StackoverFlow Developer Survey 2019 Data Analysis

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EXECUTIVE SUMMARY

1.   Popular Programming Languages and Databases For Current vs. Future

2.   Gender Gaps in Software Development Field

3.   Technologies Gaps in Countries

INTRODUCTION

About:

Data analysis on Stack Overflow Developer Survey about the trends in developer's favorite technologies varied by countries and genders

Purpose:

1. What are the top programming languages in demand?

2. What are the top database skills in demand?

3. What are the popular IDEs?

Target Audience:

Software Developers, Software Engineering Manager/Lead, HR Managers

METHODOLOGY

1. ## Sources for Data Collection

   - The 2019 Stack Overflow Developer Survey Results
   - Github Job Postings
   - Annual Salary for Programming Languages

2. ## Data Cleaning

3. ## Data Mining and Analysis
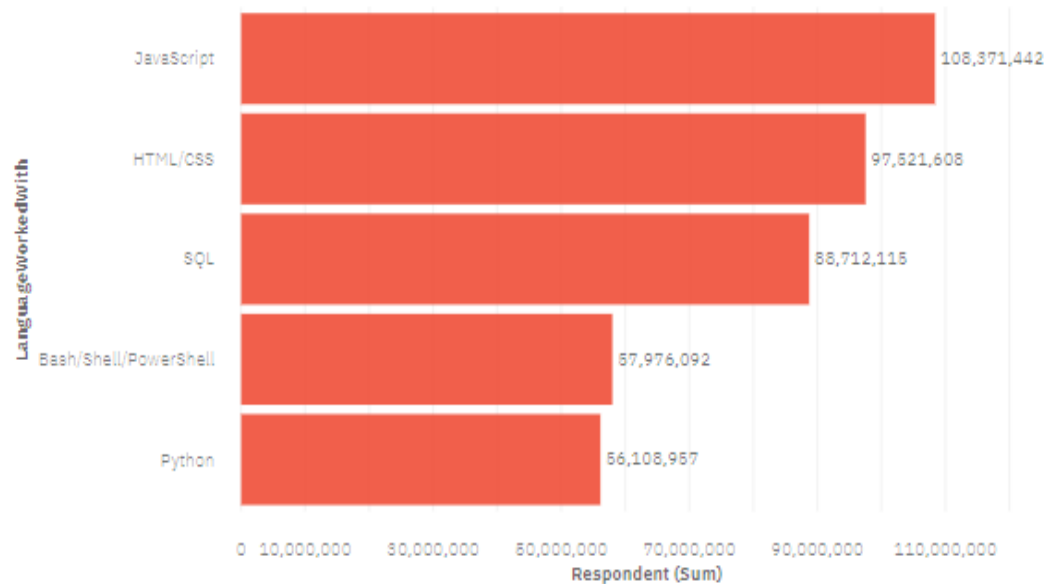
4. ## Data Visualization

5. ## Presentation

RESULTS

- Top Programming Languages currently in use are Javascript, HTML/CSS, SQL, PowerShell and Python.
- Top Programming Languages people desire to learn next year are Javascript, Python, HTML/CSS, SQL and Typescript.
- Top Databases currently in use are MySQL, PostgreSQL, MicrosoftSQLServer, SQLite and MongoDB.
- Top Databases currently people desire to learn next year are PostgreSQL, MongoDB, Radia, MySQL and Elasticsearch.
- Top platforms currently in use and people desire to learn are Windows and Linux.
- Similarly, top Webframeworks currently in use and are desired to learn are jQuery, React.js and Angular.js.
- More than 80% of tech professionals are men and there exists a huge gender disparity in tech industry.
- USA has the most number of skilled professionals in Tech field.
- Majority of Tech profressionals atleast have educational level of Bachelors degree or above.
- Tech professionals are mostly young with a median age of 29 Years.
- Median annual compensation of Tech professionals globally is USD 57745.
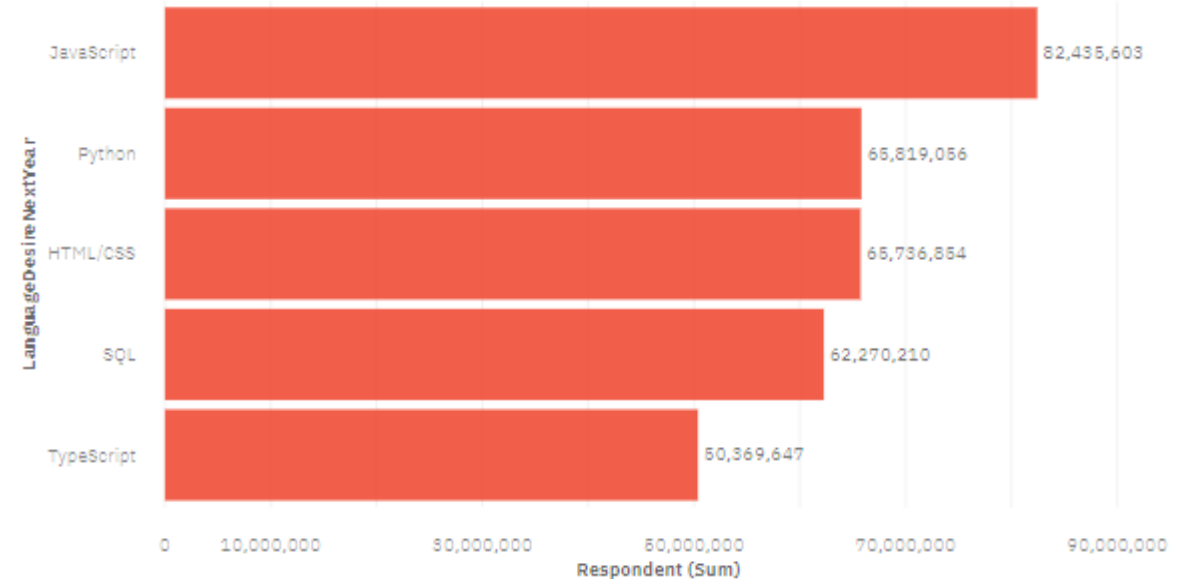
PROGRAMMING LANGUAGE TRENDS

Current Year

Next Year

Top Programming Languages used

Language Worked With	Respondent (Sum)
JavaScript	108,371,442
HTML/CSS	97,521,608
SQL	88,712,115
Bash/Shell/PowerShell	67,976,092
Python	56,108,957

Top Languages desired to learn Next Year

Language Desire Next Year	Respondent (Sum)
JavaScript	82,435,603
Python	65,819,056
HTML/CSS	65,736,854
SQL	62,270,210
TypeScript	50,369,647

PROGRAMMING LANGUAGE TRENDS – FINDINGS & IMPLICATIONS

Findings

- C#, HTML/CSS and Javascript are the top 3 languages that software developers have worked with.
- Python becomes one of the top preferred languages to be mastered in future.
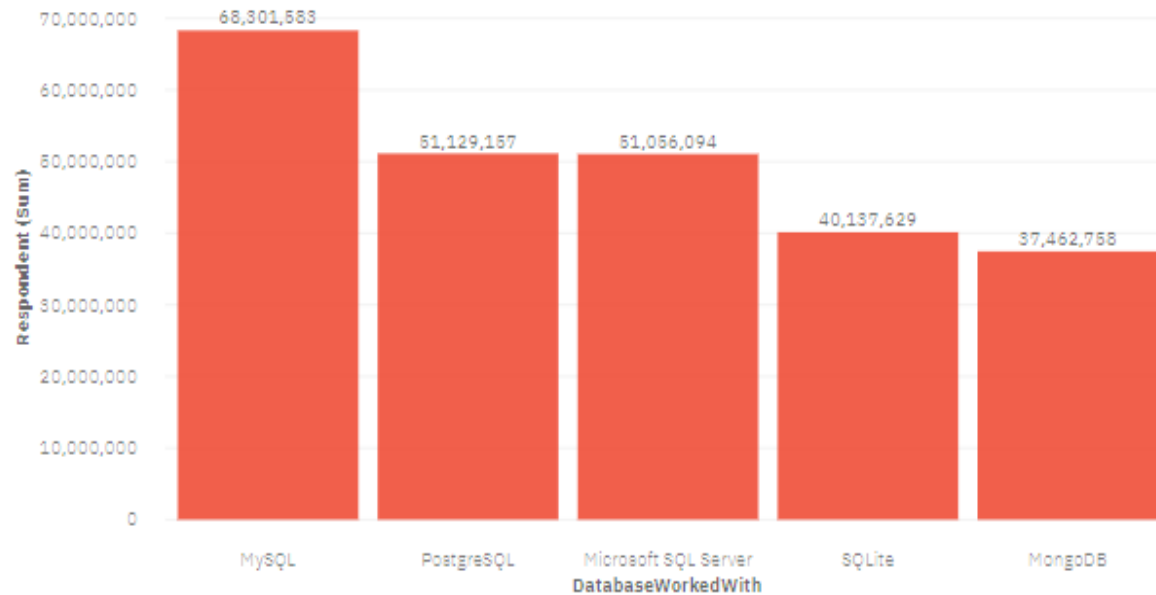- Knowledge in SQL still high in demand for future.

Implications

- Website development is still high in demand for future.
- Python is the fastest-growing major programming language for Artificial intelligence / Machine learning fields.
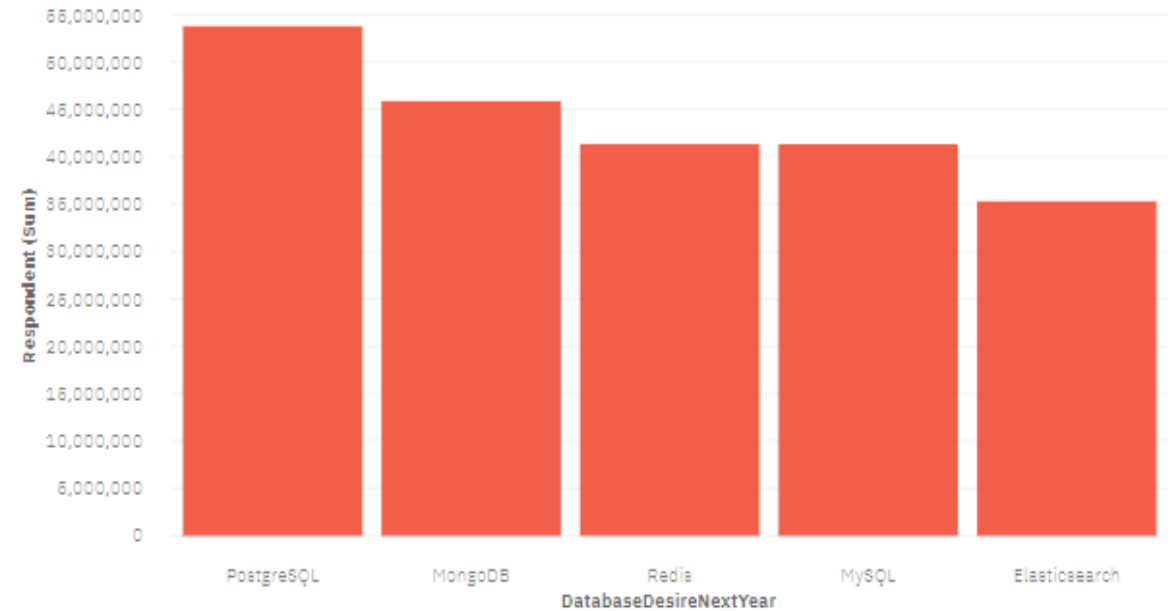- Data analytics / big data fields would require expertise in SQL.

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DATABASE TRENDS

Current Year

Next Year

Top Databases Used

Top Databases desired to learn Next Year

DATABASE TRENDS – FINDINGS & IMPLICATIONS

Findings

- PostgreSQL and Redis started rising this year.

- Microsoft SQL Server is edged out from the list.

- MongoDB is another upcoming favorite database.

Implications

- Open source databases are preferable as they are highly efficient, especially with large databases.

- PostgreSQL is preferred by companies compared to Microsoft SQL Server because it is a free open source object-relational database system.

- MongoDB is rising as it is a NoSQL database which store big data of all kinds (structured/unstructured).

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DASHBOARD

Dashboard link:

https://dataplatform.cloud.ibm.com/dashboards/4e16259b-c517-4972-a6cf-a59b97b80a20/view/4c03dc20348908e047cbc0e4079d24507533210bb4bb855588857b4909357597f0681796c827435b8e440630a6ea1a58c0

DASHBOARD TAB 1

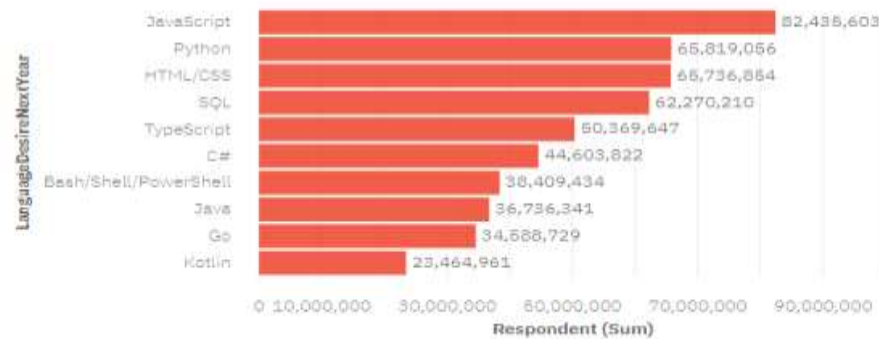## Current Technology Used

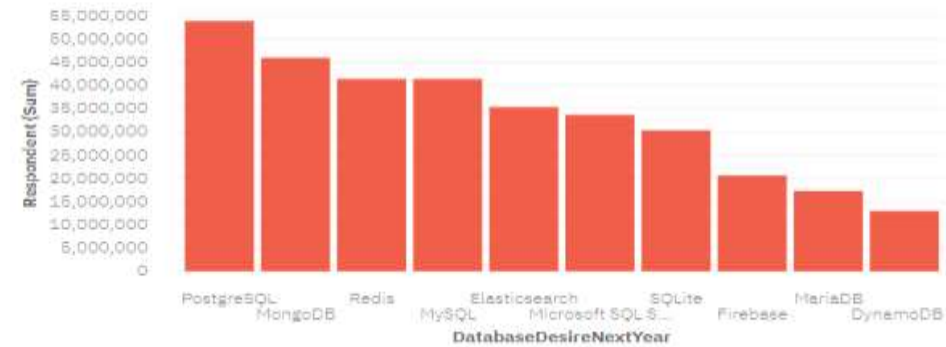Current Technology Usage   Future Technology Trend   Demographics   ⊕
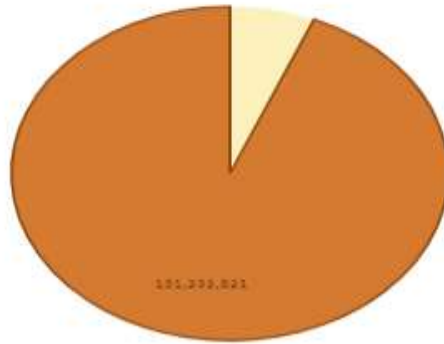
Top Programming Languages used

LanguageWorkedWith	Respondent (Sum)
JavaScript	108,371,442
HTML/CSS	97,521,608
SQL	88,712,115
Bash/Shell/PowerShell	57,976,092
Python	56,108,957
Java	55,836,723
C#	53,376,993
TypeScript	40,230,558
PHP	36,438,296
C++	24,456,246

Top Databases Used

Respondent (Sum)

- MySQL — 68,301,583
- PostgreSQL — 51,129,157
- Microsoft SQL S... — 40,137,629
- SQLite — 31,557,370
- MongoDB — 24,154,705
- Redis — 21,247,003
- Elasticsearch — 16,227,799
- MariaDB
- Oracle
- Firebase

DatabaseWorkedWith

Top Platforms worked with

Respondent (Sum)

2,552,293   72,555,619

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

Top WebFrameWorks worked with

Respondent (Sum)

ASP.NET, jQuery, Angular/Angular, Vue, Express, React.js, Spring

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DASHBOARD TAB 2

Future Technology Trend

DASHBOARD TAB 3

Demographics
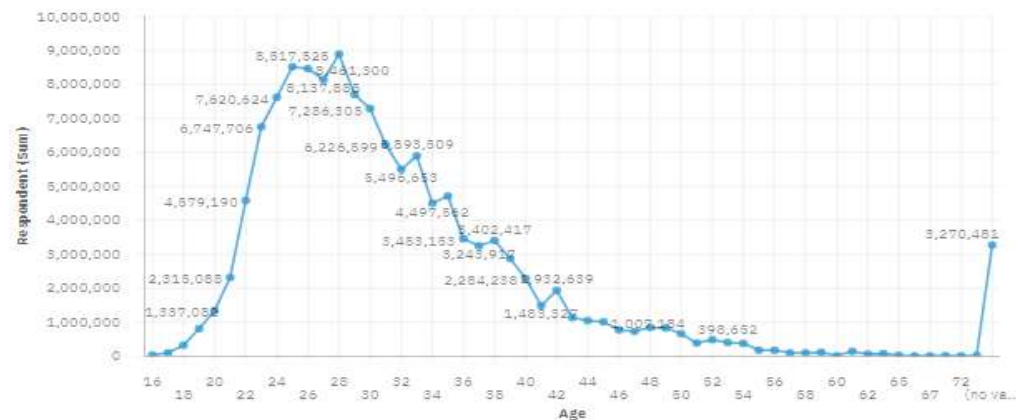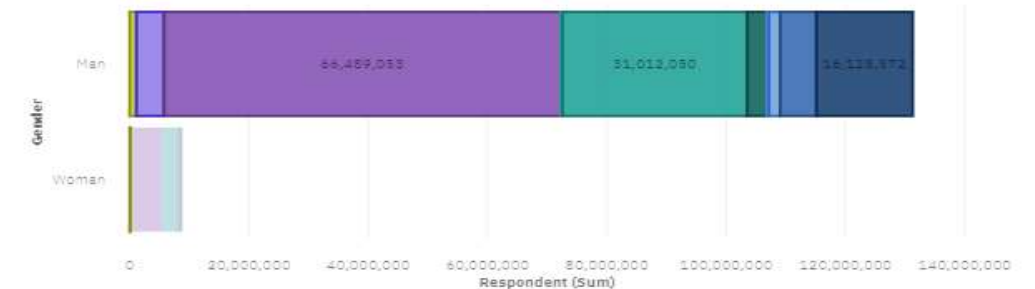
DISCUSSION

- The demand for the required skills in software technology for upcoming jobs.

- Increase women participation in software development fields.

- Provide trainings to the existing software developers who wish to learn new technologies.

- Enable more online courses for people who are interested to dive into software development or switch career.

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OVERALL FINDINGS & IMPLICATIONS

Findings

- Fast changing technologies introduced every year.

- Many software technology expertise are from countries such as USA, India and Germany.

- Huge Gender Disparity in the Technology field.

- Tech professionals are mostly young with a median age of 29 Years.

- Median annual compensation of Tech professionals globally is USD 57745.

Implications

- Companies need to adapt to new technologies rapidly.

- More online courses or learring need to be shared with other countries in order to create more software professionals.

- Technology determines the direction of the future, and women need equal opportunity to shape that direction. Companies must ensure that sexism is avoided in the hiring process and in the workplace, and to continue building great initiatives to bridge the gender divide all over the world.

- The current generation of children will need to be literate in technology in order to be competitive in the future job market as most jobs require the knowledge of basic IT skills.

CONCLUSION

1. Adapt to new technologies rapidly as new technologies come up every year.

2. Enable more online resources for learning purposes all over the world.

3. Empower women pursuing software engineering roles.
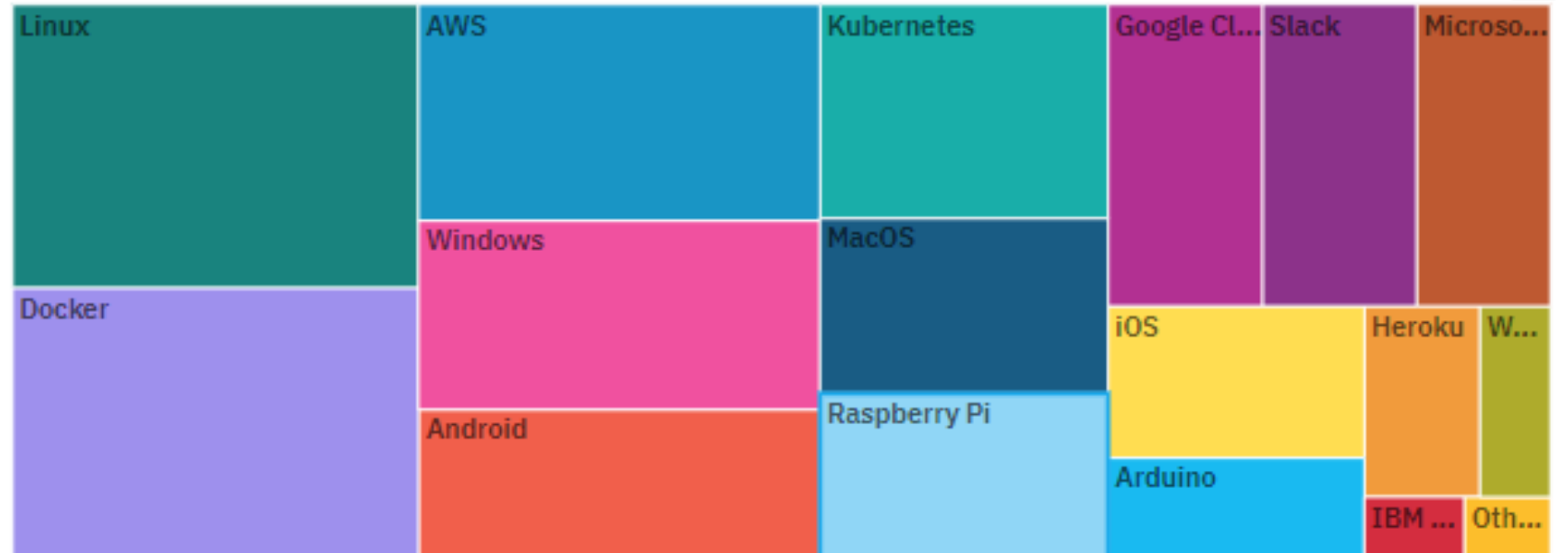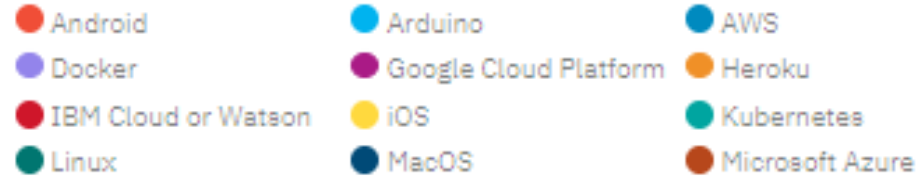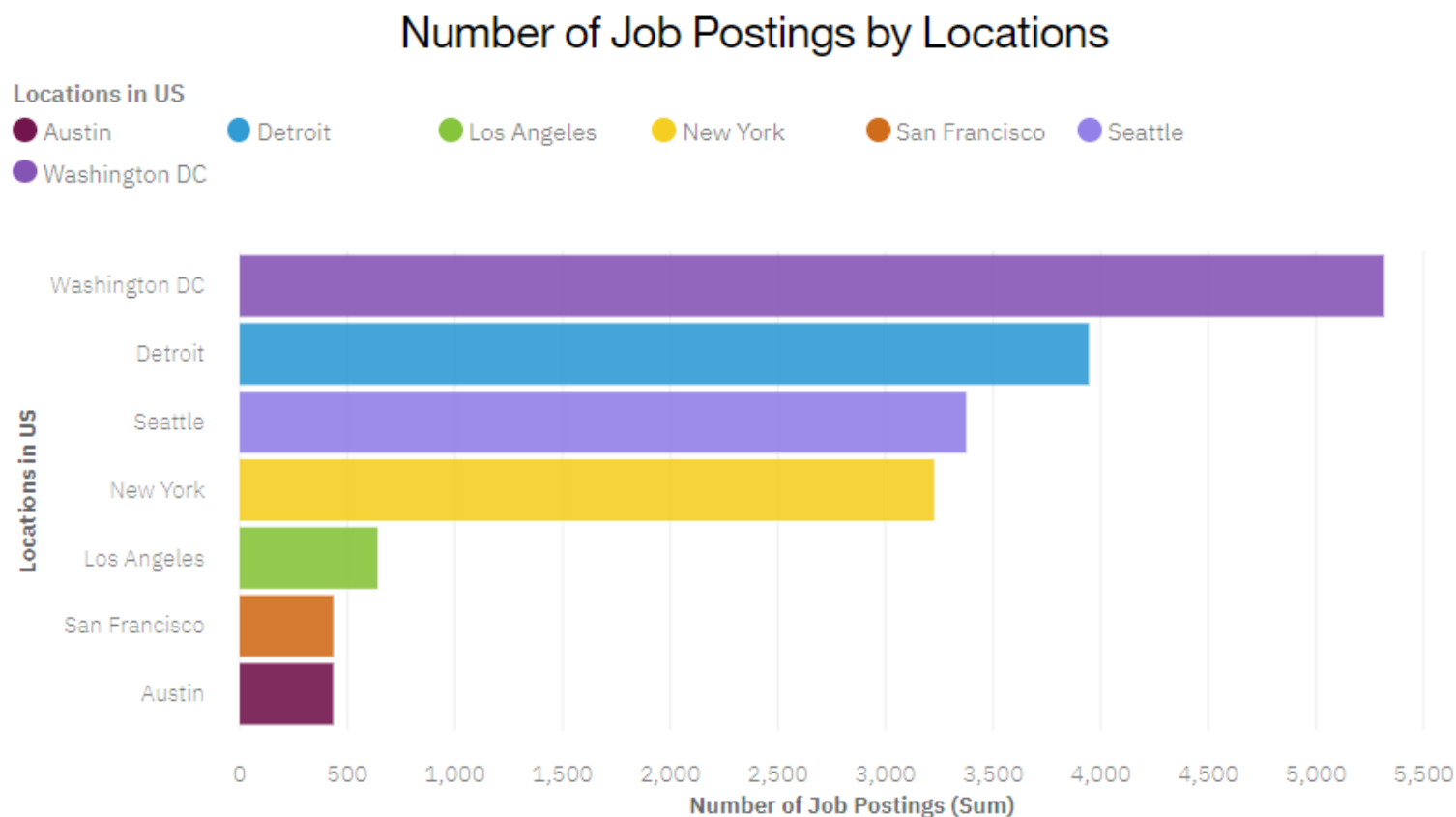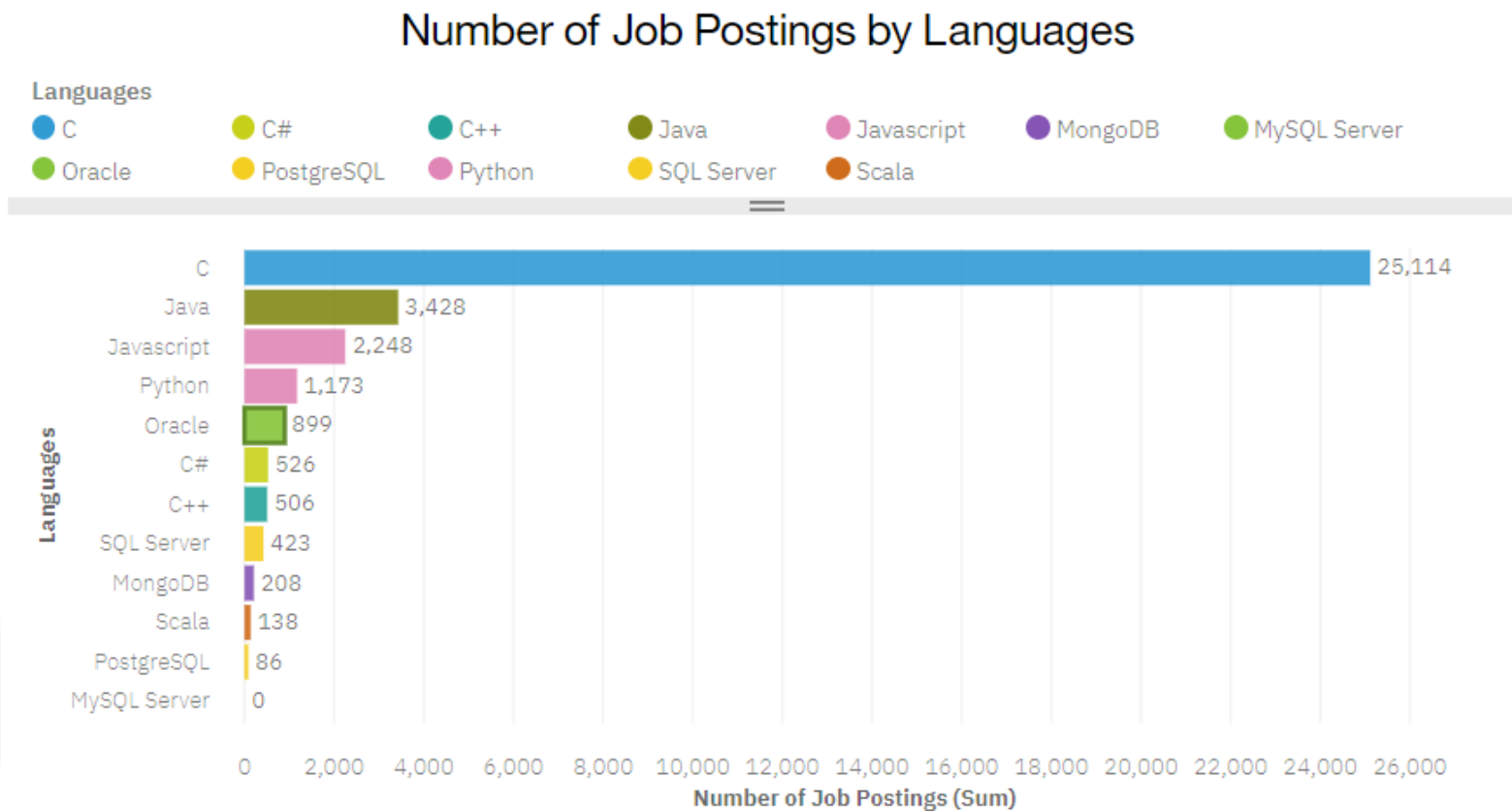
APPENDIX

JOB POSTINGS

Number of Job Postings by Locations

JOB POSTINGS

Number of Job Postings by Languages

POPULAR LANGUAGES

Average Annual Salary by Languages