



Analysis of IT Trends and Predictions

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OUTLINE



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EXECUTIVE SUMMARY



- Analyze IT technologies and examine trends to determine which technologies are currently popular, which technologies are gaining popularity, and which technologies developers should learn to remain competitive in the IT industry.
- Conduct data analysis and create data visualizations that illustrate the current and future popularity of technologies such as programming languages, databases, platforms, and web frameworks.
- Suggest recommendations based on the analysis.
- Wrap up the presentation with conclusions about the research.

INTRODUCTION



- The relevant IT technologies change yearly, and developers must identify current and future trends to keep up with them and remain competitive.
- Stack Overflow's annual Developer Survey aims to capture the responses from approximately 90,000 developers from 179 countries worldwide to determine which technologies are popular and which technologies developers want to work with next year.
- This presentation will discuss the current and future trends of technologies using the following criteria:
 - Top 10 languages currently used and desired for next year
 - Top 10 databases currently used and desired for next year
 - Top 10 platforms currently used and desired for next year
 - Top 10 web frameworks currently used and desired for next year
- This presentation is for the stakeholders and critical decision-makers for a global IT and business consulting services firm.

METHODOLOGY



- Collect survey data and job postings and explore the content using the following:
 - APIs (Application Programming Interfaces)
 - Web Scraping
 - The Python pandas and requests libraries
- Perform data wrangling on the data to ensure all data is relevant, properly formatted and free of errors.
- Perform exploratory data analysis to understand the data, identify patterns, and determine correlations between variables.
- Create different data visualizations to highlight the following:
 - The distribution of the data
 - The relationships between variables
 - Comparisons between values
- Build dashboards with different data visualizations to analyze current technology usage, future technology trends, and developer demographics.
- Data is from the following sources:
 - Stack Overflow Developer Survey 2019
 - Jobs from Naukri.com

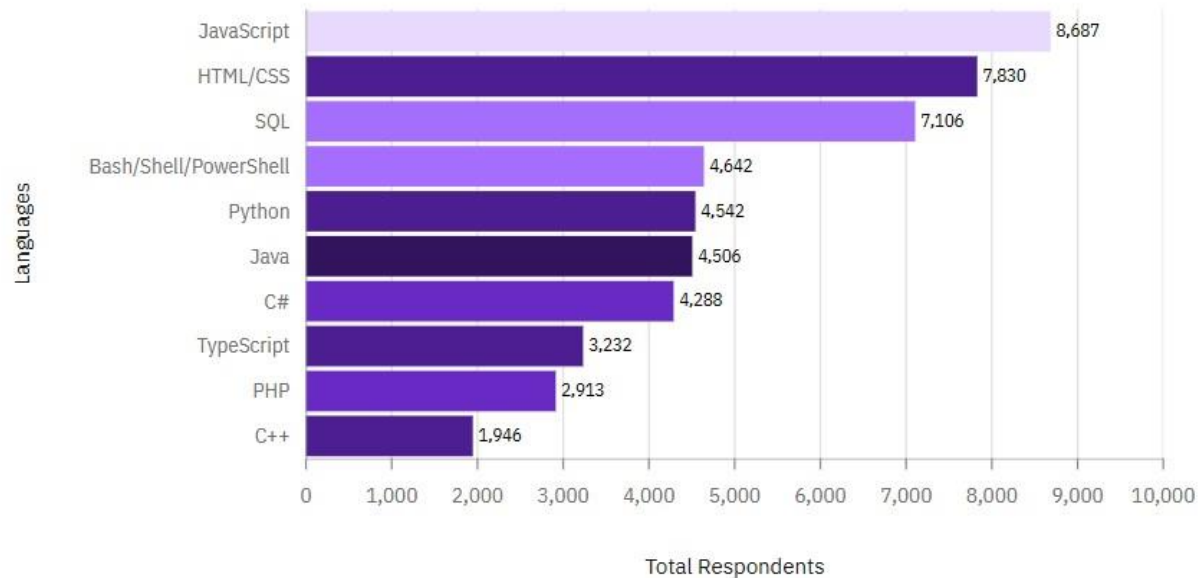
RESULTS



PROGRAMMING LANGUAGE TRENDS

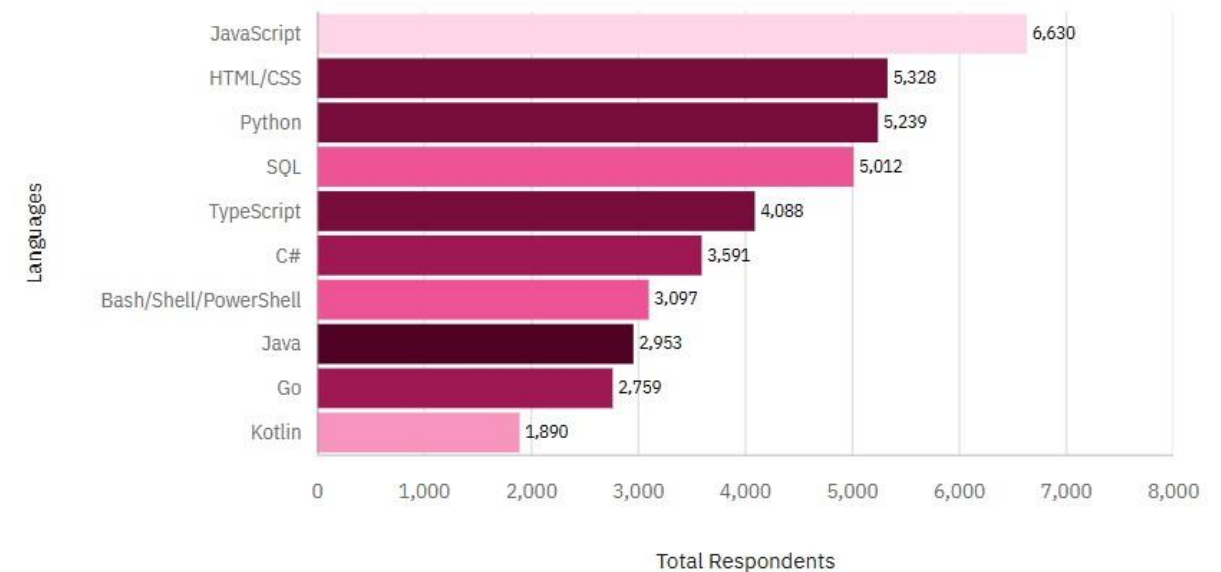
Current Year

Top 10 Languages Worked With



Next Year

Top 10 Languages Desired Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript and HTML/CSS are the top 2 languages developers worked with and want to work with next year.
- Python is one of the top 5 languages developers worked with and it is one of the top 3 languages developers want to work with next year.
- TypeScript's popularity has increased, becoming one of the top 5 languages developers want to work with next year.

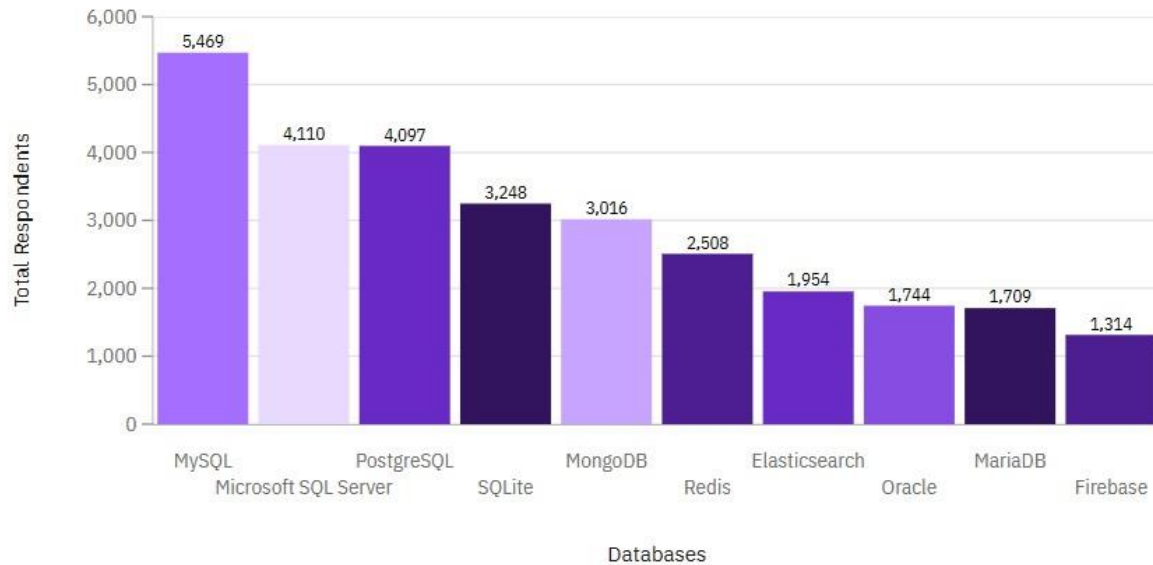
Implications

- JavaScript and HTML/CSS are currently the most popular languages used by developers and will likely remain so in the future.
- Developers should learn Python since it is gaining popularity and being used more often to build applications.
- An increasing number of developers may start working with TypeScript in the future since it is closely related to JavaScript.

DATABASE TRENDS

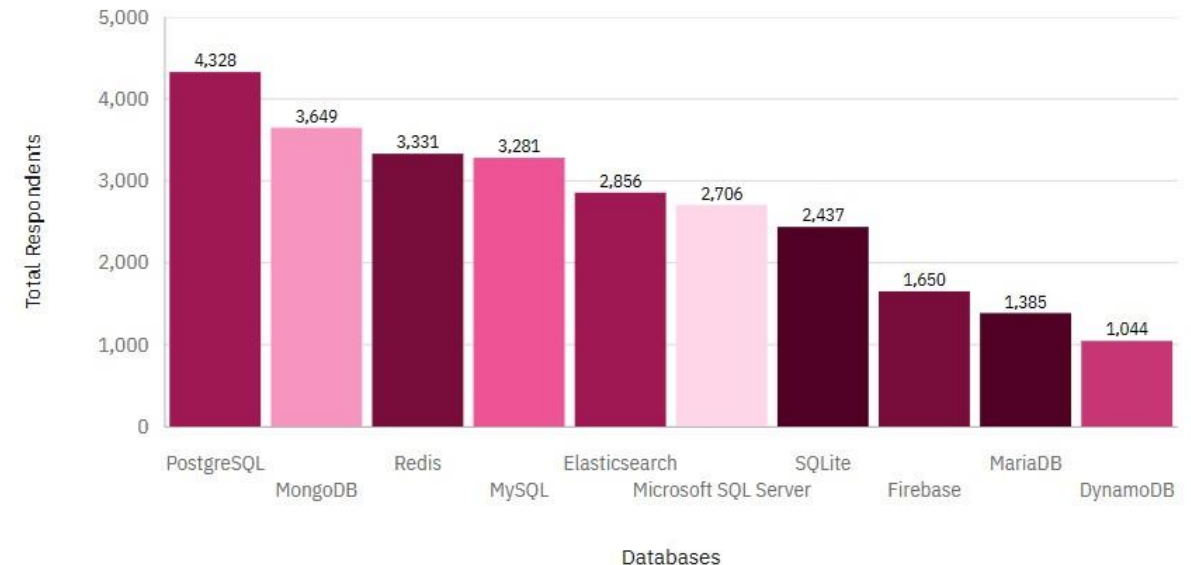
Current Year

Top 10 Databases Worked With



Next Year

Top 10 Databases Desired Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Redis has risen in popularity to become one of the top 5 databases developers want to work with next year.
- Although Oracle is currently one of the top 10 databases this year, it is not one of the top 10 databases developers want to use next year.
- PostgreSQL and MongoDB have become the top 2 databases developers want to learn next year.

Implications

- Redis will likely continue to grow in popularity since more developers will likely work with it in the future.
- Developers who have worked with Oracle must learn to use newer databases such as Elasticsearch, Firebase, and Redis to stay competitive in the IT industry.
- More developers will start working with PostgreSQL and MongoDB due to their rising popularity.

PLATFORM TRENDS

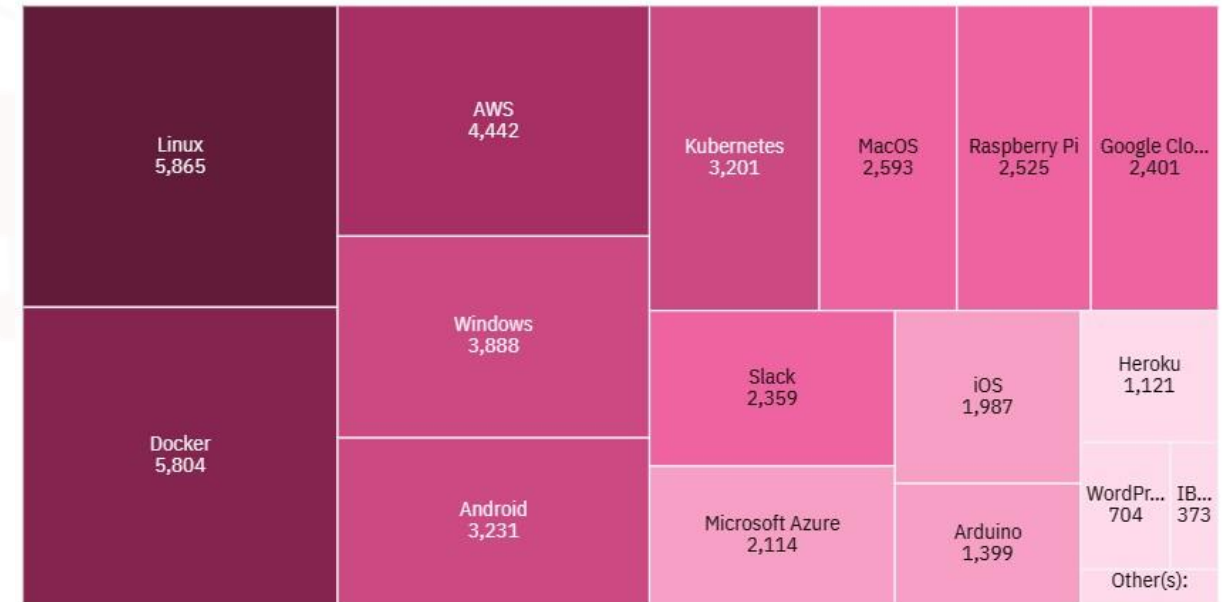
- Current Year

Platforms Worked With



- Next Year

Platforms Desired Next Year



PLATFORM TRENDS – FINDINGS & IMPLICATIONS

• Findings

- Linux is one of the top 5 platform developers worked with and want to work with next year.
- AWS and Docker have risen in popularity to become two of the top 5 platforms developers want to work with next year.
- More developers worked with Android than iOS and more want to work with Android next year rather than iOS.

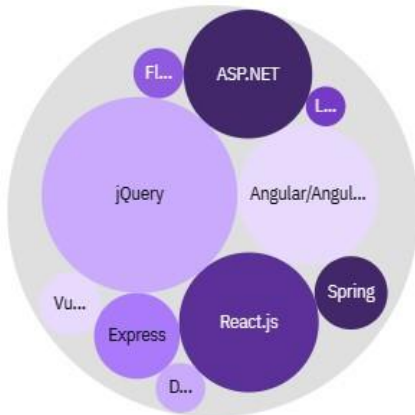
• Implications

- Linux will likely remain a popular platform among developers, and more developers will start using it.
- More developers will start working with AWS and Docker since they are gaining popularity.
- Developers will likely start developing mobile applications using Android instead of iOS, which is losing popularity.

WEB FRAMEWORK TRENDS

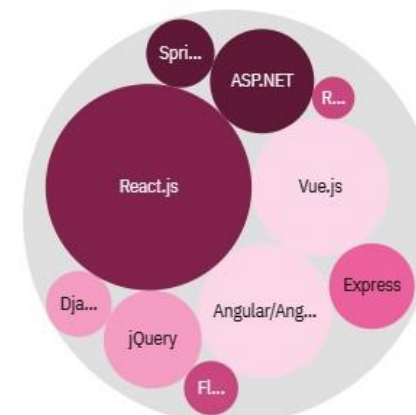
- Current Year

Top 10 Web Frameworks Worked With



- Next Year

Top 10 Web Frameworks Desired Next Year



WEB FRAMEWORK TRENDS – FINDINGS & IMPLICATIONS

- Findings

- jQuery was the top web framework developers worked with this year and remains one of the top 5 web frameworks developers want to work with next year.
- React.js is the top web framework developers want to learn next year.
- 4 out of 5 of the top web frameworks developers want to work with next year include JavaScript frameworks such as React.js, jQuery, Angular/Angular.js, and Vue.js.

- Implications

- Developers will continue to work with jQuery as it is still popular and will remain popular in the future.
- More developers will start working with React.js since it is gaining popularity.
- JavaScript will become more widely used as developers start working with these JavaScript web frameworks.

DASHBOARD

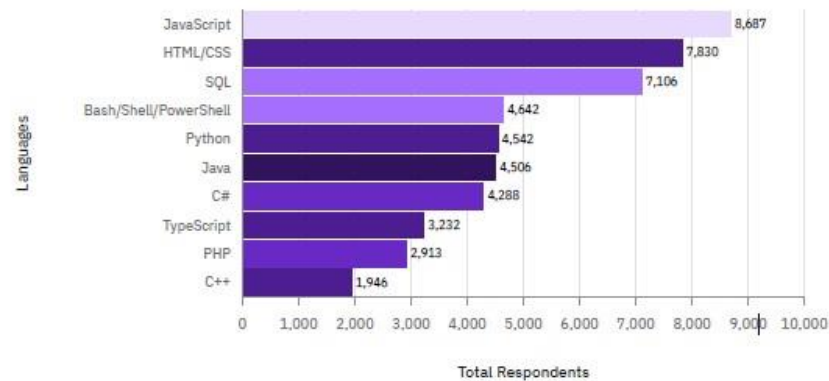


[https://github.com/hemaang-dewan/IBM Data Analyst Capstone Project/blob/017d2757d05287f7baecc5b18f1a3daf8af12111/IBM%20Data%20Analyst%20Capstone%20Project%20Dashboard.pdf](https://github.com/hemaang-dewan/IBM_Data_Analyst_Capstone_Project/blob/017d2757d05287f7baecc5b18f1a3daf8af12111/IBM%20Data%20Analyst%20Capstone%20Project%20Dashboard.pdf)

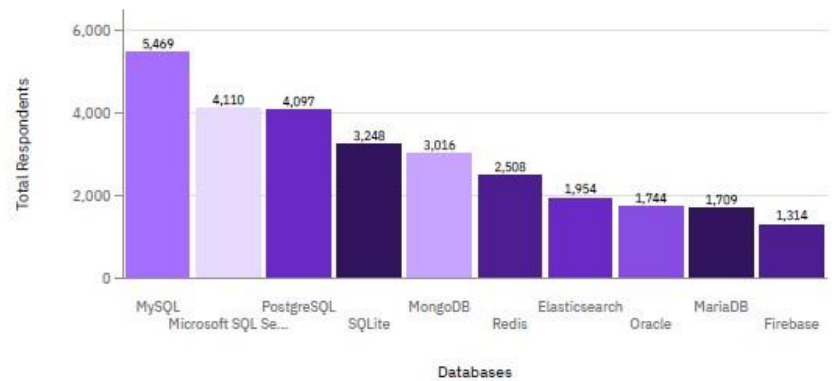
DASHBOARD TAB 1

Current Technology Usage

Top 10 Languages Worked With



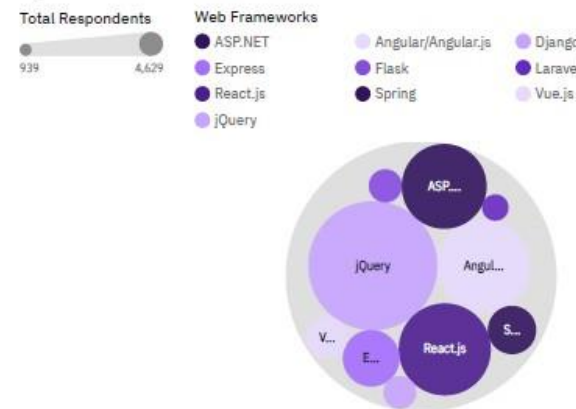
Top 10 Databases Worked With



Platforms Worked With



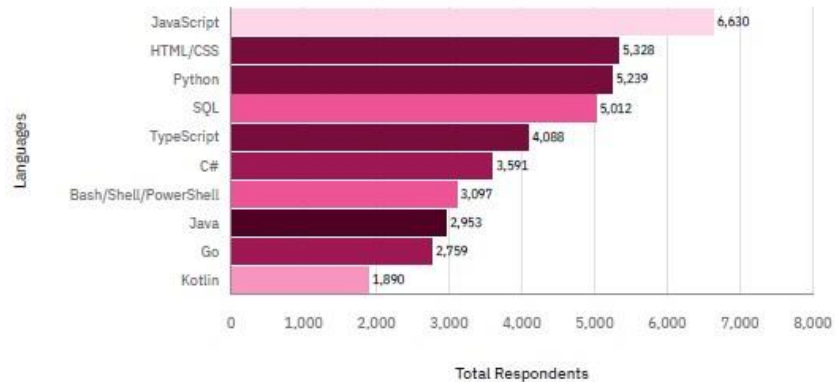
Top 10 Web Frameworks Worked With



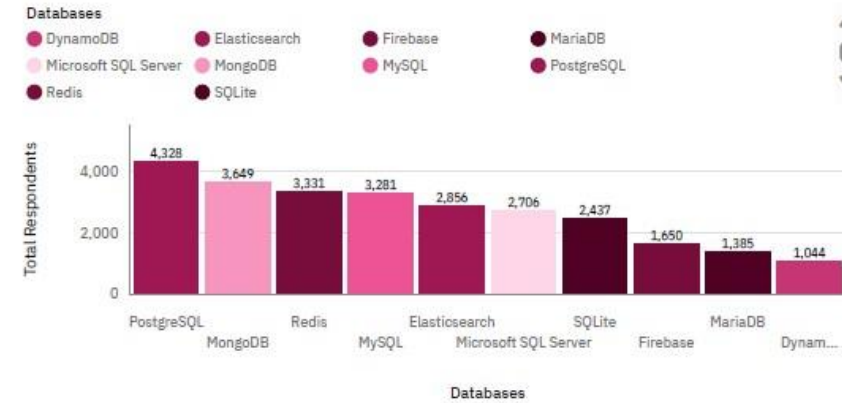
DASHBOARD TAB 2

Future Technology Trend

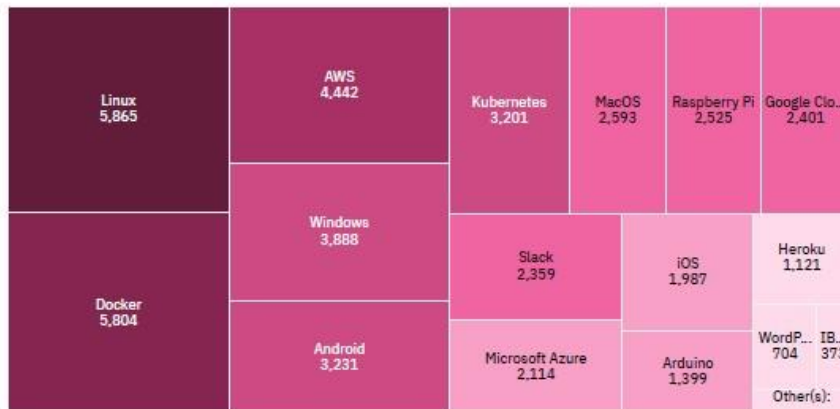
Top 10 Languages Desired Next Year



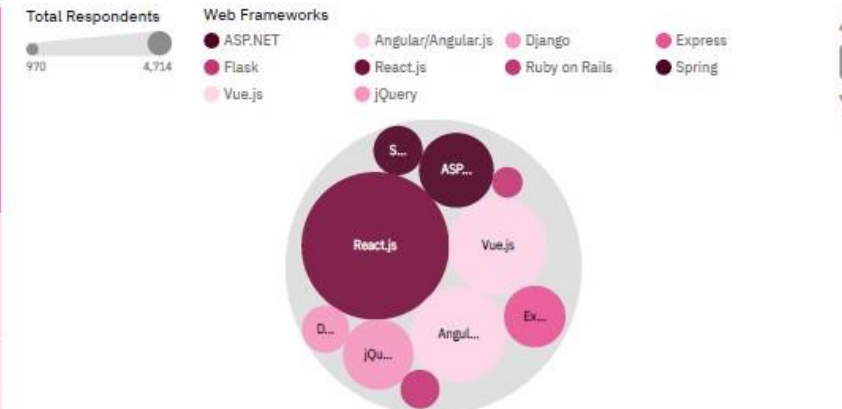
Top 10 Databases Desired Next Year



Platforms Desired Next Year



Top 10 Web Frameworks Desired Next Year

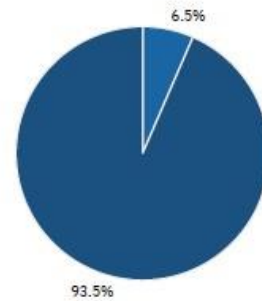


DASHBOARD TAB 3

Demographics

Respondents Classified by Gender

Gender
● Woman ● Man

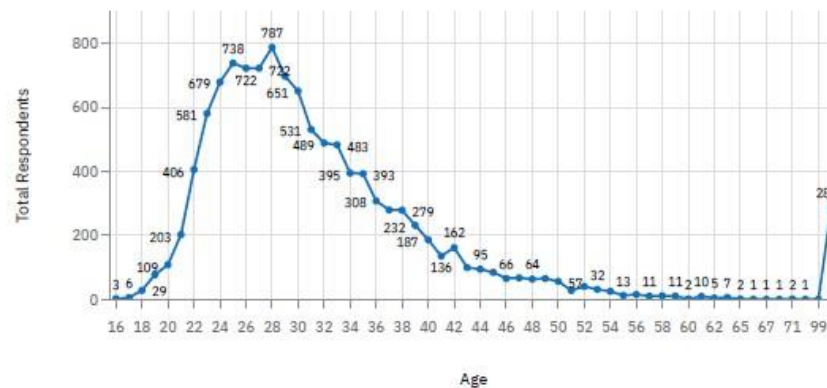


Respondent Count by Country

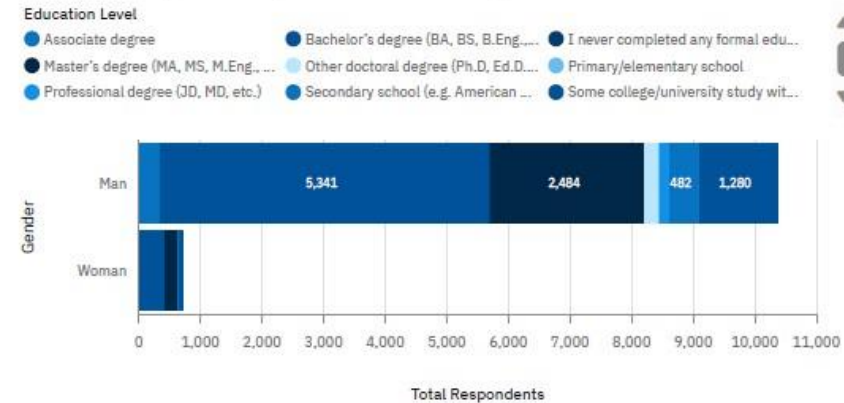
Total Respondents
1 3,127



Number of Respondents Classified by Age



Number of Respondents by Gender, Classified by Formal Education Level



DISCUSSION



OVERALL FINDINGS & IMPLICATIONS

Findings

- Oracle is losing popularity as developers are opting to work with other databases such as Elasticsearch, Firebase, and Redis.
- AWS and Docker are two platforms that more developers want to work with in the future.
- JavaScript frameworks such as jQuery, React.js, Angular.js, and Vue.js are becoming more popular.

Implications

- Developers who previously worked with Oracle should learn Elasticsearch, Firebase, and Redis to stay competitive in the IT industry.
- Developers should start working with AWS and Docker since they are gaining popularity and becoming more widely used to build applications.
- Developers should work with these JavaScript frameworks to expand their JavaScript knowledge and stay competitive since JavaScript is the most popular language and the top language developers want to work with in the future.

CONCLUSION

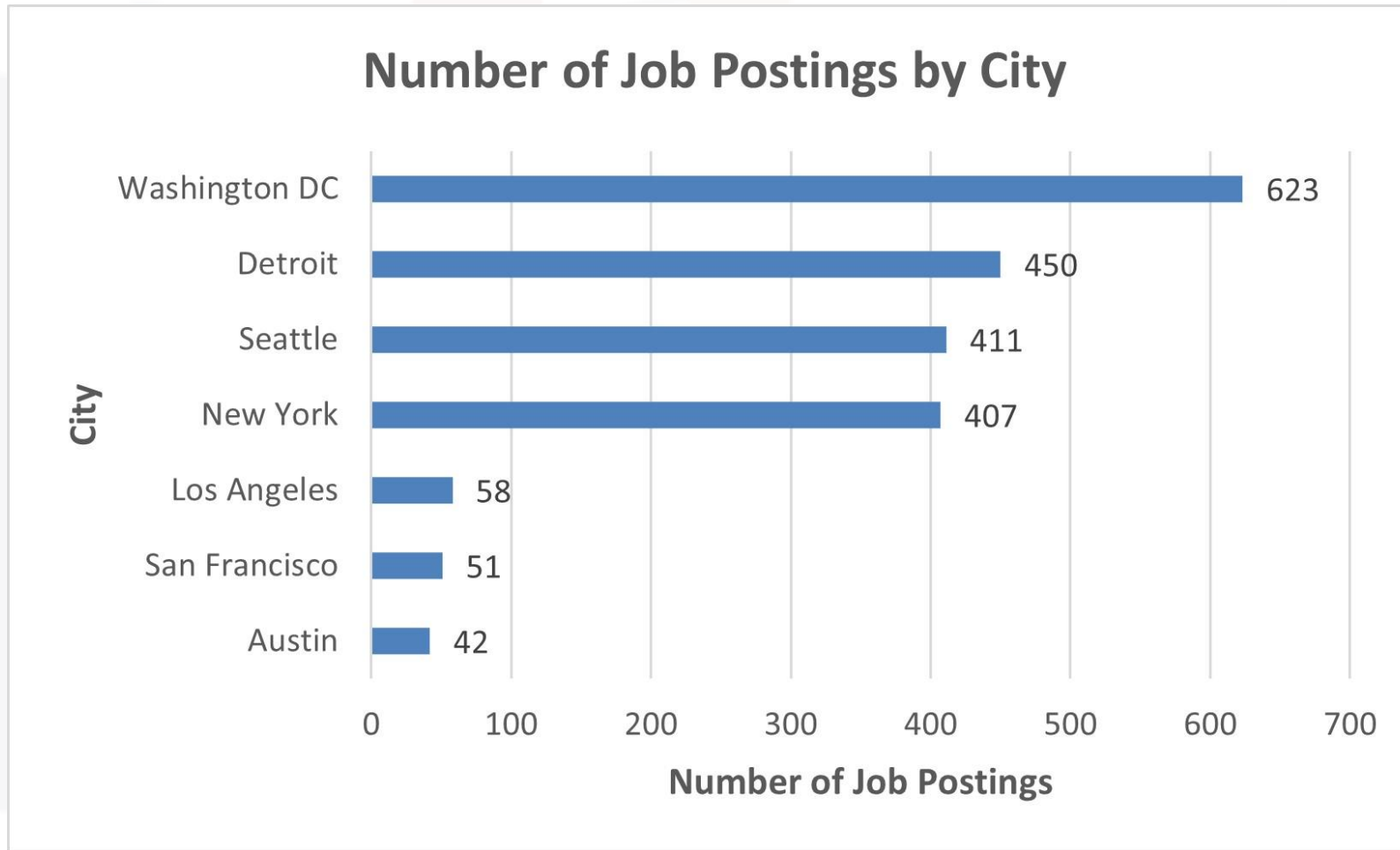


- Some technologies, such as PostgreSQL and Docker, are becoming more popular.
- Technologies like Oracle are losing popularity and are at risk of being replaced by newer technologies.
- Companies must work on bridging the gender gap between male and female developers.
- Companies should consider hiring for skills rather than degrees to gain access to a larger set of potential candidates.

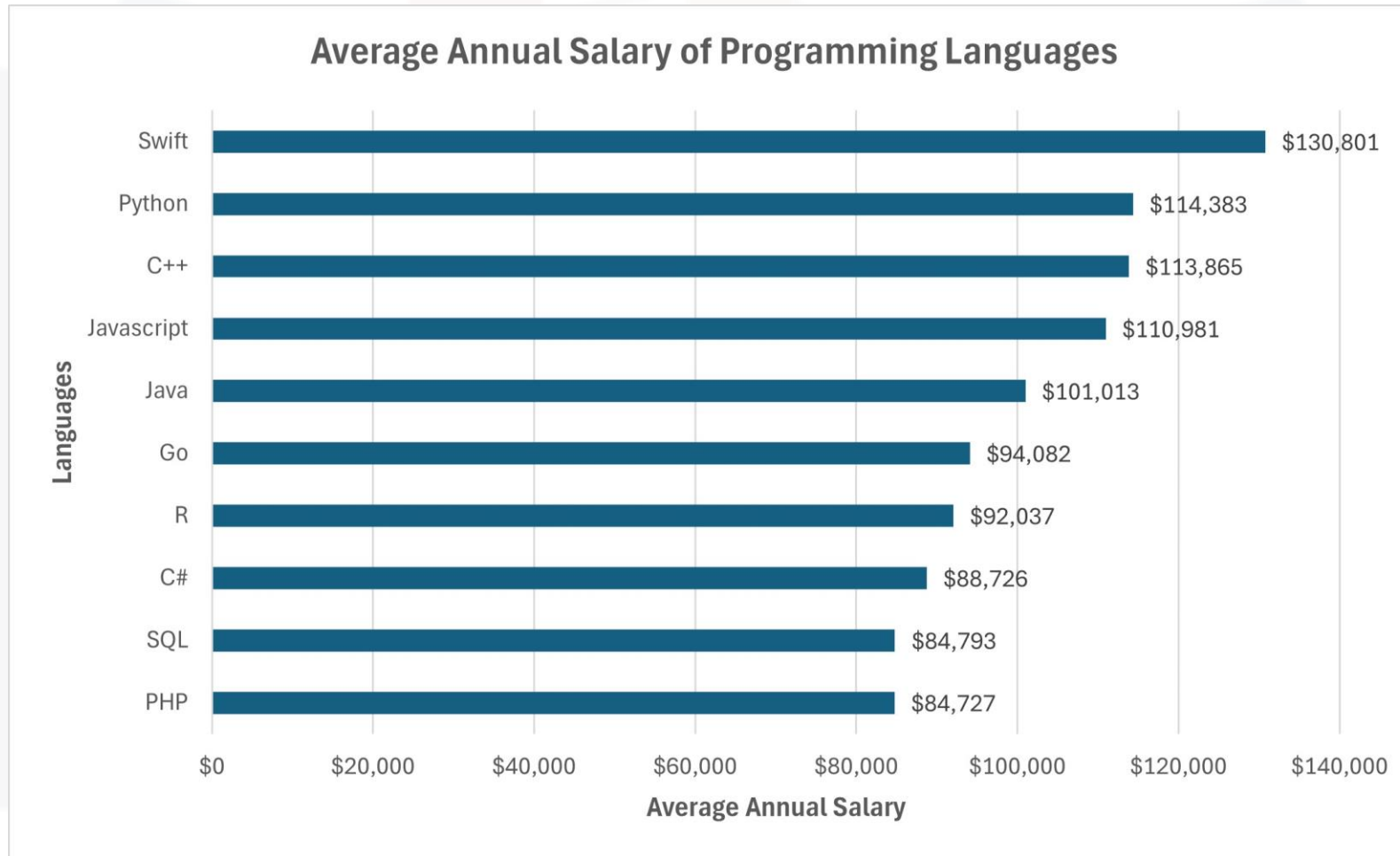
APPENDIX



JOB POSTINGS



POPULAR LANGUAGES



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- [m5_survey_data_demographics.csv](#)
- [m5_survey_data_technologies_normalised.csv](#)
- [popular-languages.csv](#)