



Popular and Emerging Skills in Data Analytics

Gabrielle Coterillo

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OUTLINE



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EXECUTIVE SUMMARY



- As an IT firm it is important to stay on top of upcoming technology
- Through a 2019 Stack Overflow Developer survey we found
 - The top data programming languages this year compared to the desired ones for next year
 - The most used databases from this year compared to desired for next year
 - And the platforms most worked with this year vs. what platforms developers want to work with next year
- By gathering this information we can determine what new technology needs to be implanted into training for our staff
- We can also see which platforms, languages, and databases we may be able to shift focus from in order to stay with the trends of the market

INTRODUCTION



- Analysis of job postings, training portals, and surveys to get a clear view of the data analysis field
- The main goal is to remain competitive in an ever-changing field
- Keep on top of emerging skills, databases, and programming languages
- Questions that lead the analysis:
 - What are the top programming languages in demand?
 - What are the top database skills in demand?
 - What are the popular IDEs?

METHODOLOGY



- Data mining through webscraping and accessing various APIs
- Data wrangling through data normalization and data cleaning to ensure clean and easy-to-interpret data
- Statistical analysis to discover top coding languages, databases, and IDEs
- Put all findings in an easy-to-understand IBM Cognos Analytics dashboard
 - Split into current technology usage, desired data technology for next year, and demographics to get the full picture of the data
 - Displays data without the audience having to look at a screen full of numbers



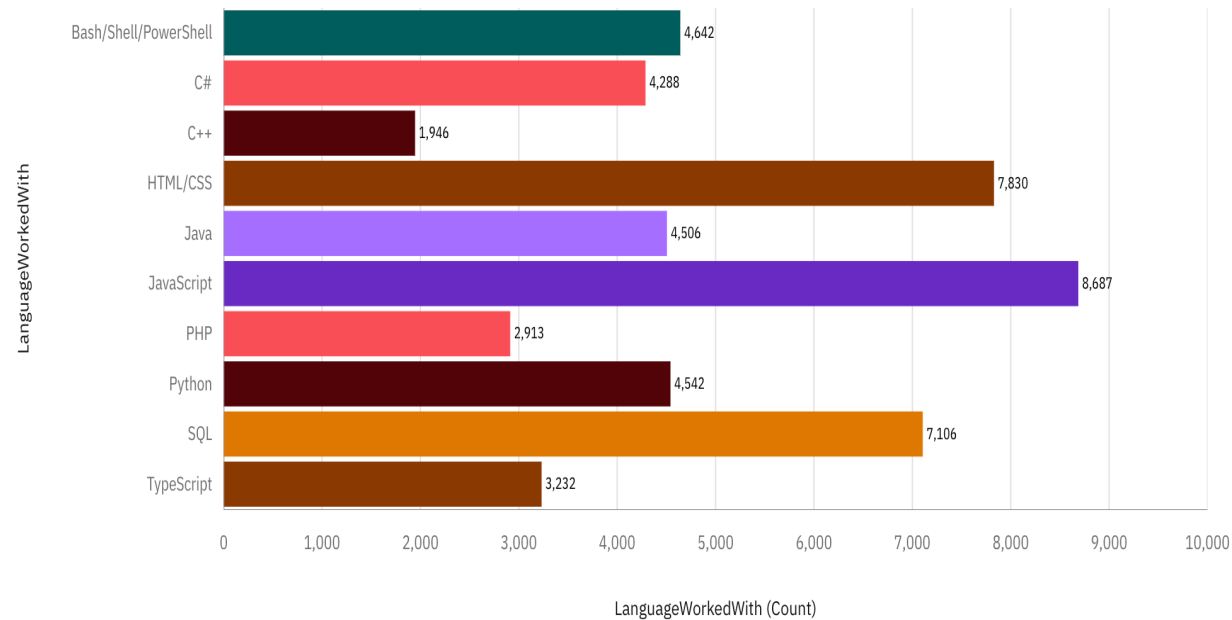
RESULTS

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PROGRAMMING LANGUAGE TRENDS

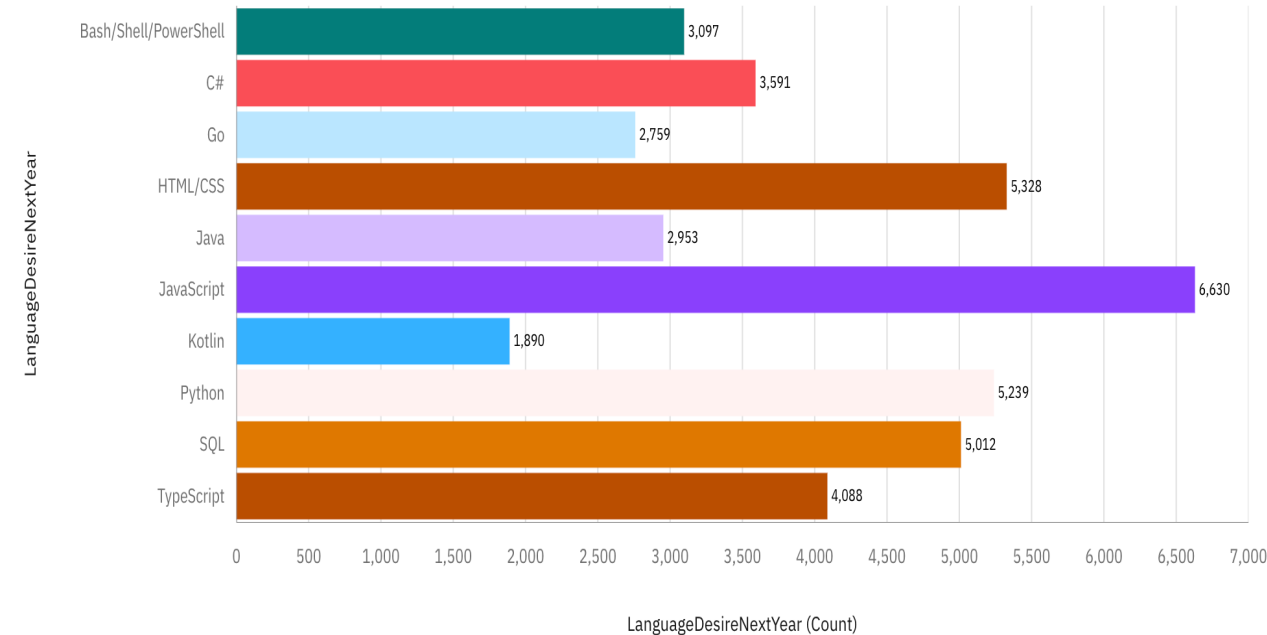
Current Year

Top 10 Languages Worked With



Next Year

Top 10 Languages Desired Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- HTML, Javascript, and SQL are the leading languages worked with this year, while Javascript, Python, and SQL are most desired for next year
- C++ and PHP do not crack top 10 desired languages for next year, but are on top 10 for this year
- Go and Kotlin programming languages show up on most desired for next year, but not on top 10 for this years

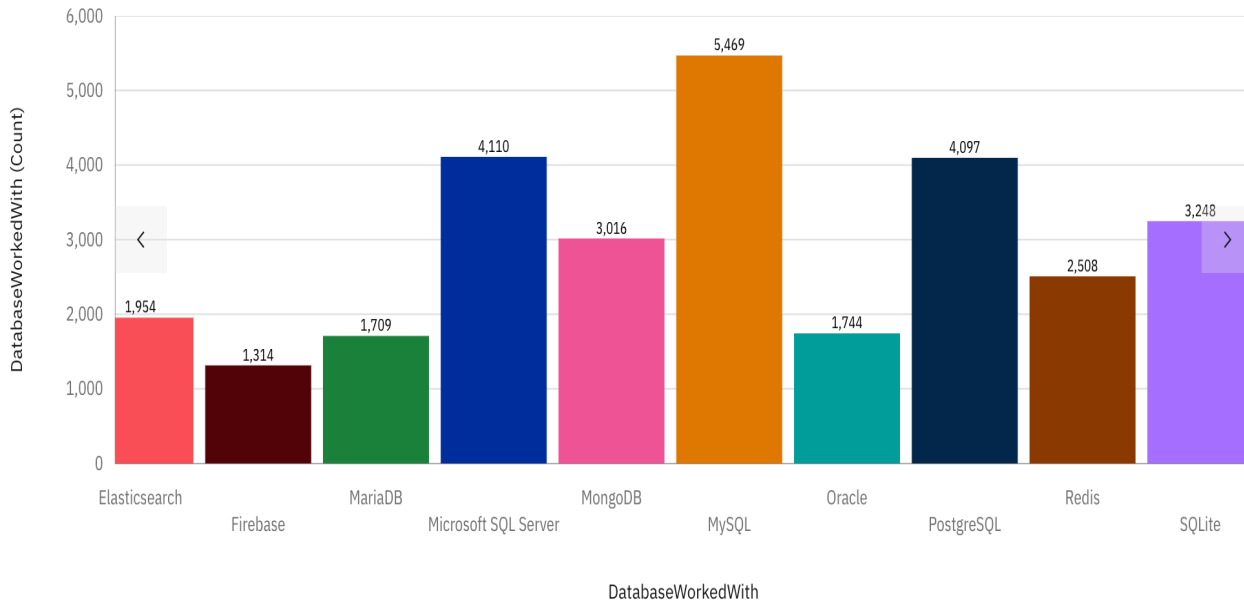
Implications

- There needs to be more investment in learning Python to keep up with trends
- C++ and PHP are no longer part of the most desirable languages and therefore can take a back seat in focus
- Go and Kotlin need to be a priority for increasing skills for this coming year

DATABASE TRENDS

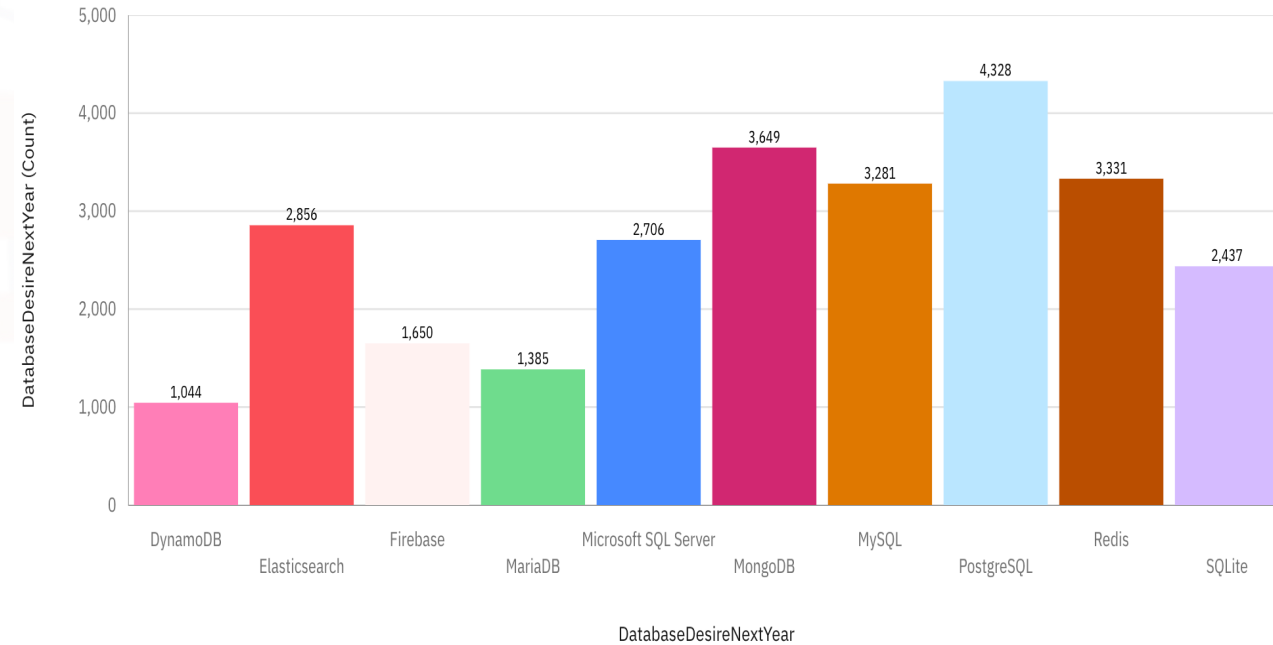
Current Year

Top 10 Databases Worked With



Next Year

Top 10 Databases Desired Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL, Microsoft SQL Server, and PostgreSQL are top databases used this year, while PostgreSQL, MongoDB, and Redis are the top desired databases for next year
- Elasticsearch outpaces current numbers by over 900 instances
- DynamoDB replaces Oracle in top 10 desired languages compared to previous year

Implications

- There needs to be a focus on MongoDB and Redis for furthering database education
- Elasticsearch should be prioritized for learning new databases as it is trending upwards at a faster rate than all others
- There can be less of a focus on utilizing Oracle, and more of a focus on learning DynamoDB for next year

DASHBOARD

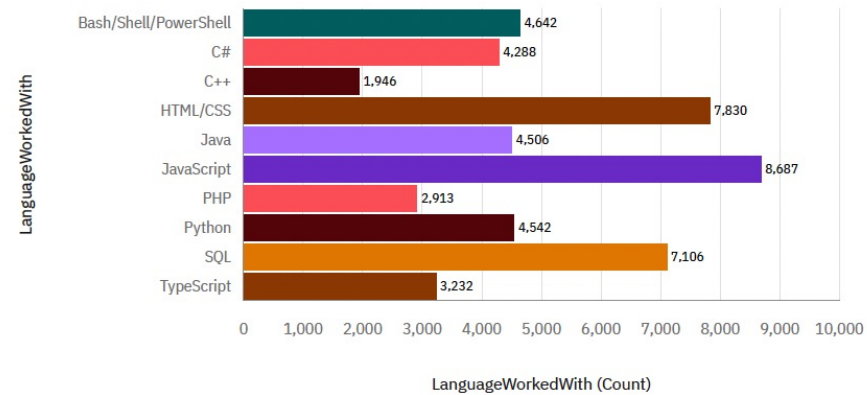


<https://github.com/GabbieElena/Dashboards-with-Cognos-Analytics/blob/main/Capstone%20Dashboard.pdf>

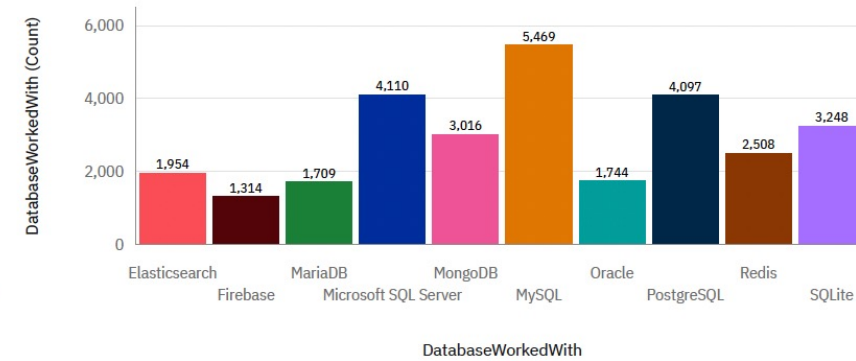
Current Technology Usage

Current Technology Usage

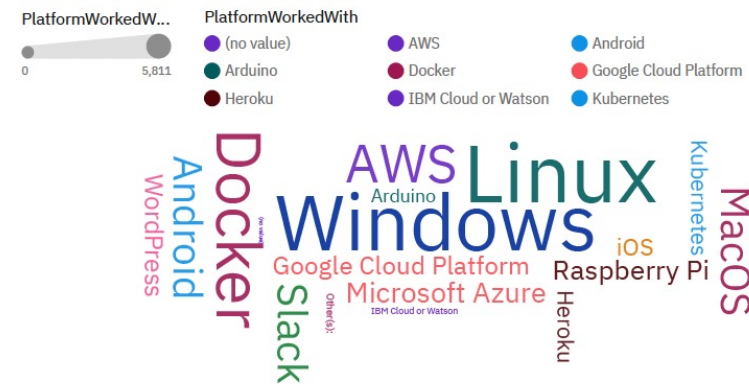
Top 10 Languages Worked With



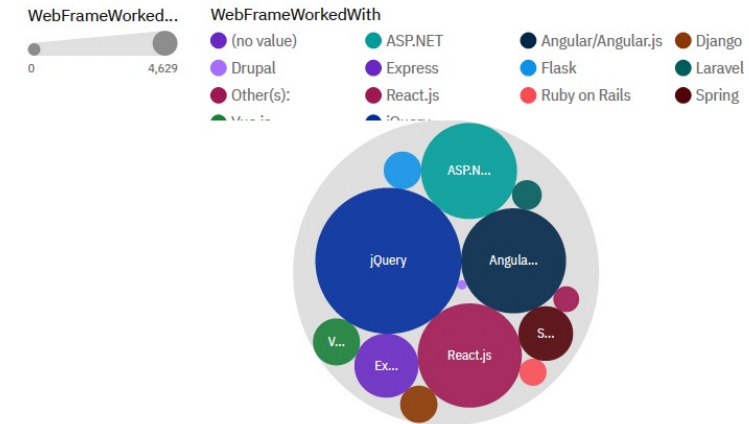
Top 10 Databases Worked With



Platforms Worked With



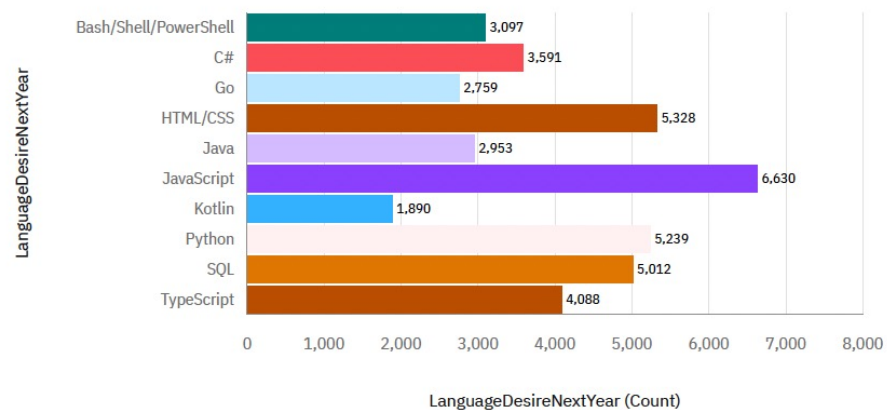
WebFrames Worked With



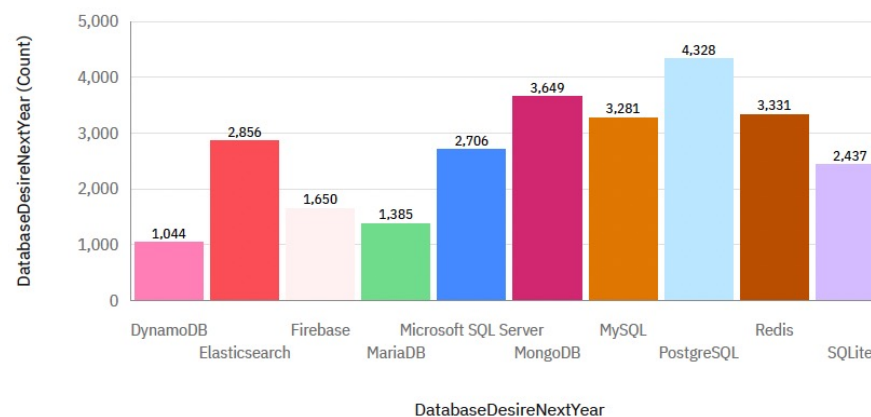
Future Technology Trend

Future Technology Trend

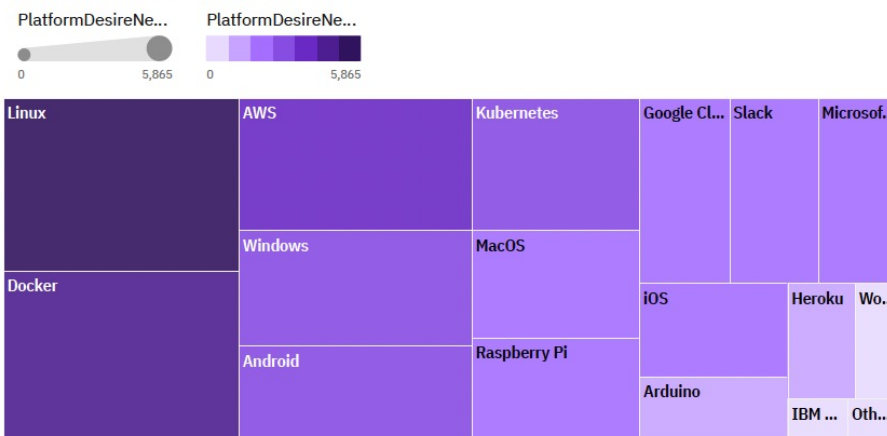
Top 10 Languages Desired Next Year



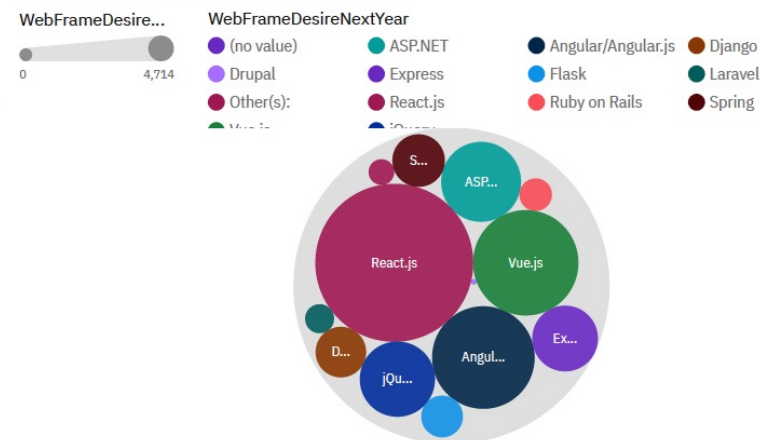
Top 10 Databases Desired Next Year



Platforms Desired Next Year



WebFrames Desired Next Year

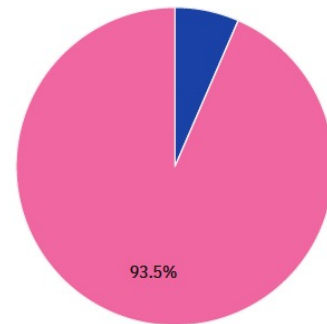


Demographics

Demographics

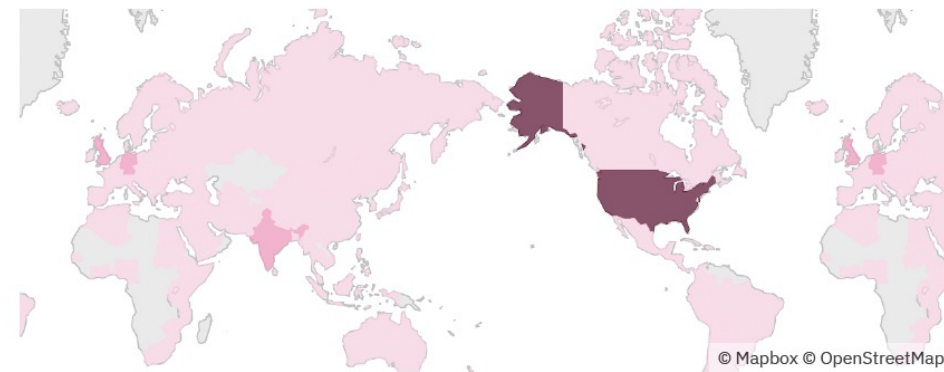
Respondents by Gender

Gender
● Woman ● Man

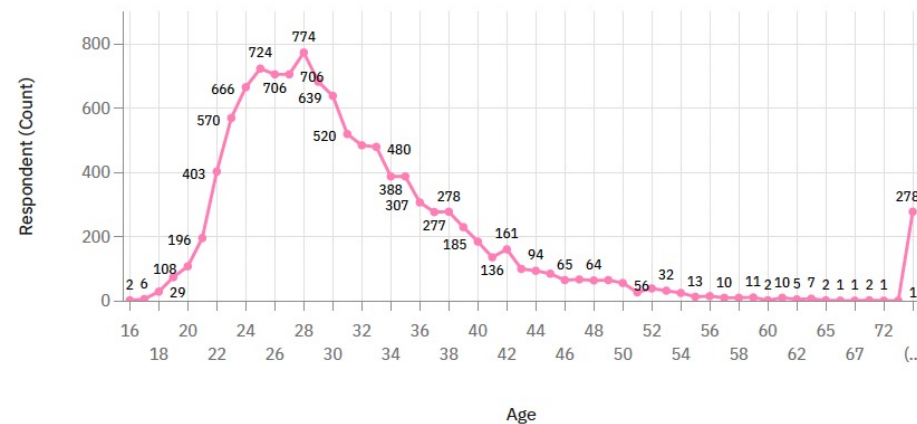


Respondent Count by Country

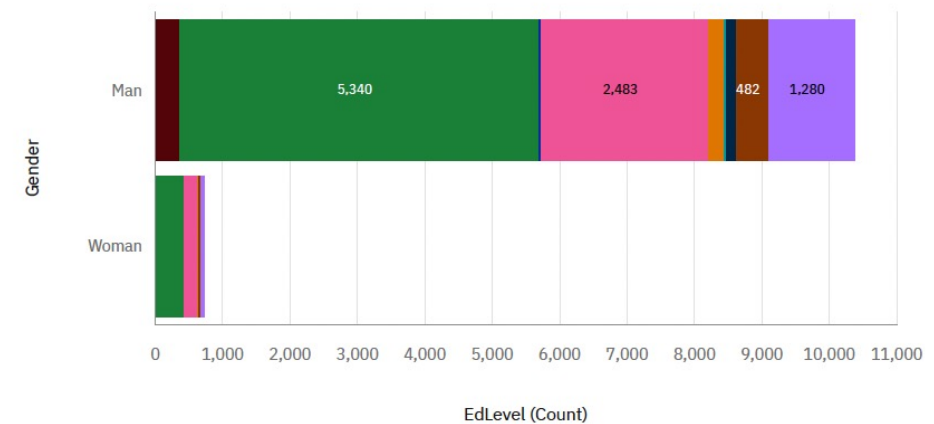
Respondent (Count)
1 3,058



Respondent Count by Age



Respondent Count by Gender and Education Level



DISCUSSION



- Questions that need to be considered:
 - What are the top programming languages in demand?
 - What are the top database skills in demand?
 - What are the popular IDEs?

OVERALL FINDINGS & IMPLICATIONS

Findings

- Python, HTML and Javascript were the most desired languages going into next year
- Elasticsearch database increasing the most in desired database compared to current usage numbers
- Kotlin and Go programming languages broke top 10 in the desired languages for next year, while not being in the top 10 used this year
- Linux and Windows are the largest platforms used this year, while Linux and Docker are the top desired platforms for next year

Implications

- Python, HTML, and Javascript should be the primary focus for programming languages
- There needs to be a focus on learning and implementing the Elasticsearch database to keep up with current trends
- Kotlin and Go need to be added to the skillset of data analysts to keep up with current trends for desired languages
- We need to keep our focus on the Linux platform and add-in training for Docker to keep up with current trends

CONCLUSION



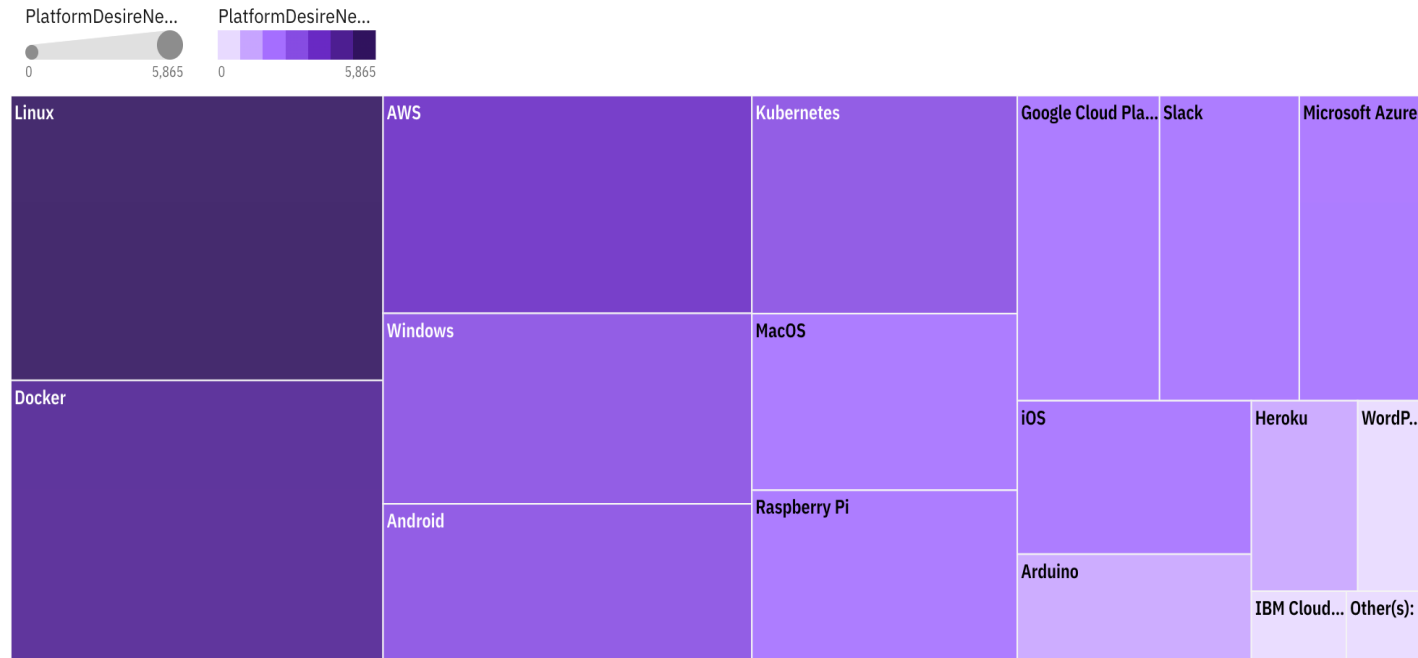
- Python, Javascript, and HTML will be the top programming languages for next year
- Kotlin and Go programming languages are becoming popular among developers
- PostgreSQL, Mongo DB, and Redis are the most desired databases for next year and should be our focus along with Elasticsearch
- Linux and Docker are becoming the most desired platforms for next year among developers and should be our focus going forward

APPENDIX

Platforms Worked With

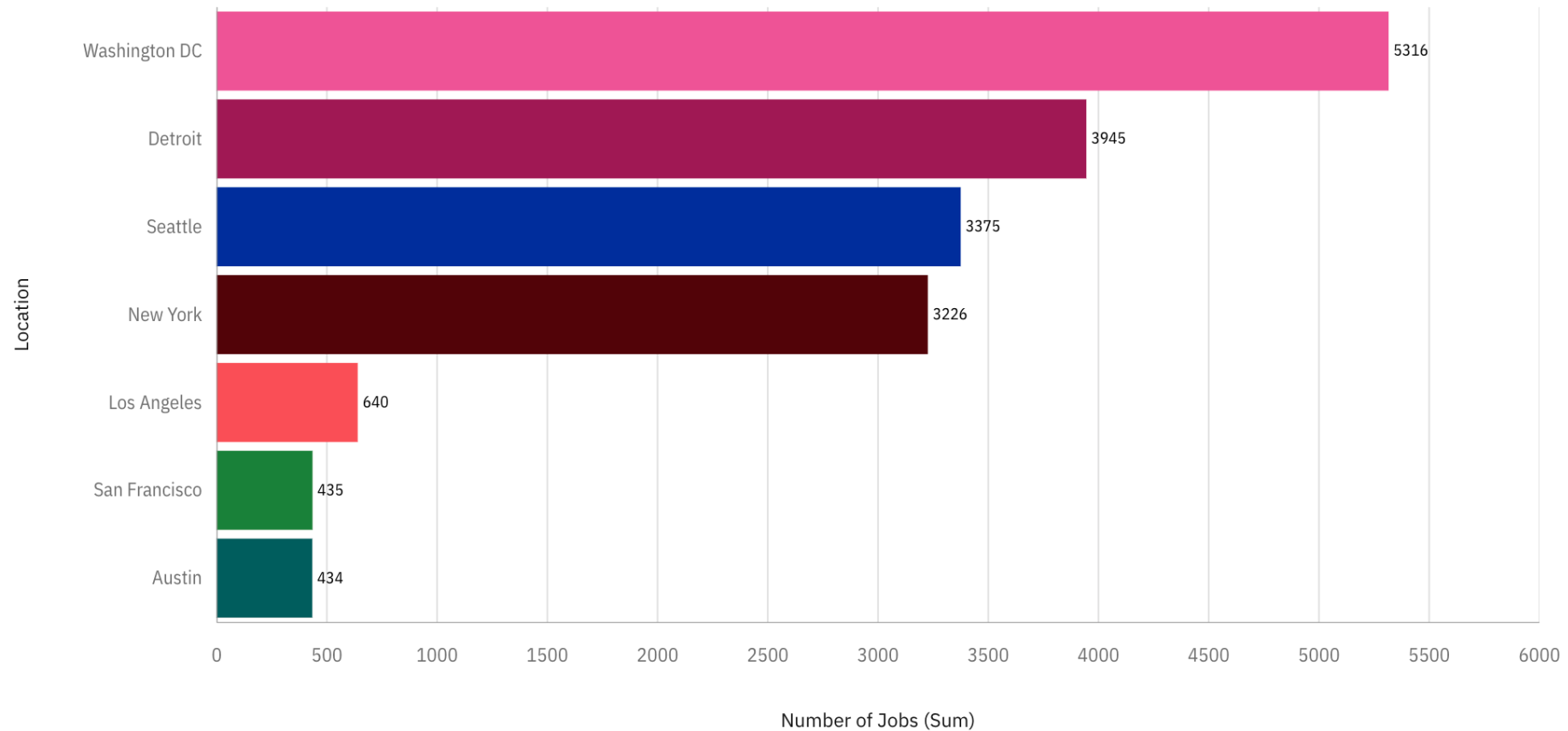


Platforms Desired Next Year



JOB POSTINGS

Number of Jobs by Location



POPULAR LANGUAGES

Average Annual Salary by Language

