



Stack Overflow Developer Survey Analysis

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OUTLINE



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EXECUTIVE SUMMARY



- Stack Overflow performs annually a comprehensive survey of people who code around the world and covers everything from developers' favorite technologies to their job preferences.
- Key Findings:
 - JavaScript, HTML/CSS, Python, SQL and TypeScript are the most desired programming languages
 - Python is the fastest growing major programming language
 - PostgreSQL, MongoDB, Redis, MySQL, Elasticsearch are the most desired databases
 - NoSQL is getting more popular

INTRODUCTION



Stack Overflow Annual Developer Survey identify early trends from people who code around the world, from favorite technologies to job preferences.

- It helps to Identify future skill requirements
- The most desire programming languages in the future
- The top database future demands
- The most popular Platforms, IDEs & web Frames
- And the job preferences and Demographics

The intended audience is IT and HR Professionals

METHODOLOGY



- Data Collection Sources
 - Stack Overflow Developer 2019 Survey
 - GitHub Job Postings API
 - Programming Languages Annual Salary
- Data Exploration with Python
- Data Cleaning with Python
- Data Visualization with Python & Cognos Analytics
- Presentation

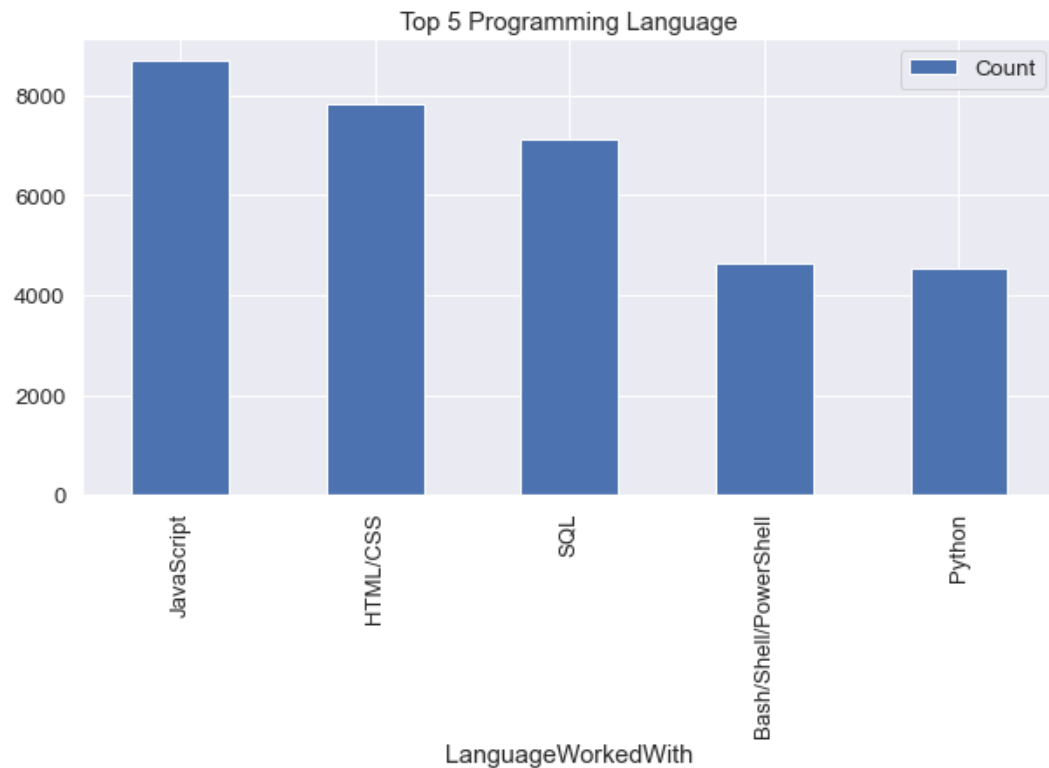
RESULTS

The following table show the correlation between age and ConvertedComp (Salary)

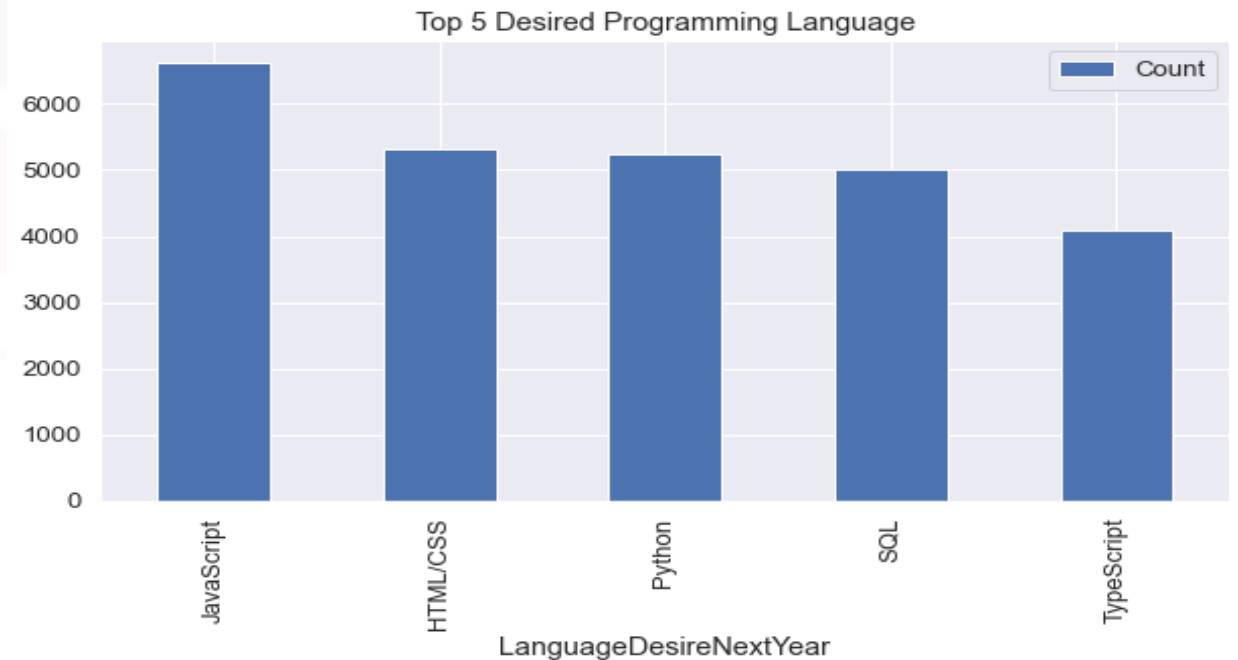
	Respondent	CompTotal	ConvertedComp	WorkWeekHrs	CodeRevHrs	Age
Respondent	1.000000	-0.013490	0.002181	-0.015314	0.004621	0.004041
CompTotal	-0.013490	1.000000	0.001037	0.003510	0.007063	0.006970
ConvertedComp	0.002181	0.001037	1.000000	0.021143	-0.033865	0.105386
WorkWeekHrs	-0.015314	0.003510	0.021143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

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript, HTML/CSS, SQL were at the top in 2019
- JavaScript continue to be the leader
- Python is becoming more popular

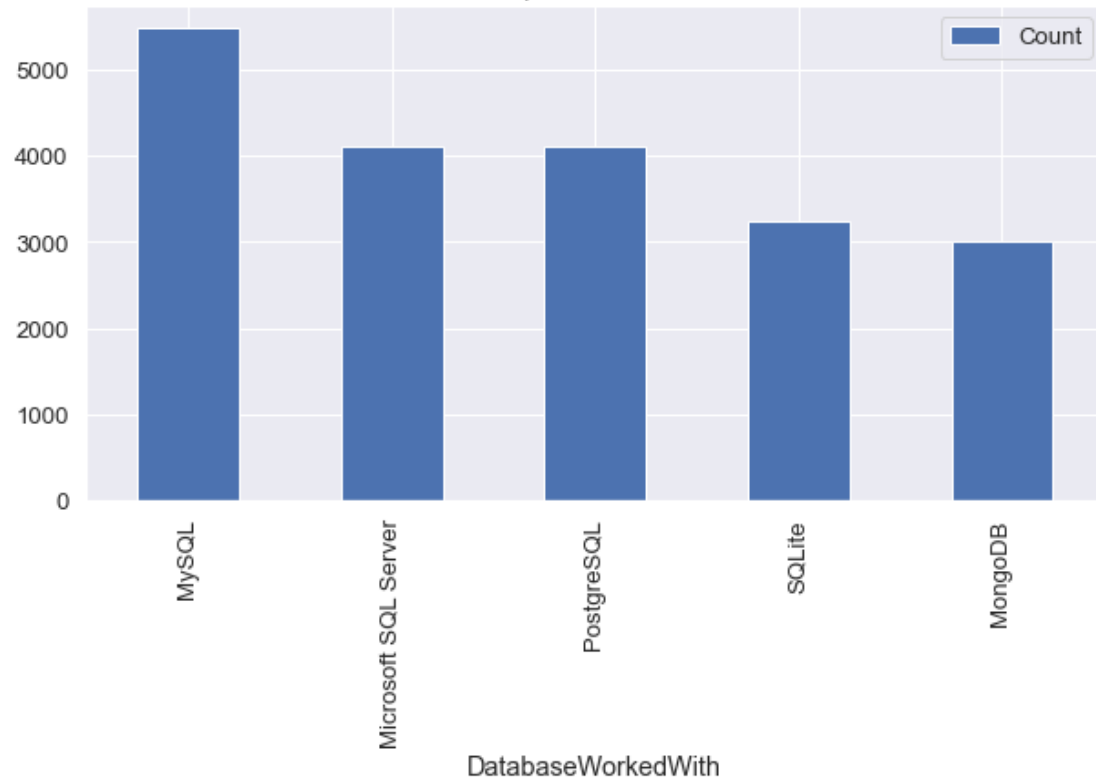
Implications

- Web development and JavaScript will continue to be in high demand
- Python is the preferred choice for Data Science and AI/ML
- Business still require SQL

DATABASE TRENDS

Current Year

Top 5 Databases



Next Year

Top 5 Databases Desired Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Open Source databases are being preferred
- PostgreSQL the most desired relational database
- NoSQL MongoDB and Redis are becoming favorites

Implications

- Business still using relational databases but prefer Open Source
- MySQL and SQL Server are being challenged
- NoSQL databases are more commonly used

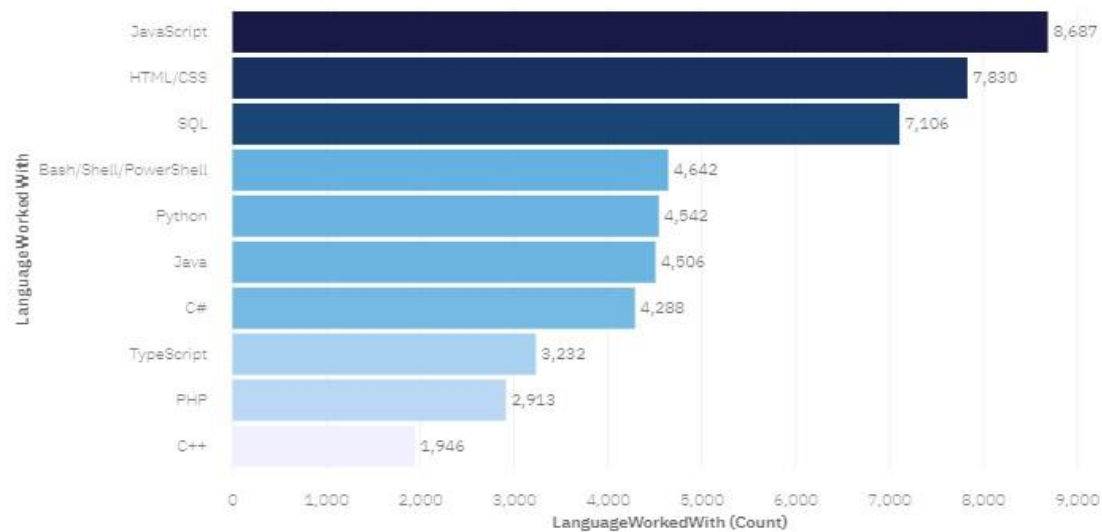
DASHBOARDS



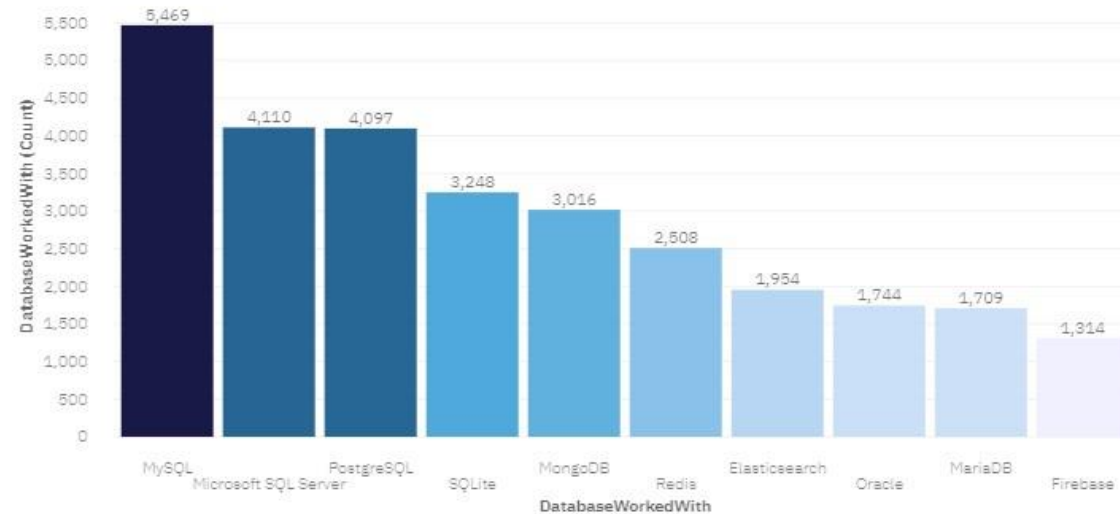
DASHBOARDS LINK

<https://dataplatform.cloud.ibm.com/dashboards/76b49209-505f-4563-8266-6e880e5999db/view/0562fc2c3ab62ed76debd4e4079e7f037c31270ee7bbd55581827b4959657897f06d46c0c8791f5fdc10046bf1ef410d9b>

Top 10 Language Worked With



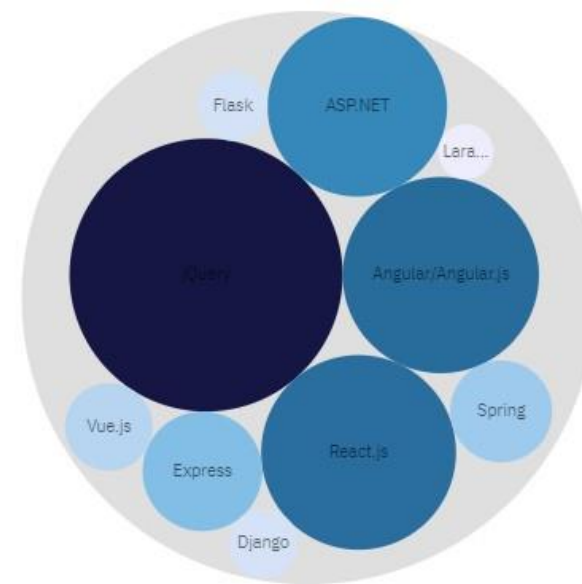
Top 10 Database Worked With



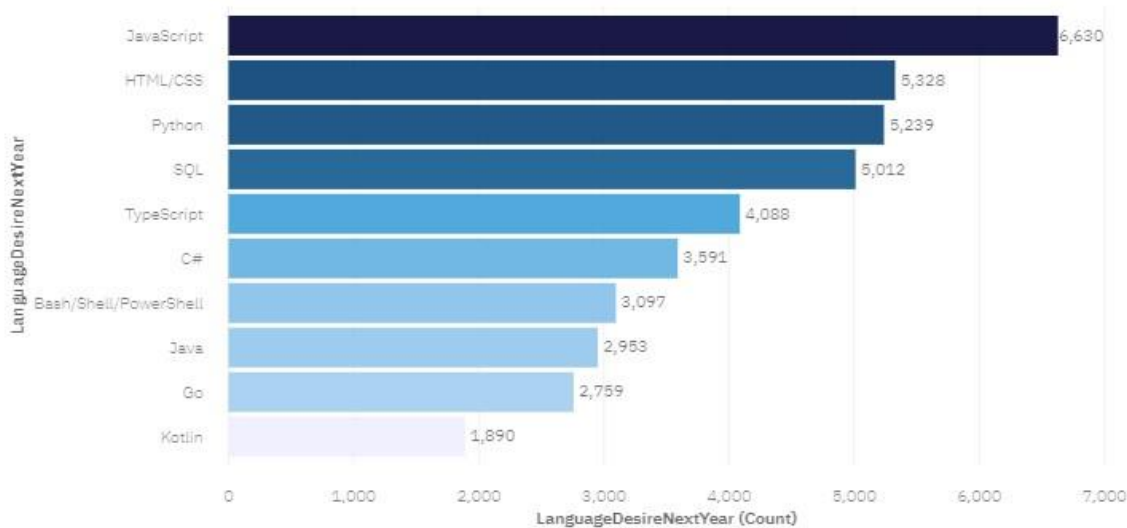
Platform Worked With



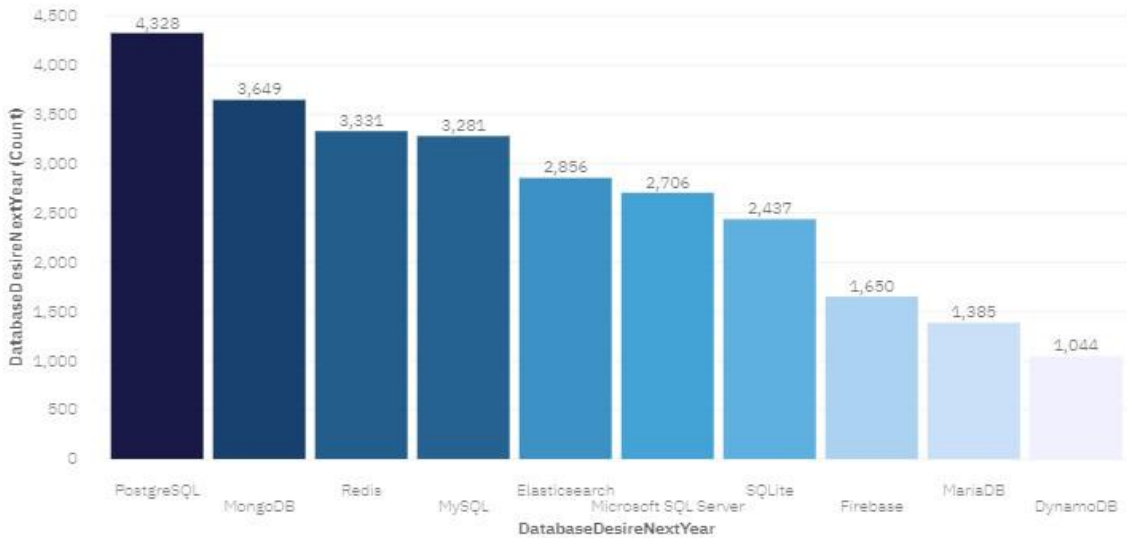
Top 10 Web Frame Worked With



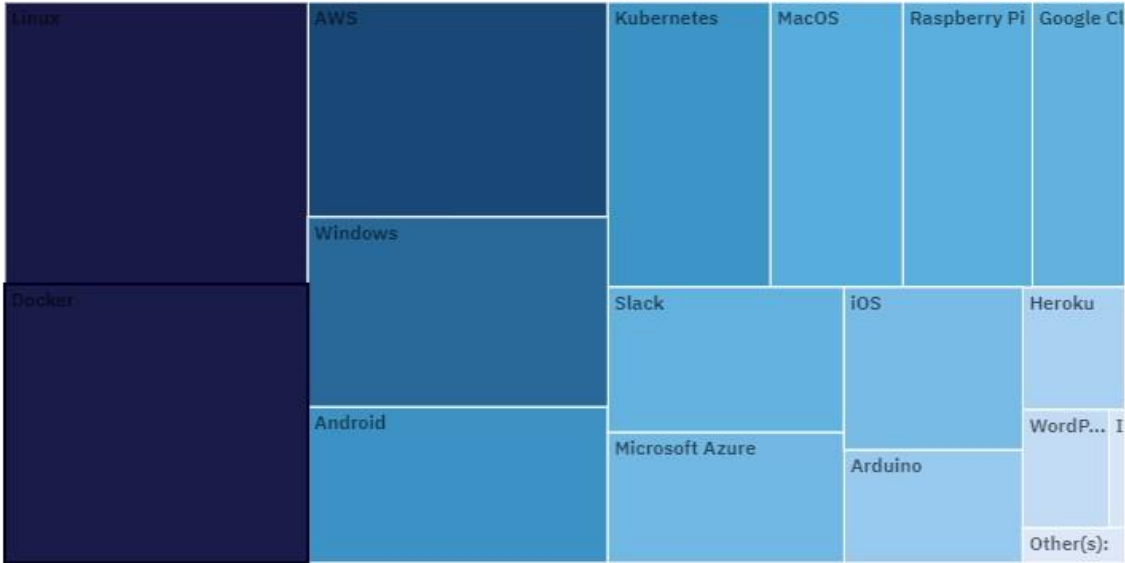
Top 10 Language Desire Next Year



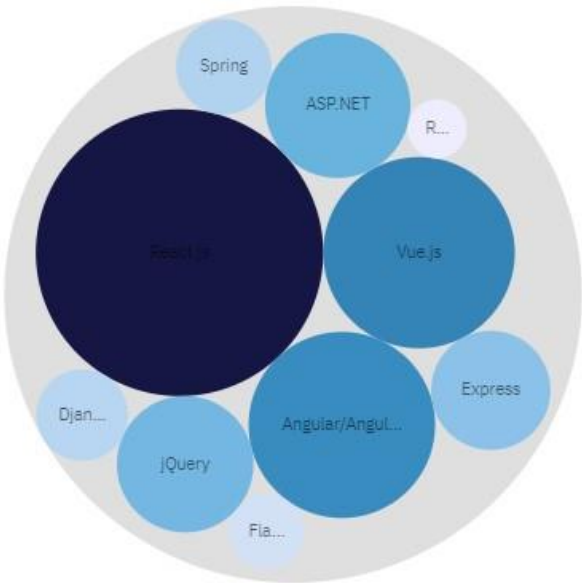
Top 10 Database Desire Next Year



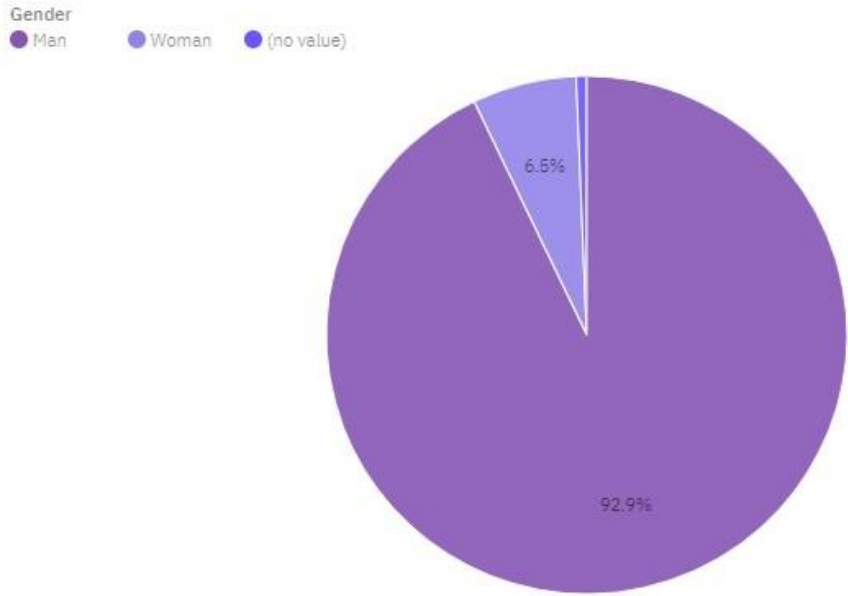
Platform Desire Next Year



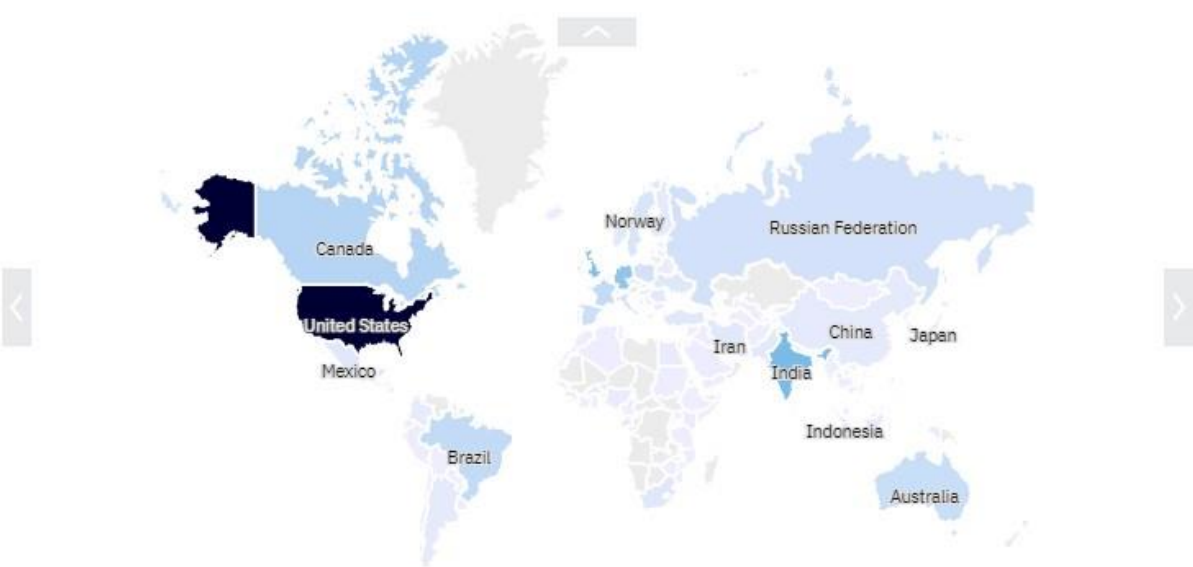
Top Ten Web Frame Desire Next Year



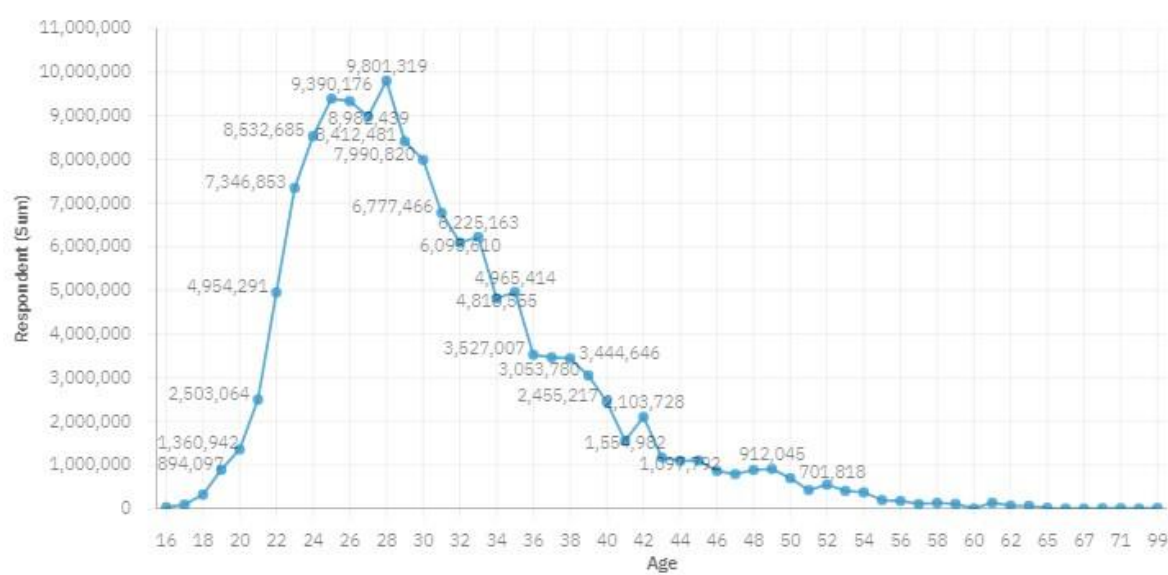
Respondent classified by Gender



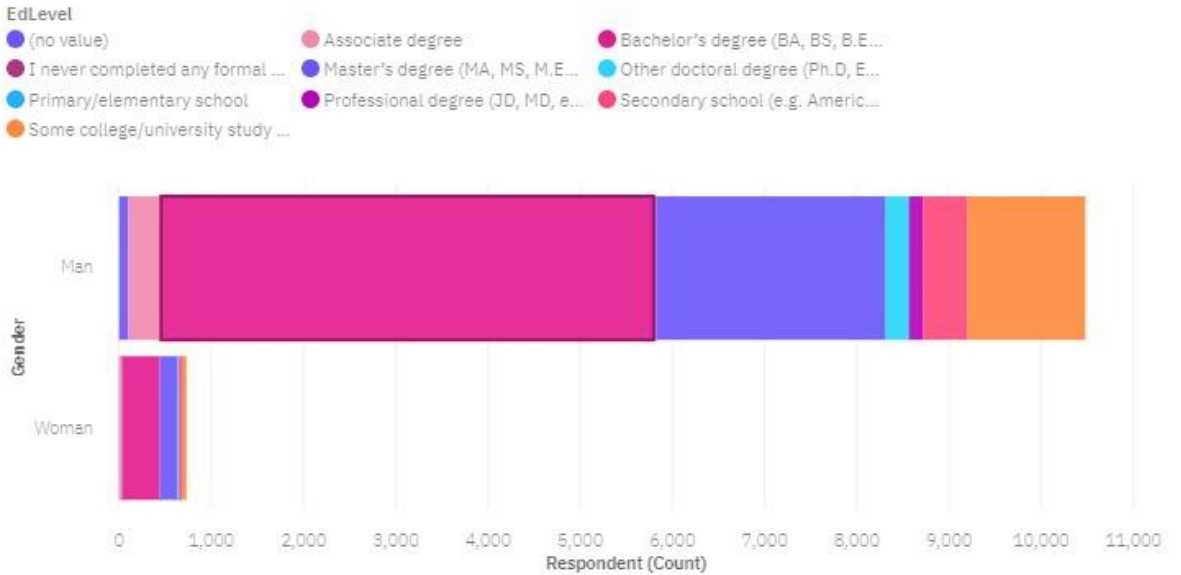
Respondent Count for Countries



Respondent Count by Age



Respondent Count by Gender, classified by Formal Education Level



DISCUSSION



- The most popular languages to learn, Python for DS, AI & ML
- Need training and reskilling of workers
- Need to improve female participation
- Salary will follow skills needs

OVERALL FINDINGS & IMPLICATIONS

Findings

- JavaScript continue to lead, for web development
- Python the most desirable for Data Science and AI/ML
- The average salary is passing the six figures (USD)
- The gender gap in technology

Implications

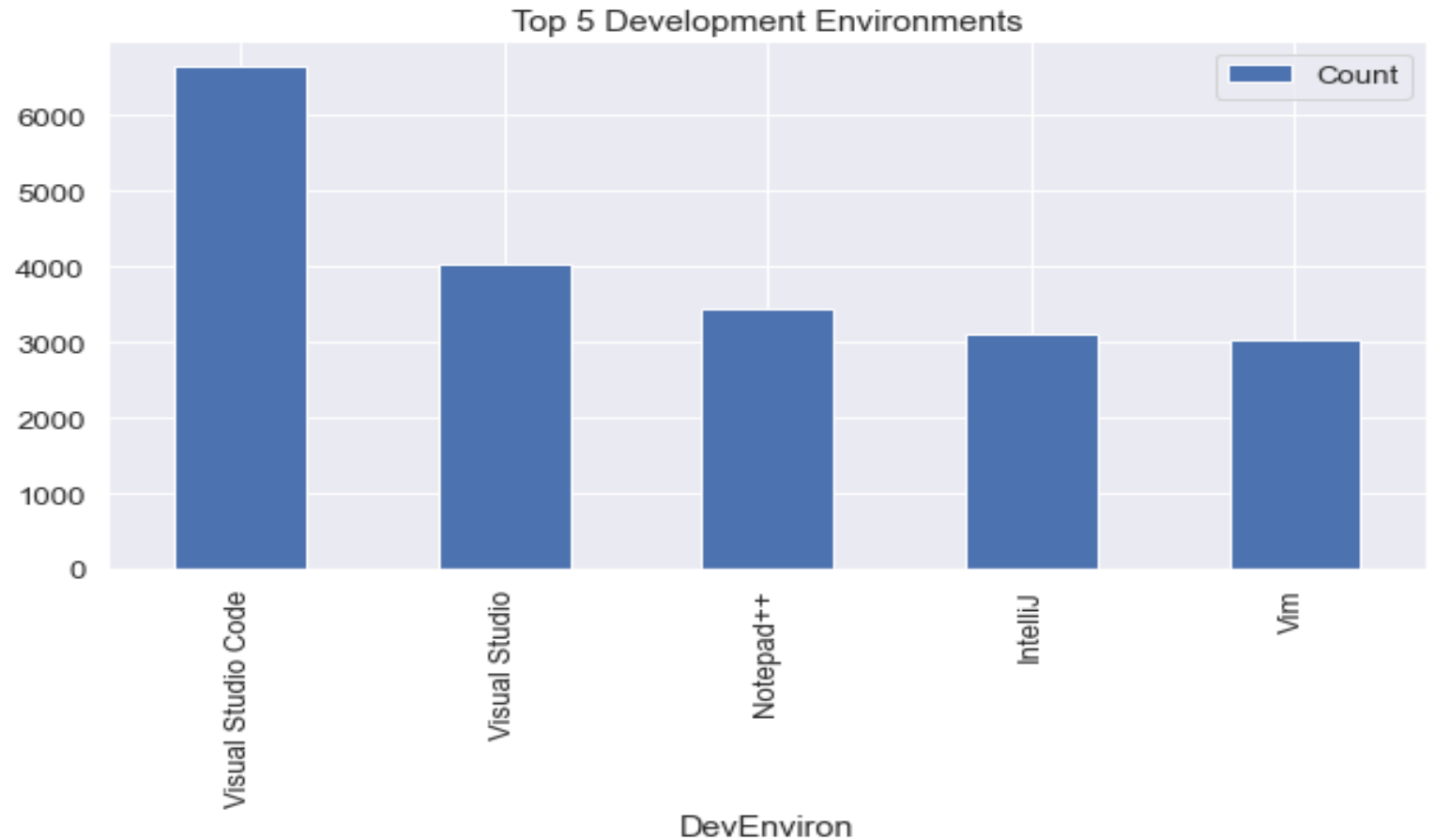
- Business are adapting to new technologies: Cloud, Open Source, NoSQL etc.
- Salaries are increasing according to skills needs
- Watch the gender gap

CONCLUSION

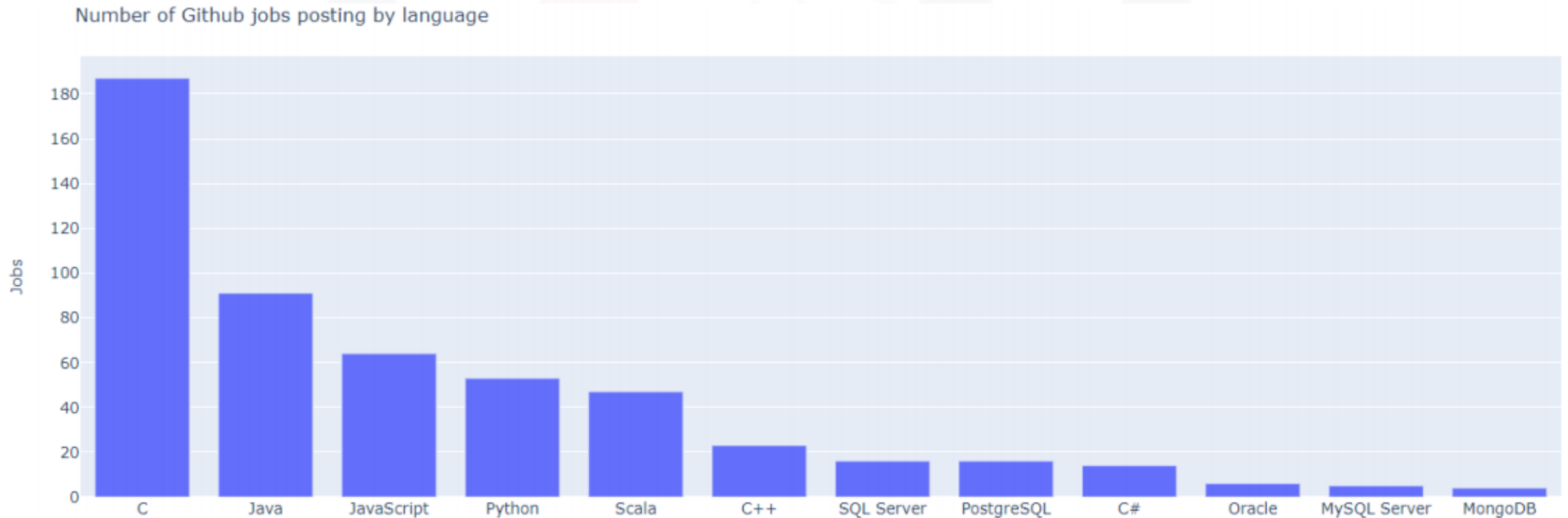


- The technology trends show us the languages to choose and learn
- Business need to adapt fast
- The gender gap need to be narrowed
- Web development and JavaScript will continue to be important
- Data Science and AI/ML will continue to prop Python to the top
- NoSQL Databases to be more common

APPENDIX



GITHUB JOB POSTINGS



POPULAR LANGUAGES

Average annual salary by Programming language

