



TECHNOLOGIES TRENDS IN 2019: Developer Survey by Stack Overflow

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OUTLINE



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EXECUTIVE SUMMARY pt. 1



- Most popular Languages:
 - JavaScript, HTML/CSS, SQL, Bash/Shell/PowerShell, Python, Java, C#, TypeScript, PHP
- Most popular Databases:
 - MySql, PostgreSQL, Microsoft SQL Server, SQLite, MongoDB, Redis, Elasticsearch, MariaDB, Oracle, Firebase
- Most popular Platforms:
 - Windows, Linux, Docker, AWS, Slack, MacOS, Android, Raspberry Pi, Microsoft Azure, Wordpress
- Most popular Web Frames:
 - jQuery, Angular/Angular.js, React.js, ASP.NET, Express

EXECUTIVE SUMMARY pt. 2



- Next year trends:
 - Python will take over 2nd place in Most popular Languages
 - PostgreSQL will take 1st place in Most popular Databases, moving MySQL to 3rd place
 - Kubernetes and Google Cloud Platform will join Most popular Platforms list taking over 6th place and 10th place respectively
 - React.js will land 1st position in Most popular Web Frames followed by Vue.js moving jQuery straight to 5th place

INTRODUCTION



- During past years several key trends in the world of programming and technologies have shaped
- Captured insights enlightens next year trends in programming languages, databases and web frames
- About 90 000 developers took participation in 20 minutes Survey of 2019
- Stack Overflow conducts comprehensive worldwide surveys on the matter of programming and technologies from 2011

METHODOLOGY



- Used data is based on survey by Stack Overflow, which was fielded from January 23 to February 14 2019. In the survey participated 88,883 software developers from 179 countries around the world
- This dataset was brought to my attention during completing IBM Data Analyst Professional Certificate on global online learning platform Coursera Platform
- Analysis of the data and visualization were shaped using business intelligence tool IBM Cognos Analytics

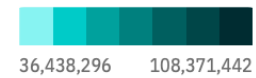
RESULTS

- Among all the programming languages Python stands out as significantly fastest growing programming language
- JavaScript is the most used and most desired programming language
- Most used database is MySQL and most desired next year is PostgreSQL
- The most used Web Frame is jQuery, however it takes only 5th place in the most desired Web Frames next year, giving up the 1st place to React.js
- Most respondents are from USA with 3127 respondents, meanwhile only 108 respondents from Ukraine
- 51,8 % of the respondents has Bachelor's degree and 23,9 % has Master's degree.
- 259 respondents has doctoral degree, most of who are 28 – 36 years old

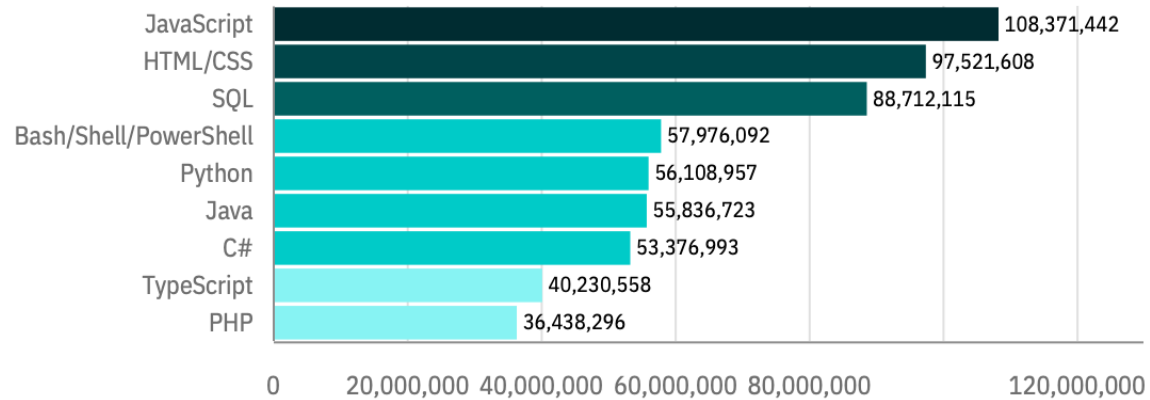
PROGRAMMING LANGUAGE TRENDS

Top 10 Languages respondents worked with

Respondent (Sum)



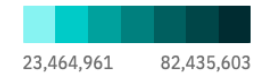
LanguageWorkedWith



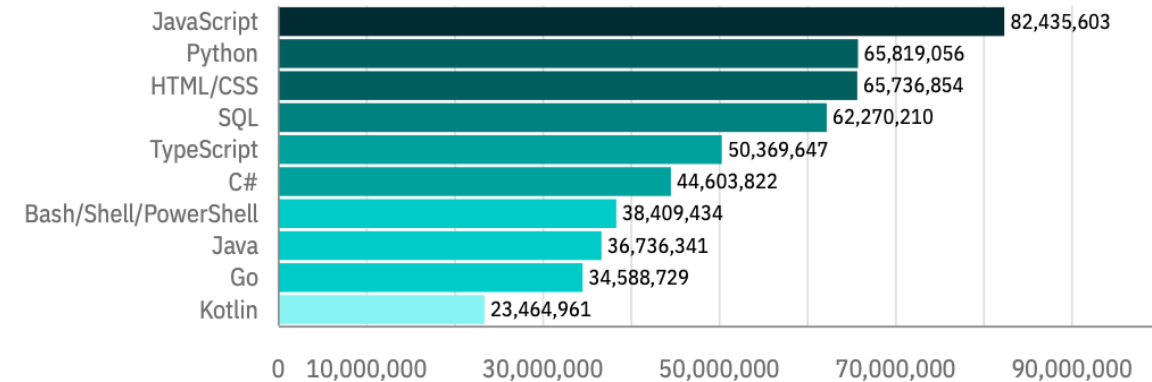
Respondent (Sum)

Respondent's Top 10 desired Languages next year

Respondent (Sum)



LanguageDesireNextYear



Respondent (Sum)

PROGRAMMING LANGUAGE TRENDS

Findings

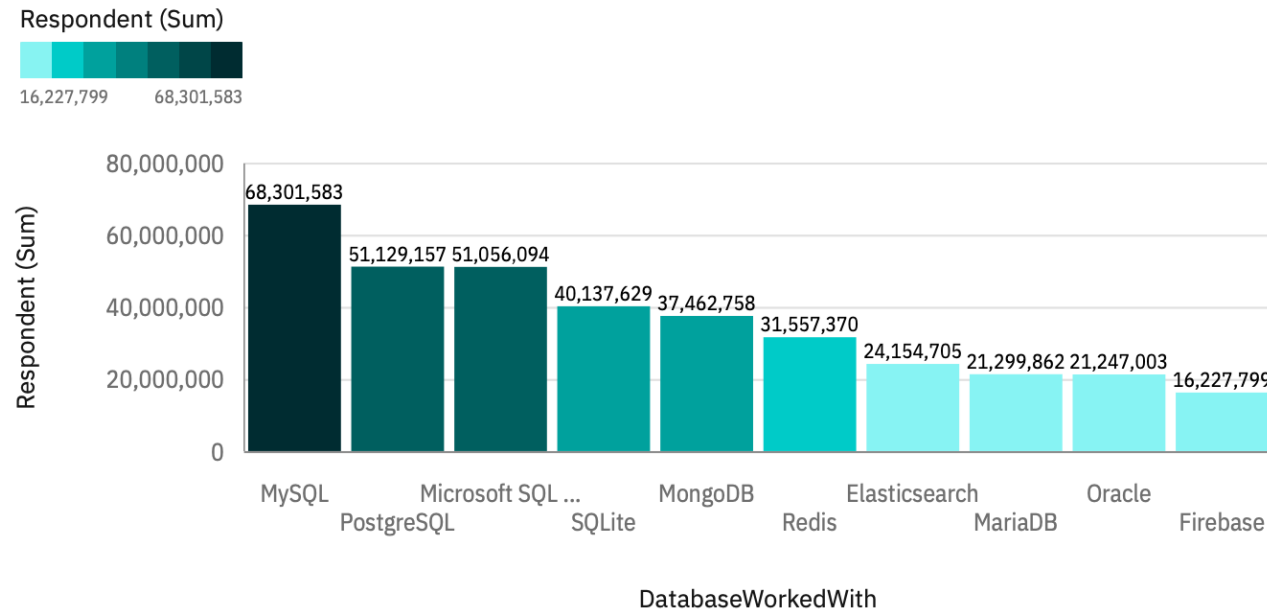
- JavaScript, HTML/CSS and SQL are top 4 languages, which developers work with and desire to use in the next year
- Python has become second most desired language in the next year
- Go and Kotlin has joined top 10 most desired languages next year

Implications

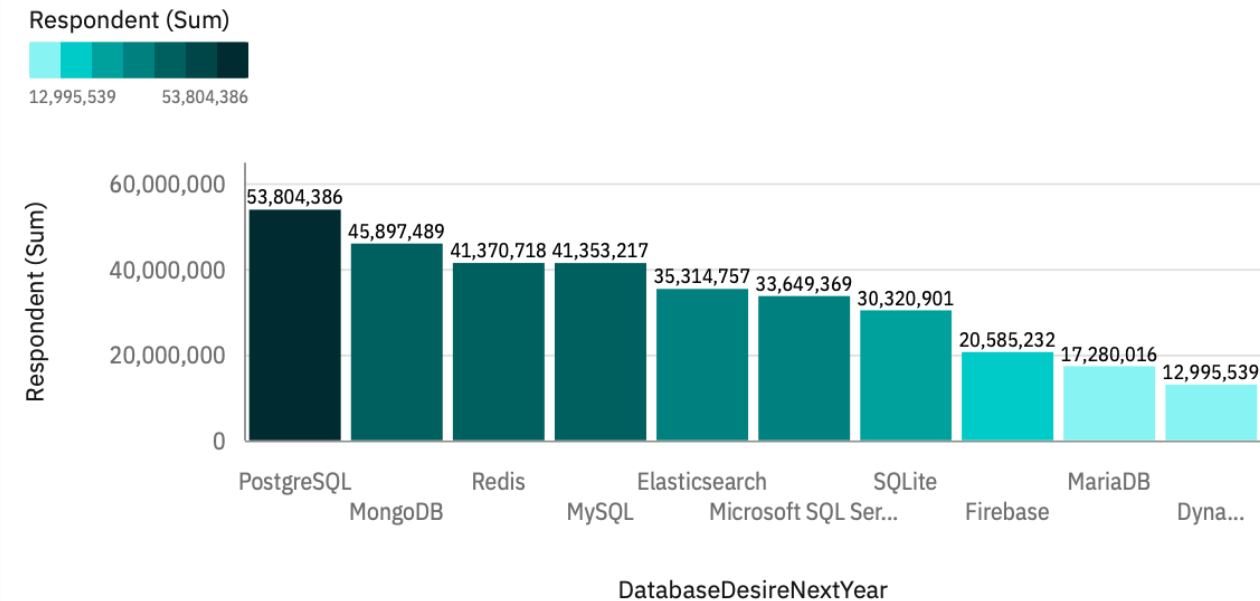
- Consistent trend of these languages shows the need and importance of mastering them for developers
- Arising role of Python and consistency of popularity of SQL shows the importance to master those languages from people who work with data
- The appearance of the new languages in our list testifies importance in permanent learning and mastering new skills for developers.

DATABASE TRENDS

Top 10 Databases respondents worked with



Respondent's Top 10 desired Databases next year



DATABASE TRENDS

Findings

- MySQL is the most popular relational database management system (RDBMS)
- PostgreSQL most popular in object-relational database management system (ORDMBS)
- MongoDB most popular non-relational database (NoSql aka "not only SQL")

Implications

- Consistent trend of top used/desired tools to work with data show the importance of mastering them for developers
- Highly growing importance of MongoDB indicates growing needs in using NoSql databases and flexible data models
- Diversity of tools testifies importance of choosing right tool for each task

DASHBOARD



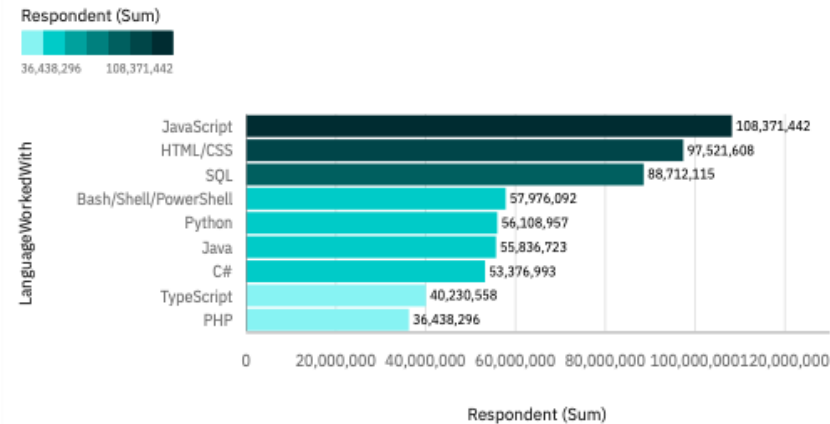
Link to the dashboard on GitHub

https://github.com/8karpov/cousera_peer/blob/main/DASHBOARD%20Peer-Graded%20Assignment_%20Part%20A%20-%20Building%20A%20Dashboard%20With%20IBM%20Cognos%20Analytics%20v2.pdf

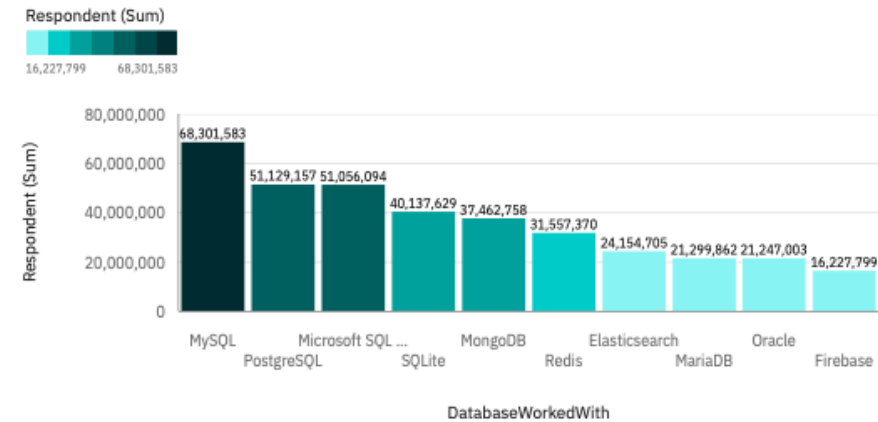
DASHBOARD TAB 1

Current Technology Usage

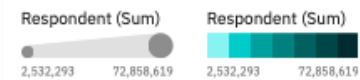
Top 10 Languages respondents worked with



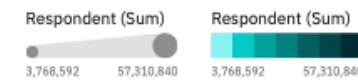
Top 10 Databases respondents worked with



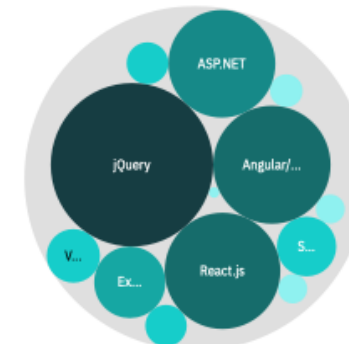
Platforms respondents worked with



Top 10 WebFrames respondents worked with



MacOS AWS
Google Cloud Platform
Slack Android
Kubernetes
WordPress
Windows
Linux
Docker
Raspberry Pi
Microsoft Azure
Heroku




DASHBOARD TAB 2

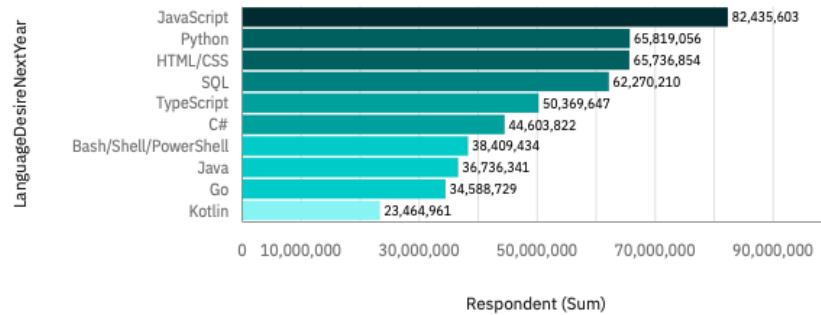
Future Technology Trend

Respondent's Top 10 desired Languages next year

Respondent (Sum)




23,464,961 82,435,603

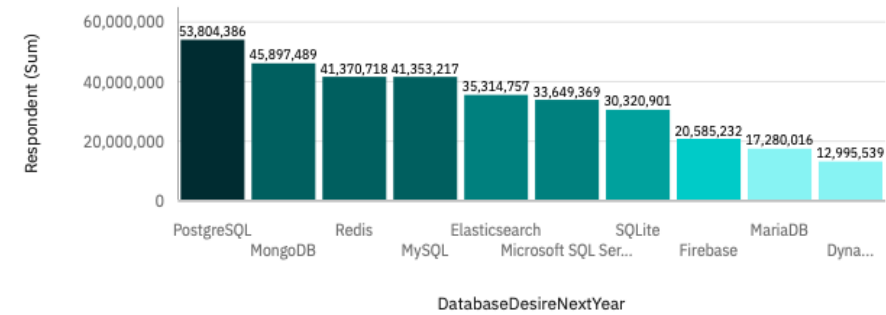


Respondent's Top 10 desired Databases next year

Respondent (Sum)




12,995,539 53,804,386

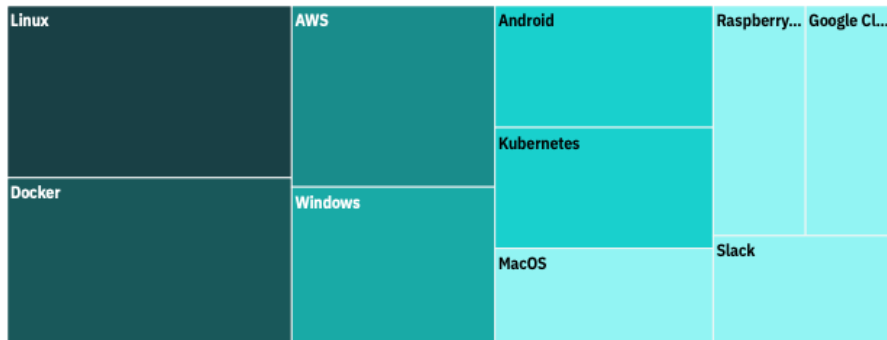


Respondent's Top 10 desired Platforms next year

Respondent (Sum)




29,377,988 73,486,491

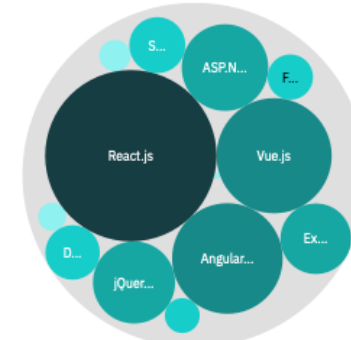


Respondent's Top 10 desired WebFrames next year

Respondent (Sum)



1,970,796 58,321,909

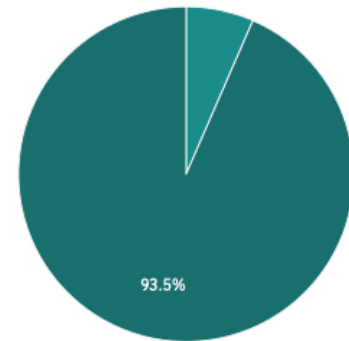


DASHBOARD TAB 3

Demographics

Respondents by Gender

Gender
● Woman ● Man

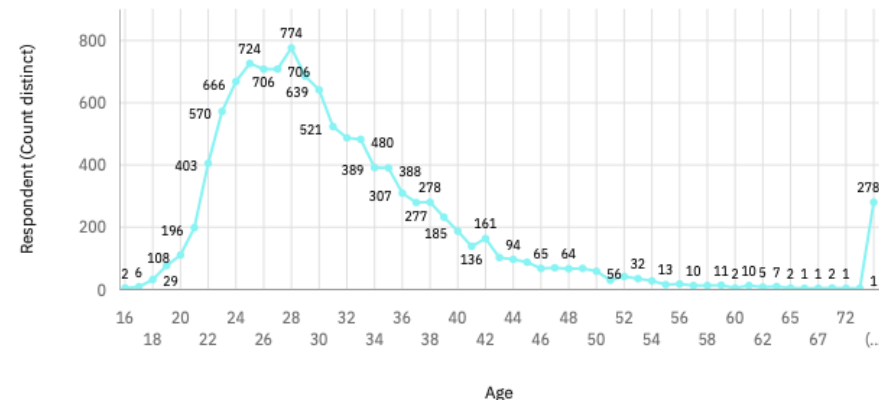


Respondent count for Countries

Respondent (Count)
1 3,058

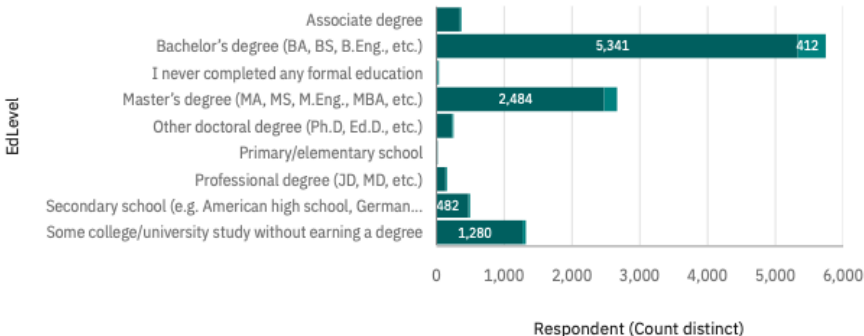


Respondent count by Age



Respondent Count by Gender, classified by Formal Education Level

Gender
● Man ● Woman



DISCUSSION



- Dominance of JavaScript among other programming languages
- Growing role of the Python programming language
- Central role of web development
- Evolving web technologies
- Connection between web development and growing importance of NoSql databases

OVERALL FINDINGS & IMPLICATIONS

Findings

- Technology trends: lasting dominance of the JavaScript and HTML/CSS and growing importance of Python.
- Databases trends: MySQL, PostgreSQL and MongoDB – diversity in top data management systems
- Wide selection of tools, which designed for different needs

Implications

- Web development dominance is caused by frequent usage of JavaScript and HTML/CSS indicates importance of digital and online trends
- Not only programming languages trends indicates above mentioned importance, but also highly growing role of NoSql databases such as MongoDB
- Modern technologies offer broad selection of tools, which designed for different needs and tasks. It is important to choose right tool for every particular assignment and project

CONCLUSION



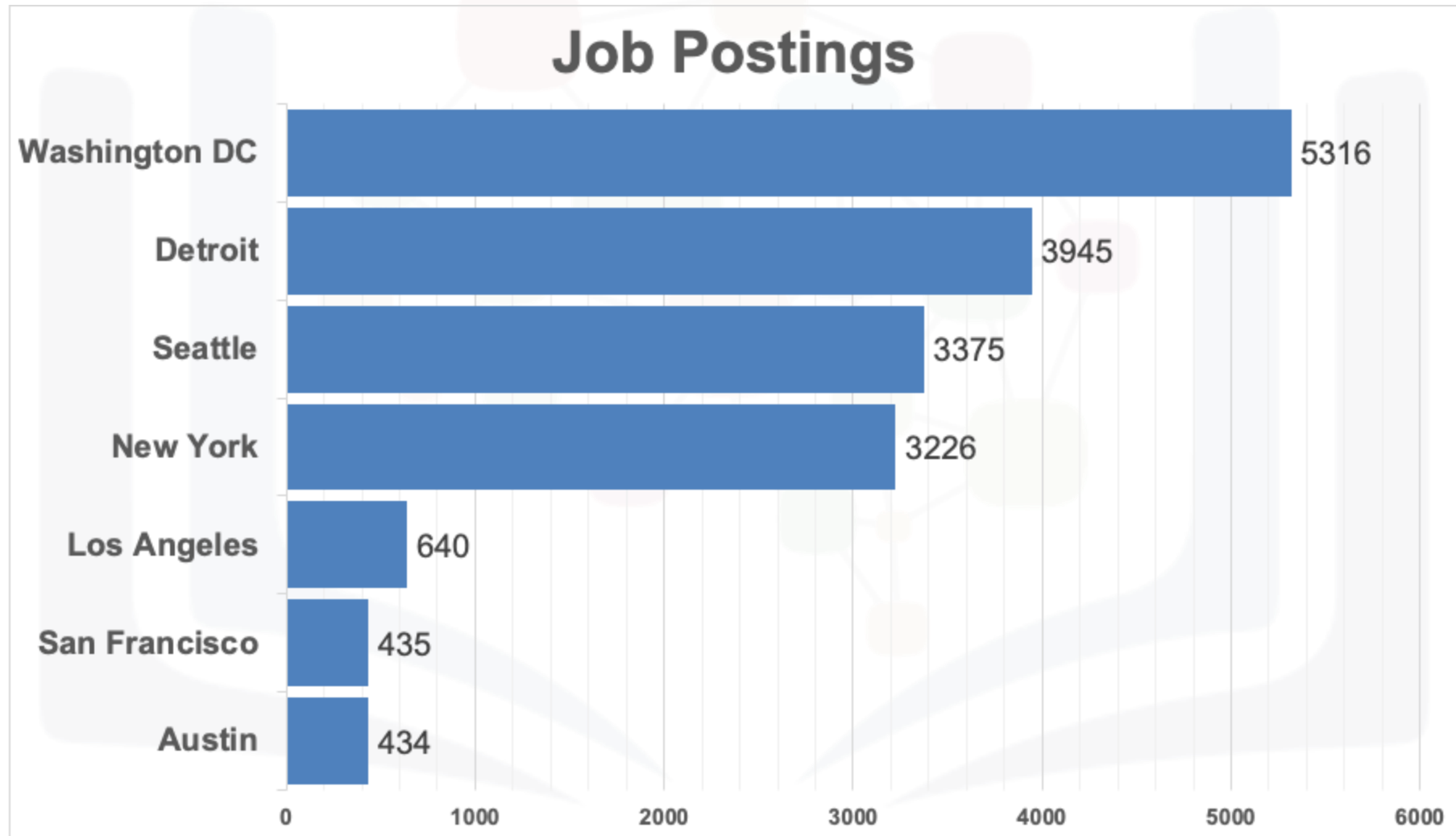
- Insights and findings of this analysis underlines dynamic changes in technologies environment, what indicates significant role of consistant improvement of developers skills
- To ensure the success of each developer in fast-changing tools and skills in the world of technologies developers need to:
 - Keep on track on trends and changes
 - Learn new skills
 - Efficiently use obtained skills and mastered tools

APPENDIX



- Job postings chart
- Popular languages char

JOB POSTINGS



POPULAR LANGUAGES

