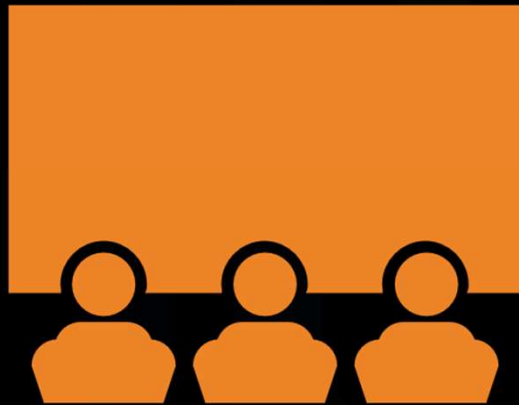




CURRENT AND FUTURE TECHNOLOGY TRENDS

Leslie Dailey
February 2022

OUTLINE



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

EXECUTIVE SUMMARY



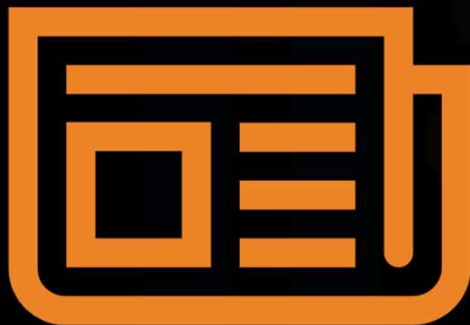
- Data Analysis based on “The 2019 Stack Overflow Developer Survey Results”
- Present and future trends for programming languages and databases.
- Interactive Dashboard of survey
- Large gender gap in tech industry

INTRODUCTION

- Purpose: Analyze developer trends across all industries to better prepare organizations for the future
- Intended audience: Human Resources, Developers, Managers in the tech industry



METHODOLOGY



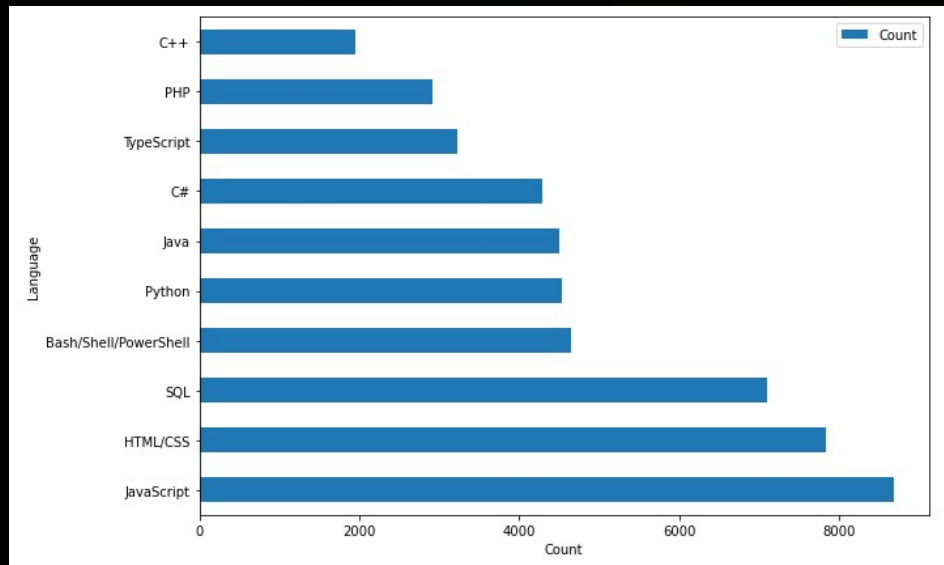
- Data sources:
 - GitHub job postings
 - Programming languages annual salary
 - Stack Overflow 2019 Developer Survey
- Exploratory data analysis
- Data wrangling
- Data visualization
 - Matplotlib
 - IBM Cognos
- Share the findings

RESULTS

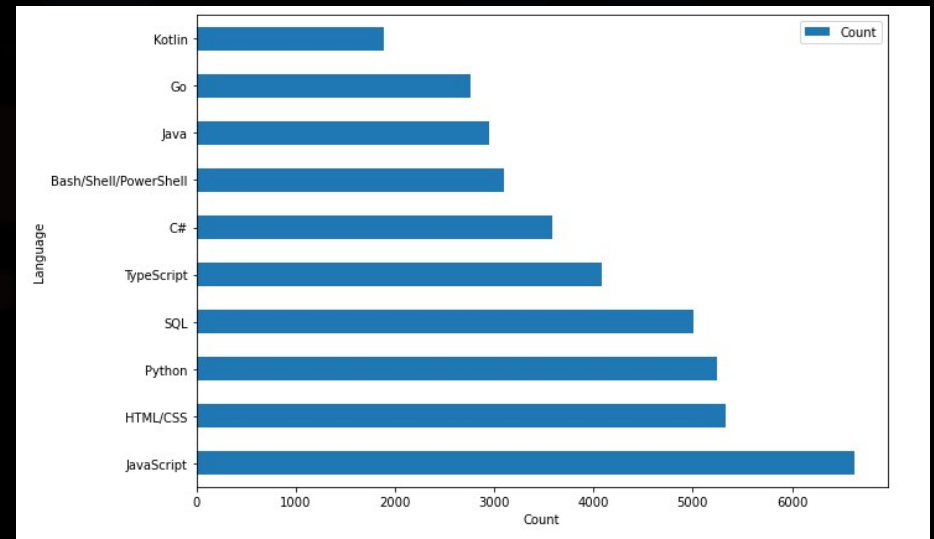
- Trends between programming languages & databases
- Interactive dashboard with 3 tabs
 - Current Technology Usage Trends
 - Future Technology Trends
 - Demographics of Developers

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Typescript gained the most popularity in a single year
- Bash/Shell/PowerShell went down in ranking the most
- JavaScript and HTML/CSS still rank the highest out of all languages

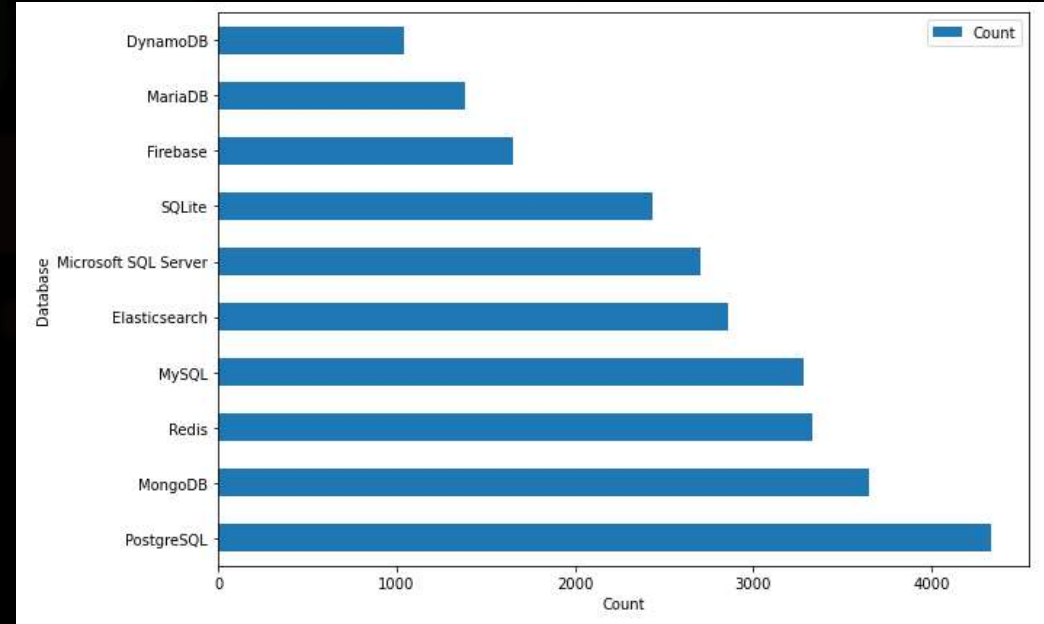
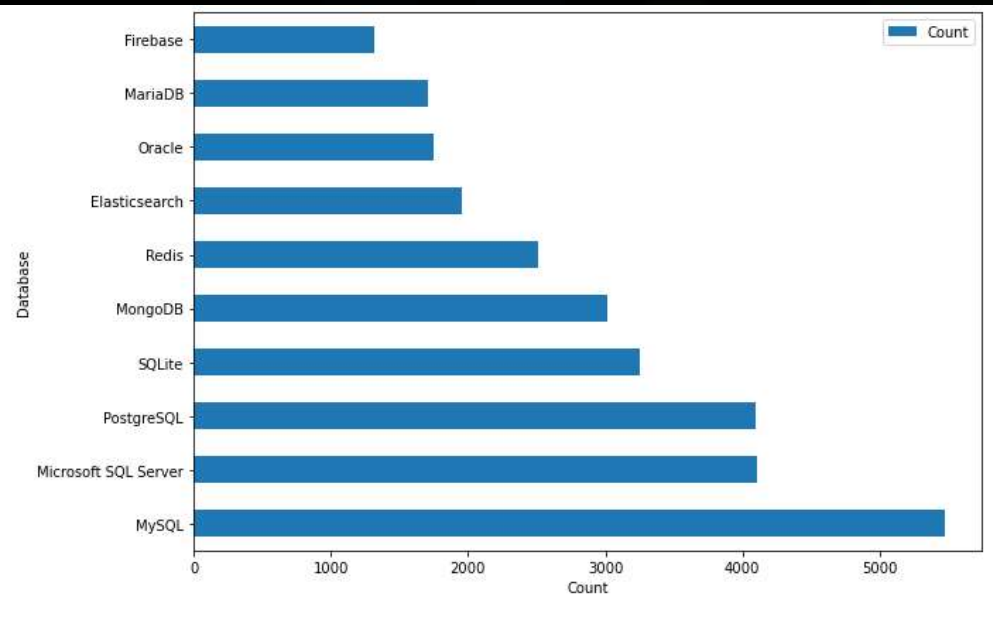
Implications

- JavaScript and HTML/CSS remain as high demand skills for developers
- Bash/Shell/PowerShell went down by 3 ranks, this could be cause to upskill employees if this continues
- Typescript or Python could be good options for organizations to upskill to since they moved up in rank the most

DATABASE TRENDS

Current Year

Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Much larger changes on the database side compared to languages
- Microsoft SQL Server moved down 4 ranks
- Redis & MongoDB both moved up 3 ranks

Implications

- Database preference doesn't have a clear winner with every type moving up or down
- Clear that open data source databases are here to stay
- With so much change in preference it's hard to match organizations with developers that have solid skills in one database

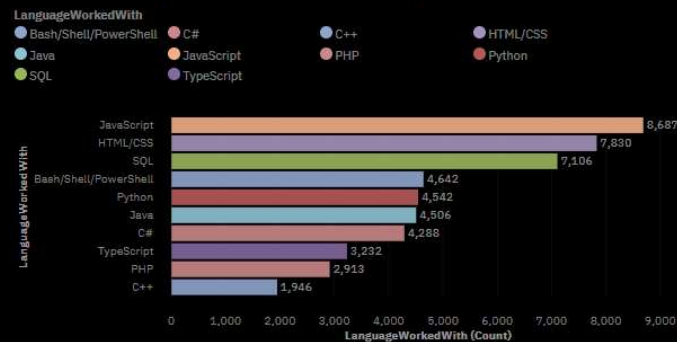
DASHBOARD



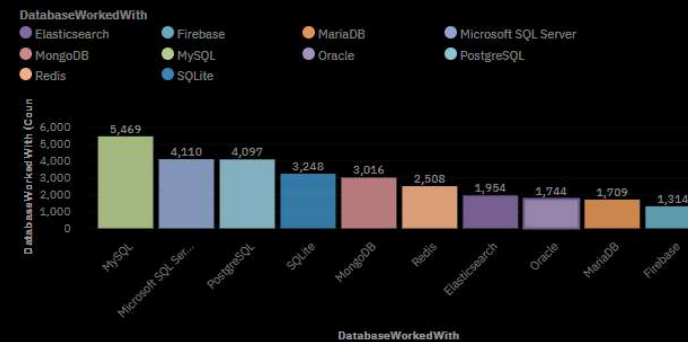
<https://dataplatform.cloud.ibm.com/dashboards/71e3754d-a01e-4ca8-8f86-faf2293c5b4e/view/4e60fb1b24eb16925fcec4e407cf2b532937740ce0bbd157d5827b495c667297a96c1594c8284e0989475731f2eb1b5f9d>

CURRENT TECHNOLOGY USAGE DASHBOARD

Top 10 Languages Worked With by Developers



Top 10 Databases Worked With by Developers



Platforms Worked With by Developers

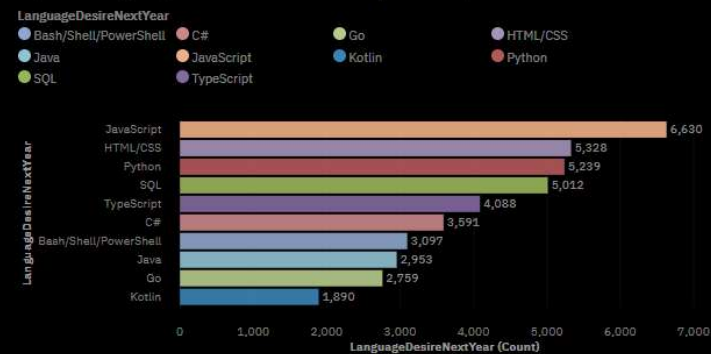


Top 10 Web Frameworks Worked With by Developers

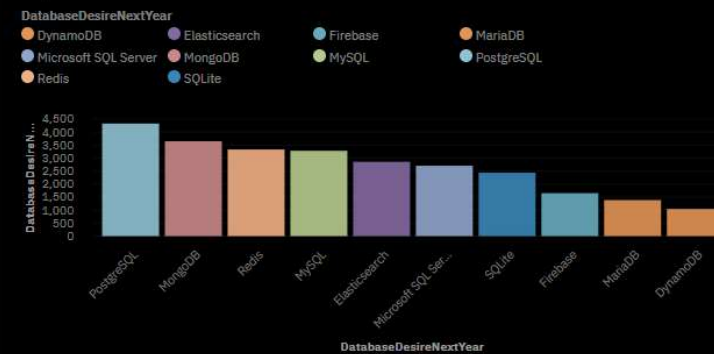


FUTURE TECHNOLOGY TREND DASHBOARD

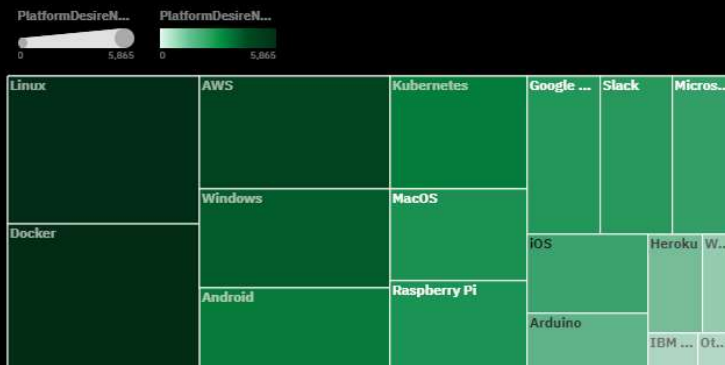
Top 10 Language Desire Next Year by Developers



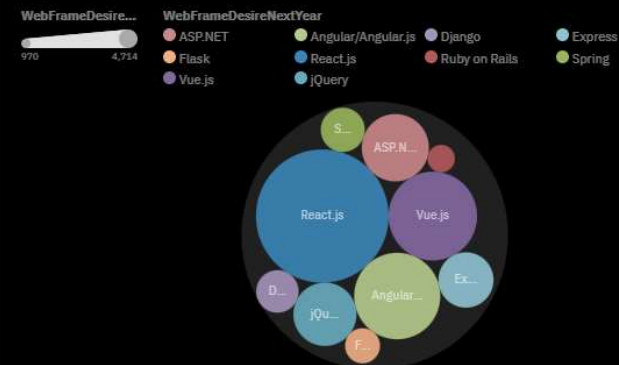
Top 10 Database Desire Next Year



Platform Desire Next Year



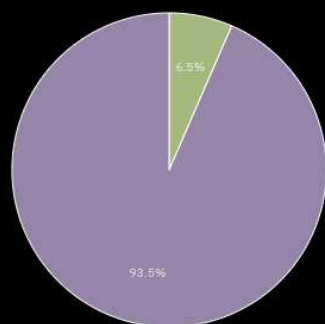
Top 10 Web Frame Desire Next Year



DEMOGRAPHICS DASHBOARD

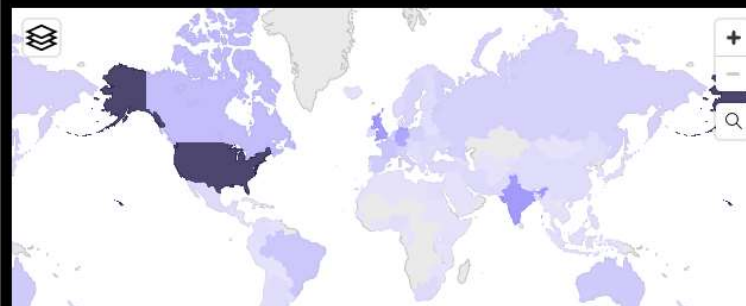
Respondent classified by Gender

Gender
● Woman ● Man

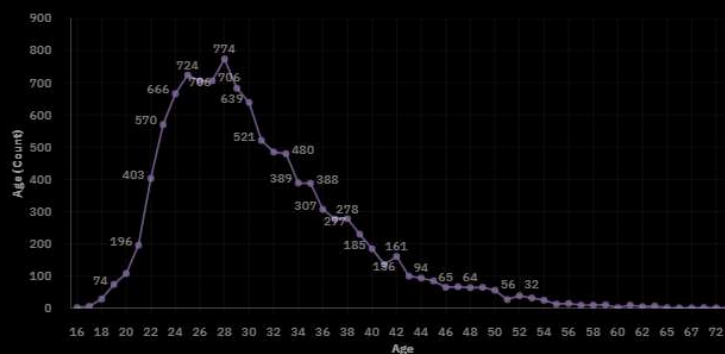


Respondent Count by Countries

Country (Count)
1 3,058

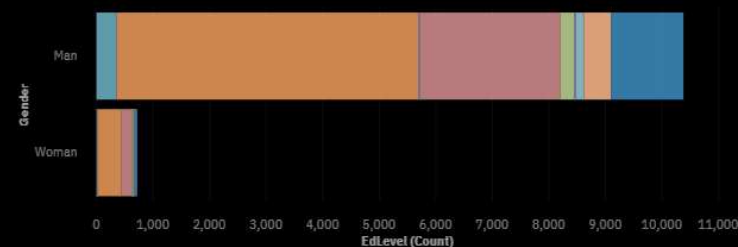


Respondent Count by Age



Respondent Count by Gender, Classified by Ed. Level

EdLevel
● 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, e... ● Secondary school (e.g. Americ... ● Some college/university study ...





DISCUSSION

- Gender gap in industry
- Age inequality
- Upskilling options



OVERALL FINDINGS & IMPLICATIONS

Findings

- Clear age inequality
- Large gender gap in industry
- USA is leading in the tech industry
- HTML and Java are essential for most developers and no clear winner for databases

Implications

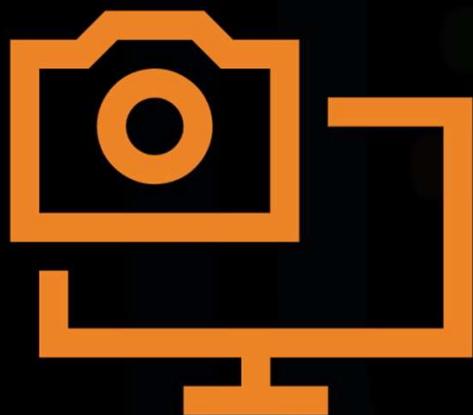
- Older developers could be the missing key in an organization's problems
- Women could be a valuable asset on ai projects to account for bias
- Databases fluctuations make it difficult for organizations to match their needs with developers.

CONCLUSION

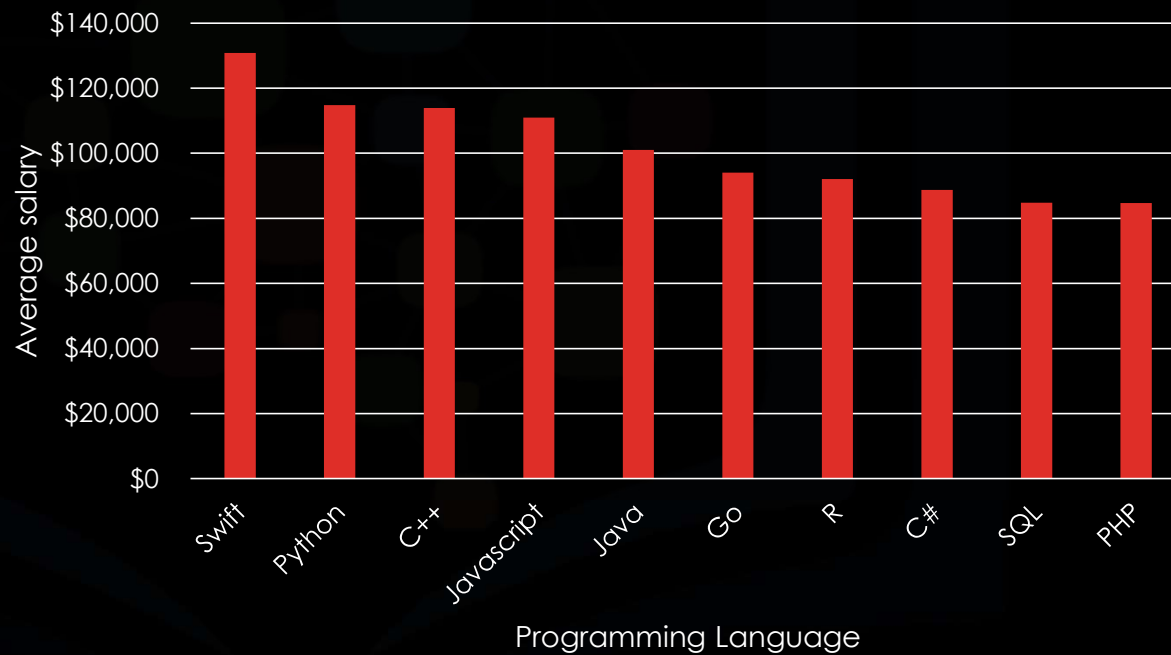
- Present and future trends in IT
- Demographic issues seen in the industry
- Interactive dashboard available for additional exploration
- Organizations need to stay flexible with technology in order to stay competitive



APPENDIX

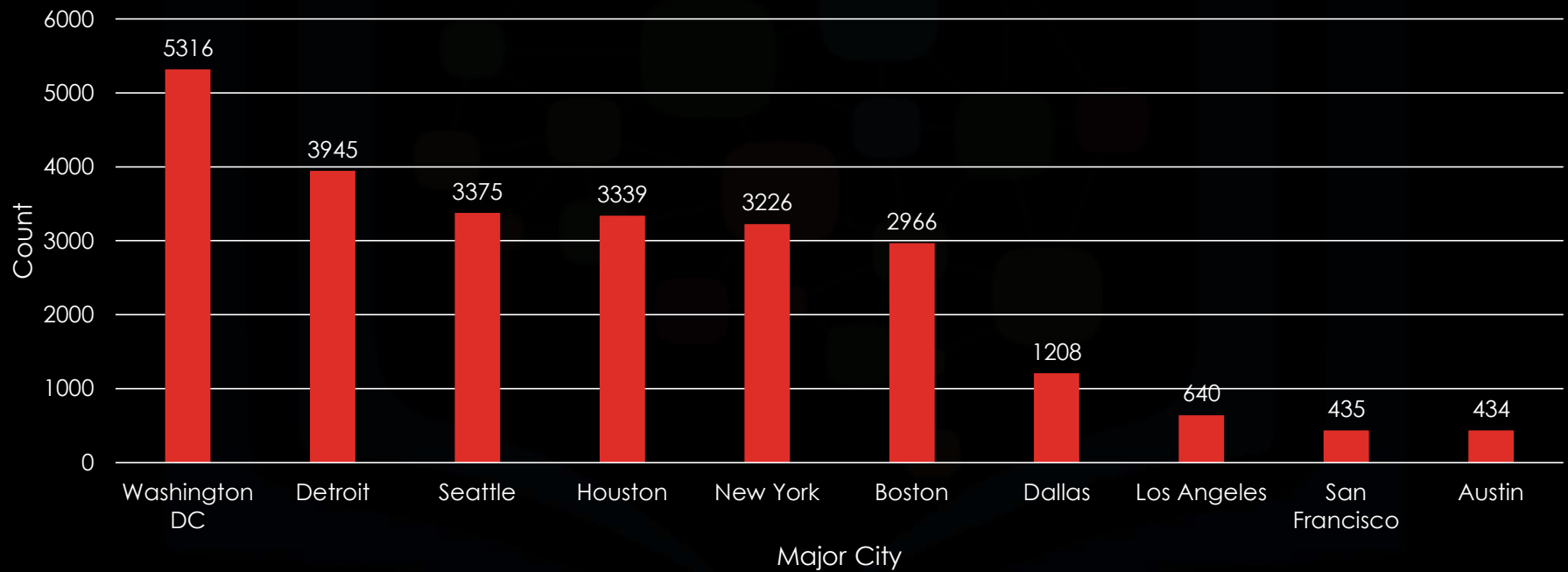


Average Annual Salary

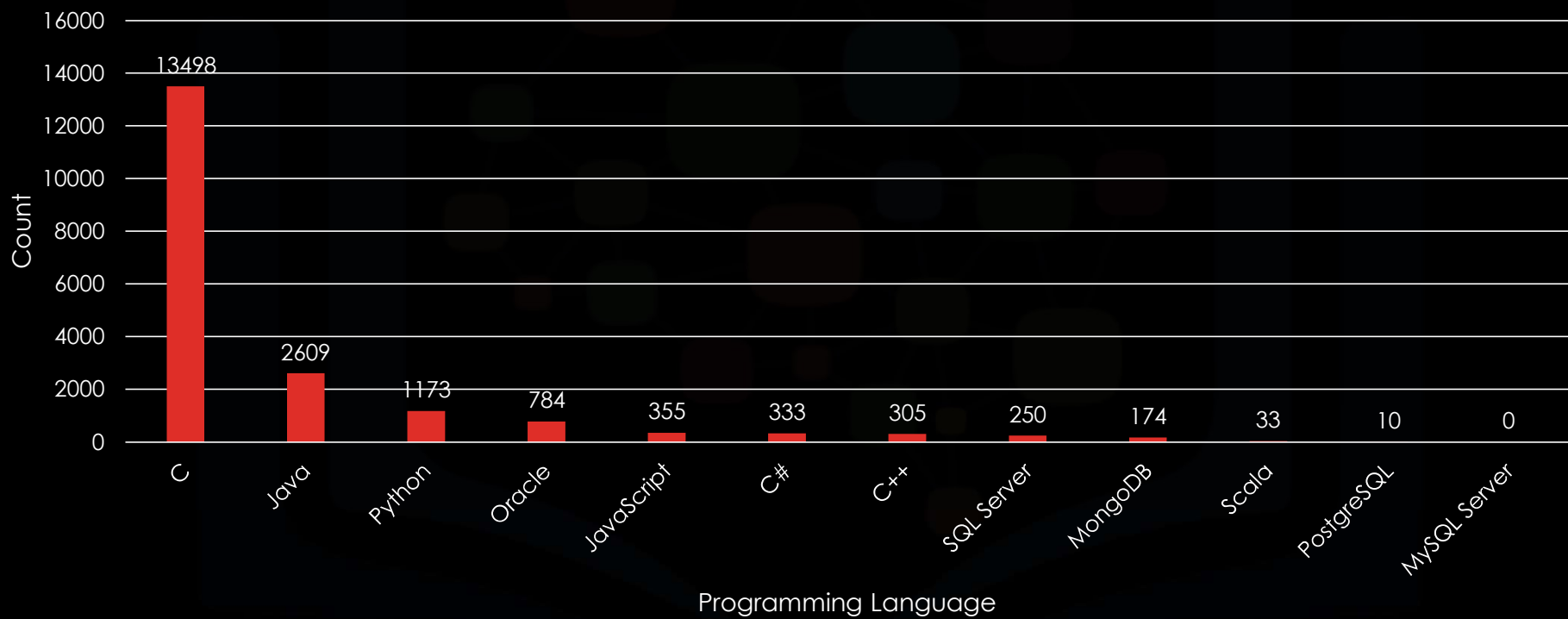


GITHUB JOB POSTINGS

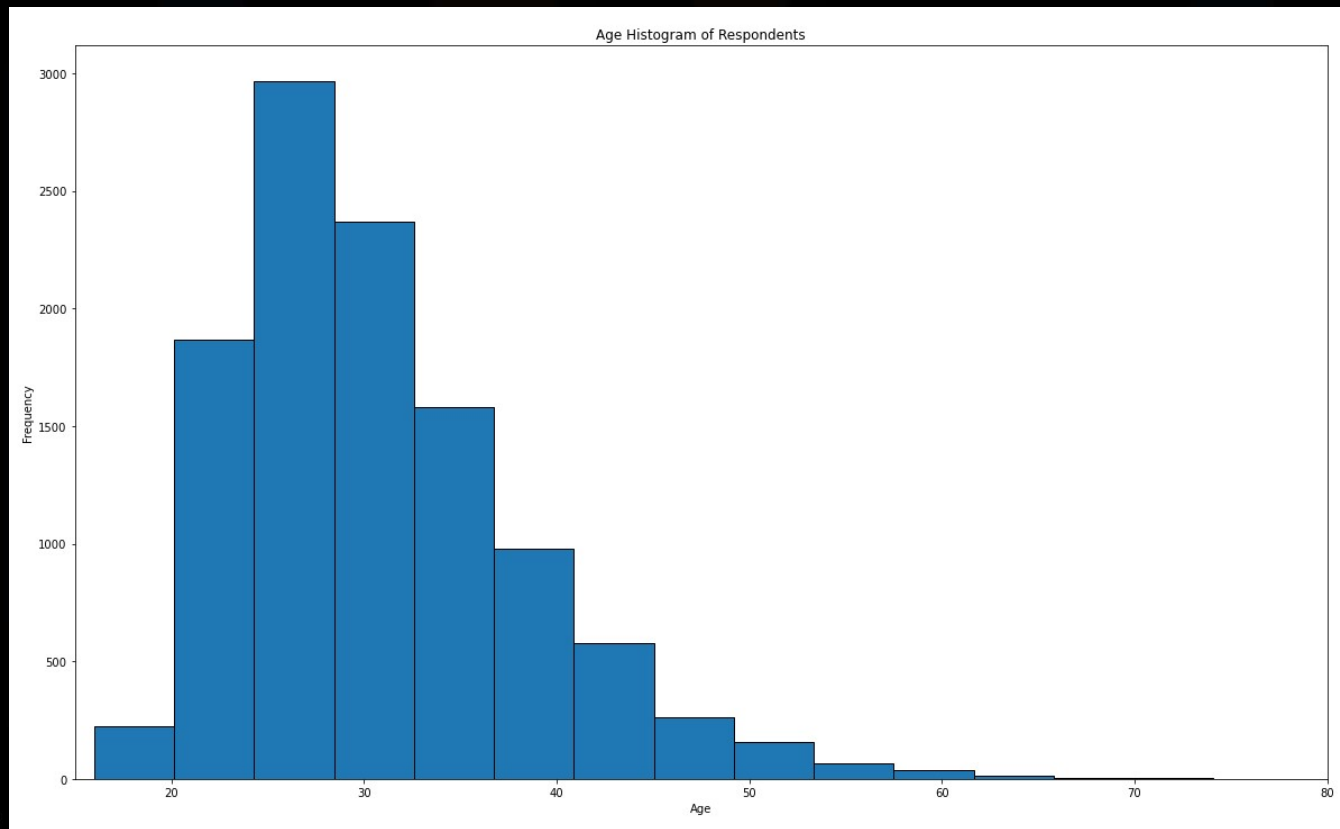
Quantity of Tech Jobs by Major City



POPULAR LANGUAGES



AGE OF RESPONDENTS



TYPES OF DEVELOPERS

