



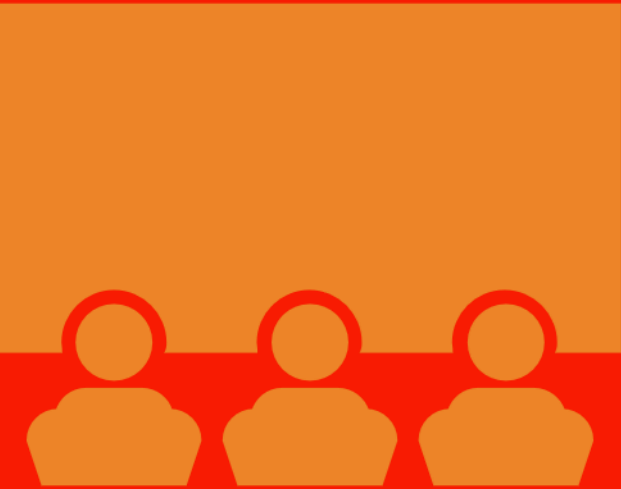
Capstone Project

Stack Overflow Developer Survey – 2019 Analysis

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August 1, 2023

OUTLINE



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

EXECUTIVE SUMMARY



■ **Current Technology Usage**

Top 10 Languages Worked with
Top 10 Databases Worked with
Platforms as presented by Word Cloud
Top 10 Web Frames worked with

■ **Future Technology Trend**

Top 10 Languages Desired Next Year
Top 10 Databases Desired Next Year
Platforms worked with Desired Next Year
Top 10 Web Frames Desired Next Year

■ **Demographics**

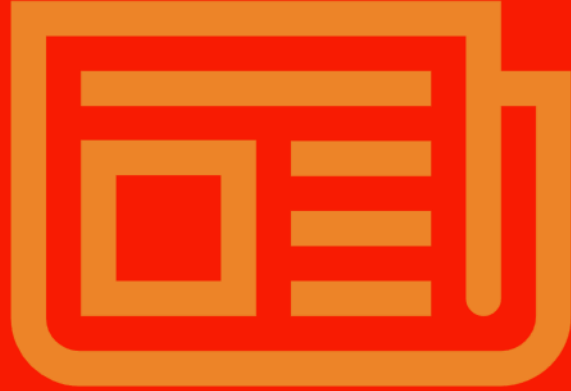
Respondents Classified by Gender
Respondent Count for Countries
Respondent Count by Age
Respondent Count by Gender by Formal Education Level

INTRODUCTION



- This is a report written for Stack Overflow's annual Developer Survey. It is the world's largest and most comprehensive survey of people who code around the world.
- Nearly 90,000 developers.
- Trends of predictive analysis and characterization of developers around the globe.

METHODOLOGY

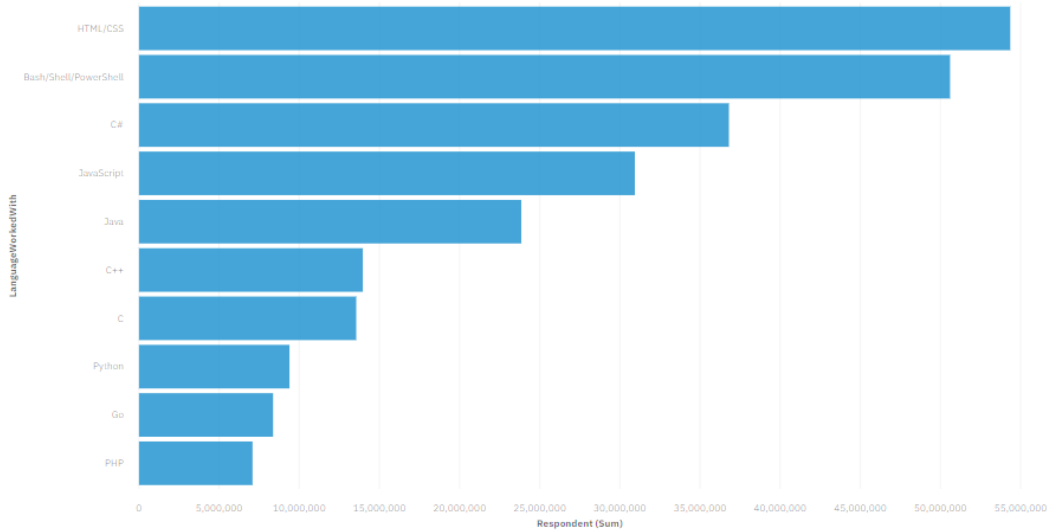


- Collecting Data – *Stack Overflow Developer Survey – 2019*
 - Using – API.
 - Using – Web scraping.
- Exploring Data
 - Finding Duplicates & Removing Duplicates.
 - Finding & Imputing Missing Values.
 - Normalizing Data
 - Handling Outliers
 - Correlation
- Visualization Data
 - Visualization Distribution, Relation, Composition & Comparison of data.
 - Building Dashboard.

RESULTS

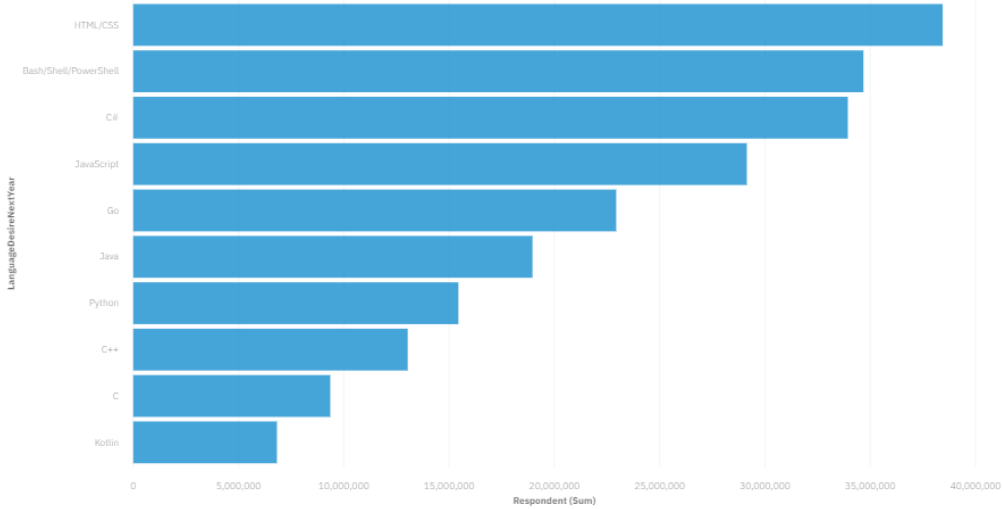
Current Year

Top 10 Languages Current Year



Next Year

Top 10 Languages Desired Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

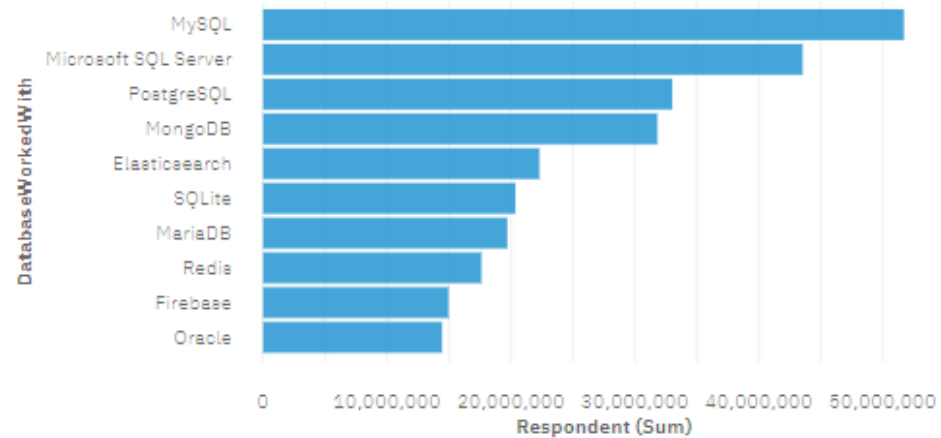
- HTML/CSS appears to be a popular choice for the current year as well as the future.
- PHP comes as the least popular for the current year and Kotlin appears as the least choice for the next year.
- JavaScript and Java appear to be a mid-popular choice for the current year and next year respectively.

Implications

- HTML/CSS is becoming the new and upcoming popular and demanding programming language among users.
- PHP and Kotlin have been replaced by other programming languages at most places.
- JavaScript and Java appear to be medium demand programming languages.

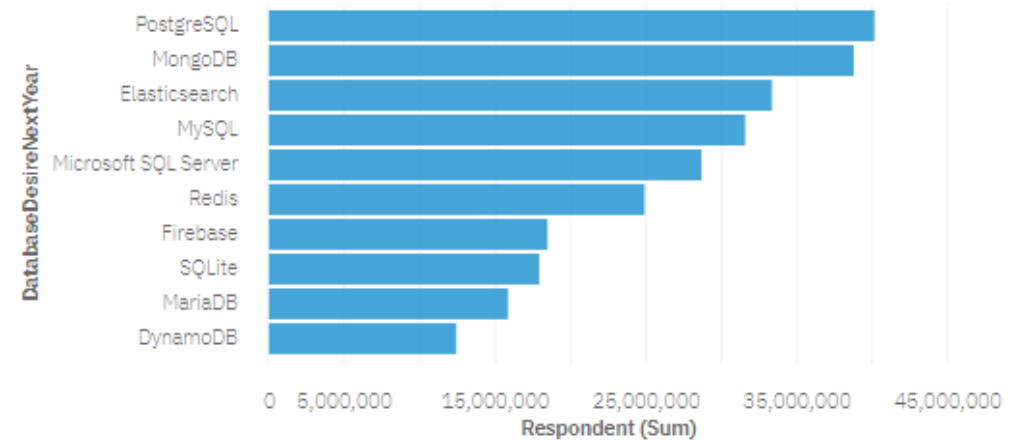
Current Year

Top 10 Databases Current Year



Next Year

Top 10 Databases Desired Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL comes out to be a popular choice of database for the current year whereas PostgreSQL is the select database desired in the future
- Oracle comes as the least popular for the current year and DynamoDB as well for the next year as well.
- Looking to the future, PostgreSQL, MongoDB, Elasticsearch, MySQL, and Microsoft SQL Server appear to be the most trending databases.

Implications

- PostgreSQL is becoming the new upcoming popular desired database skill among users replacing MySQL.
- Oracle has been replaced by other programming languages at most places.
- PostgreSQL, MongoDB, Elasticsearch, MySQL, and Microsoft SQL Server appear to be the more popular desired choices of databases in the future.

DASHBOARD



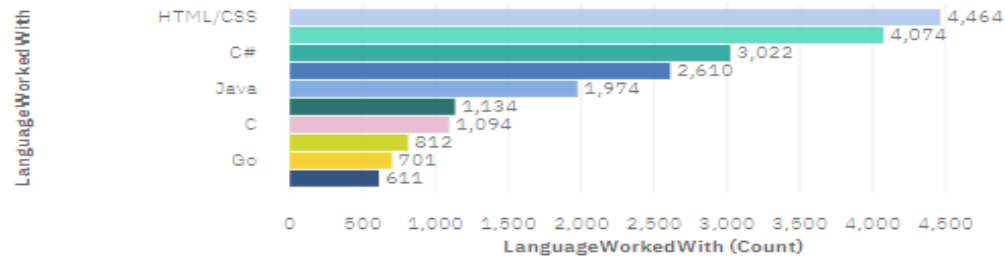
The permanent link of the read-only view of the Cognos dashboard is as follows:

<https://dataplatform.cloud.ibm.com/dashboards/c4f0dc2a-e661-4f6e-b01c-2f962861a8c8/view/6601eb2c0fa902c971b6bde4079a2e547831225ae6bb8a5085807b490e332297a96a1494c87d4e09de450762f5b8160fcb>

Top 10 Languages Worked With

LanguageWorkedWith

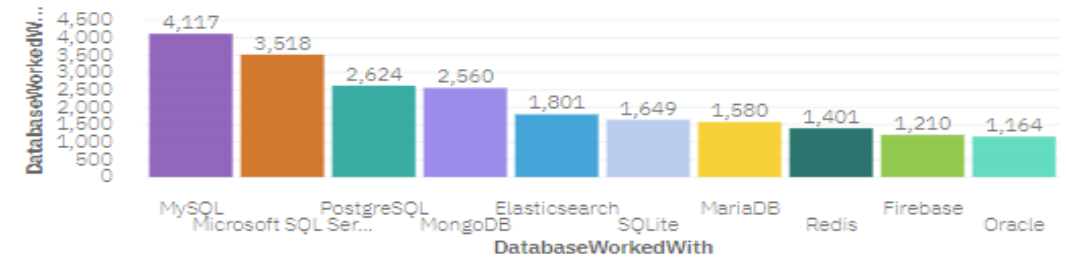
Bash/Shell/PowerShell
 C
 C++
 C#
 Go
 HTML/CSS
 JavaScript
 Java
 PHP



Top 10 Databases Worked With

DatabaseWorkedWith

Elasticsearch
 Microsoft SQL Server
 Oracle
 Firebase
 MongoDB
 PostgreSQL
 MariaDB
 MySQL
 Redis



Platforms Worked With

PlatformWorked...

PlatformWorkedWith

(no value)
 Android
 Docker
 AWS
 Arduino
 Google Cloud Platform



Top 10 Web Frames Worked With

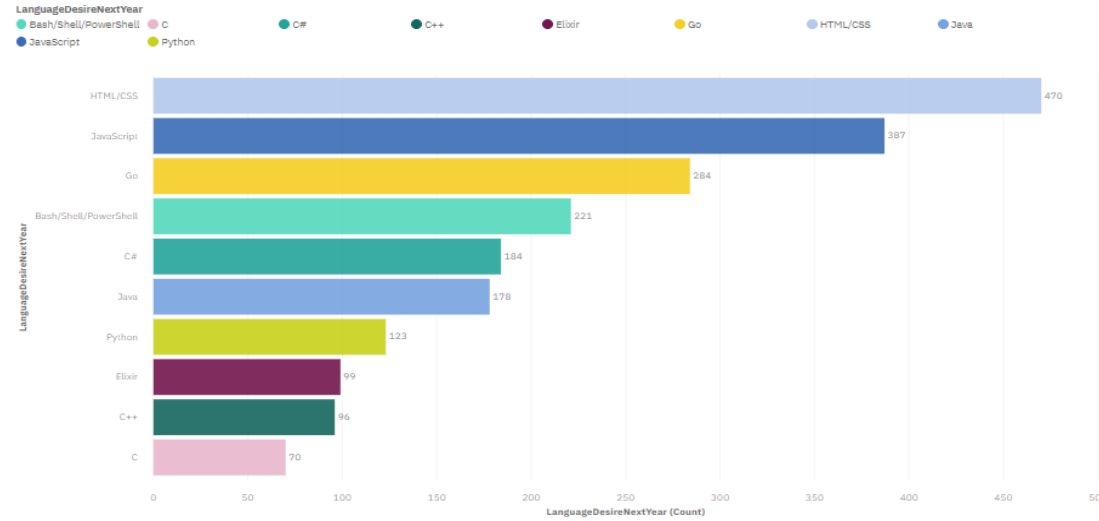
WebFrameWorke...

WebFrameWorkedWith - WebFrameWorkedWith

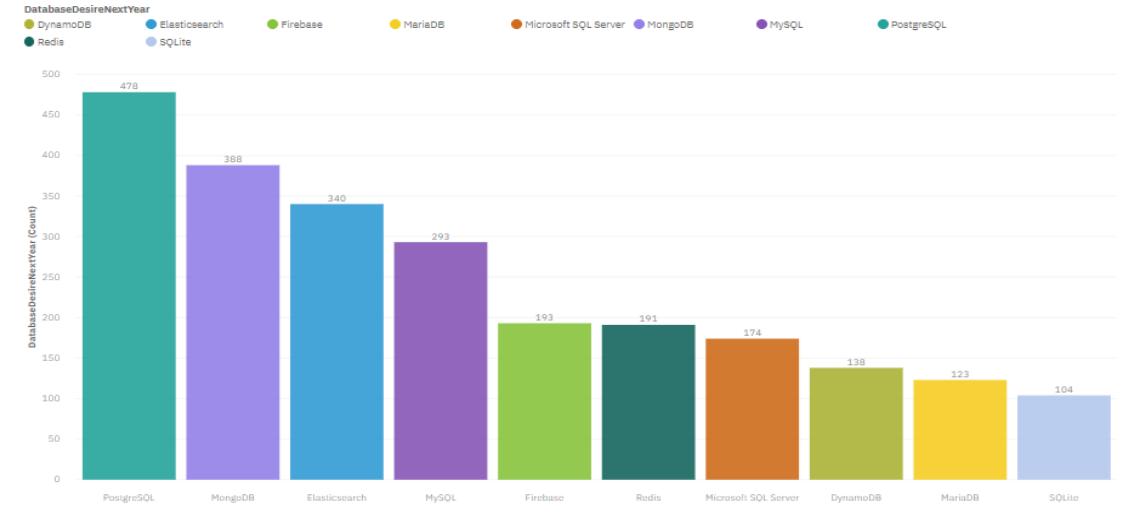
(no value) | (no value)
 Angular/Angular.js | Angular/A...
 Drupal | Drupal
 ASP.NET | ASP.NET
 Django | Django
 Express | Express



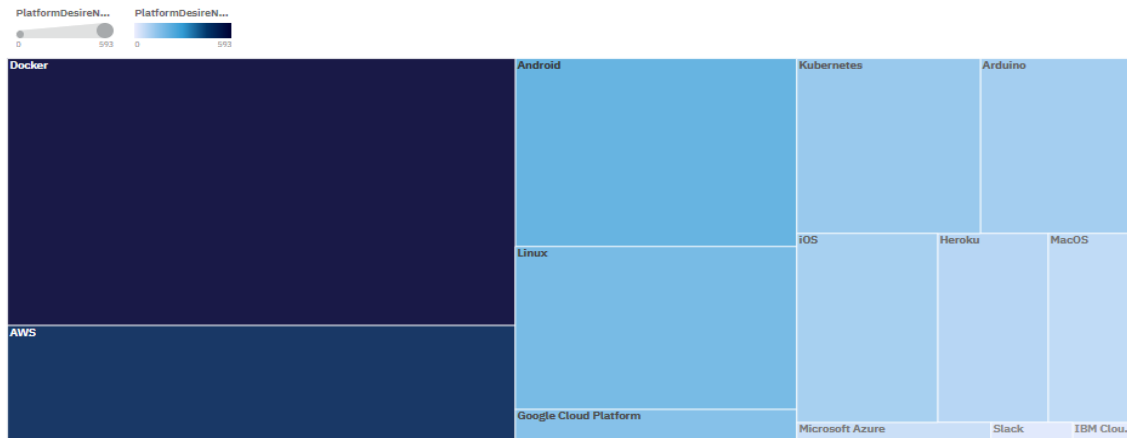
Top 10 Language Desire Next Year



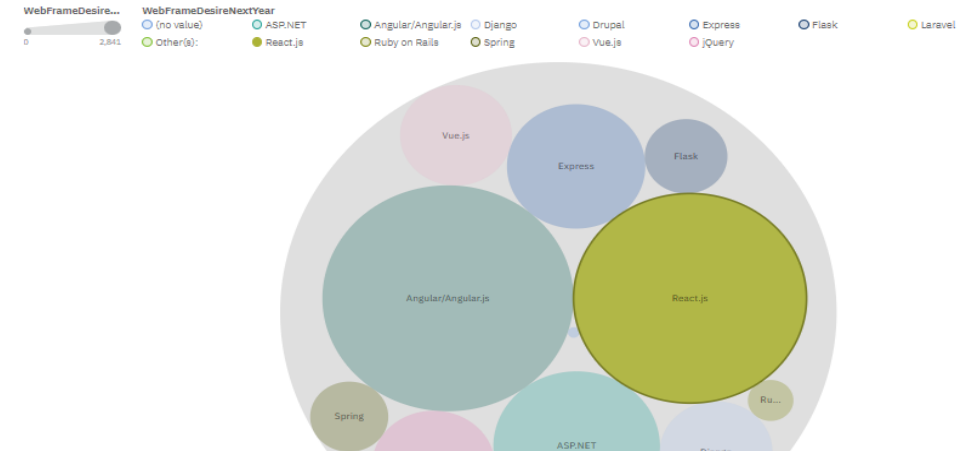
Top 10 Database Desire Next Year



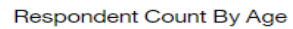
Platform Desire Next Year



Top 10 Web Frame Desired



Gender
● Woman ● Man



Respondent (Cou...



EdLevel
 (no value) Associate degree Bachelor's degree (BA, BS, B.E., ...) I never completed any formal ... Master's degree (MA, MS, M.E., ...)
 Other doctoral degree (Ph.D, E., ...) Primary/elementary school Professional degree (JD, MD, ...) Secondary school (e.g. American ...) Some college/university study ...



DISCUSSION



- All ages used for survey. Outliers filtered out.
- All genders were considered for this survey.
- People from across various countries were asked for the survey.
- Various people with different educational levels were included as well.

OVERALL FINDINGS & IMPLICATIONS

Findings

- The upcoming languages trend is for web languages like HTML/CSS and scripting languages like Bash/Shell/PowerShell.
- The upcoming trend for relational database usage is PostgreSQL.
- Docker appears to be the most used platform and continues to be the future platform of use.

Implications

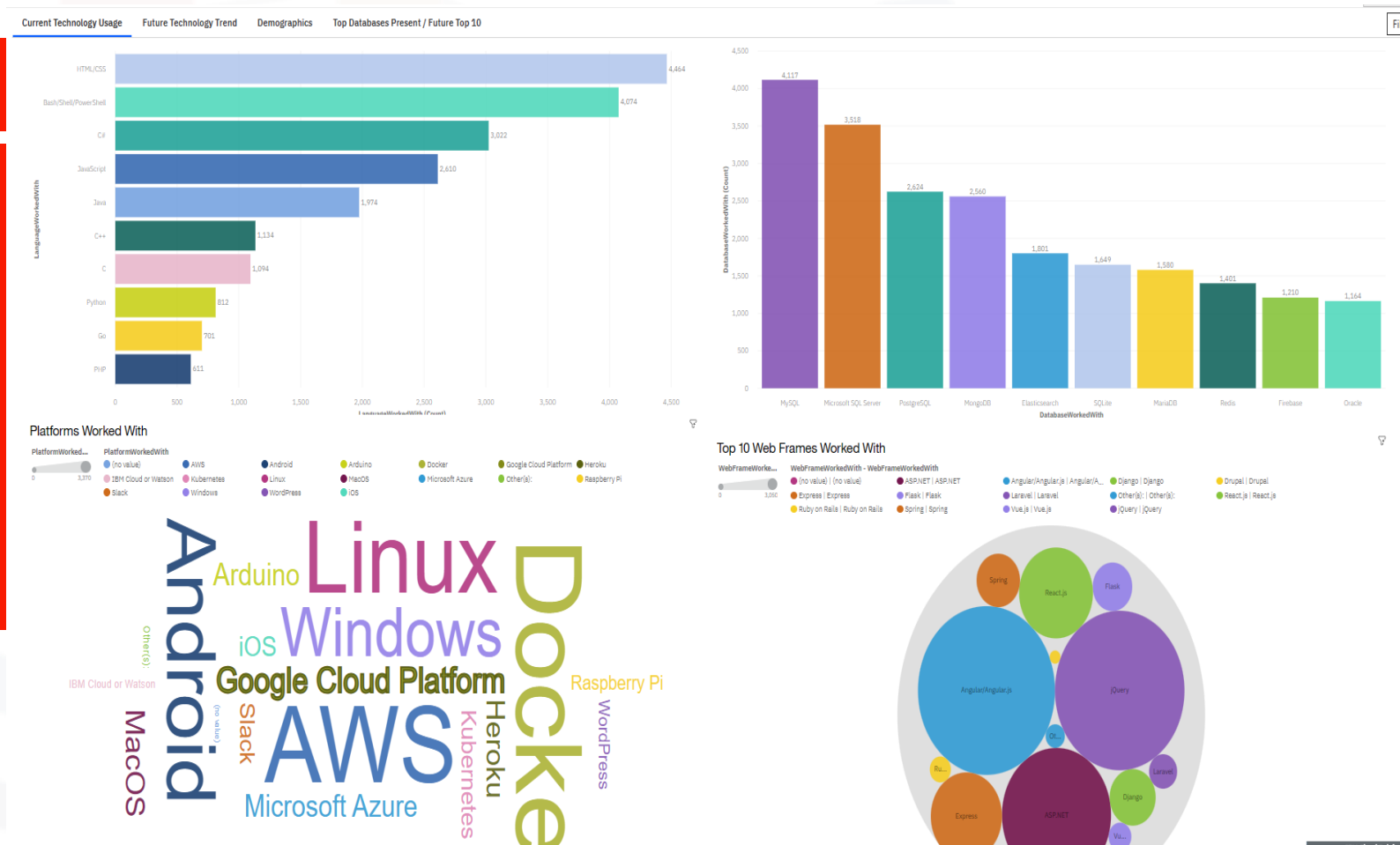
- People are looking towards web languages and shell scripting in the future.
- Relational databases are the trending options for the future!
- Docker is the dominant platform for all platforms.

CONCLUSION

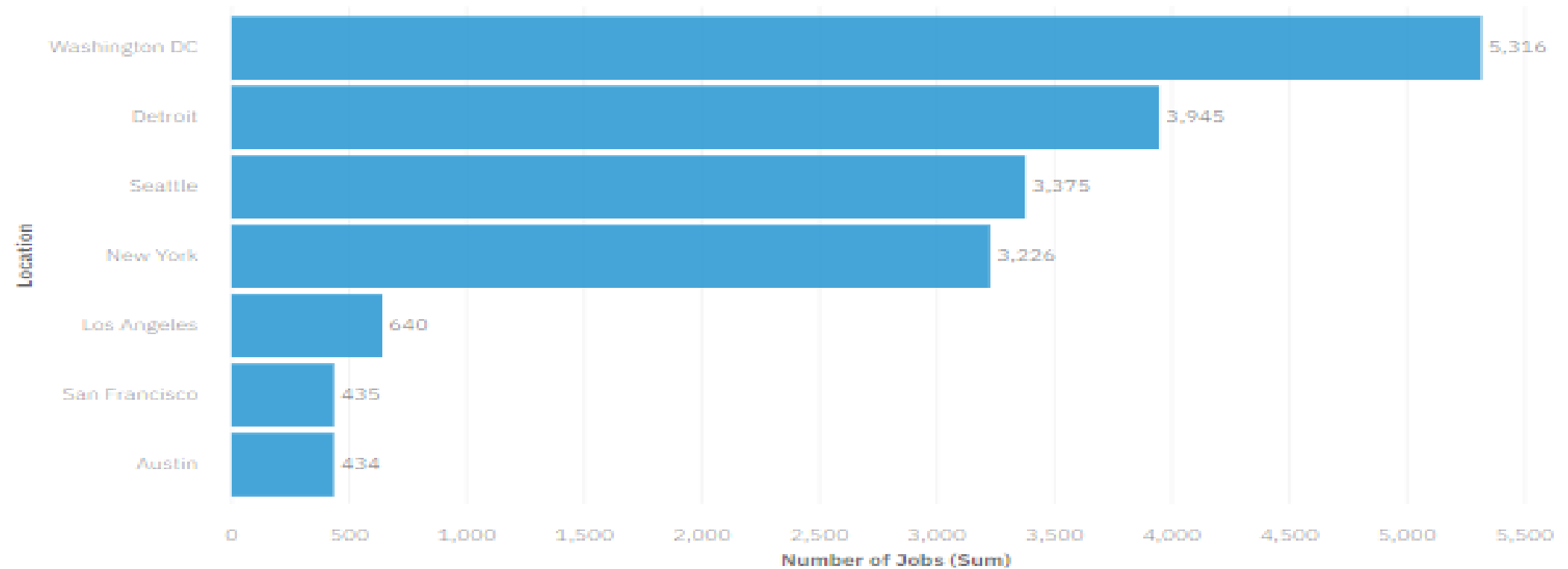


- The top language in demand of present and future is HTML/CSS.
- The top database in demand:
Present – MySQL; Future - PostgreSQL
- The most popular platform is Docker.
- The top web frame in demand for present and future is Angular.js.

APPENDIX



Github Job Postings



Popular Languages and Average Annual Salary

