



2019 Stack Overflow Developer Survey Results

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EXECUTIVE SUMMARY



- Current Technology Usage
 - Top 10 current Languages
 - Top 10 current Databases
 - Current Platforms
 - Top 10 current WebFrames
- Future Technology Trends
 - Top 10 future Languages
 - Top 10 future Databases
 - Future Platforms
 - Top 10 future WebFrames
- Respondent Demographics
 - Respondent classified by Gender
 - Respondent count for Countries
 - Respondent count by Age
 - Respondent count by Gender, classified by Formal Education Level

INTRODUCTION



- Stack Overflow's annual Developer Survey is the largest and most comprehensive survey of people who code around the world
- The survey covering everything from developers' favorite technologies to their job preferences.
- Nearly 90,000 developers took the 20-minute survey in 2019
- We have analyzed the data in the survey to understand the Current and Future Technology trends and Respondent Demographics

METHODOLOGY



- The survey data was collected in CSV format
- Data wrangling was performed for finding and inputting Missing Values and removing Duplicates
- Exploratory Data Analysis for discovering correlations and outliers
- Visualization was performed for understanding the Distribution of Data
- Finally, a Dashboard was created in IBM Cognos Analytics for conveying a clear picture of the results

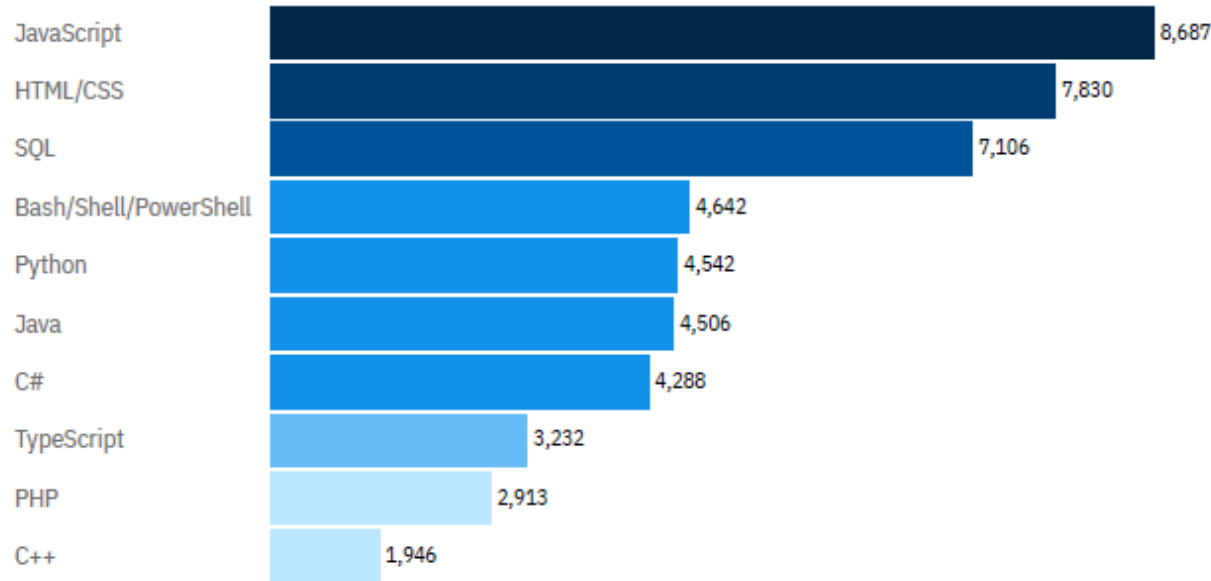
RESULTS

- JavaScript and HTML/CSS are the top programming languages
- Python is a fast-growing programming language
- SQL remains a popular language
- MySQL is the top database language
- PostgreSQL is becoming a popular alternative
- MongoDB and Redis are gaining interest among programmers

PROGRAMMING LANGUAGE TRENDS

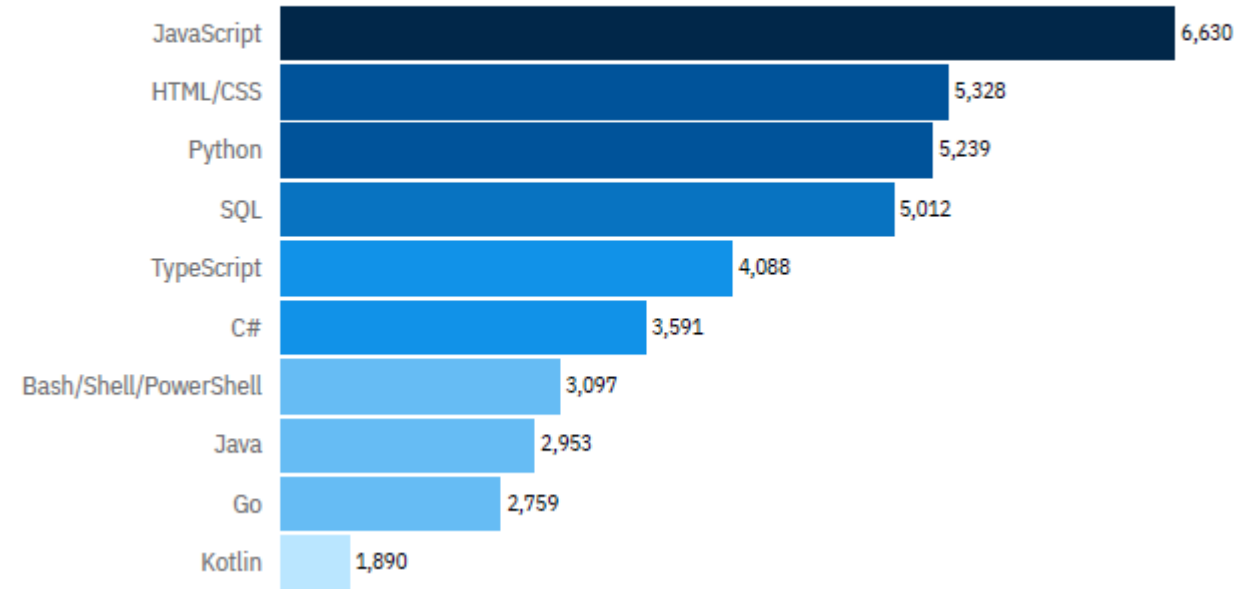
Current Year

Top 10 Languages



Next Year

Next Year Top 10 Languages



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript and HTML/CSS are the top programming languages
- Python is a fast-growing programming language
- SQL remains a popular language

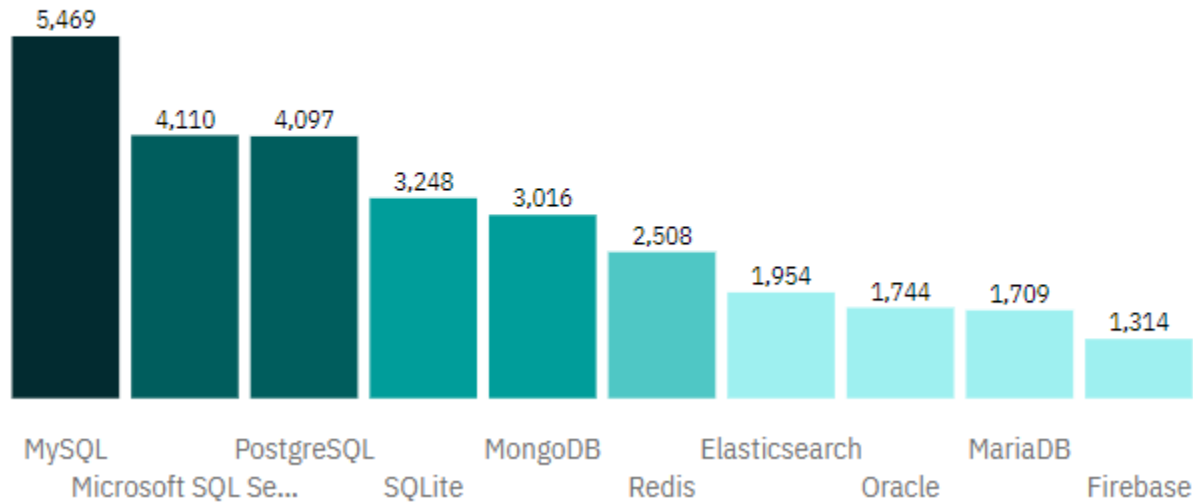
Implications

- Web Development is field where most programmers work
- Programmers should add Python in their skills for the future
- Databases administration in SQL will remain a relevant skill

DATABASE TRENDS

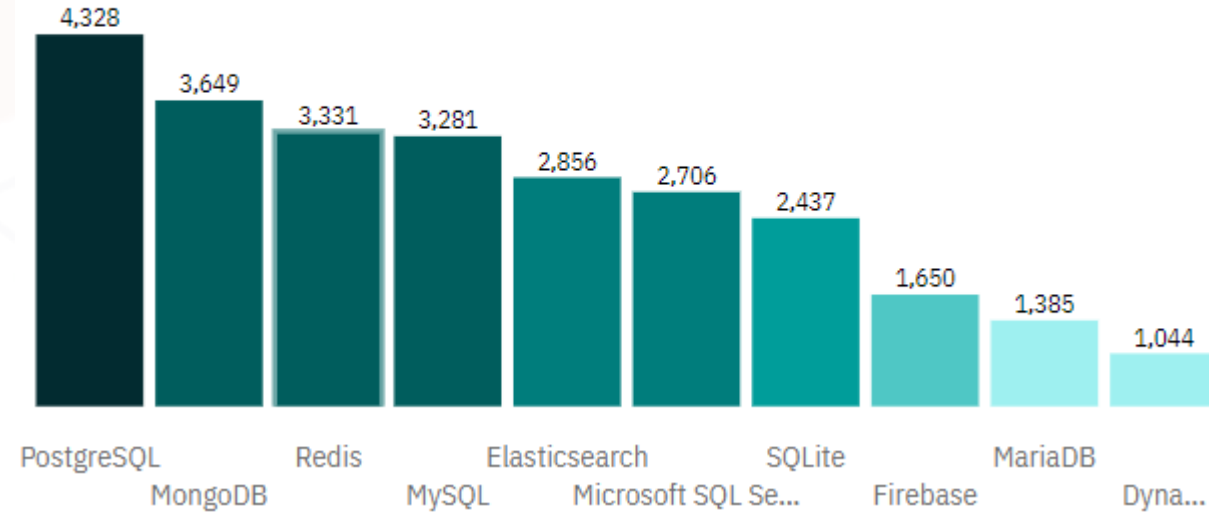
Current Year

Top 10 Databases



Next Year

Next Year Top 10 Databases



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL is the top database language
- PostgreSQL is becoming a popular alternative
- MongoDB and Redis are gaining interest among programmers

Implications

- Knowledge of MySQL is a must have skill in Databases
- Knowledge of PostgreSQL and SQLite is a valuable added skill
- BigData analytics will require more focus on alternative Databases like MongoDB and Redis

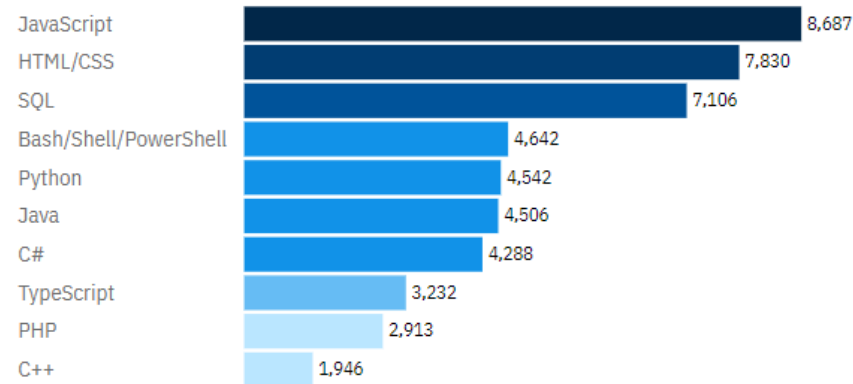
DASHBOARD



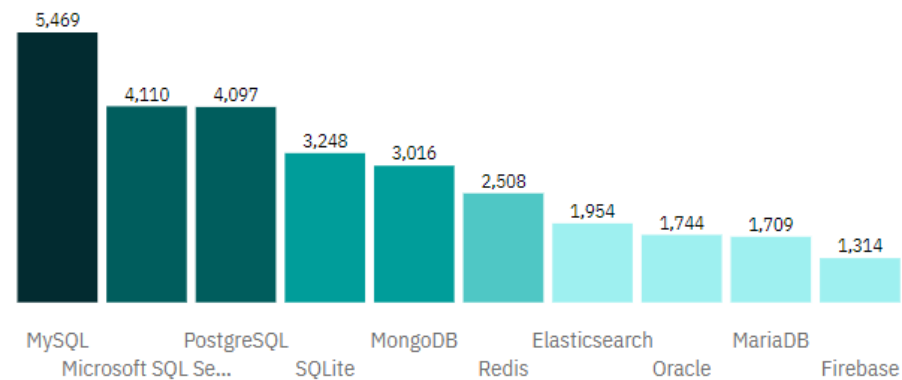
https://github.com/fdauti/c9CongosDash/blob/main/FatjonDauti_%20DashboardC9.pdf

DASHBOARD TAB 1

Top 10 Languages



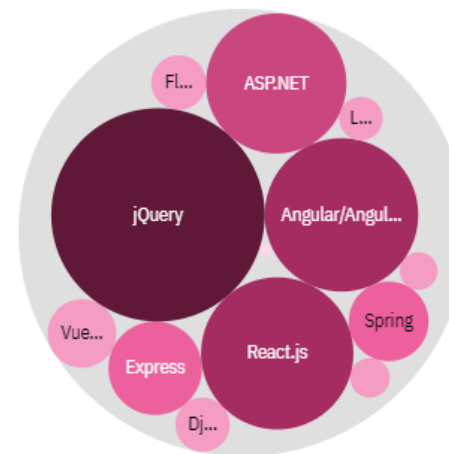
Top 10 Databases



Top Platforms

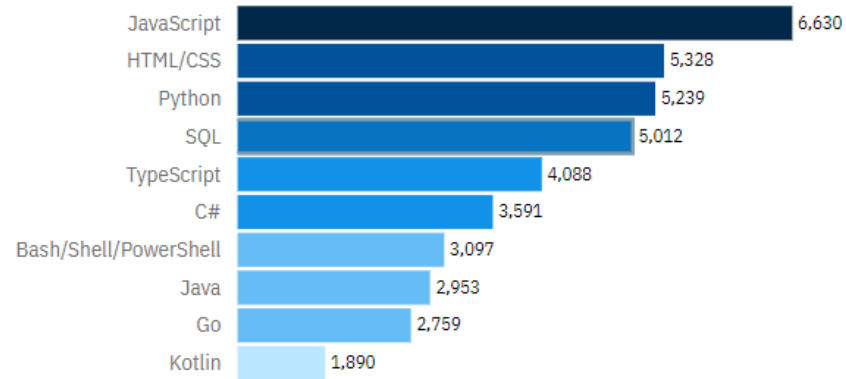


Top WebFrames

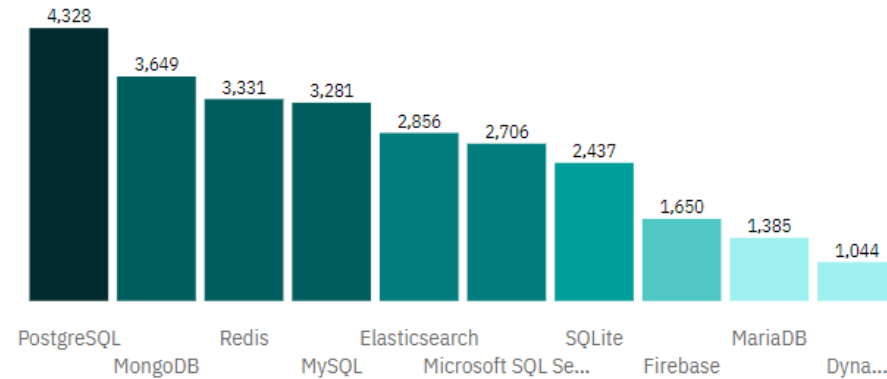


DASHBOARD TAB 2

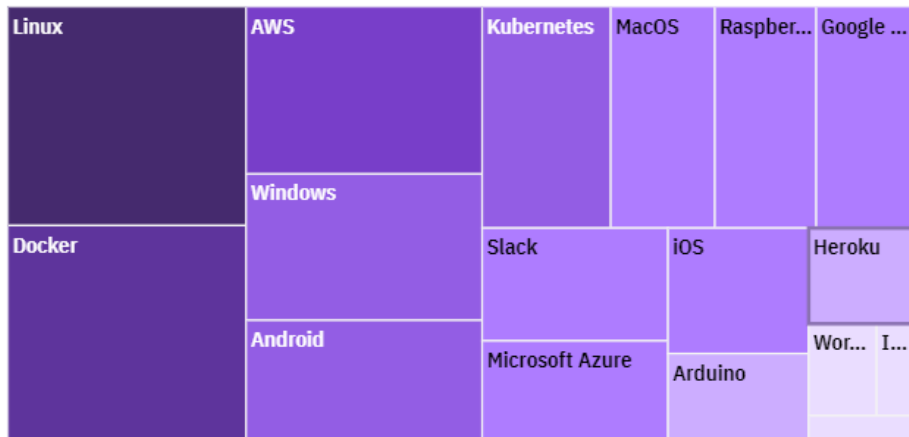
Next Year Top 10 Languages



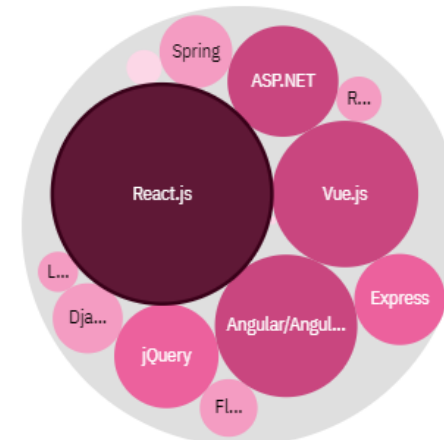
Next Year Top 10 Databases



Next Year Top Platforms



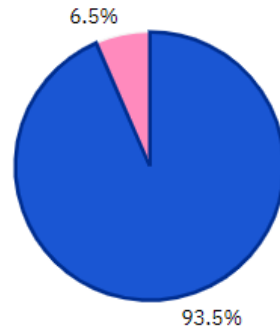
Next Year Top WebFrames



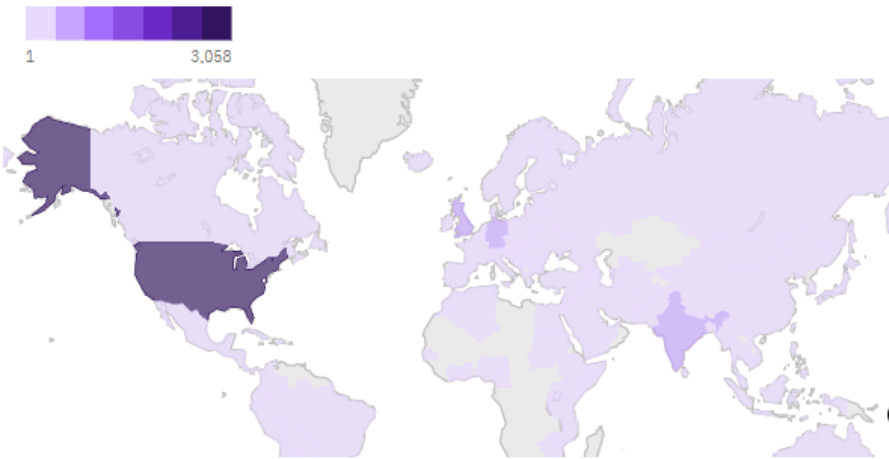
DASHBOARD TAB 3

Percentage of Respondents by Gender

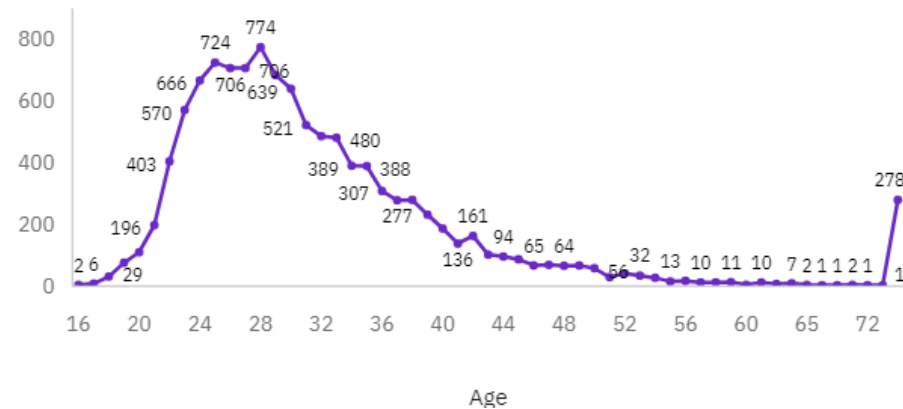
● Man ● Woman



Respondents Demographic by Country

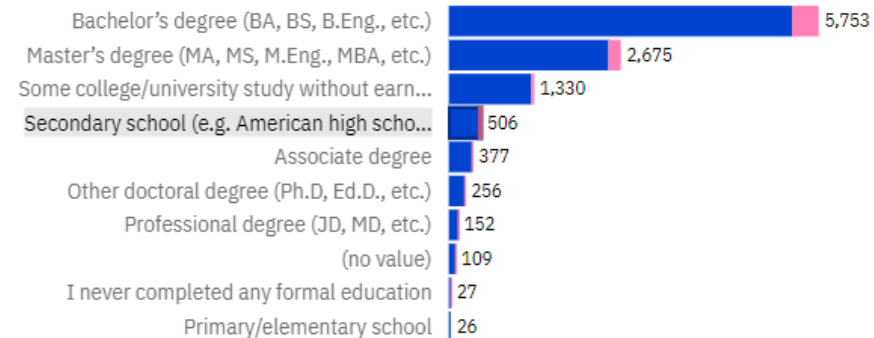


Respondents Count by Age



Respondents Count by Gender and Education Level

● Man ● Woman



DISCUSSION



- Despite the survey's broad reach and capacity for informing valuable conclusions, the results don't represent everyone in the developer community evenly
- Results reflect mainly the US job market since most respondent were employed in the US

OVERALL FINDINGS & IMPLICATIONS

Findings

- JavaScript, Python and SQL are and will remain popular
- Platforms like Linux and Docker and WebFrames like React.js are gaining popularity
- Most developers have some formal education like College or Bachelor degree

Implications

- Developers need to constantly update their skills
- Web Development backend/frontend and Database administration will remain popular fields
- Formal education is still much relevant in the programming field

CONCLUSION



- Web and Database programming are the most popular fields among developers with other domains quickly picking up
- Software Development is a very dynamic field which requires constant update of skills to stay relevant in the job market
- Based on the Gender results, more should be done to improve the inclusion of Women in Tech
- Age is not a dominant factor in programming, everyone can learn to code

APPENDIX

Developers specializations and Age correlation with other numeric markers

```
QUERY = """
SELECT * FROM DevType
"""

df_devtype = pd.read_sql_query(QUERY, conn)
df_devtype['DevType'].value_counts()
```

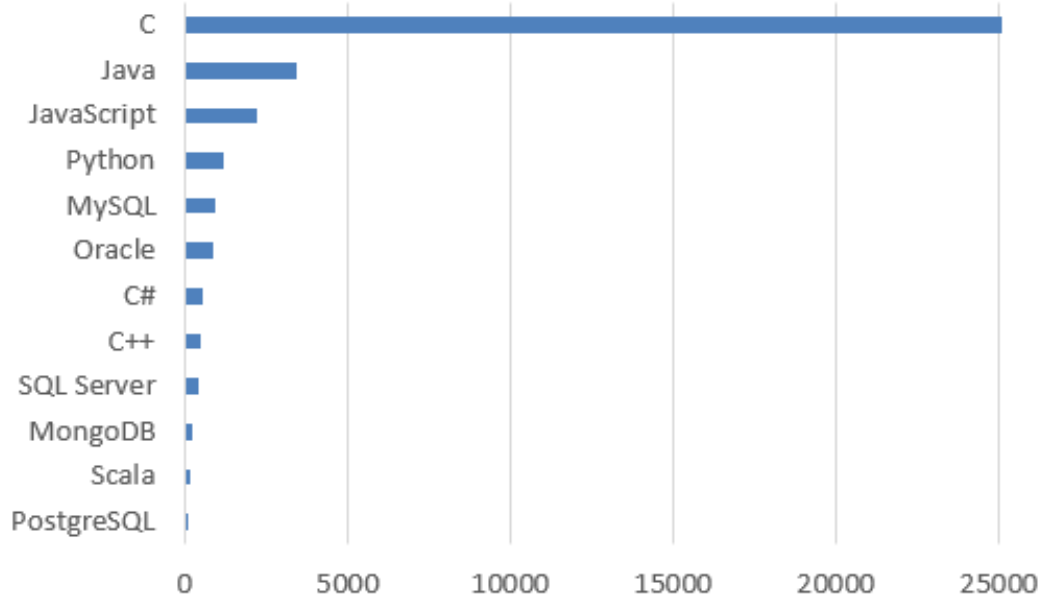
```
DevType
Developer, full-stack      6928
Developer, back-end       6290
Developer, front-end      3920
Developer, desktop or enterprise applications  2575
Developer, mobile         1959
DevOps specialist         1639
Database administrator    1413
System administrator      1202
```

```
df.corr(numeric_only=True)
```

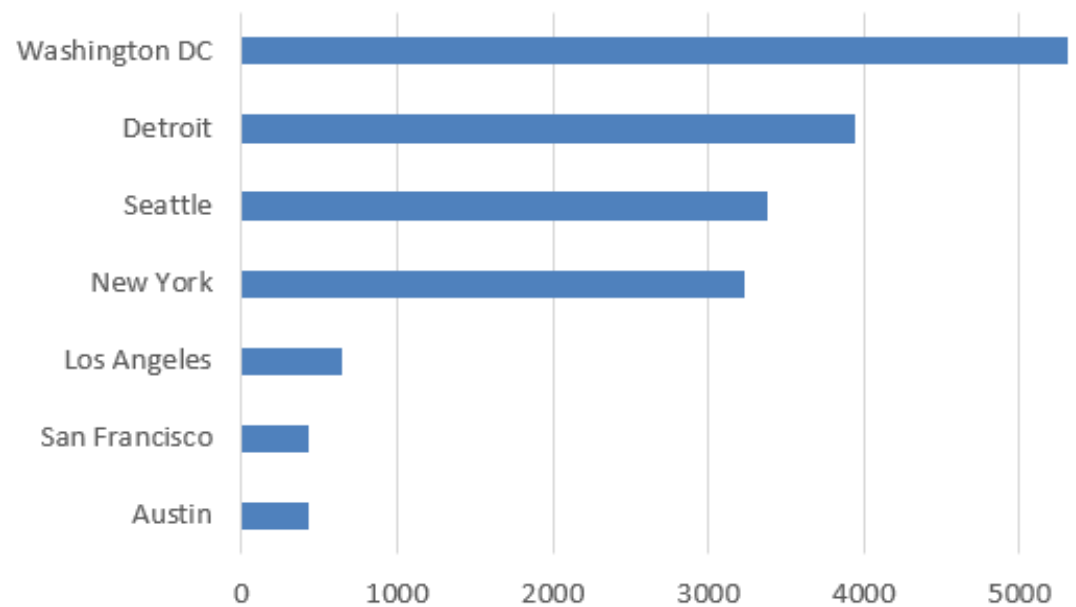
	Respondent	CompTotal	ConvertedComp	WorkWeekHrs	CodeRevHrs	Age
Respondent	1.000000	-0.013490	0.002181	-0.015314	0.004621	0.004041
CompTotal	-0.013490	1.000000	0.001037	0.003510	0.007063	0.006970
ConvertedComp	0.002181	0.001037	1.000000	0.021143	-0.033865	0.105386
WorkWeekHrs	-0.015314	0.003510	0.021143	1.000000	0.026517	0.036518
CodeRevHrs	0.004621	0.007063	-0.033865	0.026517	1.000000	-0.020469
Age	0.004041	0.006970	0.105386	0.036518	-0.020469	1.000000

JOB POSTINGS

Job Postings by Language



Job Postings by City



POPULAR LANGUAGES

