Stackoverflow Developer Survery 2019 Data Analysis

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OUTLINE

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- Discussion
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EXECUTIVE SUMMARY

- Top programming languages in demand: JavaScript, HTML/CSS, SQL, Bash/Shell/PowerShell, Python.

- Top database skills in demand: MySQL, Microsoft SQL Server, PostgreSQL, SQLite, MongoDB.

- Popular platforms: Windows, Linux, Docker, AWS, Slack.

- Popular Web Frameworks: jQuery, Angular/Angular.js, React.js, ASP.NET, Express.

- Future Technology Trend: Python takes the third row, followed by SQL and TypeScript.

INTRODUCTION

- Identify the trends in programming laguages preferences (Supply side) with job market (Demand side)

- How was the research done:
  - Using data gathered from Stackoverflow Survey 2019
  - Finding which are the most popular languages & technologies right now
  - Finding trends of technologies are demanded by learning what happens in the job posts
  - Finding trends of technologies that interest the developers to work with next year
  - Learning how to match better the needs of the job market to those of the developers

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METHODOLOGY

- Data based on Stack Overflow survey from January to February 2019, with 88,883 developers.

- Familiarization through IBM labs on Coursera covering data collection, wrangling, and visualization.

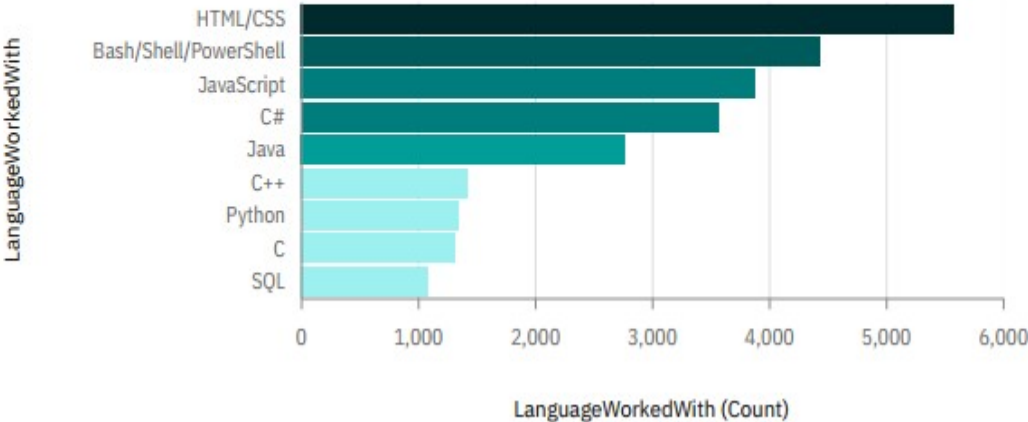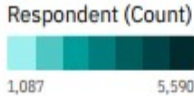- Data analysis and visualization conducted via IBM Cognos Analytics.

RESULTS

- Python overtakes Java, becoming the 5th most preferred language with significant growth.
- JavaScript remains the most used programming language.
- jQuery is the most widely used web framework, with React.js surpassing Angular.
- Globally, men represent about 90% of respondents, with higher female representation among students.
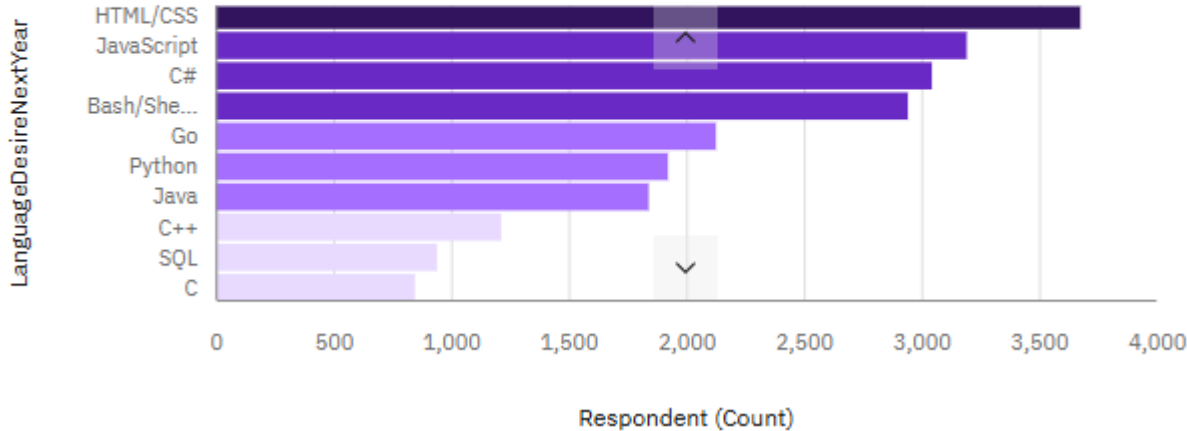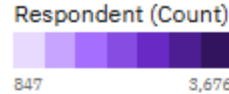
PROGRAMMING LANGUAGE TRENDS

Current Year

Next Year

Top 10 Programming Languages Used

Respondent (Count)
1,087 — 5,590

LanguageWorkedWith:
HTML/CSS, Bash/Shell/PowerShell, JavaScript, C#, Java, C++, Python, C, SQL

LanguageWorkedWith (Count)

Top 10 LanguageDesired by Respondents Next Year

Respondent (Count)
847 — 3,676

LanguageDesireNextYear:
HTML/CSS, JavaScript, C#, Bash/She..., Go, Python, Java, C++, SQL, C

Respondent (Count)

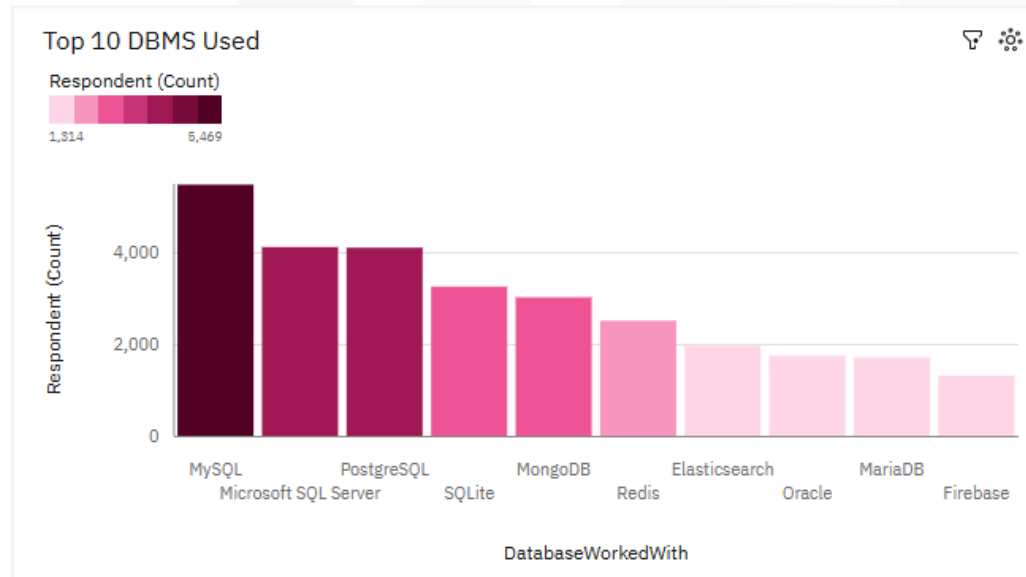# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- HTML/CSS is the most used programming languages.

- Javascript & C# goes up one position from 3rd in the last 4th positions respectively last year to the 2nd and 3rd most desired language next year, respectively.

- Scripting languages drop from 2nd best languages to the 4th most desired languages next year.

Implications

- HTML/CSS and Javascript keep their top positions since there are essential mostly in building clients frontends.

- The drop in interest of scripting languages may to fullstack languages such as Javascript & C# may indicate the need for web applications went up thus steering the interest in the job market towards the most popular fullstack languages.

- The rise in interest towards c# may indicate an increase in demand for more professional personnel in the governmental market where c# is more popular.
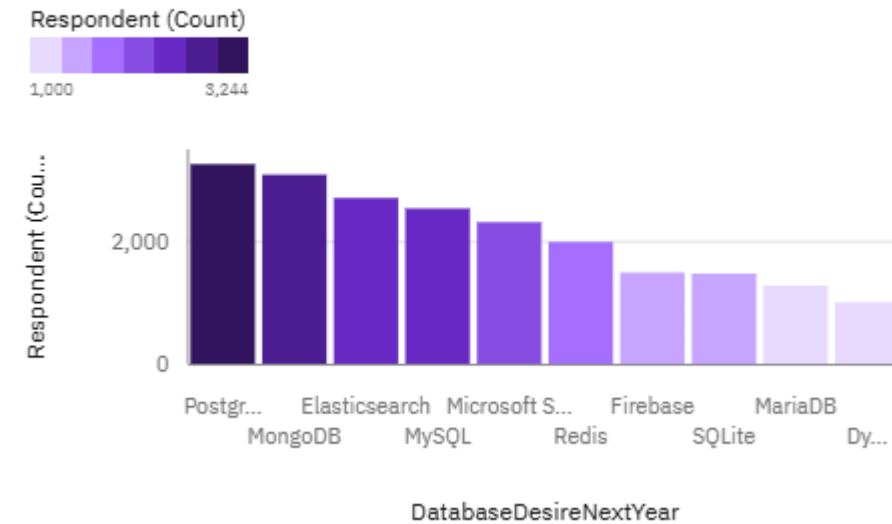
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DATABASE TRENDS

Current Year

Next Year

Top 10 DBMS Used

Respondent (Count)
1,314 — 6,469

Top 10 Desired DBMS Respondents Wish to Work With Next Year

Respondent (Count)
1,000 — 3,244

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DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL leads as the most used DBMS, followed by Microsoft SQL Server and PostgreSQL.

- Sqlite ranks as the top SQL database.

Implications

- A strong interest in NoSQL and cloud databases may indicate an increasing need in scalability and flexibility.

- Postgres has the most interest for SQL database next year may have happened since it didn't become proprietary like MySQL which was mostly used last year by the survey's respondents.

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DASHBOARD

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Currnet Technology Usage Dashboard

Future Technlogy Trend Dashboard

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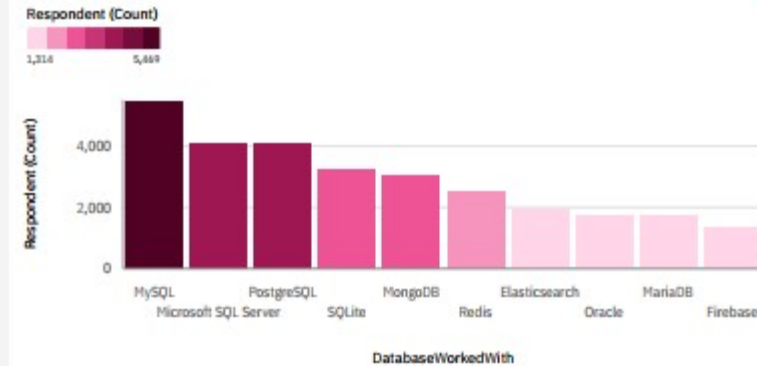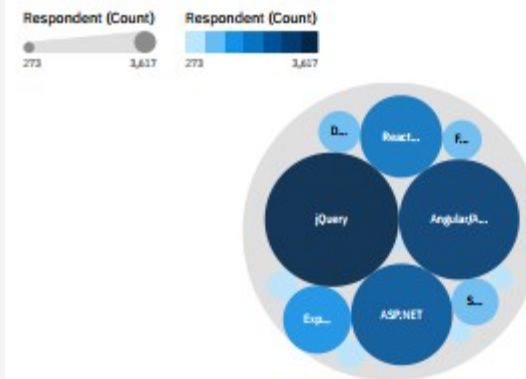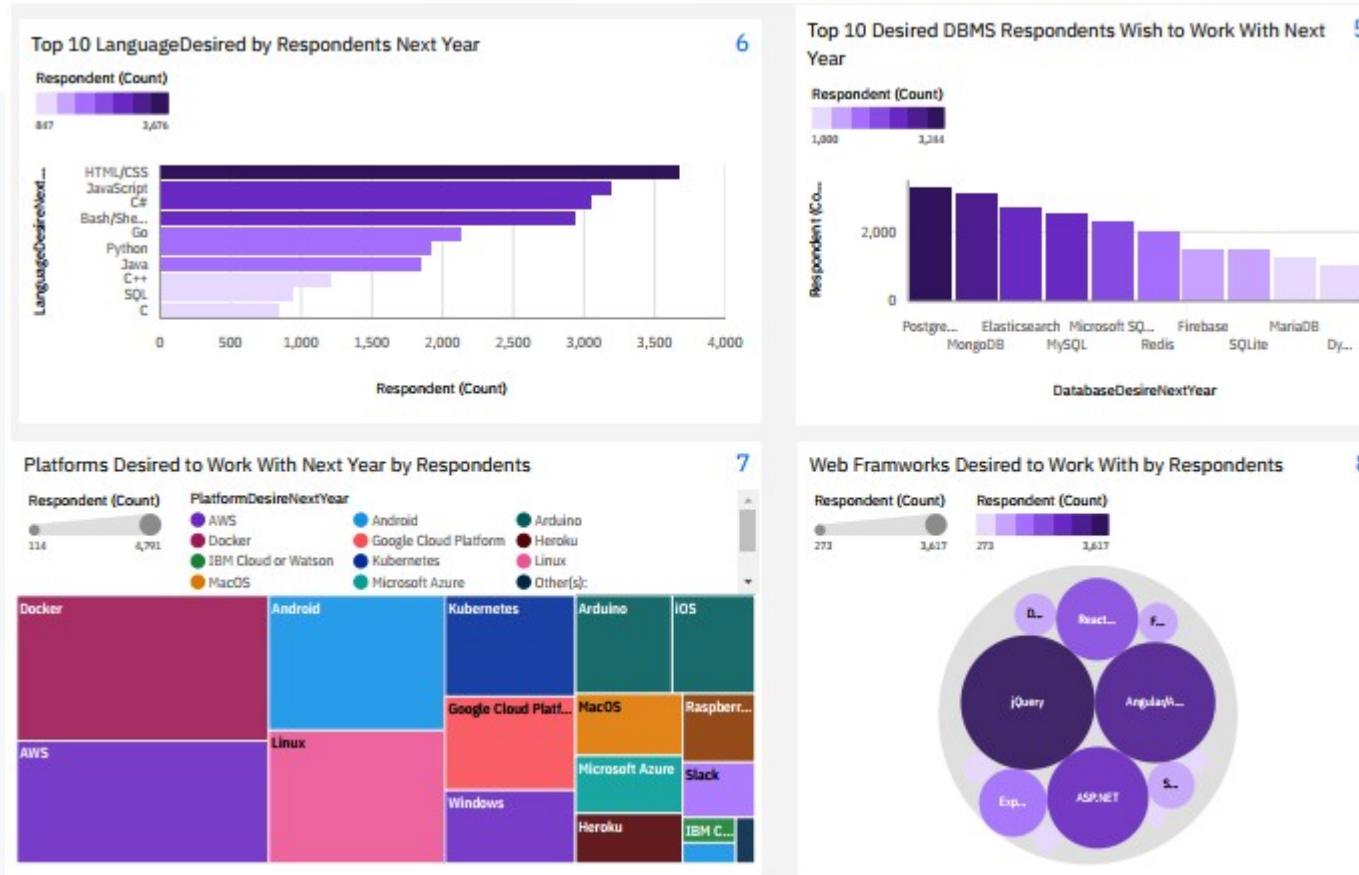
Demographics Dashboard
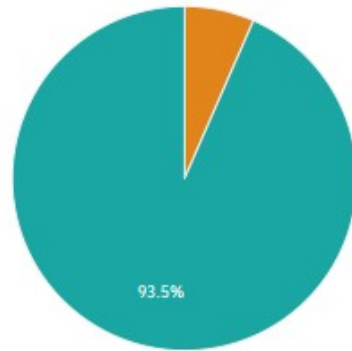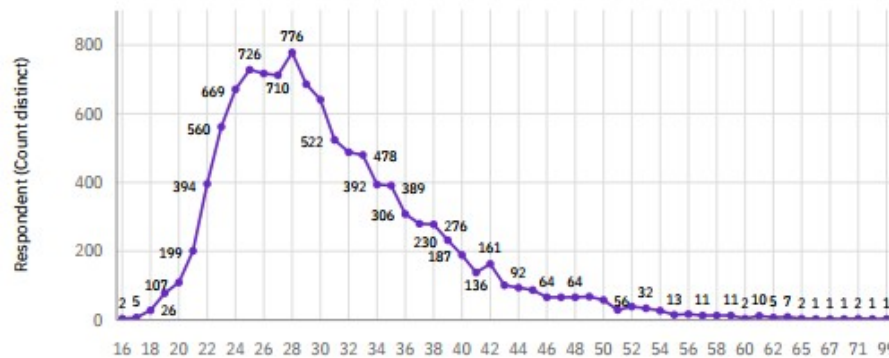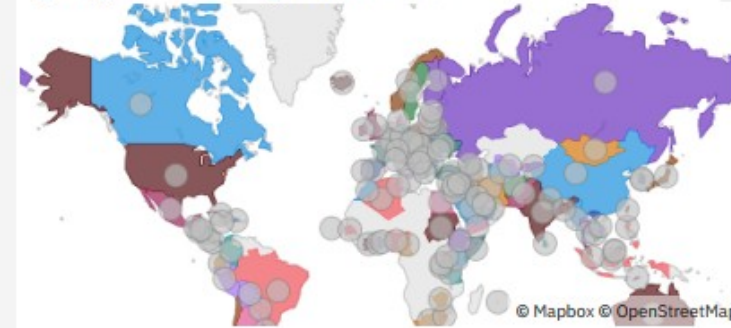
DISCUSSION

- The usage of docker alongside web technologies as HTML/CSS and Javascript is critical in today's web development in the cloud.

- Even though one may think the web technologies changes rapidly and are extensively deployed in new systems developers want to create, legacy systems such as jQuery and Angular will still dominate the market.

- We should pay attention most respondents are men between ages 22-40 and with academic degrees, so this is a caveat of the survey which may make the results more biased and more prone to job market changes in the demographic variable of gender.

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OVERALL FINDINGS & IMPLICATIONS

Findings

- Python's popularity has overtaken Java, positioning it as a top 5 language

- Jquery remains the most used web, while react.js, is gaining popularity

- Databases like MySQL and PostreSQL continue to lead, but NoSQL databases and cloud databases show strong growth in interest.

Implications

- The growing demand for Python suggests it's crucial for data-related and back-end roles.

- Companies may consider adapting React.js for front-end development to meet the preferences of modern developers.

- Interest in NoSQL DBMS highlights the need for scalable, flexible solutions as cloud technologies advance.

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CONCLUSION

- The world of programming pushes for more implementation of systems based on javacript & HTML/CSS.

- Building new systems which are based on the above systems alongside nosql systems or cloud database systems seems like a reasonable decision for the upcoming year.

- The current survey suggests that if a company wants to improve their legacy systems and still keep its developers happy and up to date, they should bet on changing its database and/or move its system to a cloud based database.
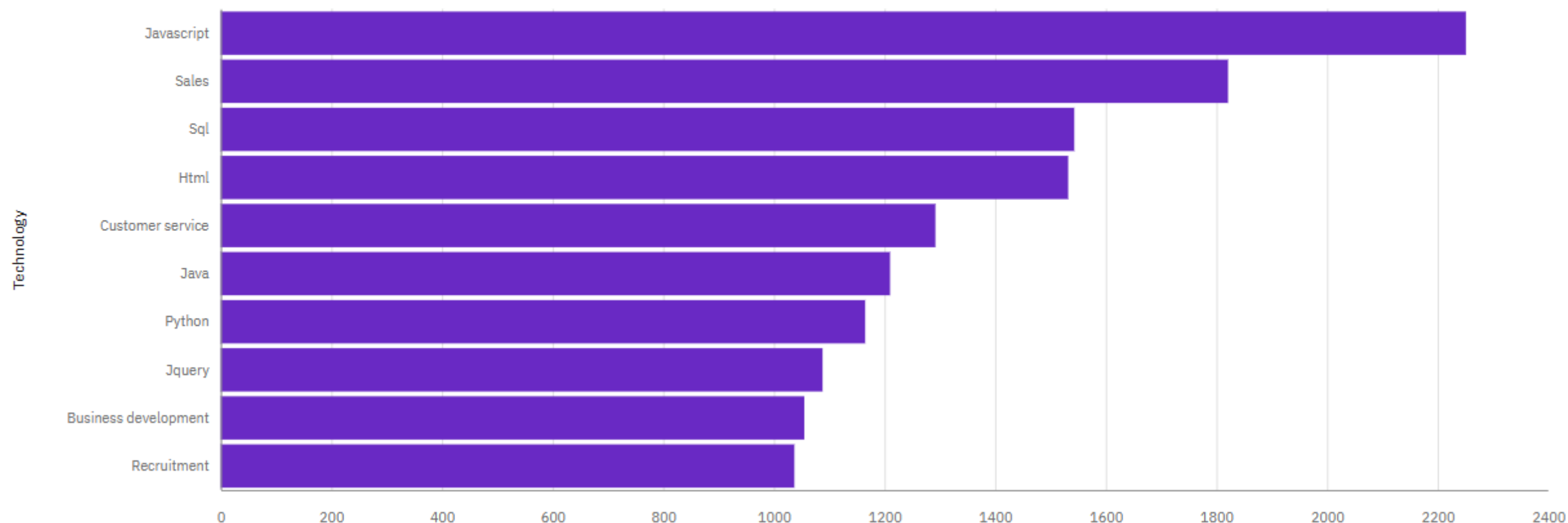
APPENDIX

- Job Postings By Technology
- Popular Languages

JOB POSTINGS BY TECHNOLOGY

POPULAR PROGRAMMING LANGUAGES

Job Postings   Popular Languages

Average Annual Salary by Language colored by Average Annual Salary