NEXT YEARS SKILL REQUIREMENTS

S.J Rademaker

15-05-24

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SKILLS NETWORK

OUTLINE

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

EXECUTIVE SUMMARY

- **Market Trend Analysis:**
- Identification of upward trajectory in demand for programming languages, databases, and web frameworks.
- Anticipation of decline in demand for certain programming languages and databases.
- **Strategic Adjustment Imperative:**
- Urgency to reallocate focus on emerging skills to meet rising demand.
- Importance of reducing emphasis on declining skills to align with future market trends.
- **Timely Replacement Strategy:**
- Need for proactive replacement of declining skills to sustain competitiveness.
- Implication of swift action in replacing declining skills with emerging alternatives.
- **Research and Development Integration:**
- Significance of integrating emerging skills into research and development efforts.
- Opportunity to leverage emerging trends to drive innovation and maintain competitive advantage.
- **Organizational Competitiveness Enhancement:**
- Overall objective of the report to equip organizations with insights for enhancing competitiveness.
- Importance of strategic skill focus adjustment in navigating an evolving market landscape.

INTRODUCTION

- **Dynamic Market Environment:**
- Overview of skill demand dynamics in response to technological advancements.
- **Analytical Focus:**
- Objective to provide insights for optimizing skill requirements.
- **Questions:**
- What are the top programming languages in demand?
- What are the top database skills in demand?
- What are the top web frameworks skills in demand?
- What are the popular IDEs?

METHODOLOGY

List of all Methods used click on the links to see resources

- **1 Data collection:**
- API's
- Web-scraping
- Resources:
- Github link for API
- Github link for Web-scraping
- **2 Data wrangling:**
- Resources:
- Github link Data wrangling
- **3 exploratory data analysis:**
- Resources:
- Github link Exploratory data analysis
- **4 Data visualization:**
- Resources:
- Github link Data visualization
- **5 Dashboard:**
- Resources:
- Github link Dashboard IBM cognos analytics

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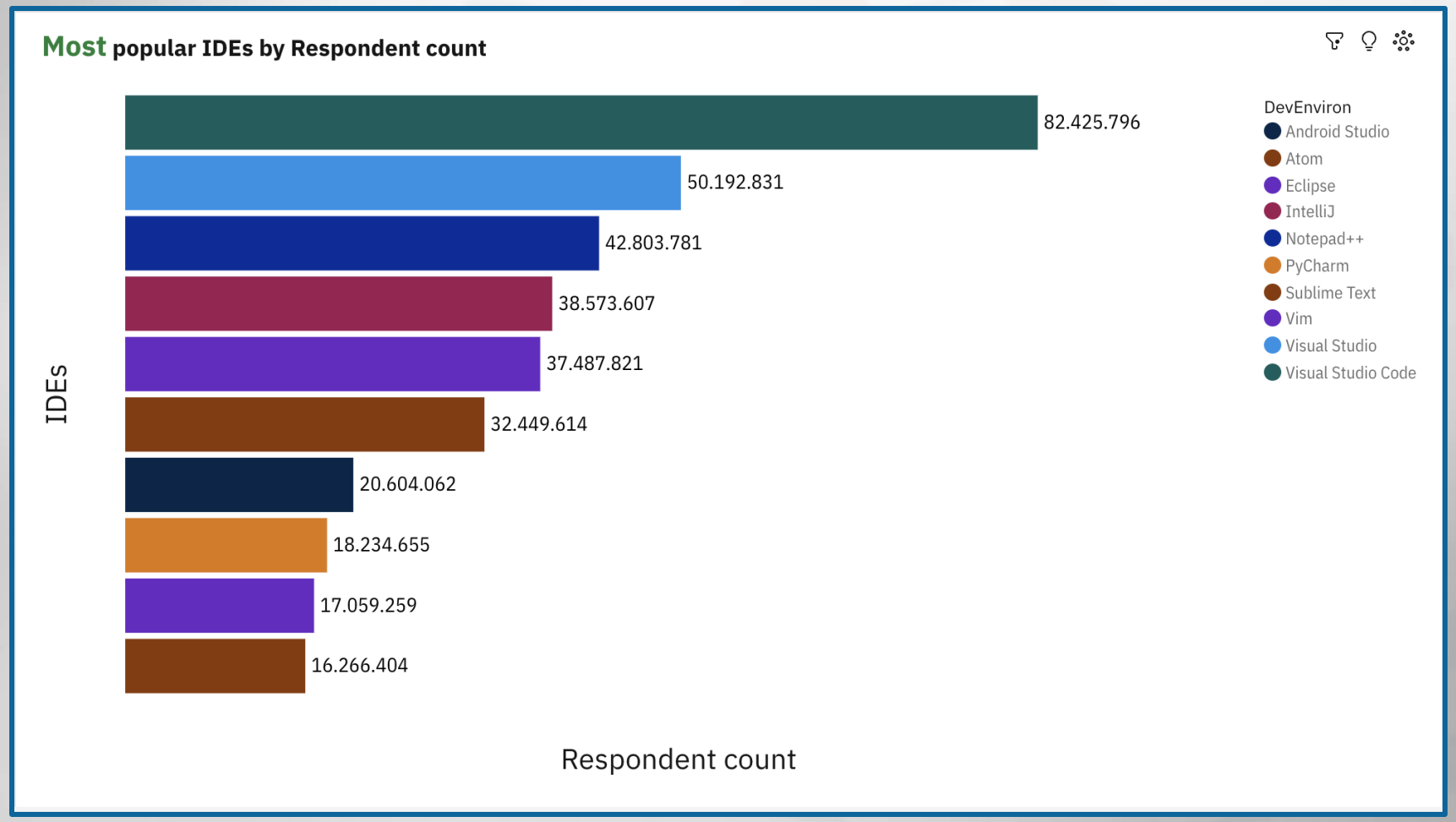
RESULTS



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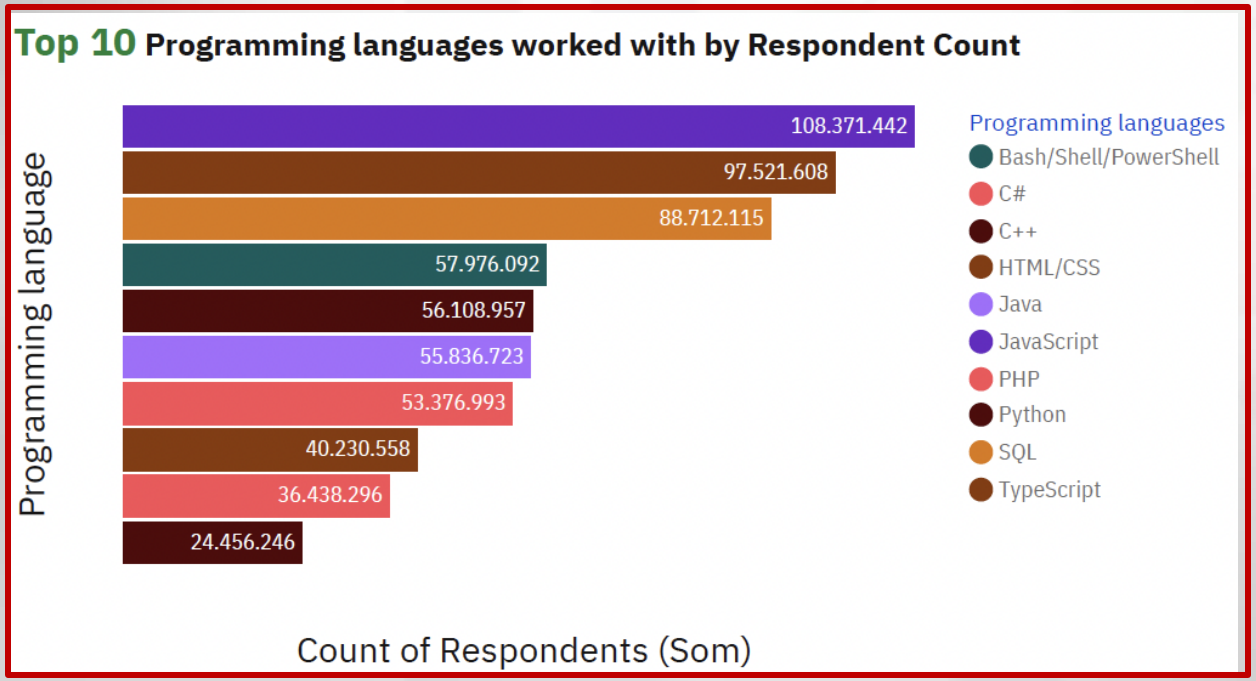
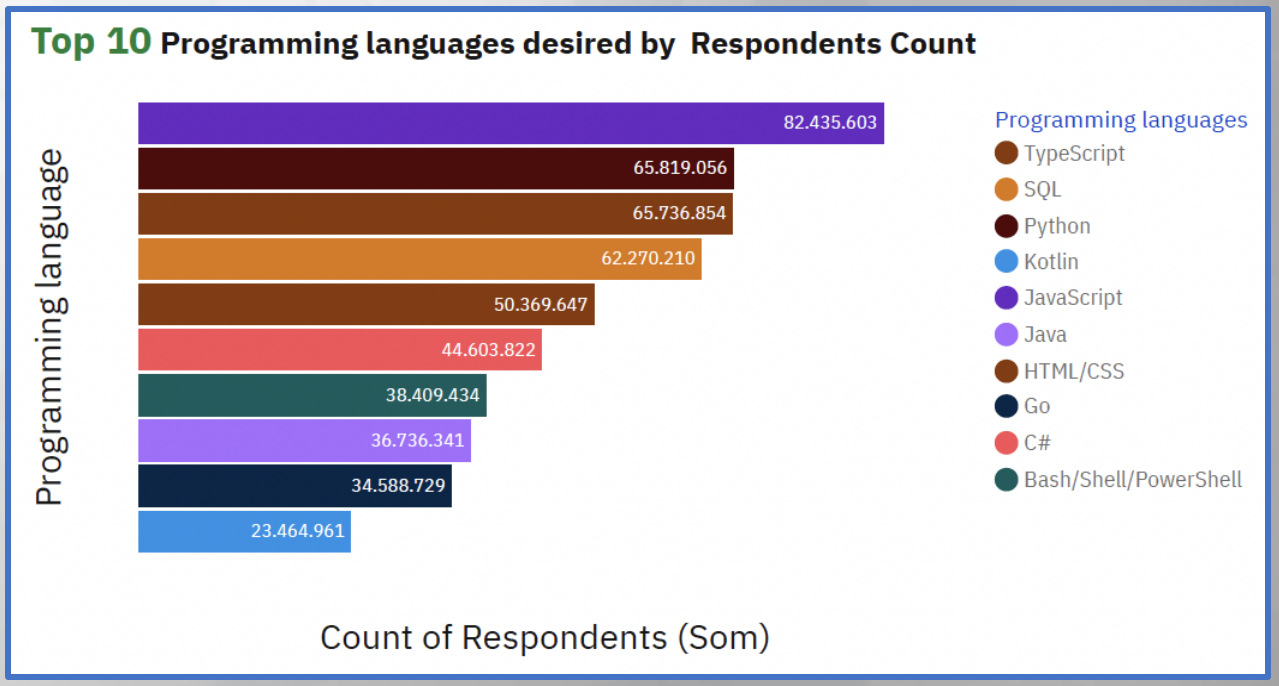
PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Finding 1:Risers
- Finding 2:Decliners
- Finding 3:Drop outs
- Finding 4:Entrants

Implications

- Implication 1:Increase focus on
- Implication 2:Decrease focus on
- Implication 3:Replacing timely
- Implication 4:Introduce to R&D

Findings 1: Risers

Findings

- **Python**: Trends to increase in usage by +17.3% next year.
- **Type script**: Trends to increase in usage by +25.2% next year.

Implications

- **Internal**: Expand language knowledge; Provide current insights for consultations.
- **External**: Add Rising skills to job reqs for continued competitiveness and efficiency; these skills are forecasted to be in demand next year

Findings 2: Decliners

Findings

- **Bash/Powershell**: Trends to Decrease in demand by -33.75% moving from rank 4 to 7 next year.
- **Java**: Trends to Decrease in demand by -34.2% moving from rank 6 to 8 next year.

Implications

- **Internal**: It's necessary to shift part of focus to other languages that will be more in demand; Provide current insights for consultations.
- **External**:Trim job reqs for skills with declining demand to optimize resource allocation

Findings 3: Drop outs

Findings

- **PHP**: Trends to drop out of the top 10 in demand skills next year.
- **C++**: Trends to drop out of the top 10 in demand skills next year.

Implications

- **Internal**: Necessary shift to replacement strategies; Provide current insights for consultations.
- **External**: Proactive replacement action for languages in infrastructure, services, or apps. Forecasting significant decrease in demand

Findings 4: Entrants

Findings

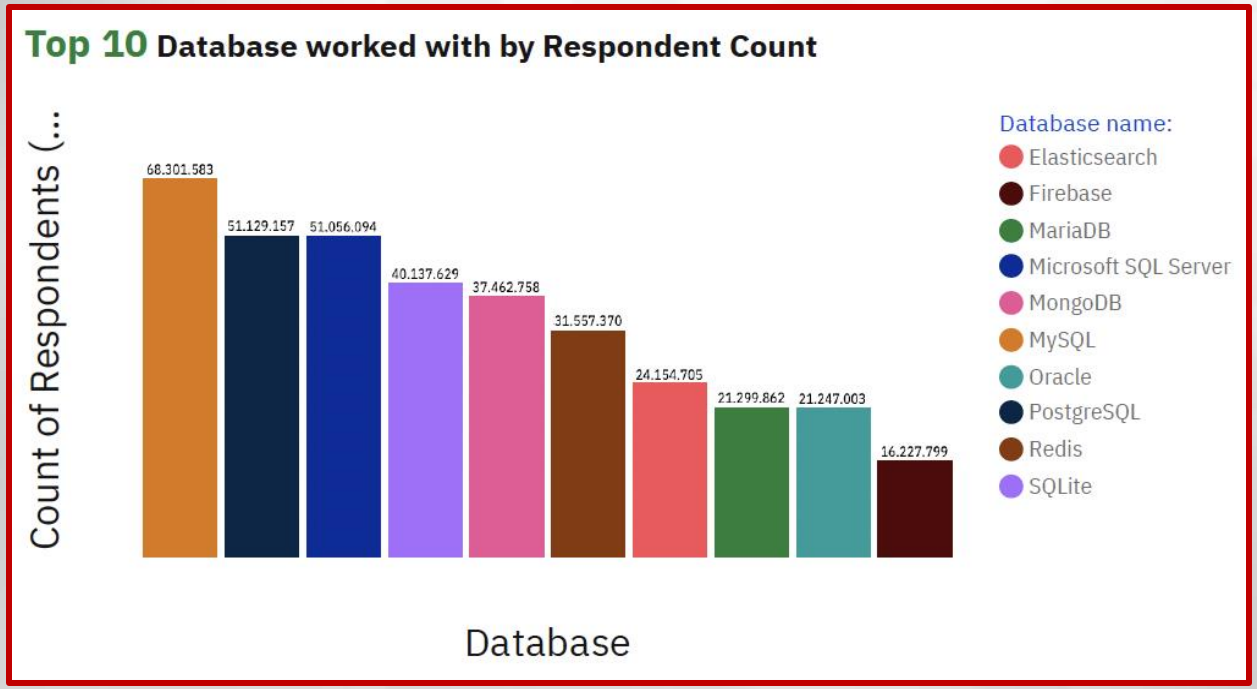
- **GO**: Trends to break in to the top 10 in demand skills moving to rank 9 next year.
- **Kotlin**: Trends to break in to the top 10 in demand skills moving to rank 10 next year.

Implications

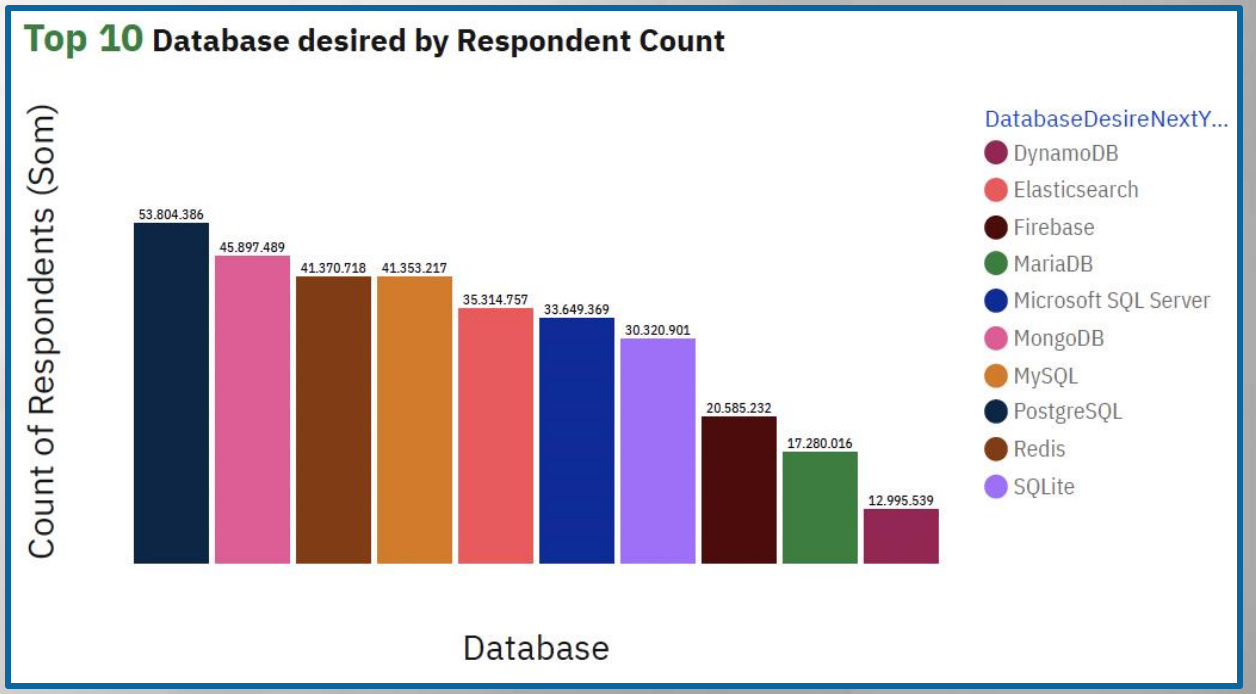
- **Internal**: Expand knowledge by research; Provide current insights for consultations.
- **External**: Gradually add skill to job reqs for R&D; Forecasted to break into top 10

DATABASE TRENDS

Current Year



Next Year



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DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Finding 1:Risers
- Finding 2:Decliners
- Finding 3:Drop outs
- Finding 4:Entrants

Implications

- Implication 1:Increase focus on
- Implication 2:Decrease focus on
- Implication 3:Replacing timely
- Implication 4:Introduce to R&D

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Findings 1: Risers

Findings

- **Redis**: Trends to increase in usage by +31% next year.
- **Mongo DB**: Trends to increase in usage by +22.5% next year.
- **Postgre-sql**: Trends to increase in usage by +5.2% next year.

Implications

- **Internal**: Expand database knowledge; Provide current insights for consultations.
- **External**: Add Rising skills to job reqs for continued competitiveness and efficiency; these skills are forecasted to be in demand next year

Findings 2: Decliners

Findings

- **Microsoft sql:** Trends to Decrease in demand by -34% moving from rank 3 to 6 next year.
- **Mysql**: Trends to Decrease in demand by -39.45% moving from rank 1 to 4 next year.
- **Sqlite**: Trends to Decrease in demand by -24.45% moving from rank 4 to 7 next year.

Implications

- **Internal**: It's necessary to shift part of focus to other databases that will be more in demand; Provide current insights for consultations.
- **External**:Trim job reqs for skills with declining demand to optimize resource allocation

Findings 3: Drop outs

Findings

- **Oracle**: Trends to drop out of the top 10 in demand skills next year.

Implications

- **Internal**: Necessary shift to replacement strategies; Provide current insights for consultations.
- **External**: Proactive replacement action for database in infrastructure, services, or apps. Forecasting significant decrease in demand

Findings 4: Entrants

Findings

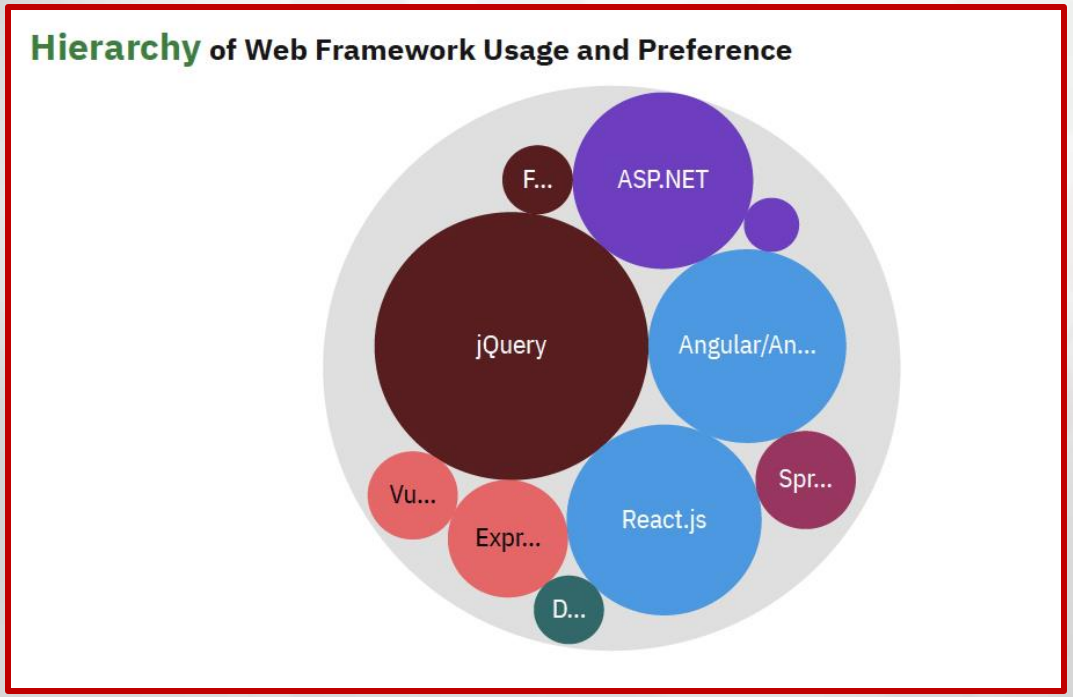
- **Dynamo DB**: Trends to break in to the top 10 in demand skills moving to rank 9 next year.

Implications

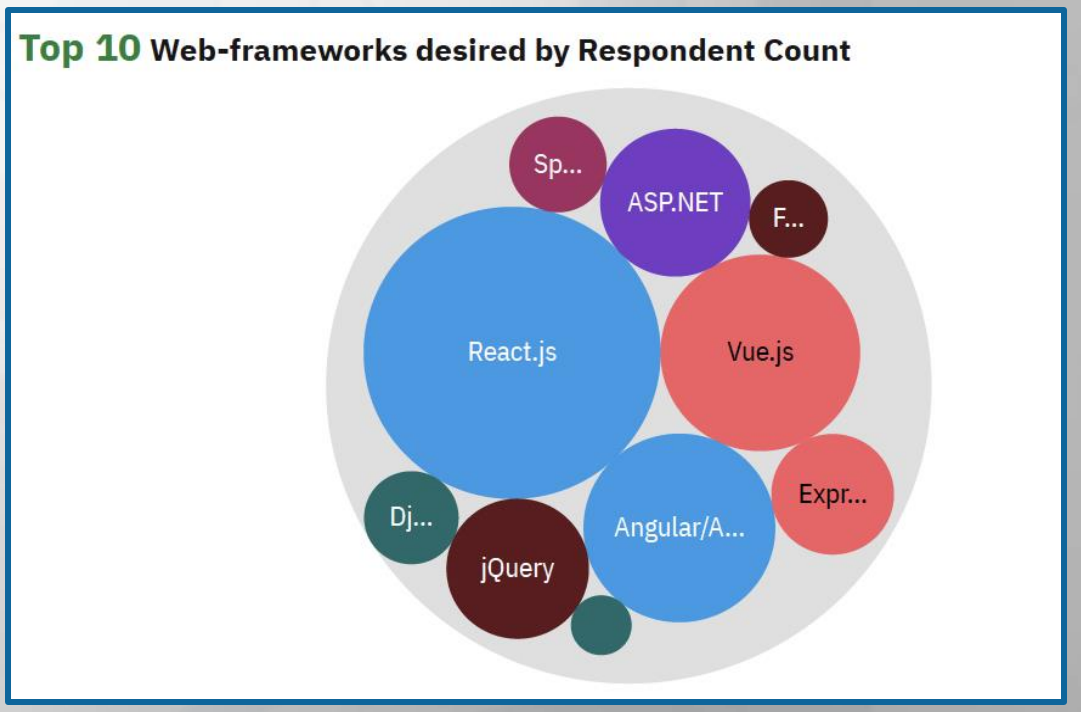
- **Internal**: Expand knowledge by research; Provide current insights for consultations.
- **External**: Gradually add skill to job reqs for R&D; Forecasted to break into top 10

WEB-FRAMEWORK TRENDS

Current Year



Next Year



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WEB-FRAMEWORK TRENDS - FINDINGS & IMPLICATIONS

Findings

- Finding 1:Risers
- Finding 2:Decliners
- Finding 3:Decreasing in popularity

Implications

- Implication 1:Increase focus on
- Implication 2:Decrease focus on
- Implication 3:Replacing timely

Findings 1: Risers

Findings

- **React js**: Trends to move up from rank 3 to 1 next year.
- **Type script**: Trends to move up from rank 6 to 2 next year.

Implications

- **Internal**: Expand Framework knowledge; Provide current insights for consultations.
- **External**: Add Rising skills to job reqs for continued competitiveness and efficiency; these skills are forecasted to be in demand next year

Findings 2: Decliners

Findings

- **JQuery**: Trends to Decrease significantly moving from rank 1 to 6 next year.

Implications

- **Internal**: It's necessary to shift most of focus to other Frameworks that will be more in demand; Provide current insights for consultations.
- **External**:Trim job reqs for skills with significant declining demand to optimize compatibility.

Findings 3: Decreasing in popularity

Findings

- **Asp net**: Trends to drop significantly in popularity while maintaining rank 4 next year.

Implications

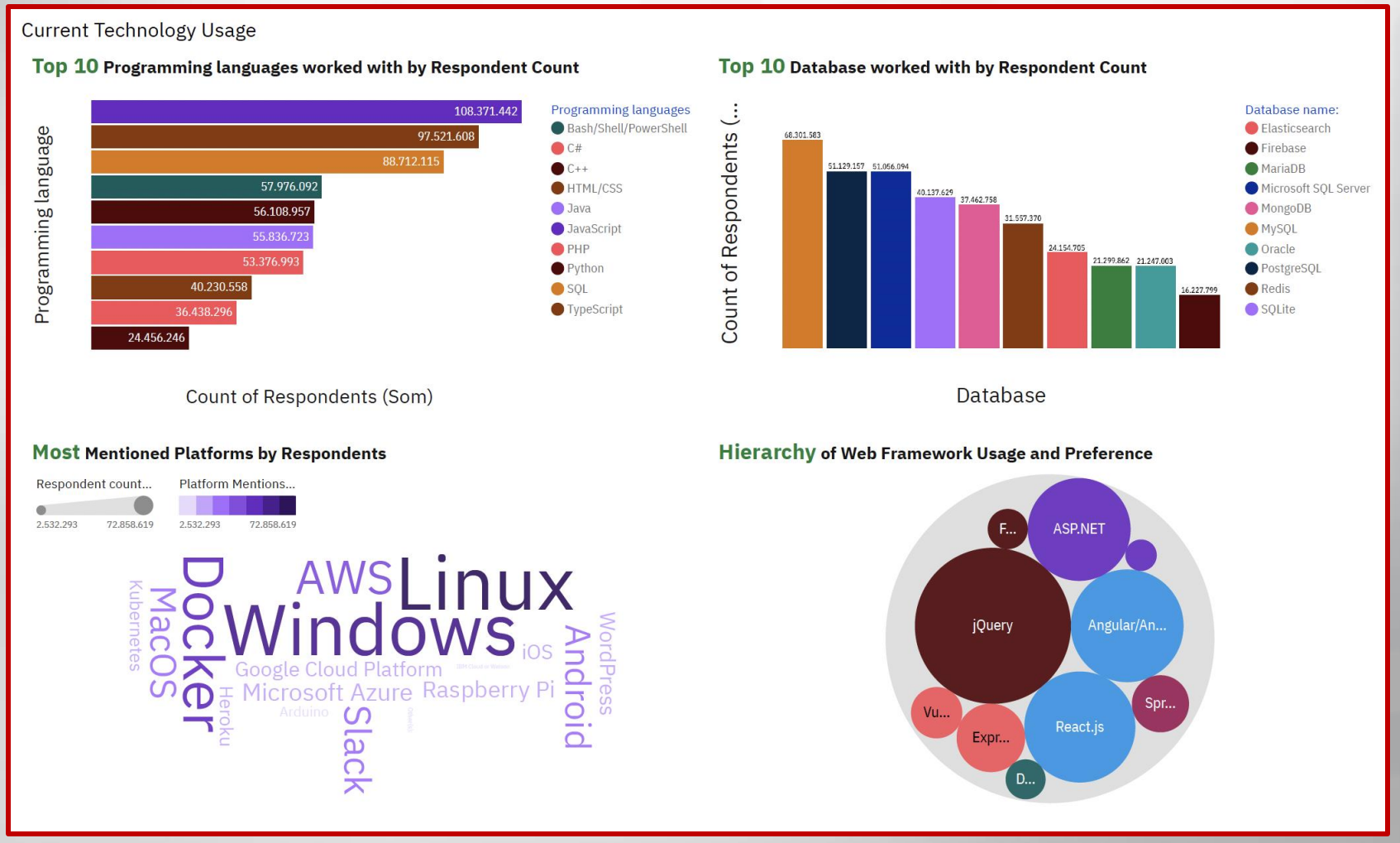
- **Internal**: Shift to replacement strategies timely; Provide current insights for consultations.
- **External**: Research the impact and scope of framework usage in infrastructure, services, or apps. Forecasting significant decrease in demand but remaining stable on postion

DASHBOARD

The GitHub link of the Cognos dashboard：

https://github.com/SylvesterRademaker/1-IBM-Peer-graded-Assignment-Peer-Graded-Assignment-Dashboards/blob/main/_%20Peer-Graded%20Assignment_%20Building%20a%20dashboard%20with%20IBM%20Cognos%20Analytics.pdf

DASHBOARD TAB 1: Current technology usage



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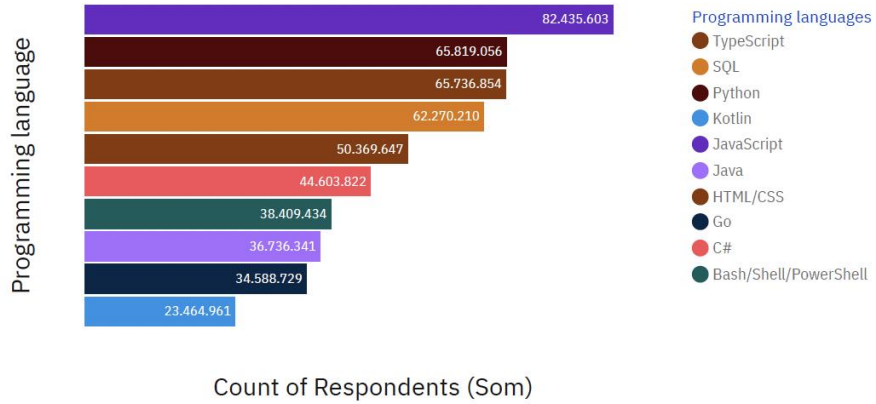
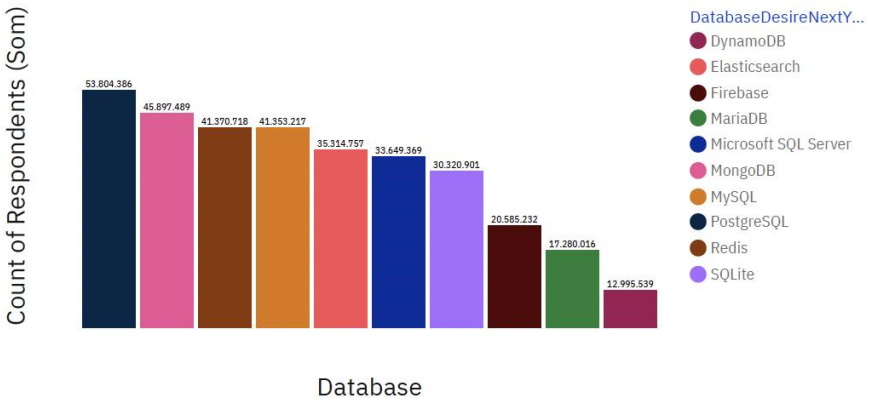
DASHBOARD TAB 2: Future technology trend

Future Technology Trend

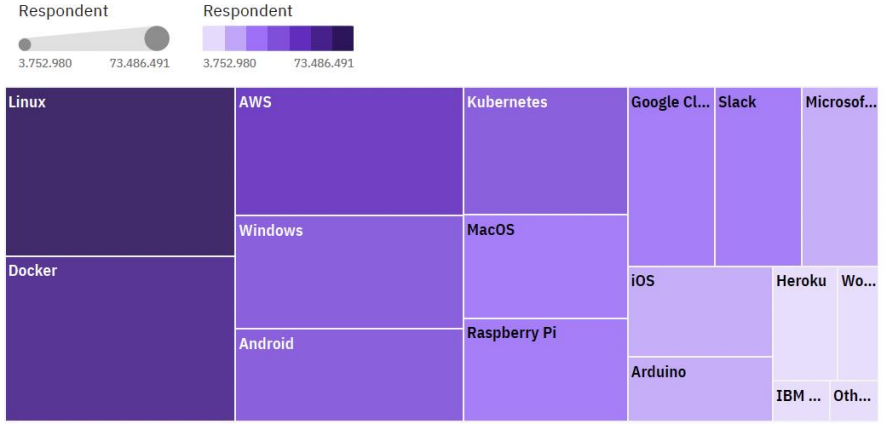
Top 10 Programming languages desired by Respondents Count



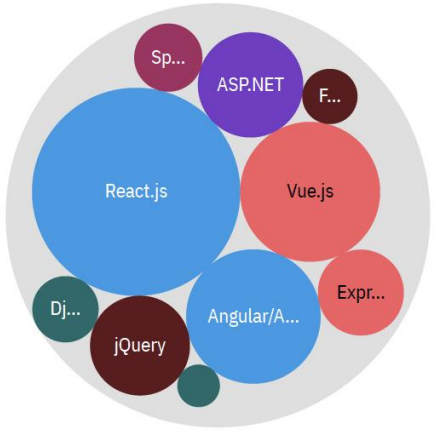
Top 10 Database desired by Respondent Count



Tree map: Desired platforms by Respondent Count



Top 10 Web-frameworks desired by Respondent Count



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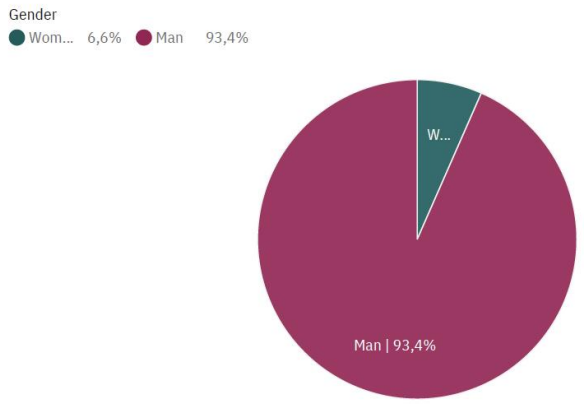
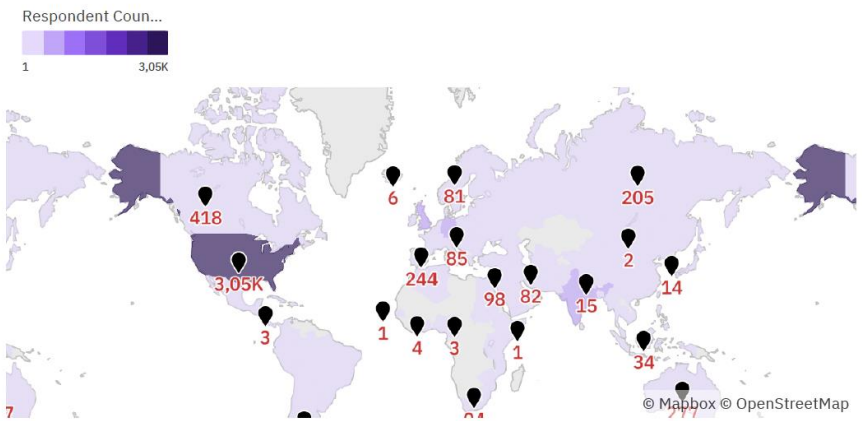
DASHBOARD TAB 3: Demographics

Demographics

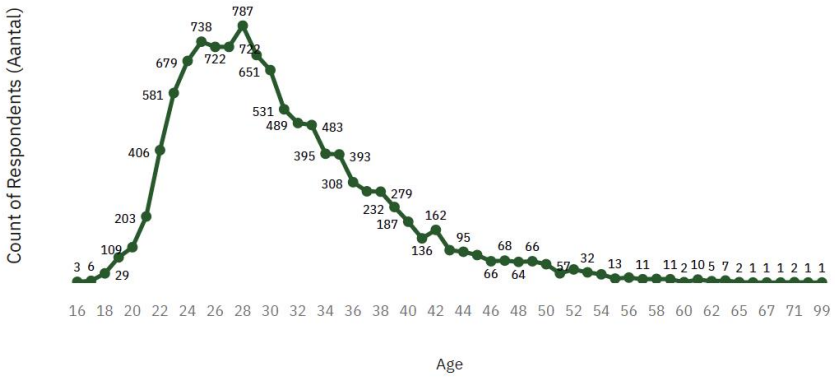
Demographic: Respondents by Gender and percentage



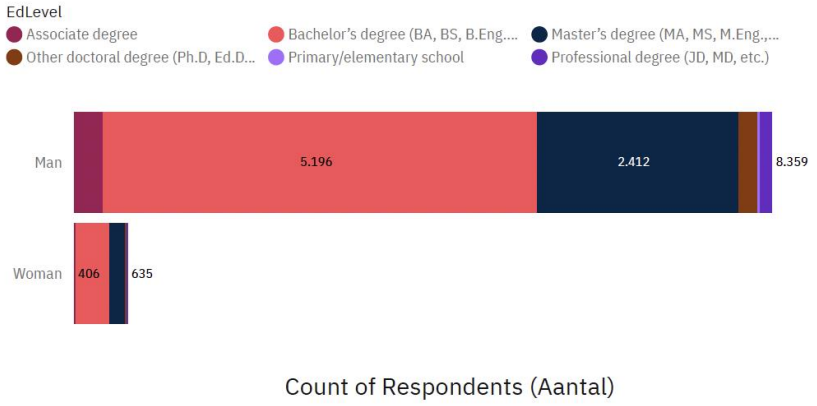
Map: Respondent Count by Country



Line chart: Respondent Count by Age



Respondent Count by Gender, classified by Formal Education Level



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DISCUSSION

In a rapidly evolving business landscape, the findings reveal a dual trend in skill demand.

On one hand, there's a significant surge in the need for programming languages, databases, and web frameworks, signaling opportunities for organizations to capitalize on emerging trends.

However, certain programming languages and databases face an imminent decline in demand, posing challenges for organizations reliant on these skills.

To navigate this dynamic environment, strategic adaptation is imperative. Organizations must proactively adjust their skill focus, replacing declining skills with emerging alternatives to maintain competitiveness.

This presents an opportunity for innovation, as integrating new skills into research and development efforts can drive product innovation and growth.

Ultimately, success lies in continuous monitoring and flexibility.

By staying vigilant to market shifts and adapting skill strategies accordingly, organizations can position themselves for long-term success in an ever-changing landscape.

OVERALL FINDINGS & IMPLICATIONS

Findings

- **Finding 1:** Upward trend in skill requirements for next year: Programming languages, Databases, Web frameworks.
- **Finding 2:** Downward trend in skill demand for next year: Programming languages, Databases, Web frameworks.
- **Finding 3:** The skills that are expected to drop out of the top 10 in demand: Programming languages, Databases
- **Finding 4:** The skills projected to enter the top 10 in demand: Programming languages, Databases

Implications

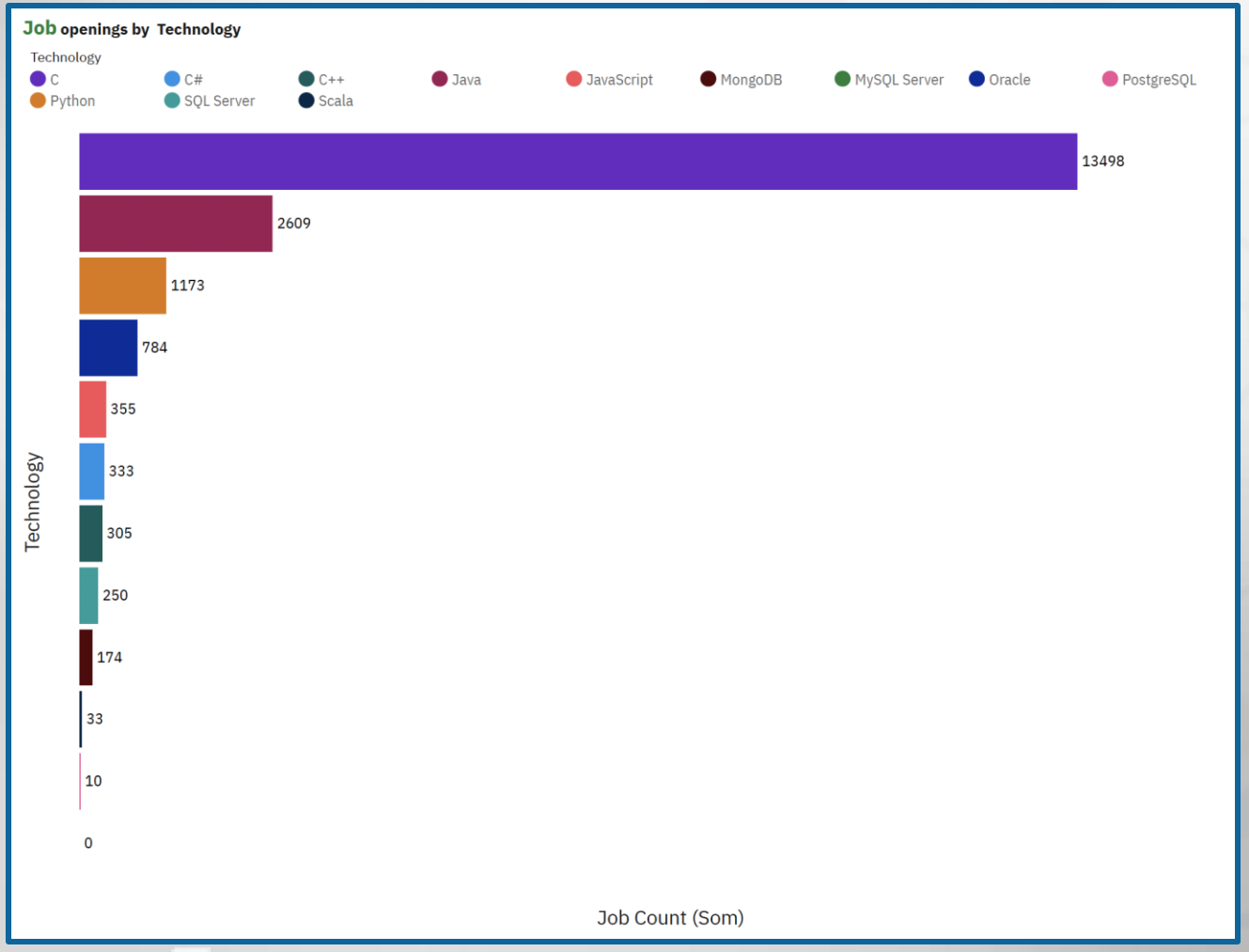
- **Implication 1:** Increase focus on emerging skills: Due to the upward trend in skill requirements for next year, prioritize development of programming languages, databases, and web frameworks.
- **Implication 2:** Decrease focus on declining skills: With the downward trend in skill demand for next year, reduce emphasis on programming languages, databases, and web frameworks expected to decline.
- **Implication 3:** Implement timely replacements: As skills like programming languages and databases drop out of the top 10 in demand, swiftly replace them with emerging alternatives to maintain competitiveness.
- **Implication 4:** Introduce new skills to R&D: With skills like programming languages and databases projected to enter the top 10 in demand, introduce them into research and development efforts to leverage their anticipated rise.

CONCLUSION

- Point 1: Focus on emerging skills due to increasing demand next year
- Point 2: Decrease emphasis on declining skills to align with future market trends.
- Point 3: Timely replacement of declining skills is essential for sustained competitiveness.
- Point 4: Introduce new skills into research and development to stay ahead of emerging trends.

APPENDIX

JOB POSTINGS



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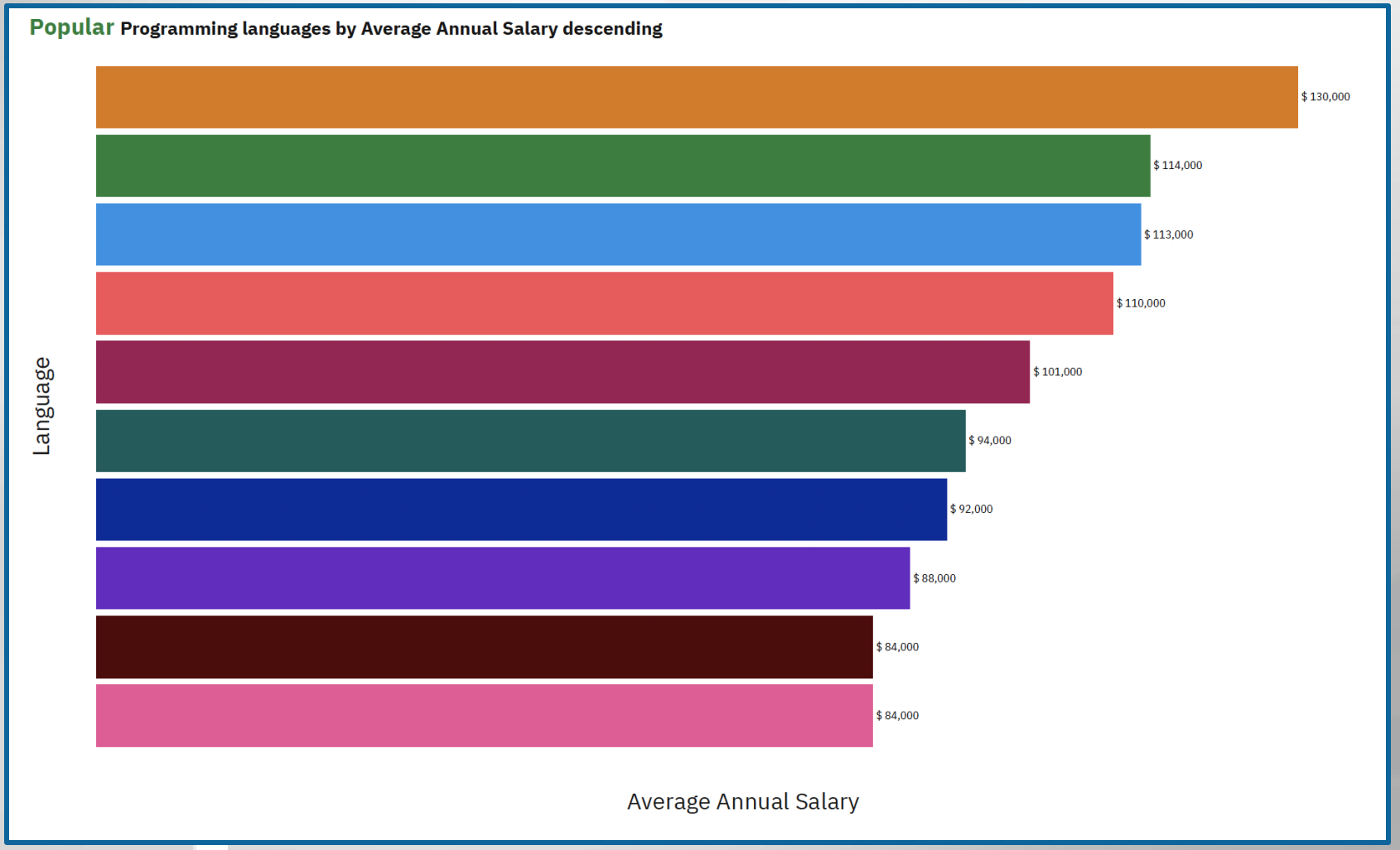
POPULAR LANGUAGES