EMERGING IT SKILLS AND TRENDS THROUGH DATA ANALYSIS

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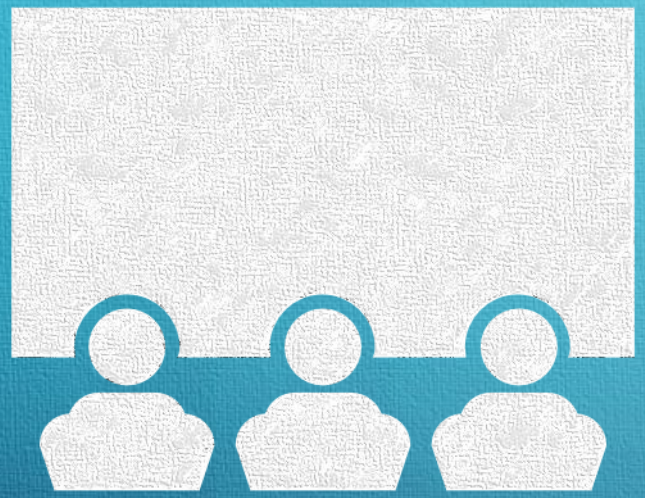
OUTLINE



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

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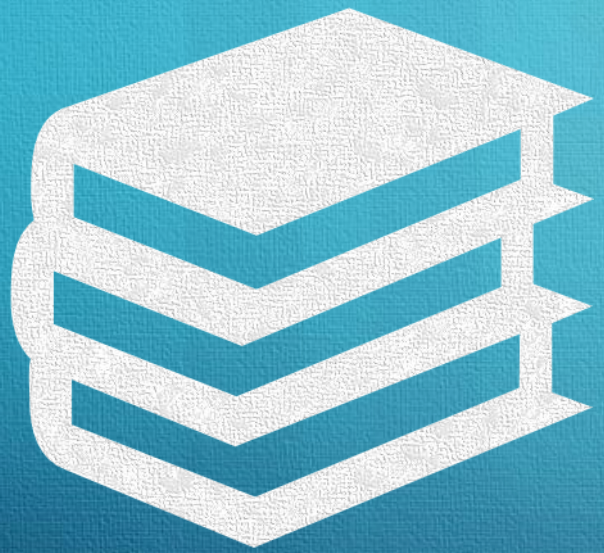
EXECUTIVE SUMMARY

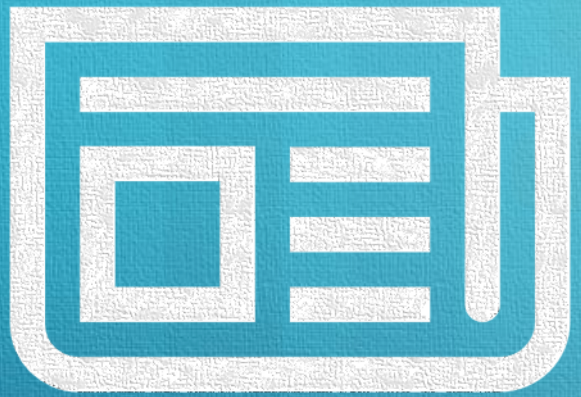
- **Objective:** Analyze data to identify emerging IT skills and trends.
- **Methodology:** Collected insights from diverse respondents across industries
- **Key Findings:**
  - **Language Trends:** JavaScript remains dominant; Python and TypeScript are on the rise.
  - **Database Preferences:** PostgreSQL and NoSQL are increasingly relevant.
  - **Platform Insights:** Docker and Kubernetes are gaining traction.
  - **Frameworks:** React.js and Vue.js are projected for future growth.
- **Demographics:** Predominantly male respondents; majority aged 25-30; significant representation from the US, India, and UK.
- **Education:** High percentage with bachelor's and master's degrees.
- **Implications:** Focus on upskilling in key areas to meet evolving market demands.

INTRODUCTION



- Purpose of the Report
  - Analyze data to identify emerging skills
  - Support strategic planning for IT and business consulting
- Focus Areas
  - Top programming languages in demand
  - Key database skills
  - Popular Integrated Development Environments (IDEs)
- Importance of Skills Analysis
  - Adapt to changing technologies
  - Enhance competitiveness in the industry
  - Align workforce capabilities with market needs

METHODOLOGY



- Data Collection
  - APIs
  - Webscraping
- Data Wrangling
- Exploratory Data Analysis
  - Seaborn
  - Matplotlib
- Data Visualization
  - SQL queries
- Dashboard Creation
  - IBM Cognos Analytics

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RESULTS

- **Language Trends:**

  Dominance of JavaScript and rising interest in Python, with anticipated growth for PostgreSQL and TypeScript next year.

- **Database Preferences:**

  Current usage and future interest in PostgreSQL and NoSQL

- **Platform Insights:**

  Emerging platforms like Docker and Kubernetes.

- **Framework Findings:**

  Key web frameworks, including React.js and Vue.js, projected for growth

- **Demographics:**

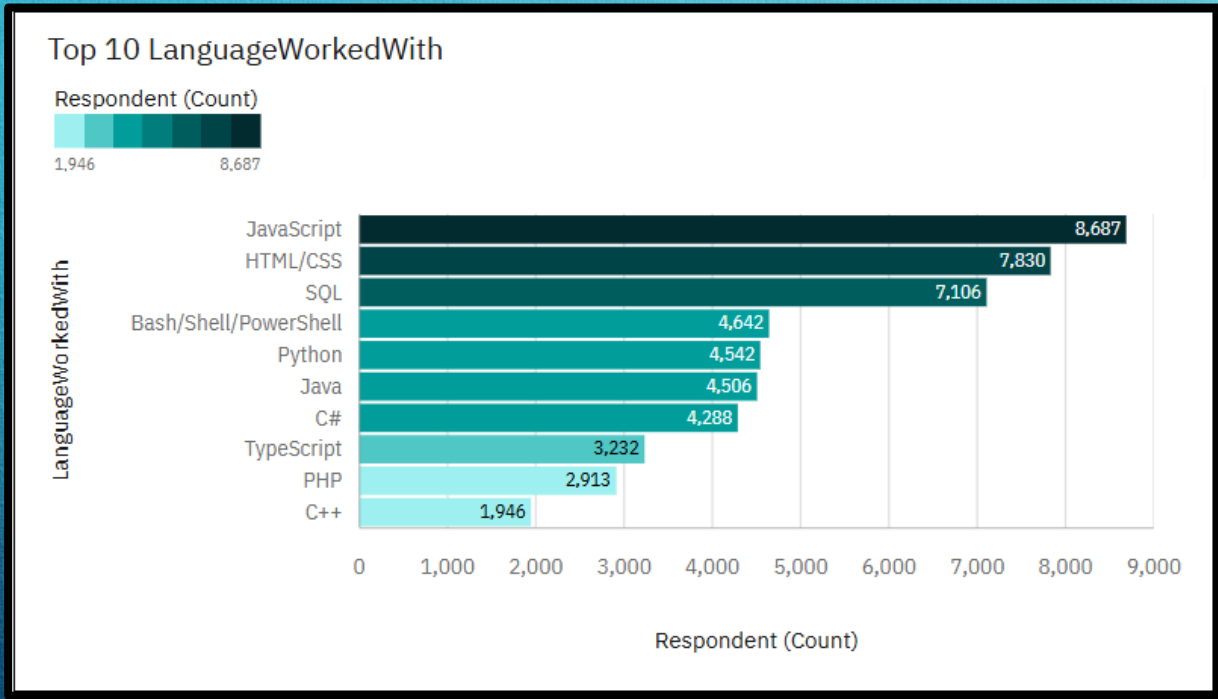
  Predominantly male, majority aged 25-30, with significant representation from the US, India, and UK

- **Education Levels:**

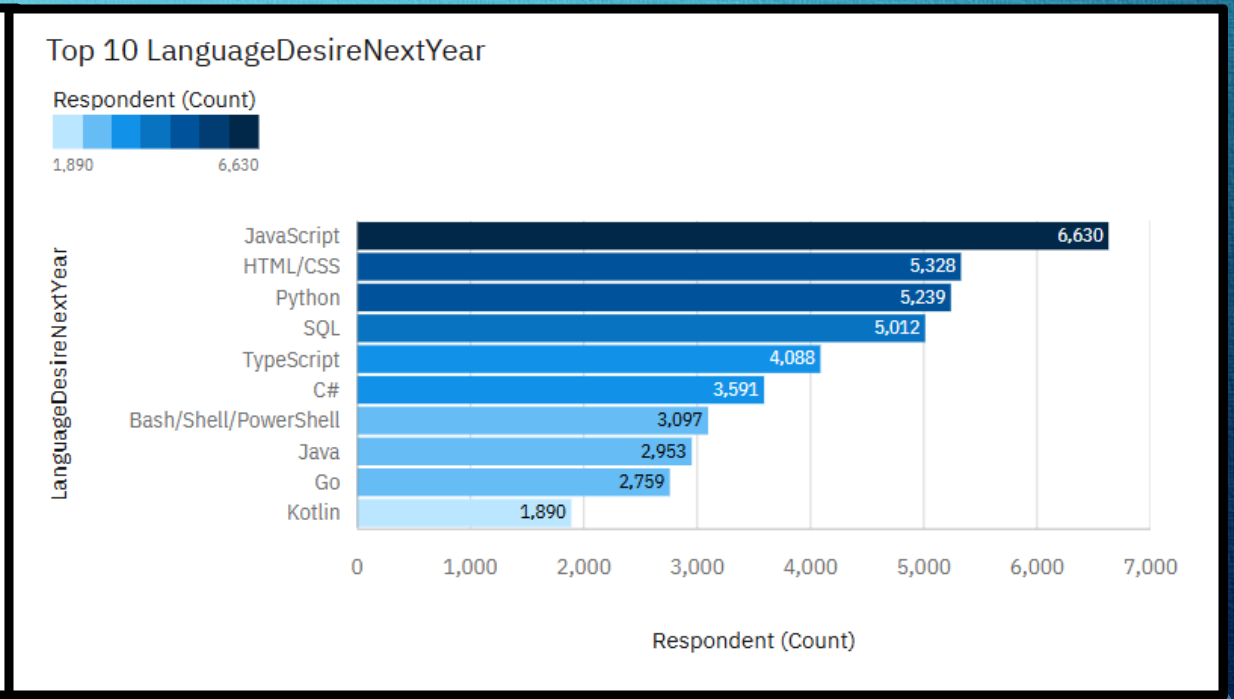
  Majority hold bachelor's and master's degrees

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

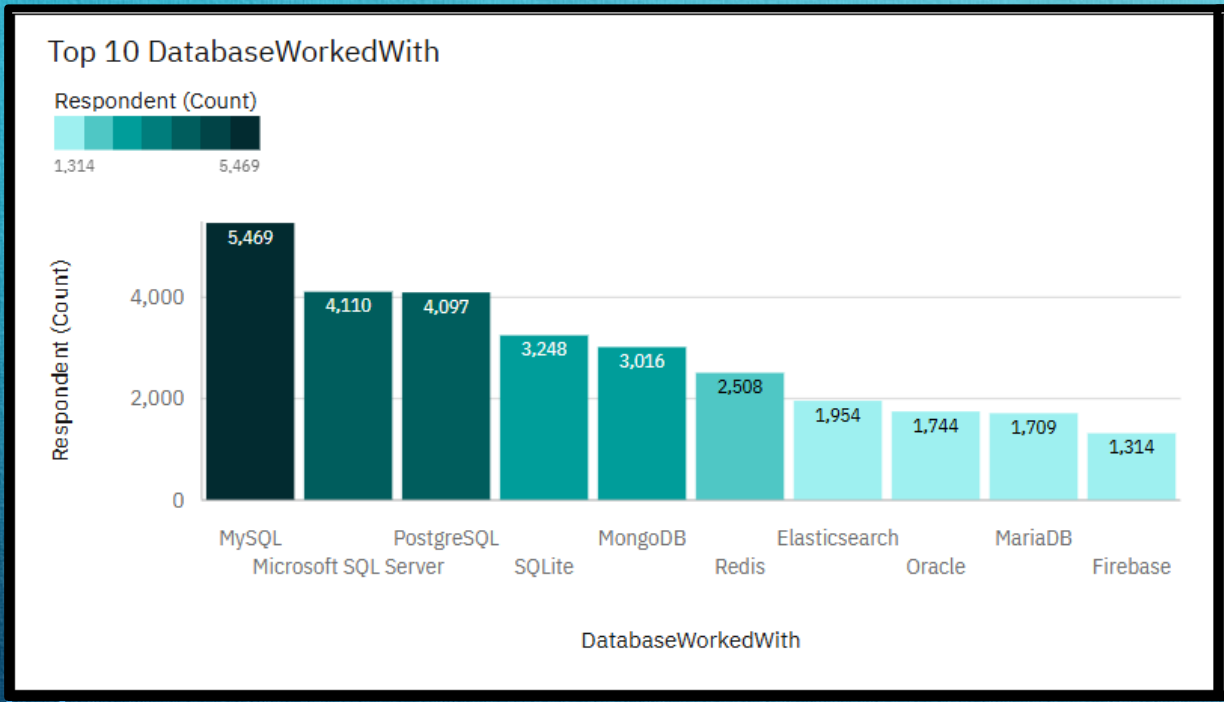
- **JavaScript:**
  Continues to dominate usage
- **Python:**
  Demand is significantly increasing
- **TypeScript:**
  Rising in importance for web development
- **Go & Kotlin:**
  Gaining emerging interest

Implications

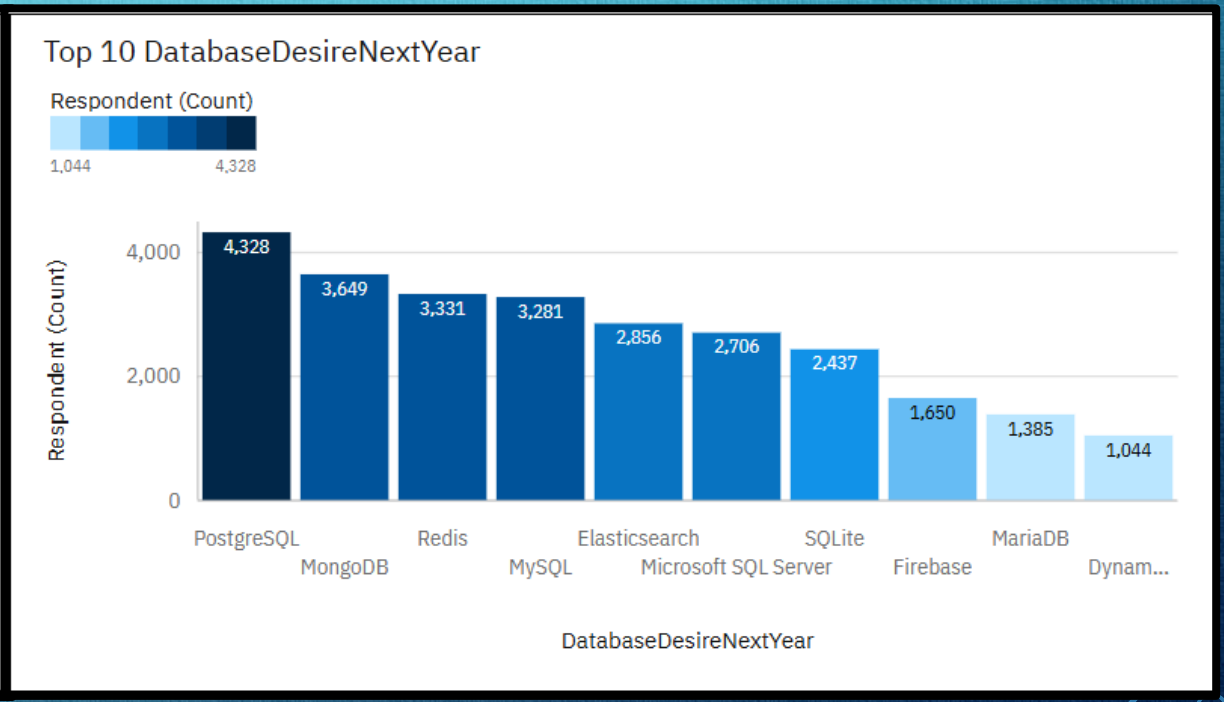
- Prioritize **JavaScript** and **Python** in upskilling
- Incorporate **TypeScript** for front-end teams
- Stay updated on **Go** and **Kotlin** trends

DATABASE TRENDS

Current Year



Next Year



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DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- **PostgreSQL:**

  Rising interest for next year

- **NoSQL Growth:**

  Significant demand for **MongoDB** and **Redis**

- **Decline in Traditional Databases:**

  Reduced future interest in **MySQL** and **SQL Server**

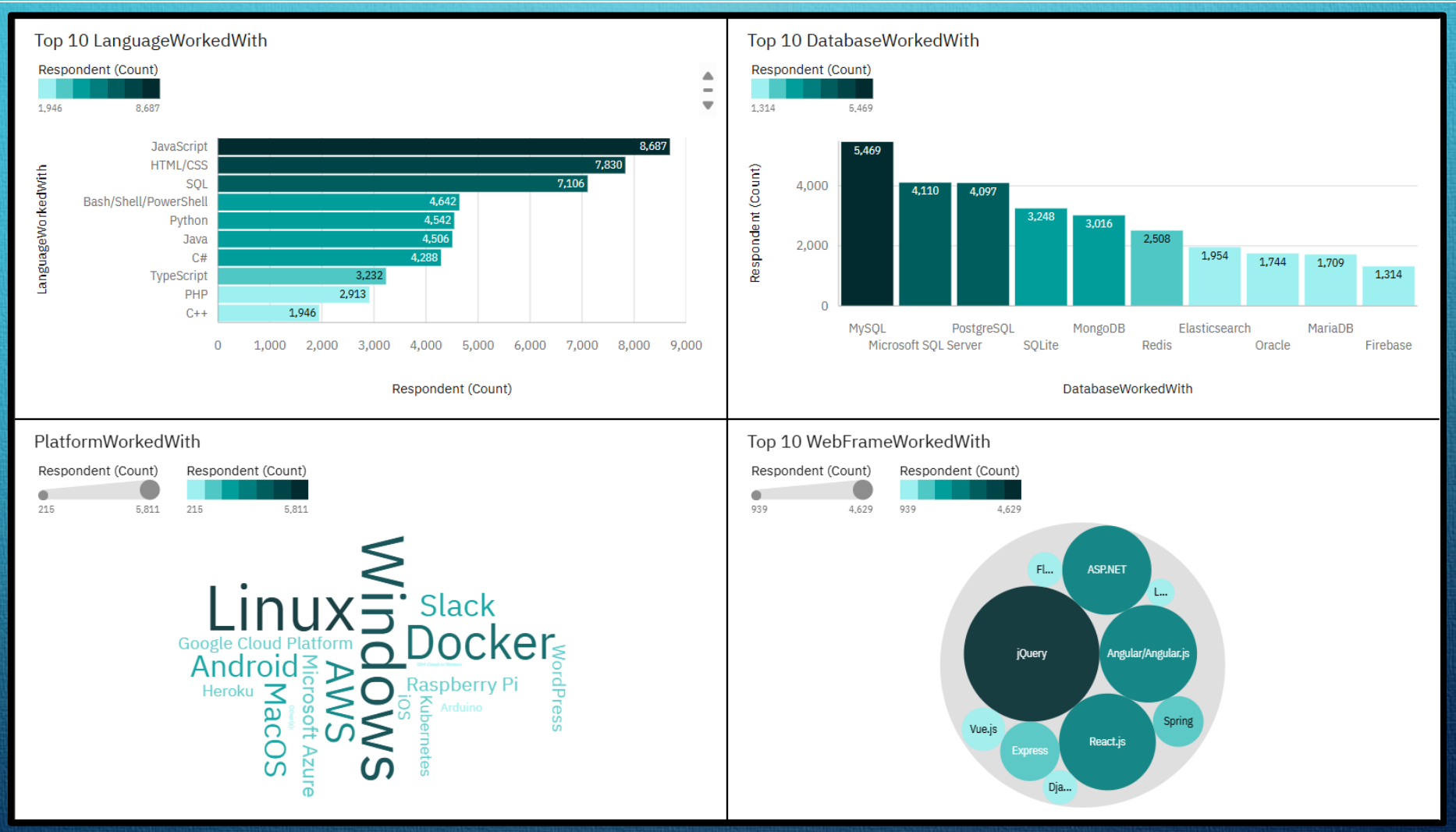
Implications

- Prioritize **PostgreSQL** training in upskilling.
- Emphasize **MongoDB** and **Redis** skills
- Reassess the relevance of **traditional** databases.

DASHBOARD

Cognos dashboard link: Click here

CURRENT TECHNOLOGY USAGE



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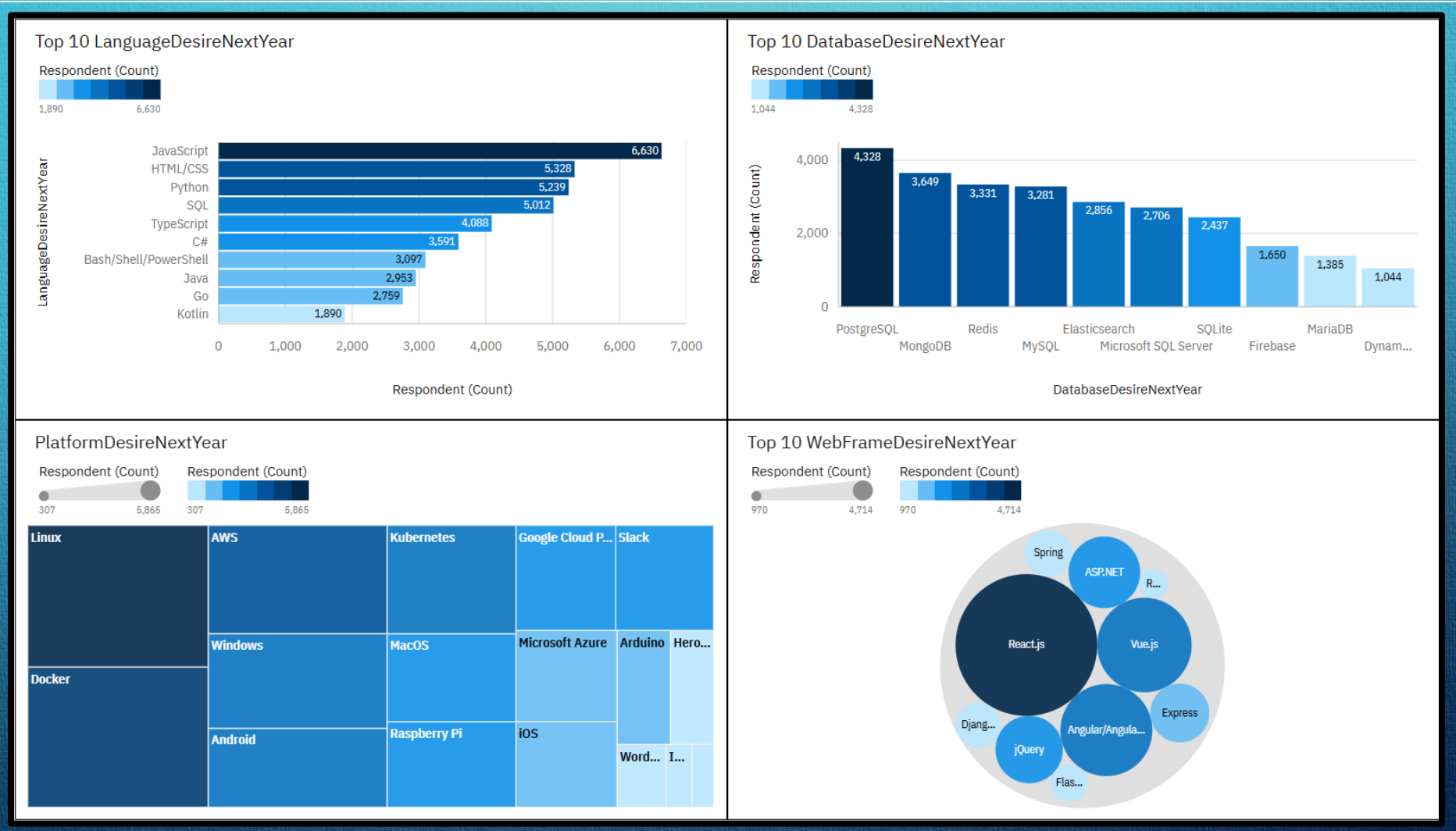
FUTURE TECHNOLOGY TREND



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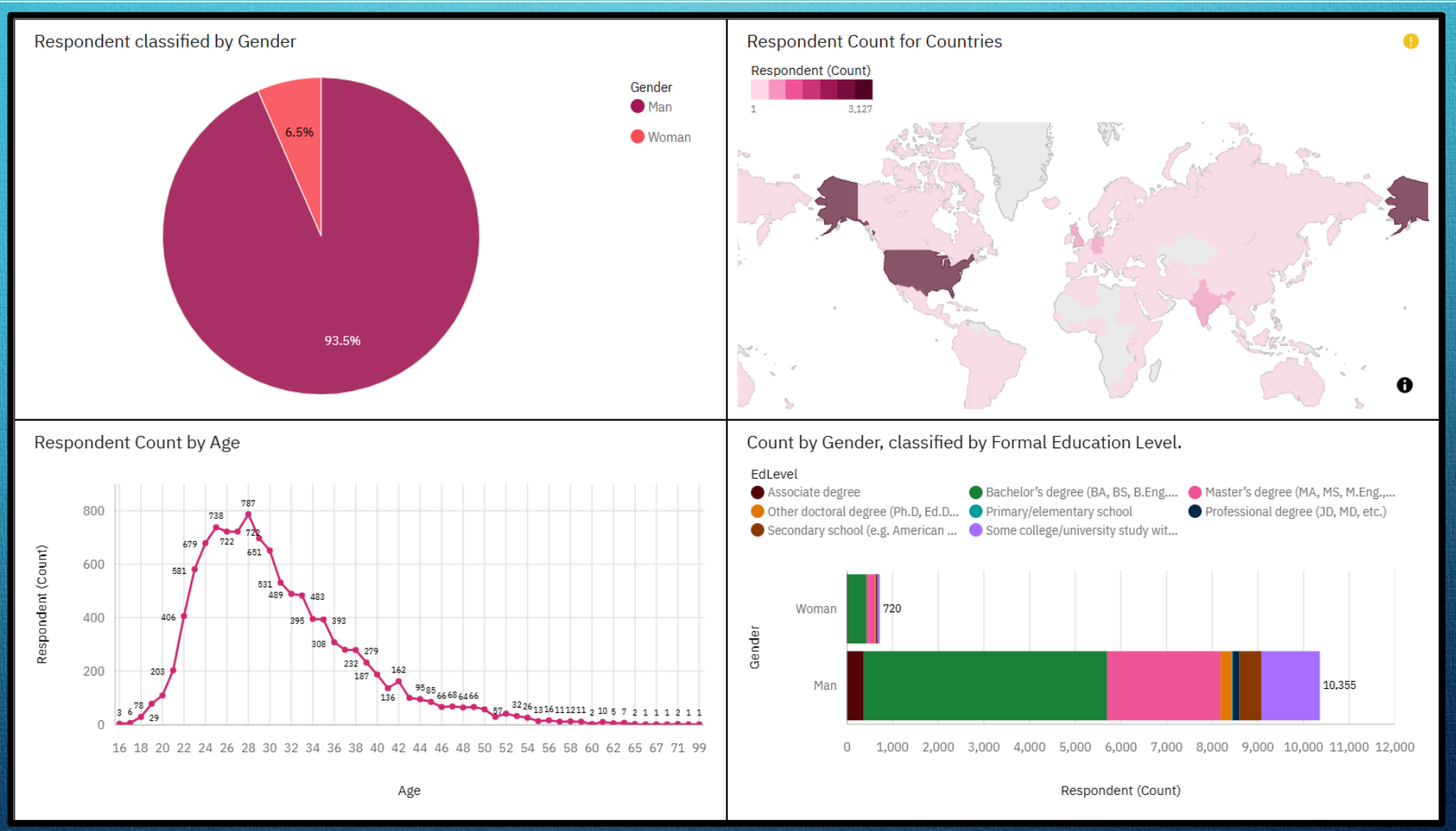
DEMOGRAPHICS



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DISCUSSION

- **Trend Analysis:**
  Shifts in programming language and framework preferences
- **Demographic Impact:**
  Predominantly male; majority aged 25-30
- **Skill Gaps:**
  Areas where skills lag behind market needs
- **Future Outlook:**
  Growth expected in Python and PostgreSQL; rising importance of Docker and Kubernetes
- **Training Recommendations:**
  Focus on targeted upskilling and diversity initiatives
- **Strategic Planning:**
  Align workforce skills with evolving market trends

OVERALL FINDINGS & IMPLICATIONS

Findings

- **Dominance of JavaScript:**
  Continues to lead in programming languages
- **Growing Demand for Python:**
  Significant rise reflects a market shift
- **PostgreSQL and NoSQL:**
  Increasing relevance in database technologies
- **Emergence of Docker and Kubernetes:**
  Key platforms gaining traction
- **Leading Frameworks:**
  React.js and Vue.js are essential for future web development
- **Demographics:**
  Predominantly male respondents; majority aged 25-30
- **Geographic Insights:**
  Majority from the US, India, and UK
- **Education Levels:**
  Majority hold bachelor's and master's degrees

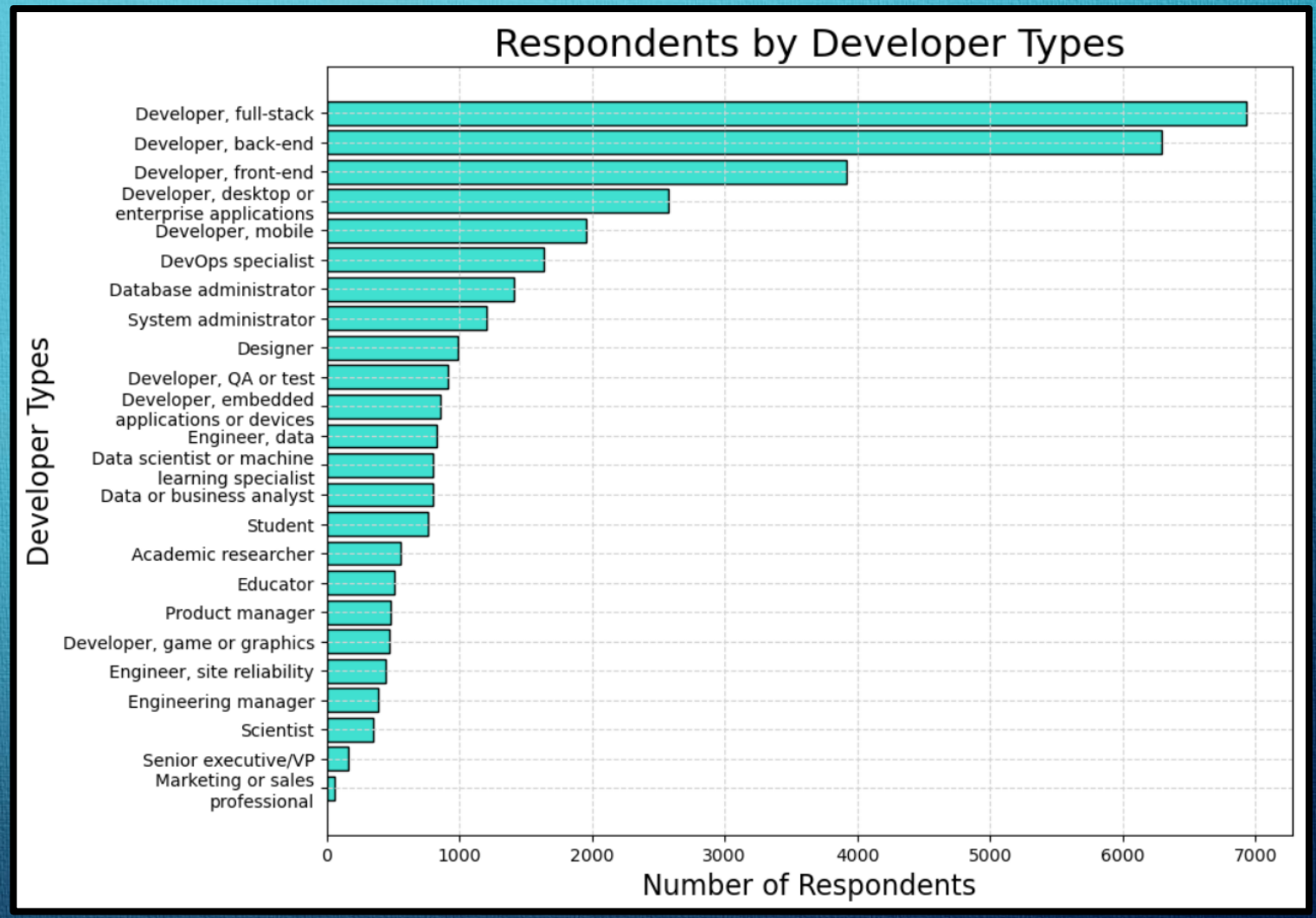
Implications

- **Upskilling Focus:**
  Prioritize JavaScript and Python in training initiatives
- **Database Training:**
  Emphasize PostgreSQL, MongoDB, and Redis skills
- **Platform Development:**
  Incorporate Docker and Kubernetes into training programs
- **Web Development Emphasis:**
  Focus on React.js and Vue.js for development teams
- **Support Diversity:**
  Develop strategies to increase female participation in tech
- **Global Tailoring:**
  Adapt training programs for leading countries
- **Leverage Education:**
  Utilize high education levels for advanced skill development

CONCLUSION

- **Evolving Skill:**
  Demand for programming languages, frameworks, and platforms is shifting
- **Key Focus Areas:**
  JavaScript, Python, PostgreSQL, and modern frameworks are essential
- **Strategic Training:**
  Prioritize upskilling in technologies like Docker, Kubernetes, React.js, and Vue.js
- **Diversity and Inclusion:**
  Address the gender gap and support increased female participation in tech
- **Ongoing Analysis:**
  Regularly monitor trends to adapt effectively
- **Future Readiness:**
  Invest in skills today for tomorrow's challenges

APPENDIX



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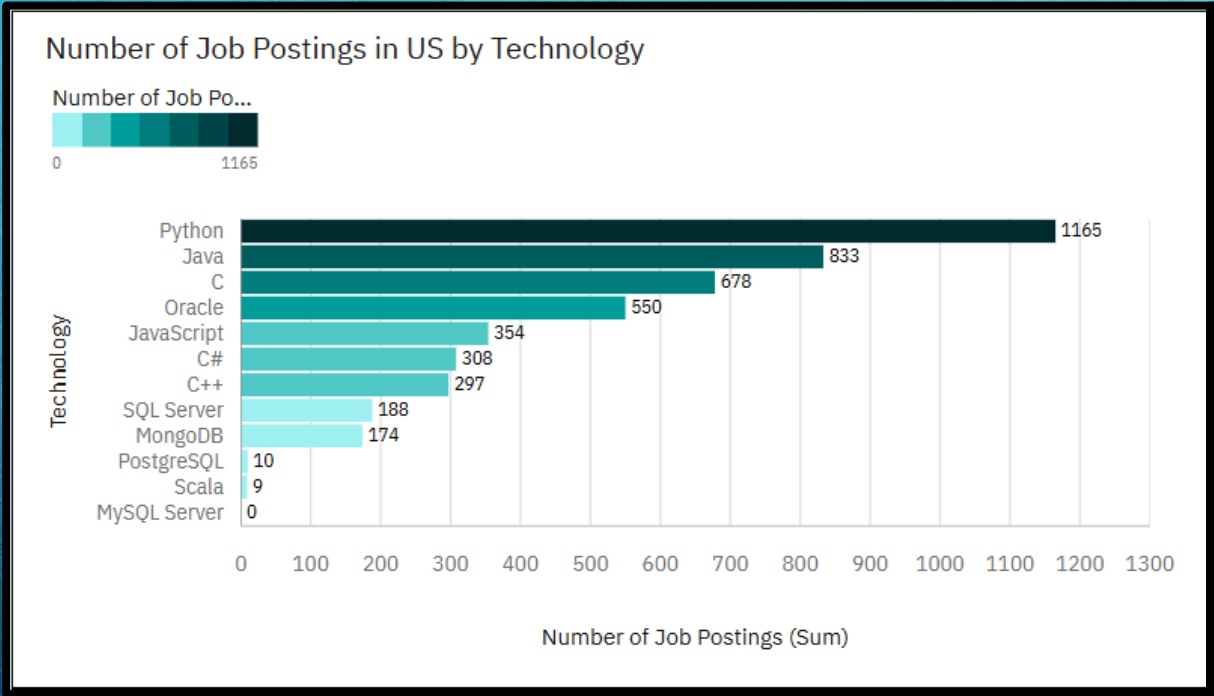
JOB POSTINGS

by Technology



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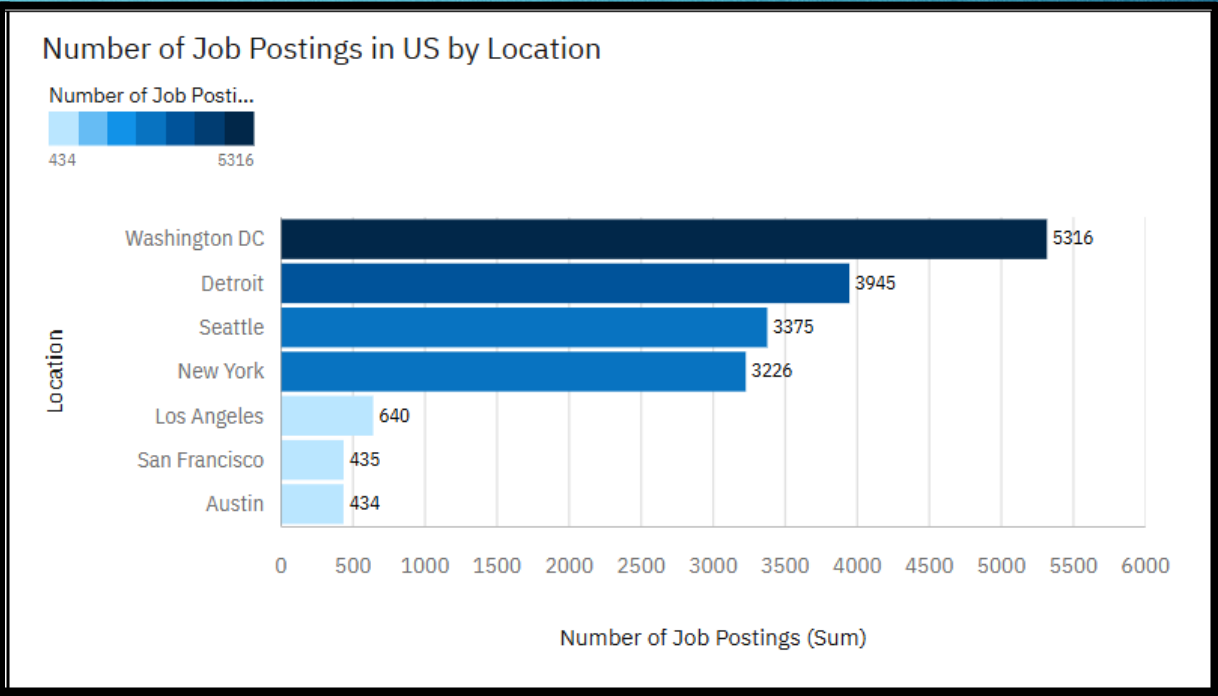

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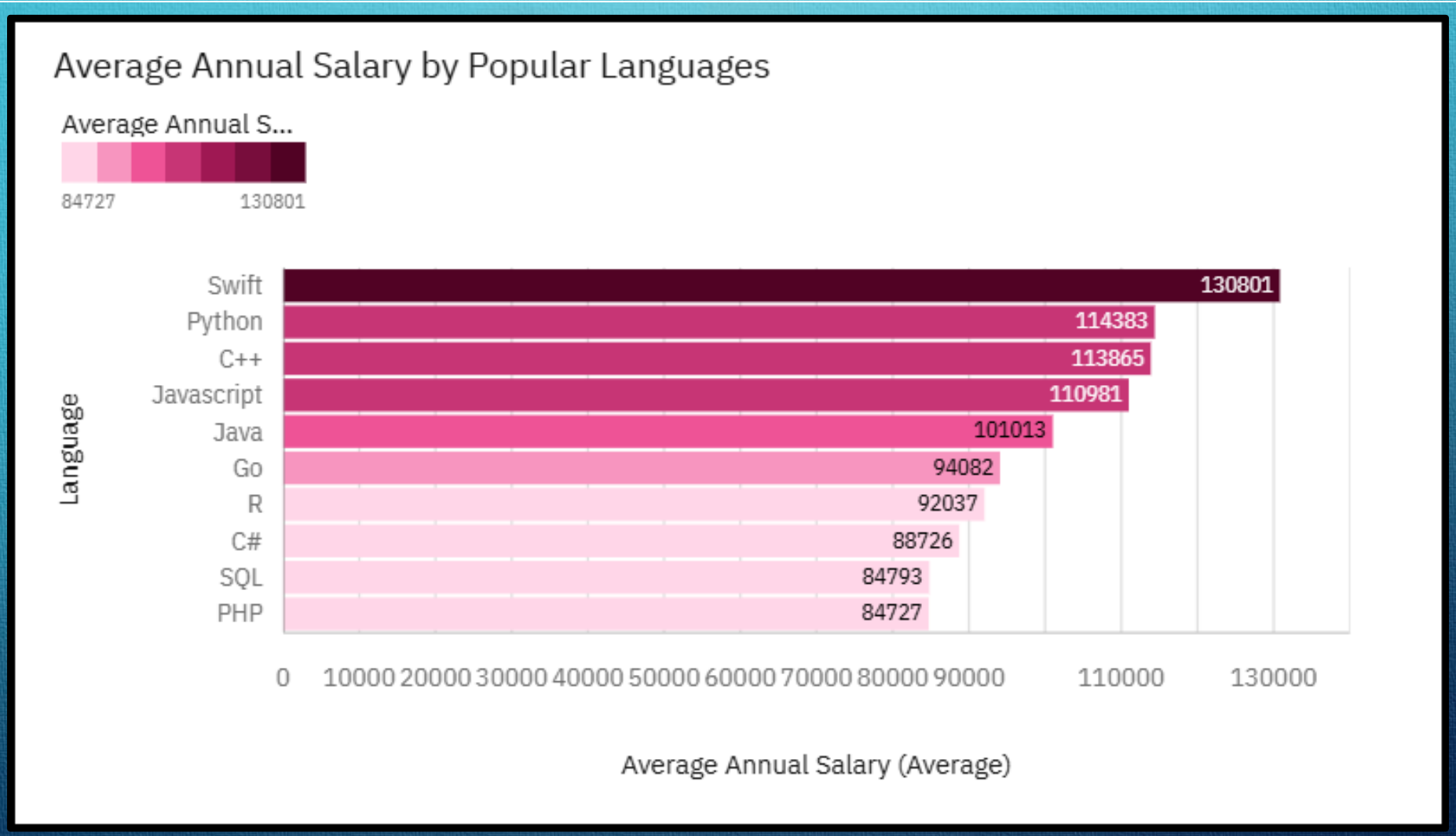
POPULAR LANGUAGES



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