IBM Data Analyst Capstone Project

Stack Overflow Developer Survey

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OUTLINE

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- Visualizations (Charts)
- Dashboard

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INTRODUCTION

Stack Overflow's survey stands out as one of the most extensive assessments of IT professionals and individuals keen on the IT sector. This survey, coupled with its subsequent analysis, delves into the latest trends in programming languages, databases, web frameworks, and anticipates future developments. The insights garnered from this survey are invaluable to both current working professionals and aspiring developers, offering a pathway to acquire new skills and gain a competitive edge in the dynamic IT workspace. Simultaneously, it provides employers with crucial information on trending IT technologies, guiding them in hiring personnel with the requisite skill set to stay ahead in the ever-evolving industry landscape.

METHODOLOGY

❖ Collect Survey Data using:
- • APIs
- • Web Scraping

❖ Data Exploration and Wrangling
- • Dealing with Duplicates and Missing Values
- • Normalizing Data

❖ Exploratory Analysis
- • Distribution
- • Outliers
- • Correlation

❖ Data Visualization
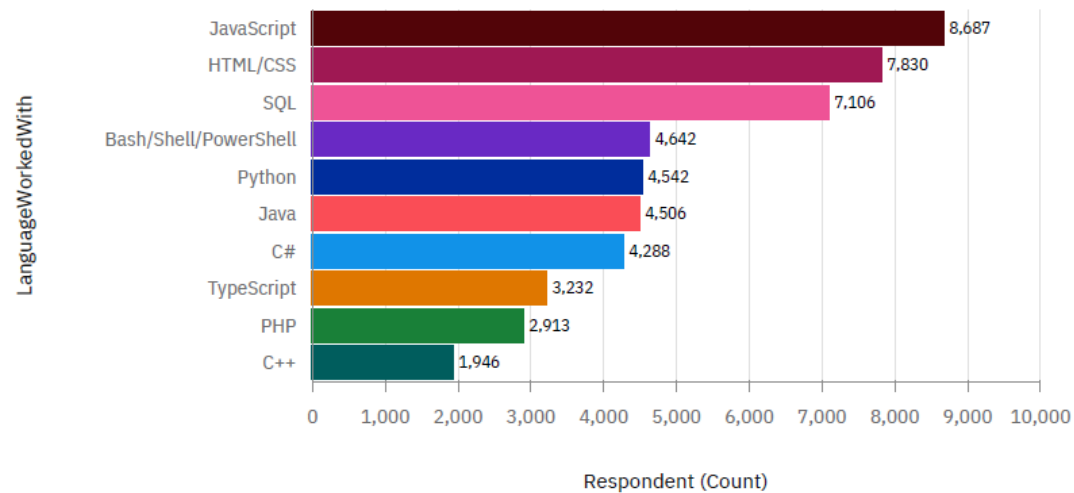
❖ Building a Dashboard in IBM Cognos Analytics

RESULTS
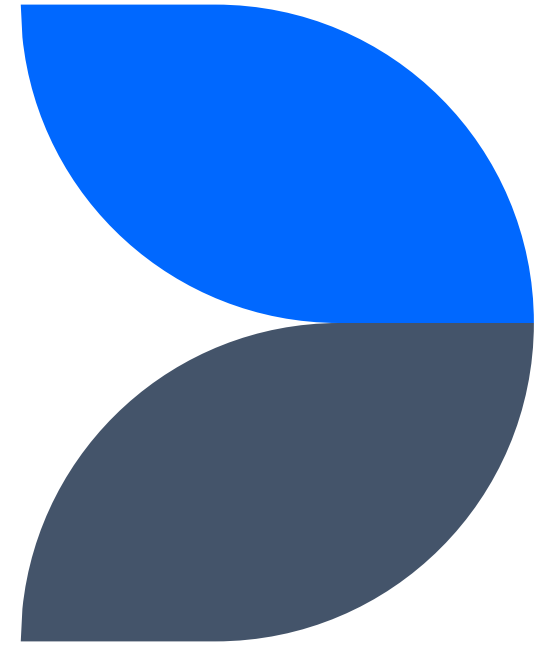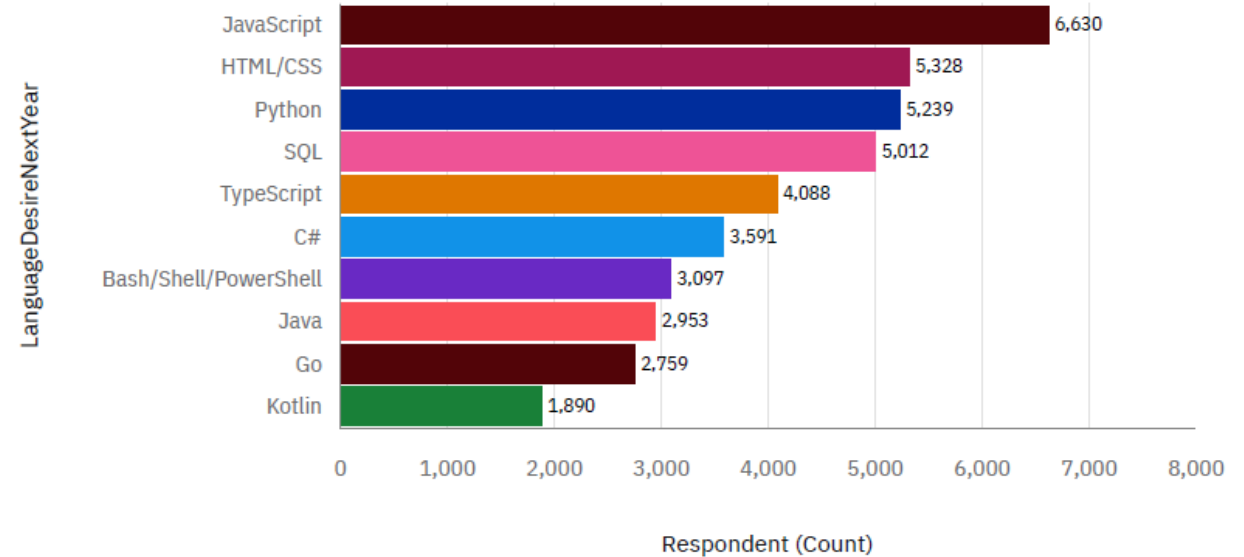
PROGRAMMING LANGUAGE TRENDS

Current Year

Next Year

Current Technology Usage

Top 10 Languages Worked With

Language	Respondent (Count)
JavaScript	8,687
HTML/CSS	7,830
SQL	7,106
Bash/Shell/PowerShell	4,642
Python	4,542
Java	4,506
C#	4,288
TypeScript	3,232
PHP	2,913
C++	1,946

Top 10 Languages Desired Next Year

LanguageDesireNextYear	Respondent (Count)
JavaScript	6,630
HTML/CSS	5,328
Python	5,239
SQL	5,012
TypeScript	4,088
C#	3,591
Bash/Shell/PowerShell	3,097
Java	2,953
Go	2,759
Kotlin	1,890

FINDINGS AND IMPLICATIONS

Findings

- JavaScript at the top

- Python and TypeScript on the rise
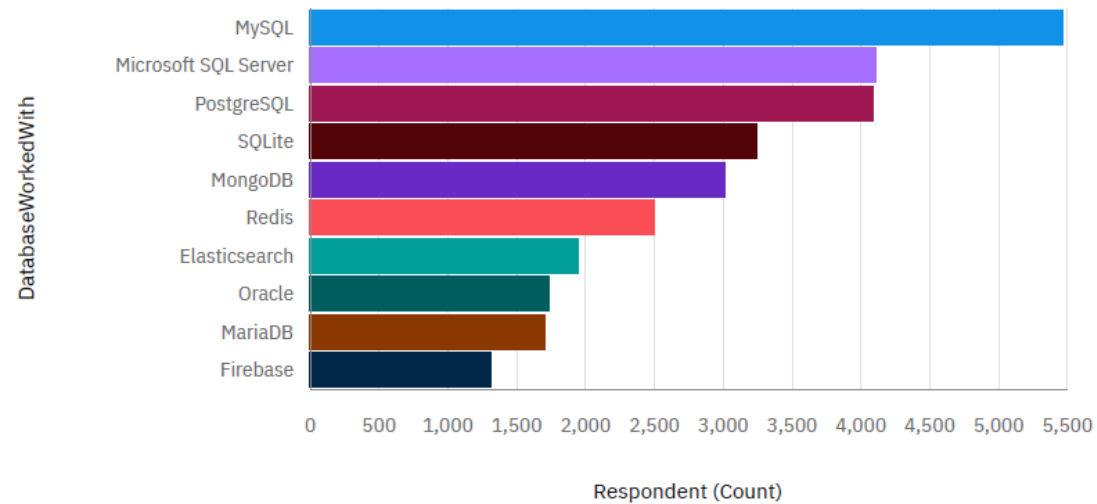
- PowerShell and Java on the decline

Implications

- The predicted popularity of JavaScript, HTML/CSS and TypeScript suggest a significant rise in the number of web developers.

- Python is gaining popularity due to its applications in many fields such as data science and back end development.

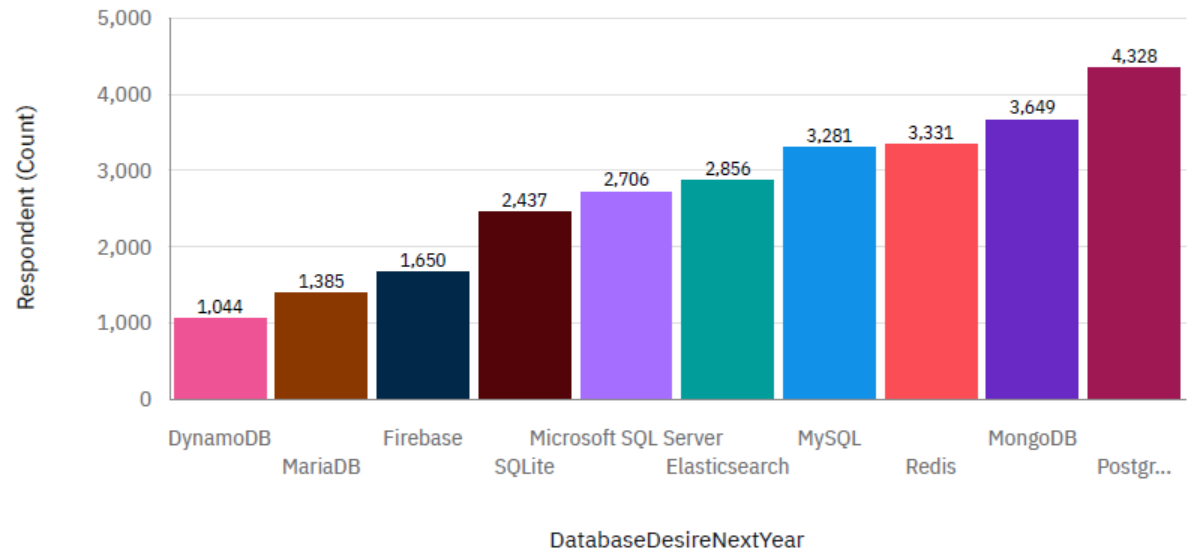- SQL remains the go to language for database management.

DATABASE TRENDS

Current Year

Next Year

FINDINGS AND IMPLICATIONS

Findings

- MySQL the top database
- Postgre SQL expected to overtake it
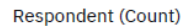- Oracle losing relevance

Implications

- With the importance of databases, there is expected to be a battle for the top database software in the coming years.
- High volatility with the popularity of different databases
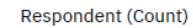- Companies seem to prefer open source databases

DASHBOARD

Dashboard Link

DASHBOARD TAB 1

Current Technology Usage

Top 10 Languages Worked With

Top 10 Databases Worked With

Platforms Worked With
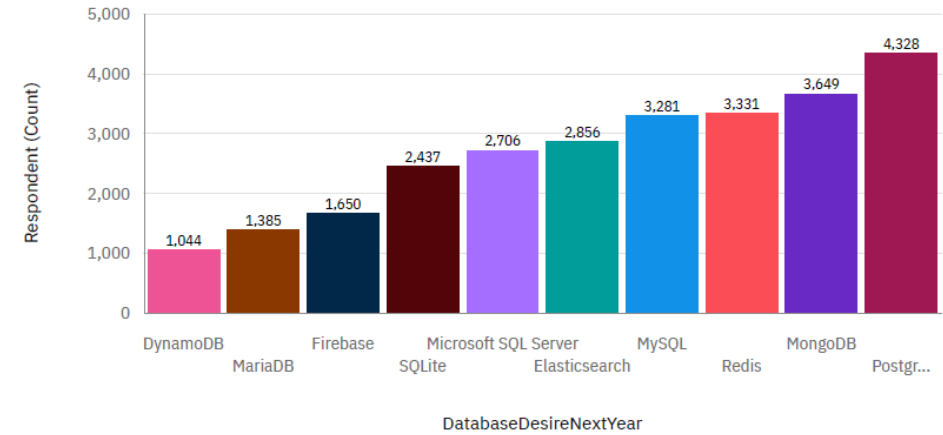
Top 10 Web Frame Worked With

DASHBOARD TAB 2

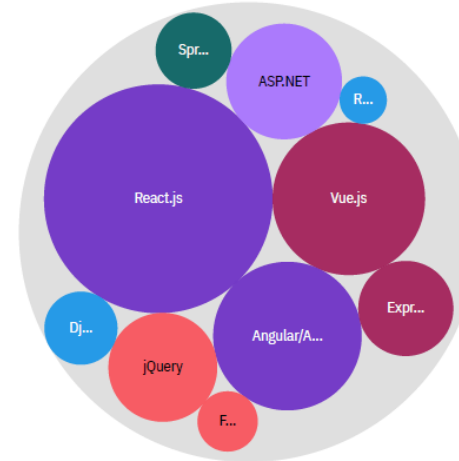Future Technology Trend

Top 10 Languages Desired Next Year

Language	Count
JavaScript	6,630
HTML/CSS	5,328
Python	5,239
SQL	5,012
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C#	3,591
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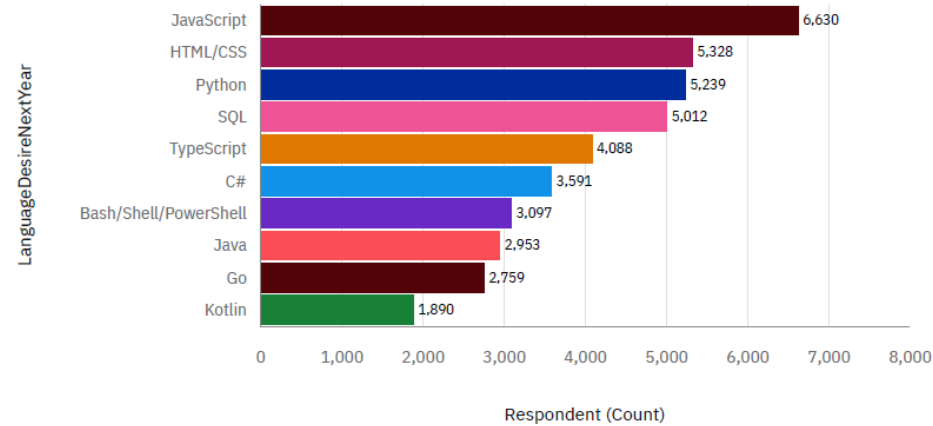
Respondent (Count)

Top 10 Databases Desired Next Year

Database	Count
DynamoDB	1,044
MariaDB	1,385
Firebase	1,650
SQLite	2,437
Microsoft SQL Server	2,706
Elasticsearch	2,856
MySQL	3,281
Redis	3,331
MongoDB	3,649
Postgr...	4,328

DatabaseDesireNextYear

Platforms Desired Next Year

DatabaseDesireN...   DatabaseDesireN...
0   4,328   0   4,328

PostgreSQL | Redis | Elasticsearch | Firebase | MariaDB
MongoDB | MySQL | Microsoft SQL Server | DynamoDB | Oracle
| | SQLite | Cassandra | Other... | Co...
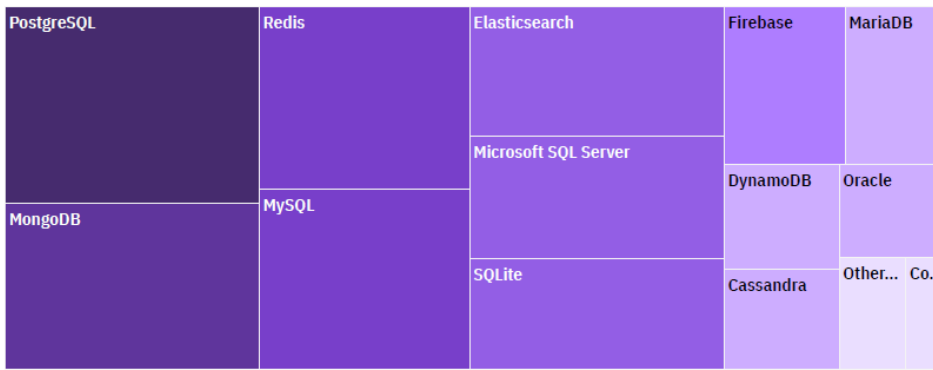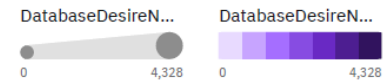
Top 10 Web Frames Desired Next Year

Spr... | ASP.NET | R...
React.js | Vue.js
Dj... | jQuery | Angular/A... | Expr...
F...

DASHBOARD TAB 3
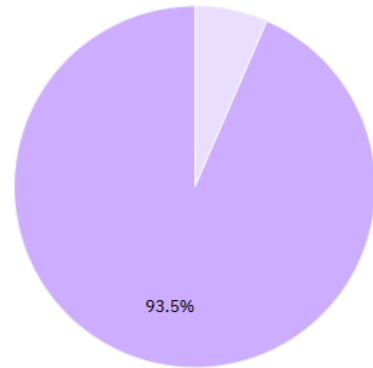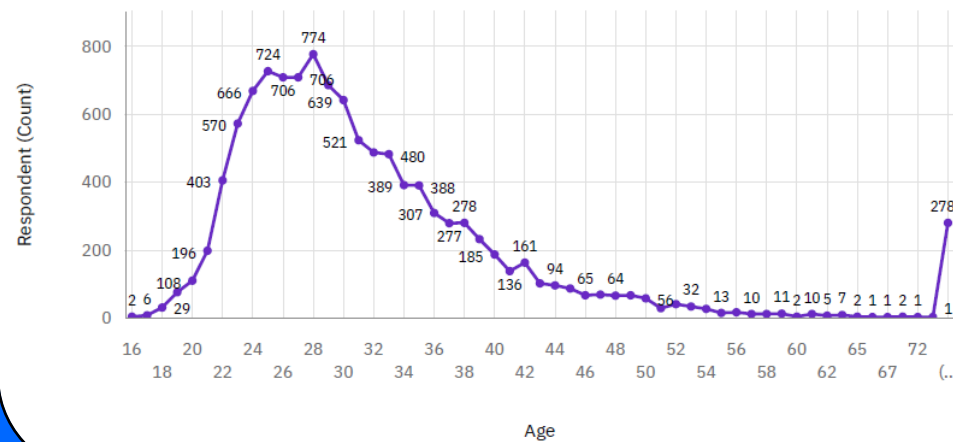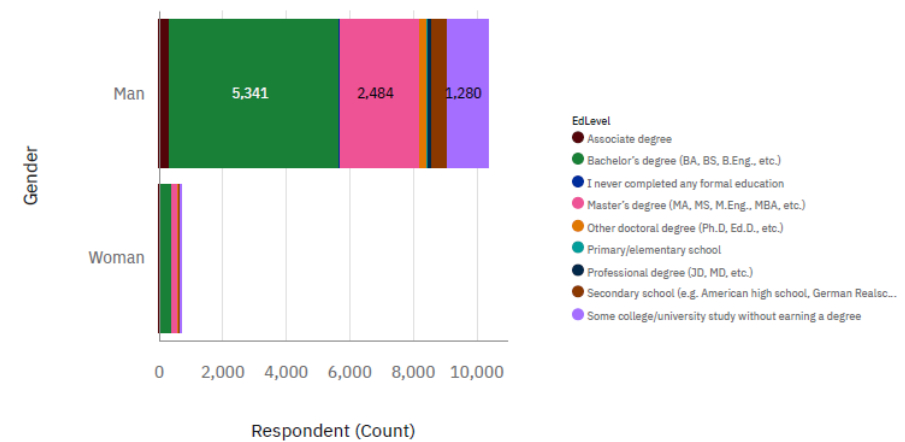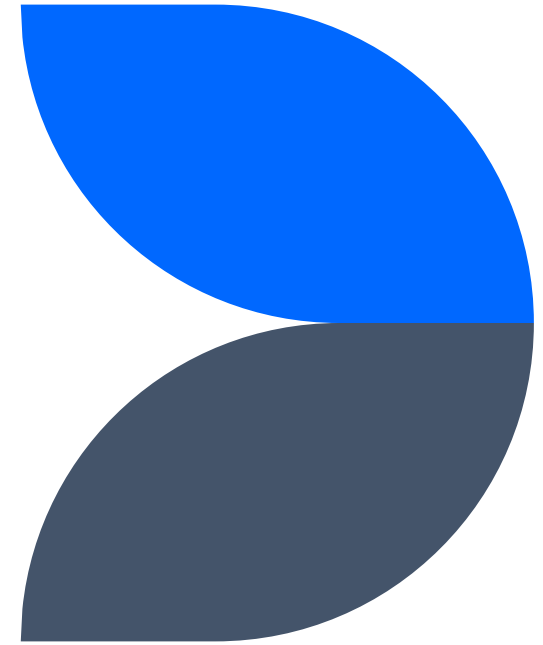
FINDINGS

OVERALL FINDINGS AND IMPLICATIONS

Findings

- Web Development Tools on the rise

- Databases will stay relevant and many different database software will be available

- Tech sector is lacking people from developing countries

Implications

- In web development, excelling at what you do is crucial to stand out from the growing crowd.

- Alongside the essential SQL skills, knowing different database software gives you an edge over others.

- Many developing countries are still working on making a mark in the IT market, emphasizing the need for equal access to opportunities and resources in the global tech sector.
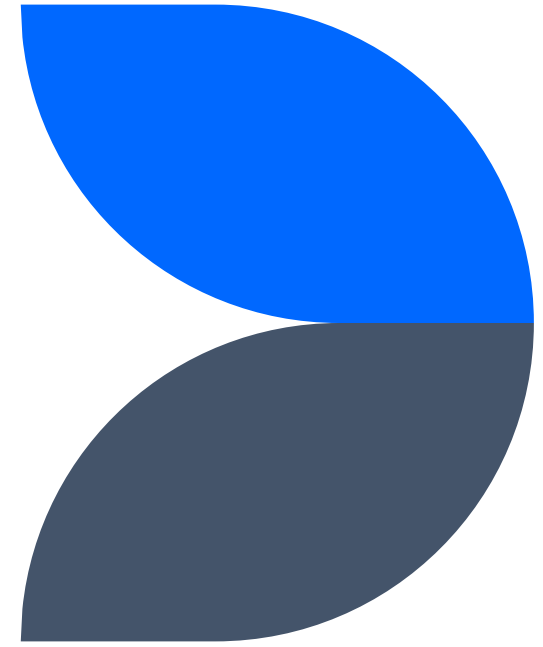
CONCLUSION
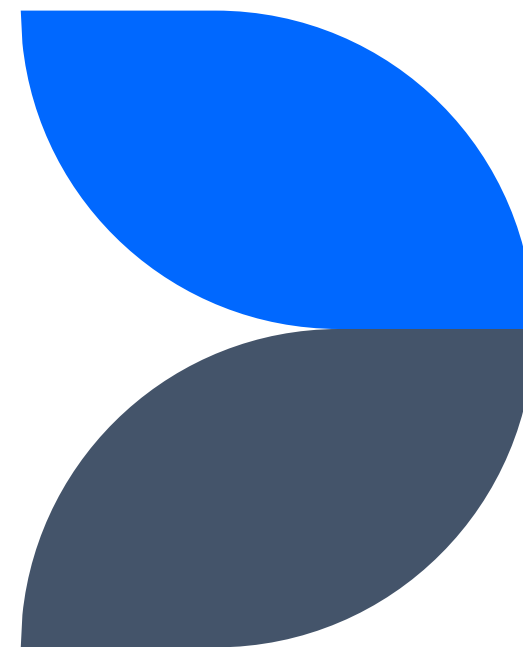
It's crucial for people to stay updated on the latest tech trends for better job prospects and staying relevant professionally.
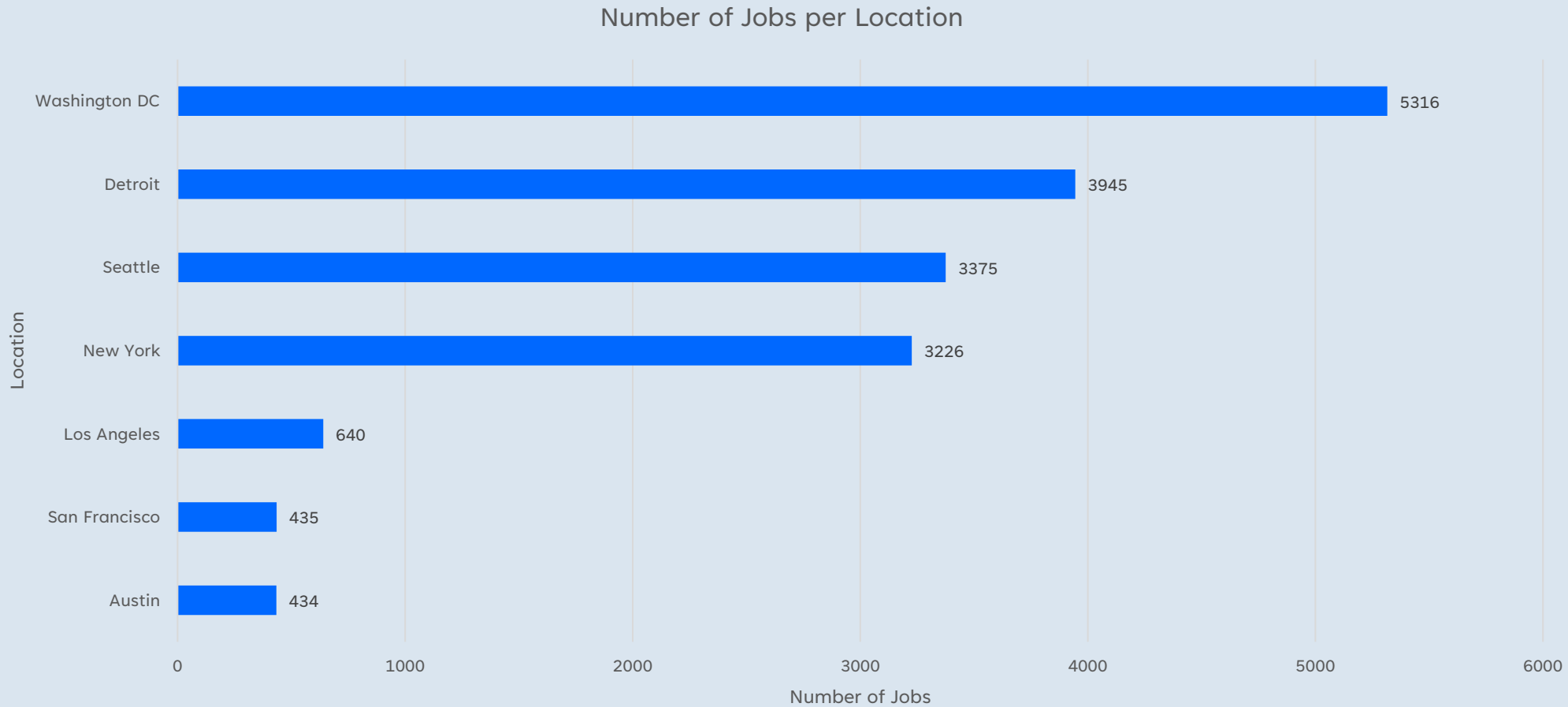
Learning a variety of skills and exceling at them, especially in databases and web development, can give individuals a significant edge.

APPENDIX

JOB POSTINGS

Number of Jobs per Location

Location	Number of Jobs
Washington DC	5316
Detroit	3945
Seattle	3375
New York	3226
Los Angeles	640
San Francisco	435
Austin	434

Stack Overflow Developer Survey

POPULAR LANGUAGES

Programming Languages Average Annual Salary

Programming Languages	Average Annual Salary
Swift	$1,30,801
Python	$1,14,383
C++	$1,13,865
JavaScript	$1,10,981
Java	$1,01,013
Go	$94,082
R	$92,037
C#	$88,726
SQL	$84,793
PHP	$84,727

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Thank you

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