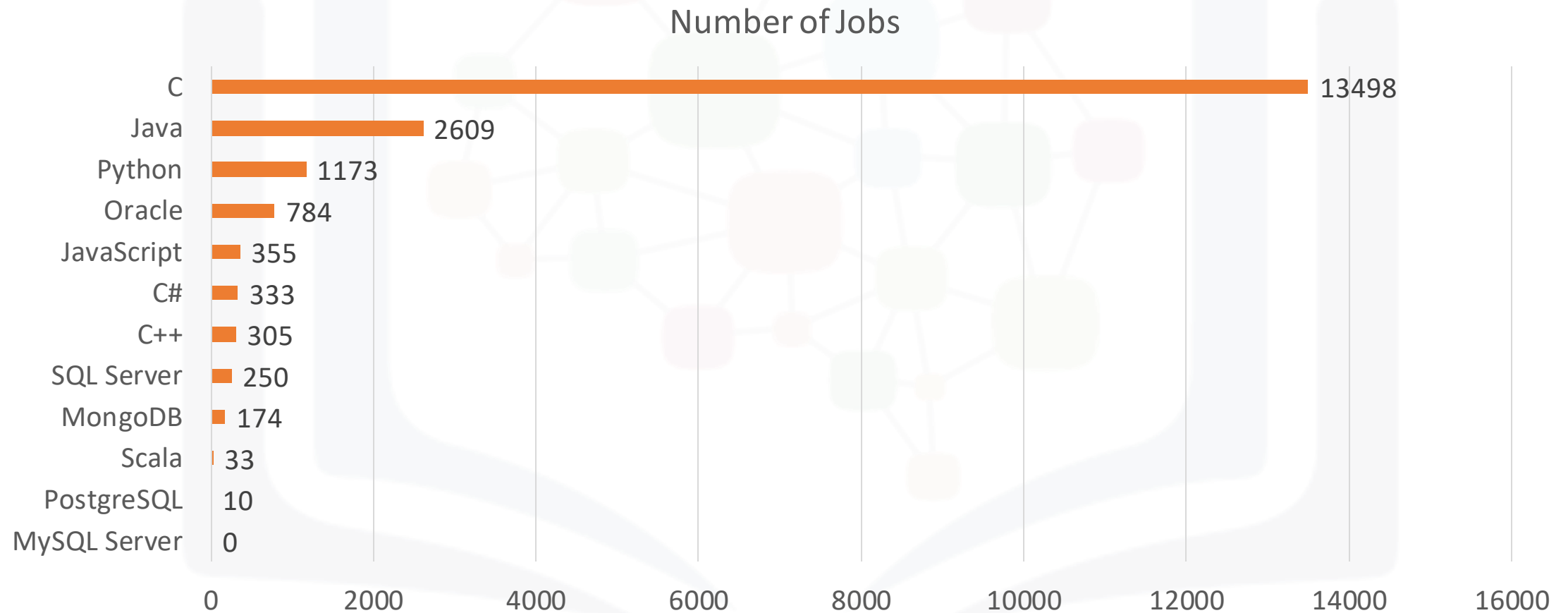


APPENDIX





JOB POSTINGS



POPULAR LANGUAGES

