



Analysis of Dynamic Developer Role

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Outline



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

Executive Summary



- Context and goal of our analysis
- Methodology
 - Data Gathering
 - Data Analysis
 - Data Visualization
- Graphical representation of the data
- Discussion
- Conclusion

Introduction



- The survey data comes from Stack Overflow.
- Each respondent took a 20 minute survey on the professional skills they use, their professional aspirations, and their personal demographics.
- Nearly 90,000 participants
- Trends have implications for 2019 developers and the future of developing.

Methodology



- Sources: 2019 Stack Overflow Survey, Jobs API notebook. Programming Languages Salaries Data
- Data Wrangling
- Exploratory Data Analysis (EDA)
- Data Visualization
- Presentation

Results

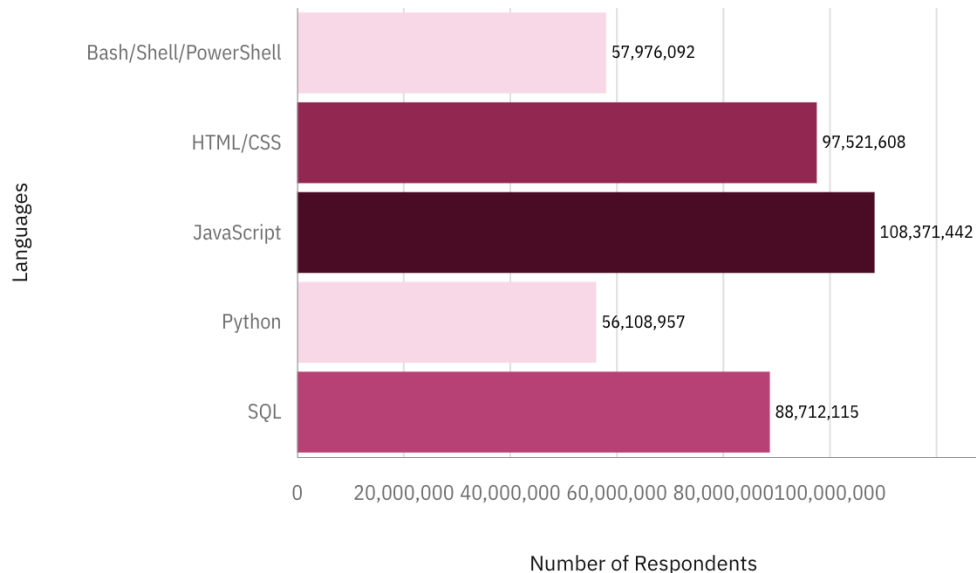
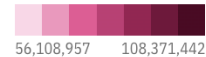


Programming Language Trends

Current Year

Top 5 Most Commonly Used Programming Languages

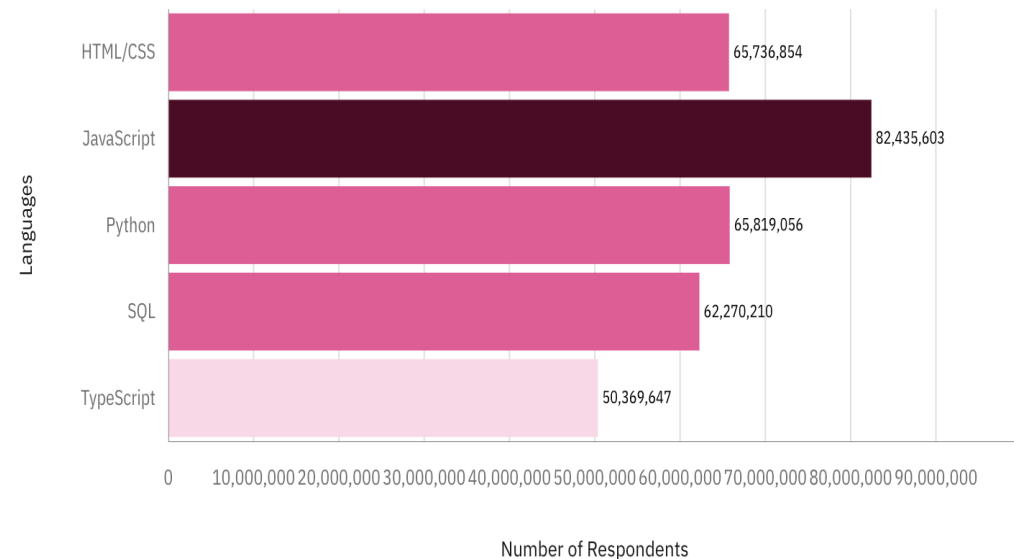
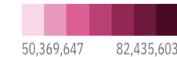
Respondent (Sum)



Next Year

Top 5 Most Desired Languages to Learn in the Future

Respondent (Sum)



Programming Language Trends - Findings & Implications

Findings

- JavaScript was the leading most-used language in 2019
- Respondents most desired to learn JavaScript in the next year
- Interest in TypeScript

Implications


- Could expect to see growth in JavaScript in the next year
- Could expect to see growth in TypeScript in the next year

Database Trends

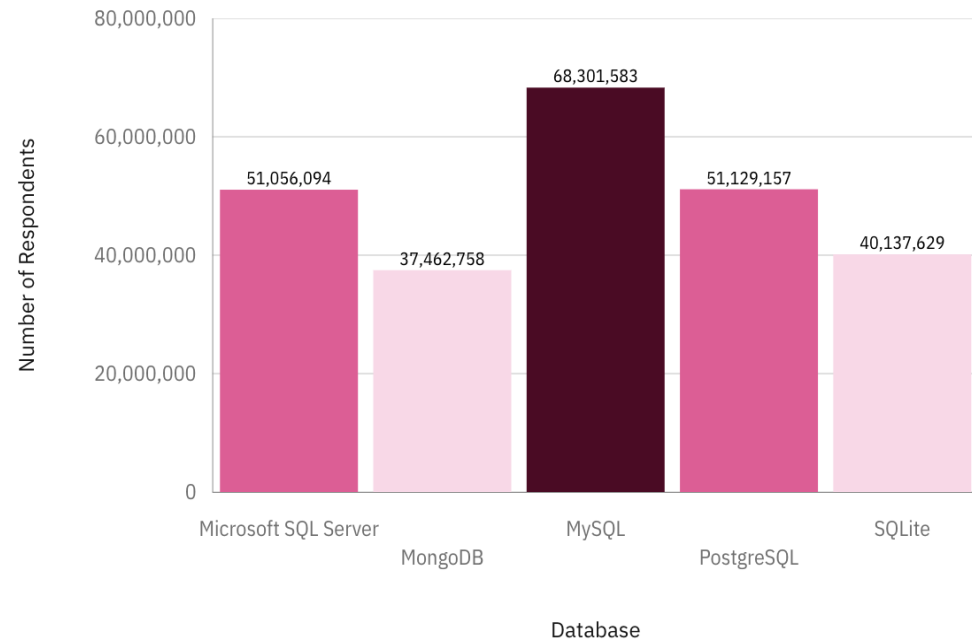
Current Year

Top 5 Most Commonly Used Databases

Respondent (Sum)




37,462,758 68,301,583



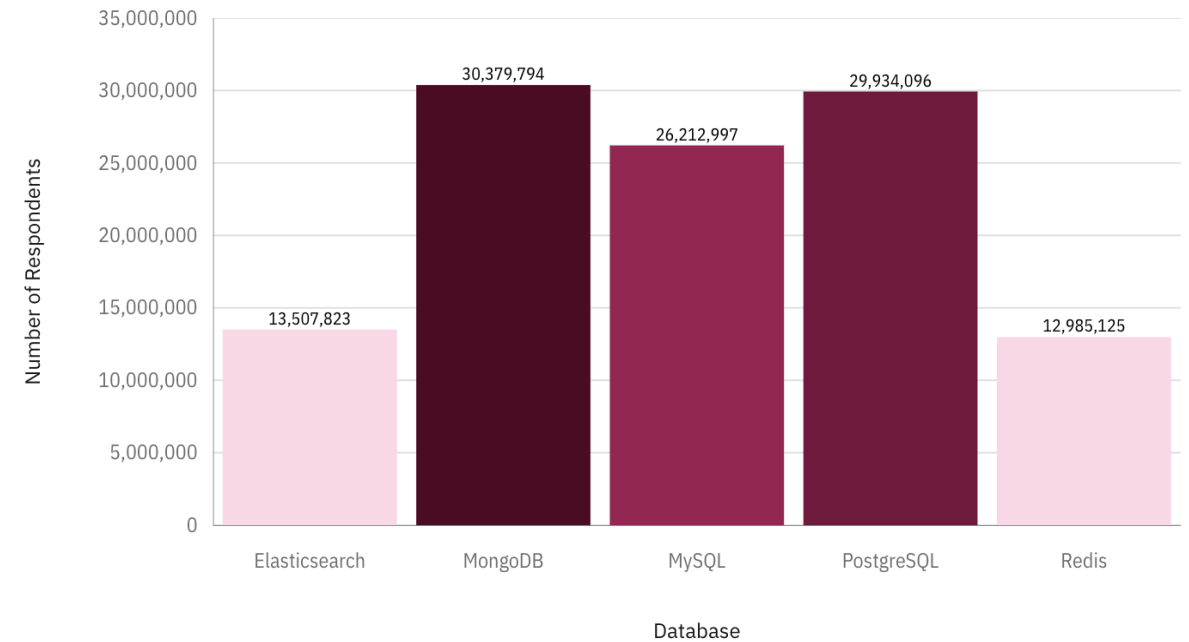
Next Year

Top 5 Most Desired Databases to Learn in the Future

Respondent (Sum)



12,985,125 30,379,794



Database Trends - Findings & Implications

Findings

- MySQL is most commonly used by respondents
- Strong interest in learning MongoDB and PostgreSQL

Implications

- Expected growth in PostgreSQL and MongoDB
- Expect MicrosoftSql Server and Sqlite to decline in popularity among the respondents

Dashboard

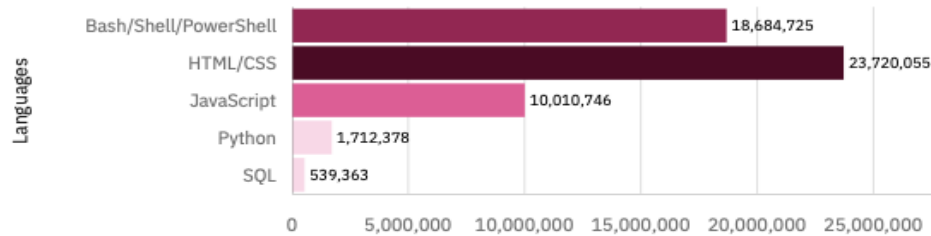


<https://github.com/noraeckert/Developer-Skills-Aspirations-and-Demographics-Dashboard/blob/main/New%20dashboard2.pdf>

Current Tech Insights

Top 5 Most Commonly Used Programming Languages

Respondent (Sum)



Number of Respondents

Platforms Developers Commonly Use

Respondent (Sum)

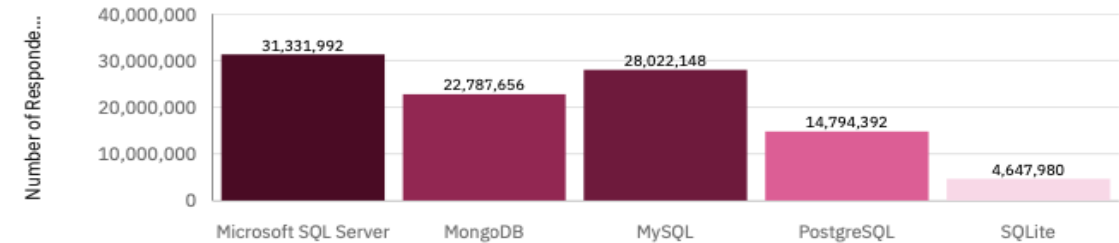
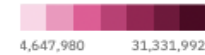


Respondent (Sum)



Top 5 Most Commonly Used Databases

Respondent (Sum)

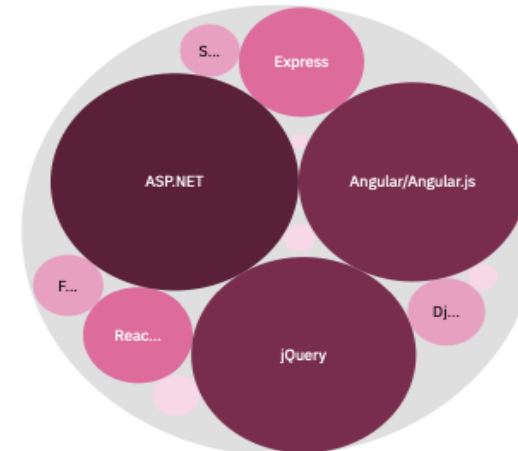
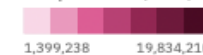


WebFrames Most Commonly Used

Respondent (Sum)

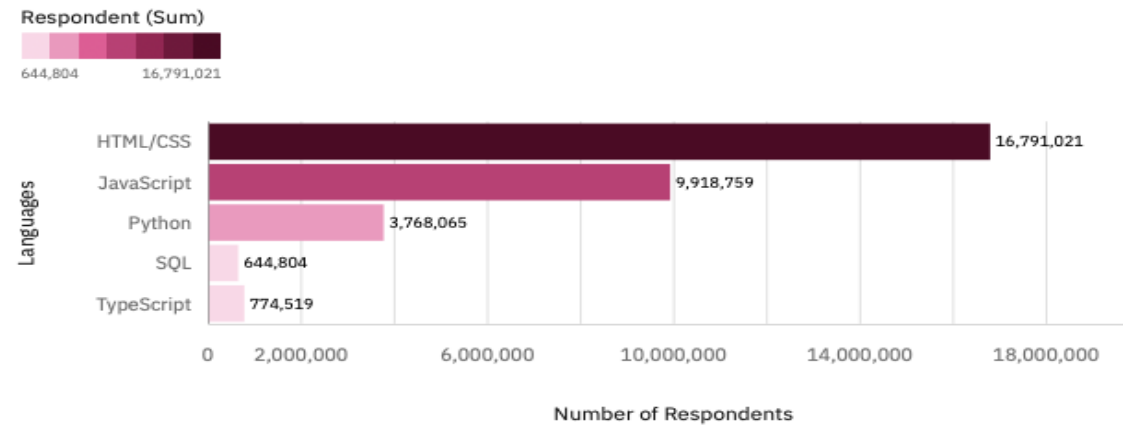


Respondent (Sum)

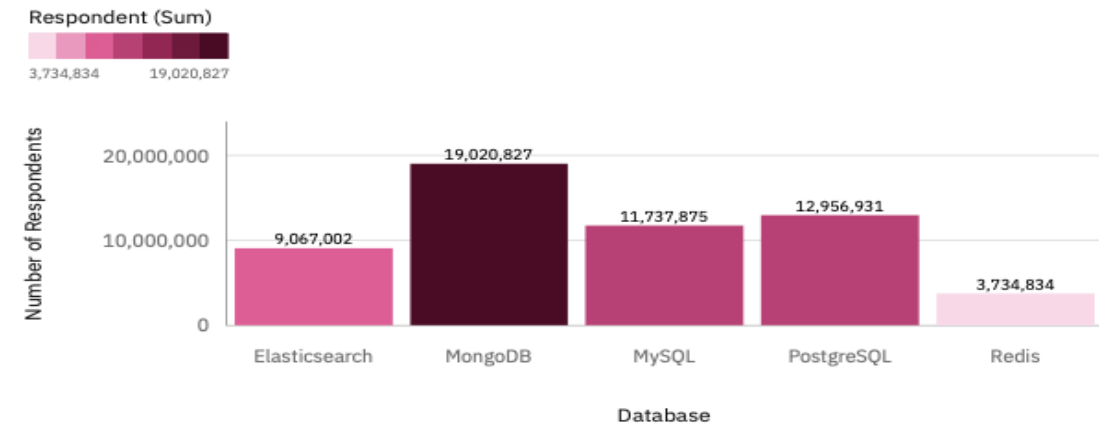


Future Tech Insights

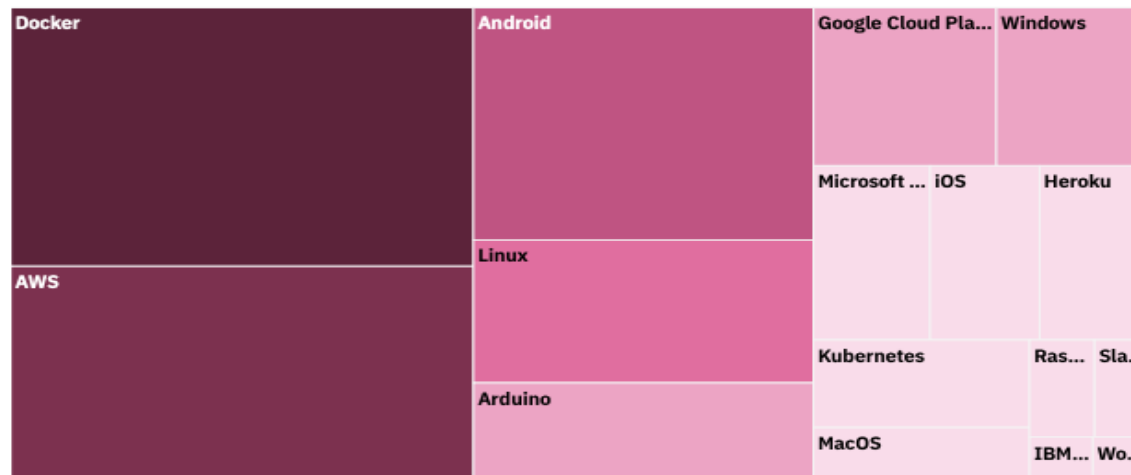
Top 5 Most Desired Languages to Learn in the Future



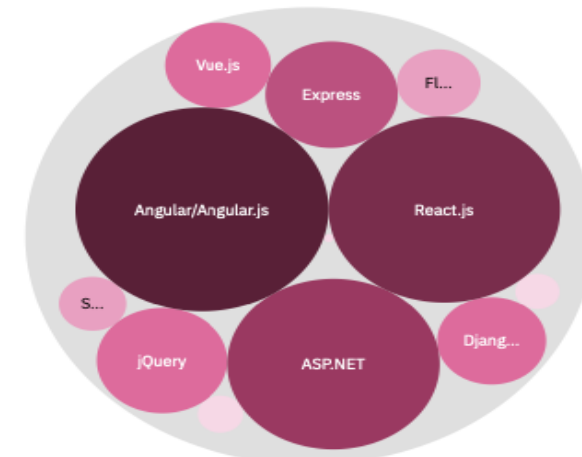
Top 5 Most Desired Databases to Learn in the Future



Most Desired Platforms to Learn in the Future



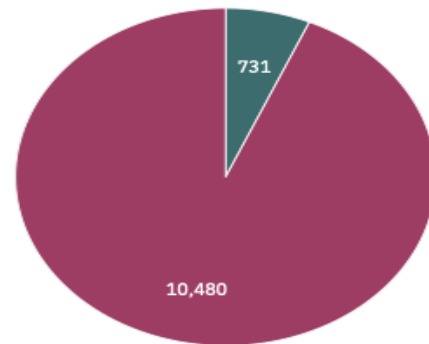
Top 10 Most Desired WebFrames to Learn in the Future



Demographics

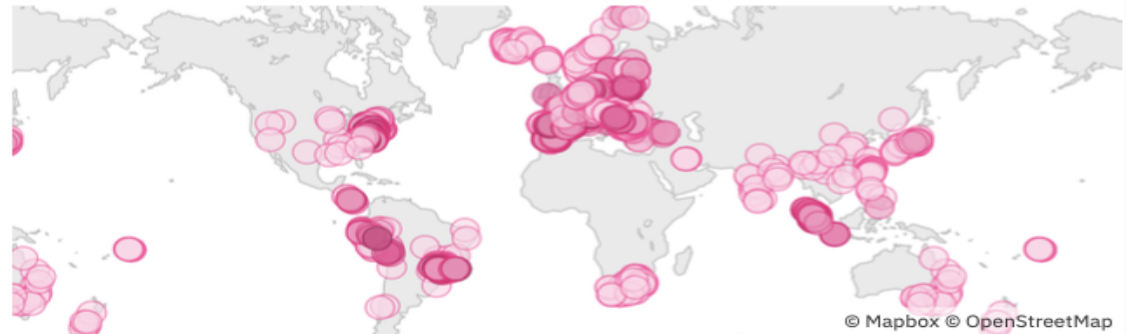
Respondent by Gender

Gender
● Woman ● Man

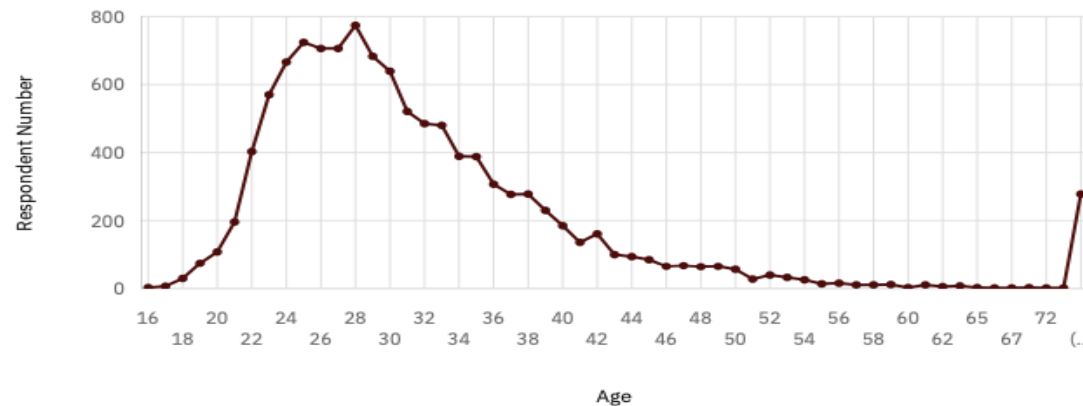


Respondent Locations

Respondent (Sum)
9 99,128



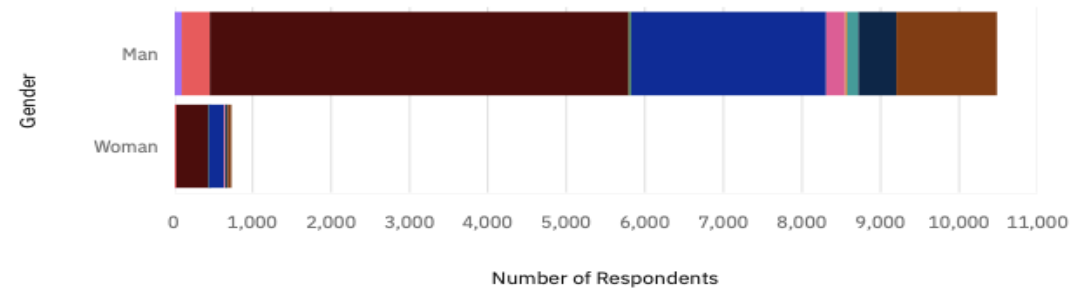
Respondent by Age



Respondent by Gender colored by EdLevel

EdLevel

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



Discussion



- Future technology trends look different than those of the present
- Professionals' need for upskilling
- Demographic data reveals little diversity amongst developers on the basis of gender, education level and age.

Overall Findings & Implications

Findings

- New technologies emerge frequently
- Many different technologies are currently used by tech professionals
- About 91% of the developers surveyed identify as men

Implications

- Professionals must adapt to changes
- Raises the question of whether standardization of practice is necessary
- Companies should strive to close the gaps in hiring

Conclusion

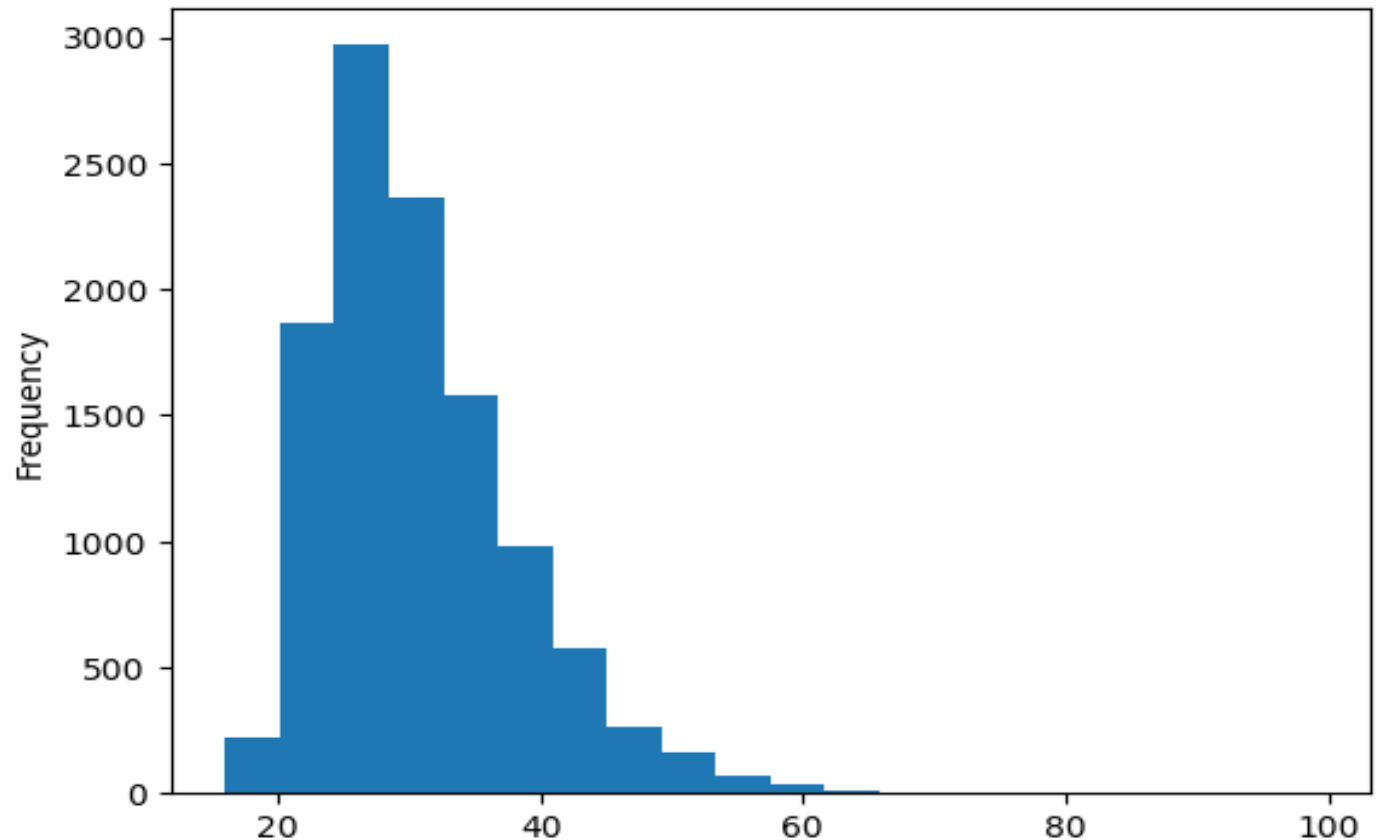


- Developer is a dynamic role; many new tools emerged with the expectation of their growth post-2019
- Gender discrepancy in the developer profession
- Consider taking action in the hiring process to resolve this discrepancy

Appendix

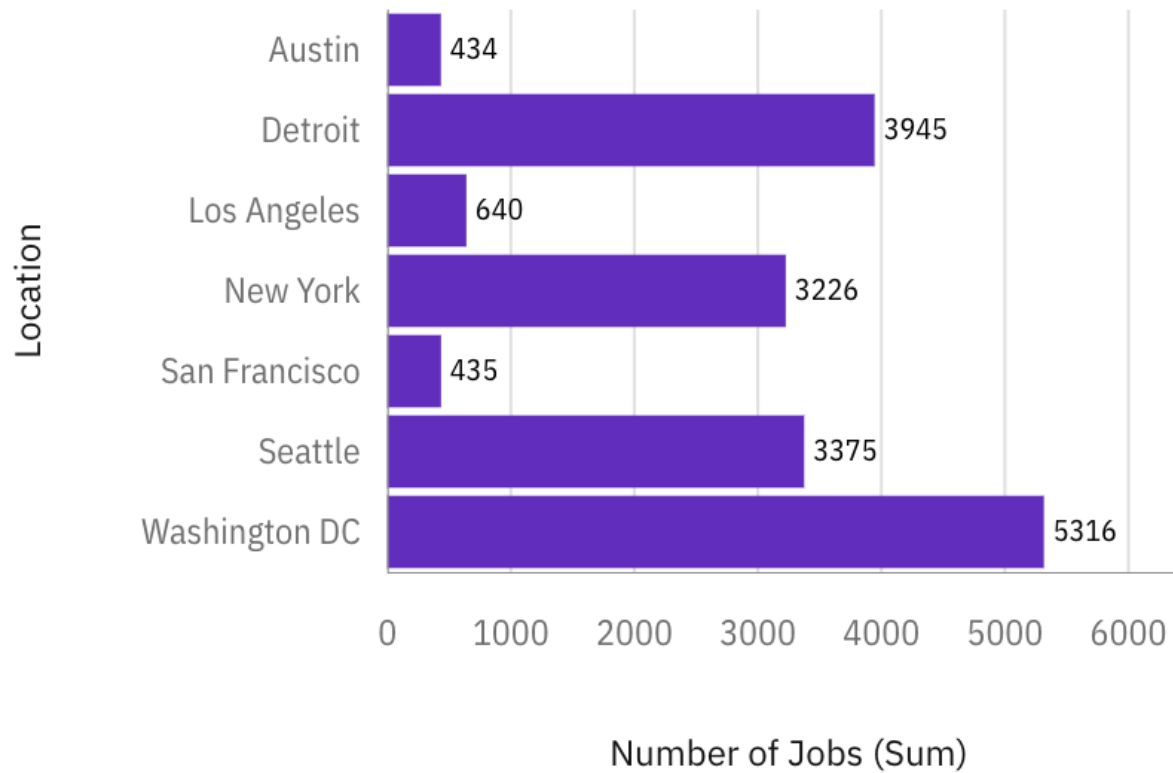
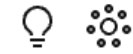


Histogram: Age Distribution of Respondents



Job Postings

Number of Jobs by Location



Popular Languages

