

FUTURE IT SKILL REQUIREMENTS



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OUTLINE



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EXECUTIVE SUMMARY



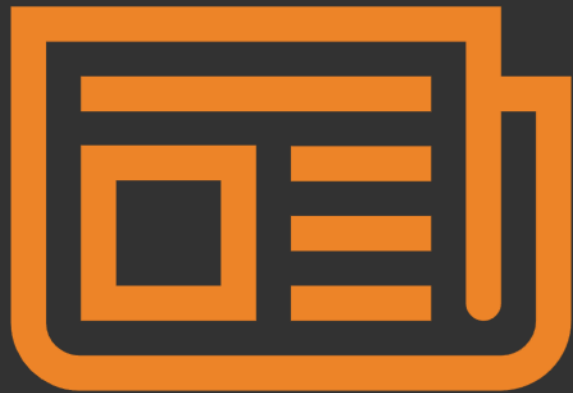
- Trends in programming languages
- Demographic and social insight in programming languages knowledge
- Technological and gender gap in jobs

INTRODUCTION



- Analyze data to help identify future skill requirements.
- Purpose:
 - What are the top programming languages in demand?
 - What are the top database skills in demand?
 - What are the popular IDEs?

METHODOLOGY



- Collecting Jobs Data using GitHub Jobs API
- Web Scraping
- Data Wrangling (Duplicates, Missing Values, Normalizing Data)
- Exploratory Data Analysis (Distribution, Outliers, Correlation)

The dataset: <https://stackoverflow.blog/2019/04/09/the-2019-stackoverflow-developer-survey-results-are-in/> under a [ODbL: Open Database License](#).

Note: This randomised subset contains around 1/10th of the original data set. Any conclusions drawn after analyzing this subset may not reflect the real world scenario.

RESULTS

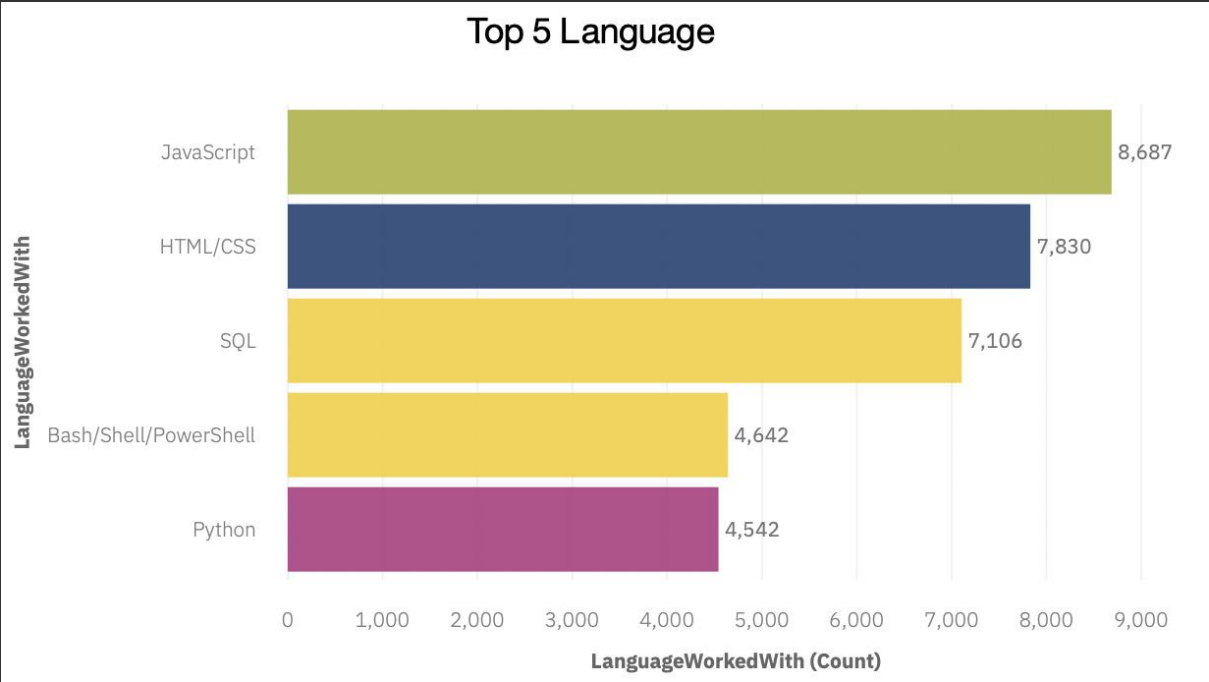
The results are based on the analysis of this table:

Respond... String	LanguageWorked... String	LanguageDesireNex... String	DatabaseWorked... String	DatabaseDesireNex... String	PlatformWorked... String	PlatformDesireNex... String
4	C	C	MySQL	MySQL	Linux	Linux
4	C++	C#	SQLite	SQLite	Windows	Windows
4	C#	JavaScript				
4	Python	SQL				
4	SQL					
9	Bash/Shell/PowerShell	Bash/Shell/PowerShell	DynamoDB	PostgreSQL	AWS	AWS
9	C#	C	PostgreSQL	Redis	Docker	Docker
9	HTML/CSS	HTML/CSS	SQLite	SQLite	Heroku	Heroku
9	JavaScript	JavaScript			Linux	Linux
9	Python	Ruby			MacOS	MacOS
9	Python	Python			MacOS	MacOS

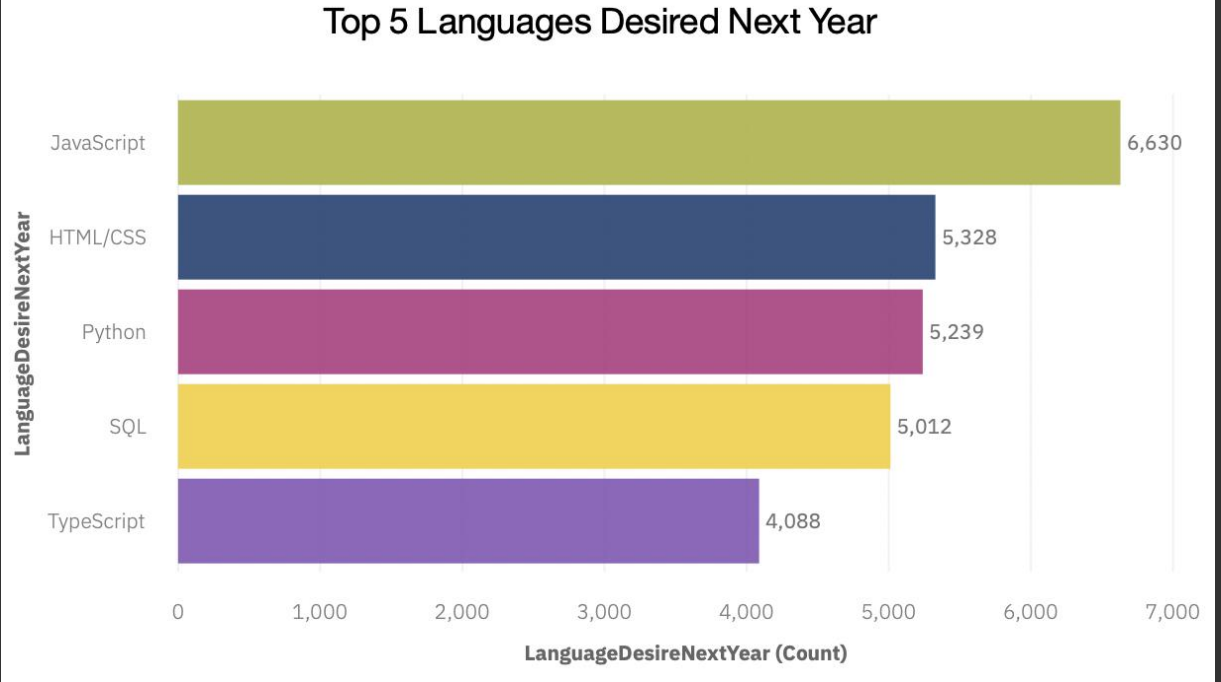
Extract

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

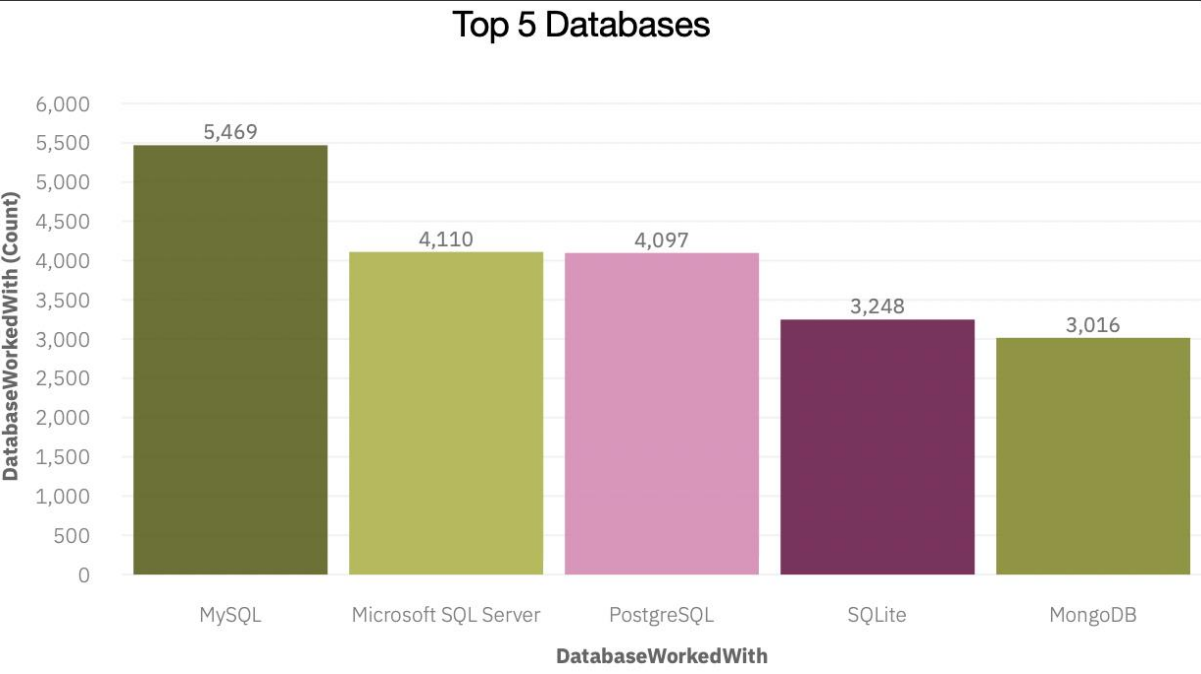
- JavaScript is the top language both for the current and the next year
- Python gained two positions in the most desired languages over the year
- Bash/Shell/PowerShell exit the top 5 languages for the next year

Implications

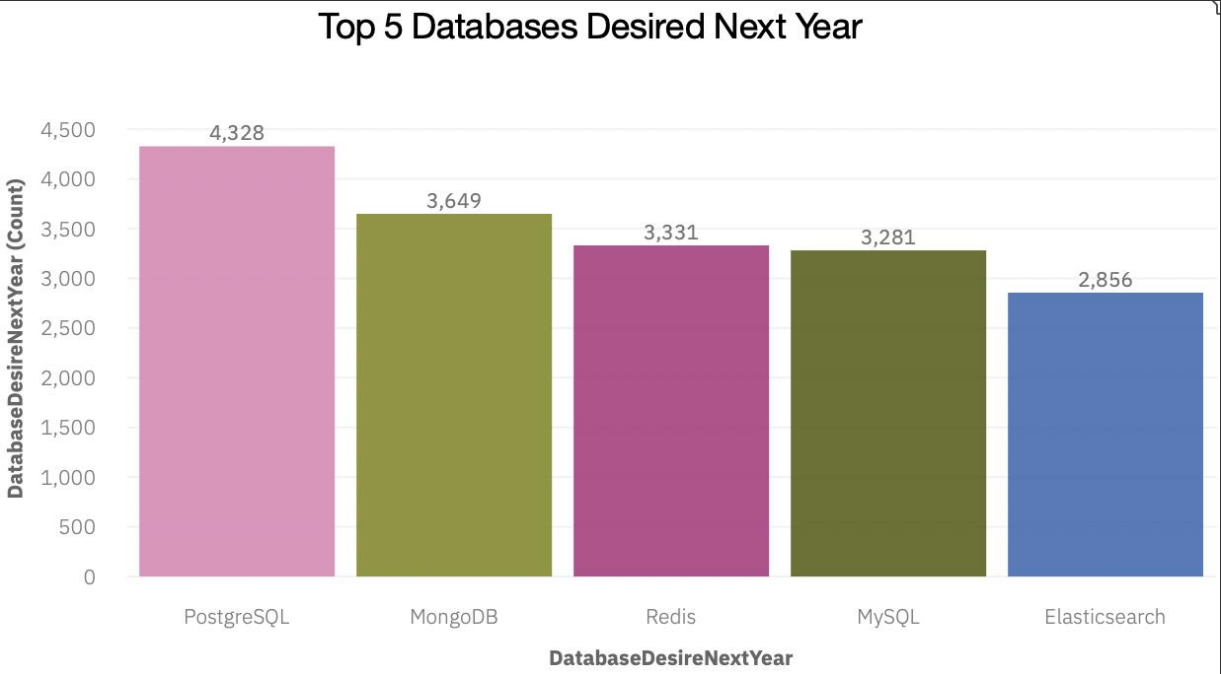
- There is still a high demand for web development
- Big Data technology still requires SQL
- AI rising demand, Python gains importance

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL most popular
- Microsoft SQL Server loses its place in the top 5 databases
- PostgreSQL and MongoDB rise in ranking

Implications

- Open-source databses are still popular
- NoSQL databses will make an impact in the next years
- Redis supports abstract data types

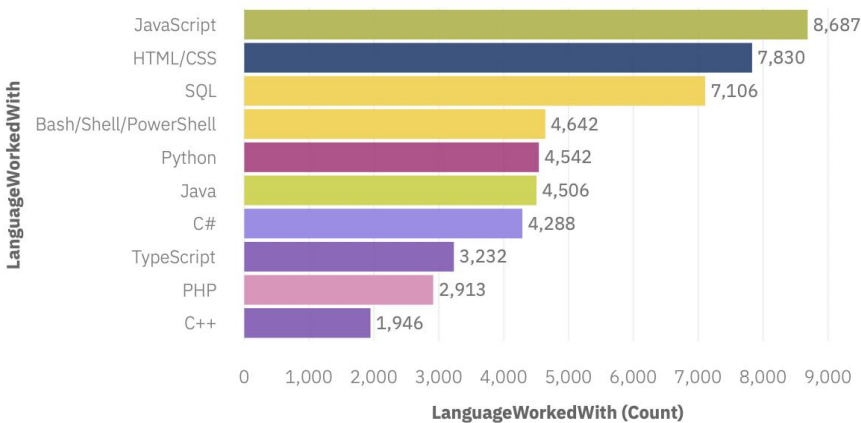
DASHBOARD



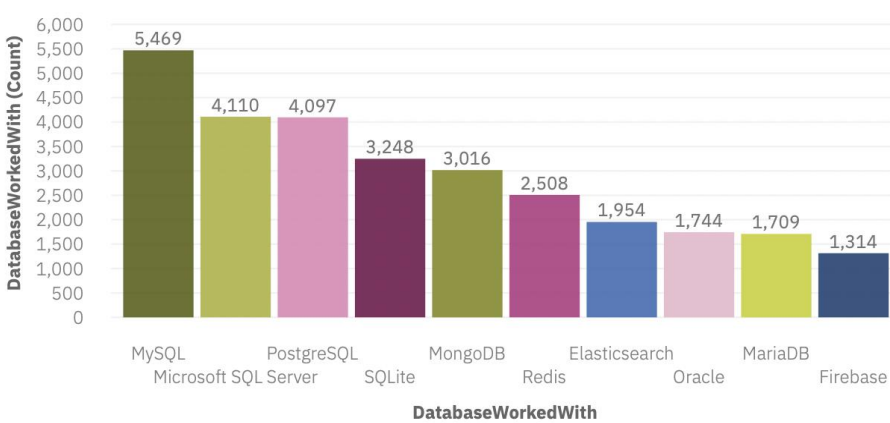
<https://eu-de.dataplatform.cloud.ibm.com/dashboards/35376dec-3f14-40de-bfd7-81dff2cde4ee/view/5a34f4031fa211936fdeb1e407982a537a30230fe7bb805080827b4906327797f06a4196c82e4a5cd945576af3be150bcd>

DASHBOARD TAB 1

Top 10 Language



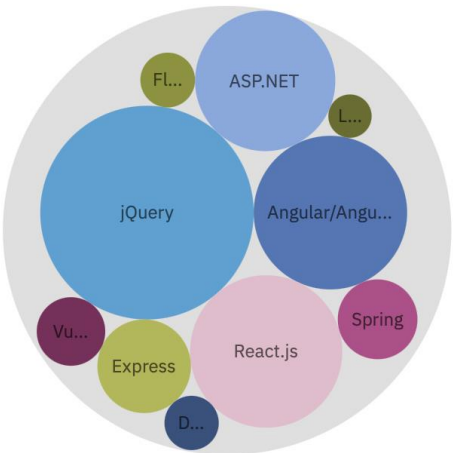
Top 10 Databases



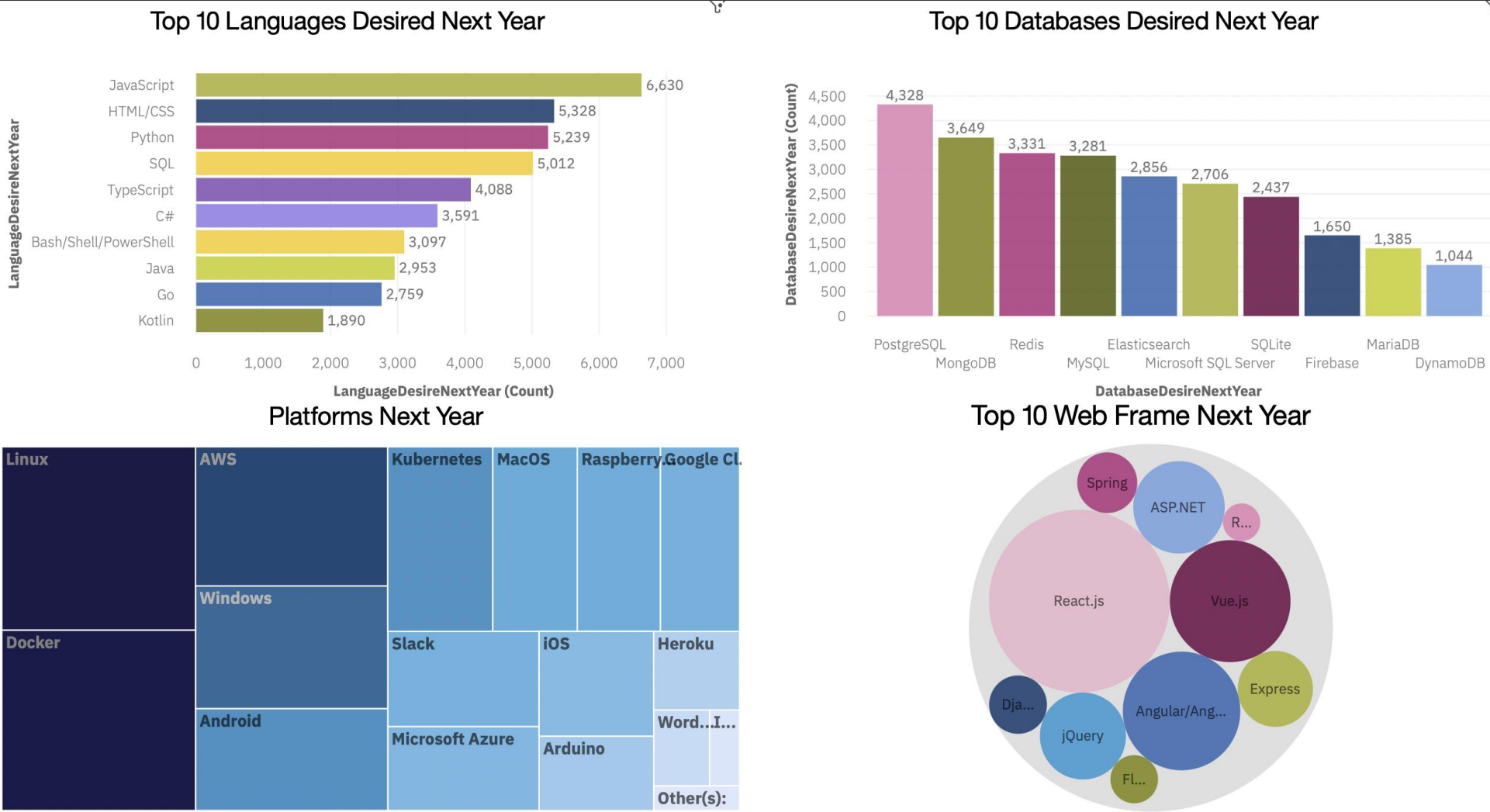
Top Platforms



Top 10 Web Frame

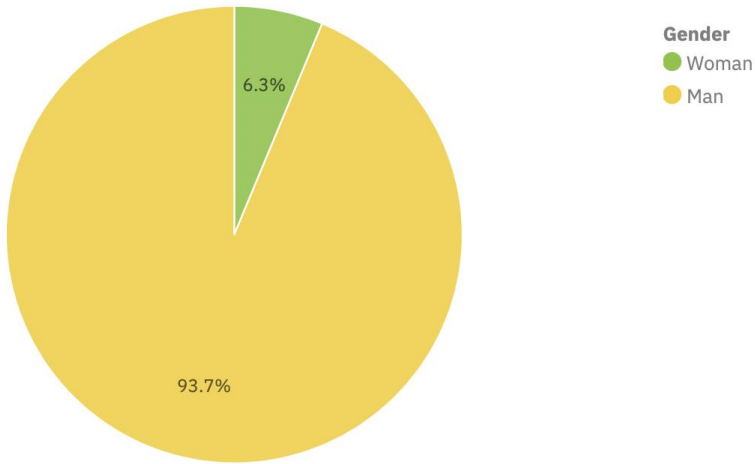


DASHBOARD TAB 2

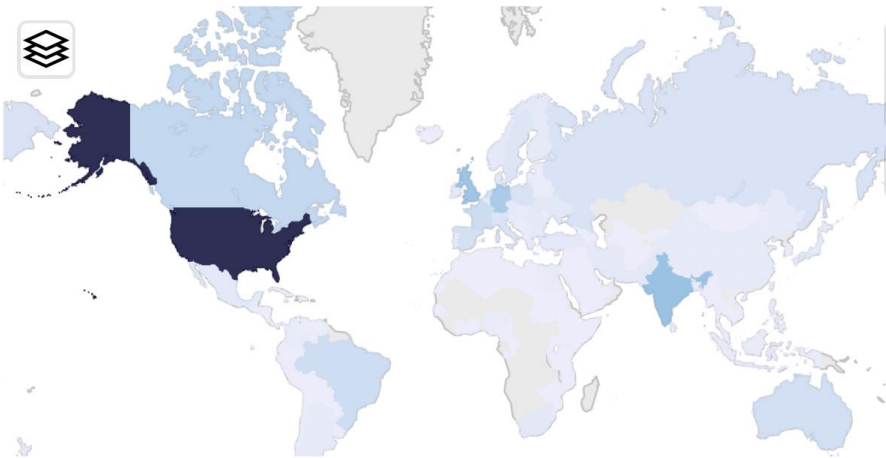


DASHBOARD TAB 3

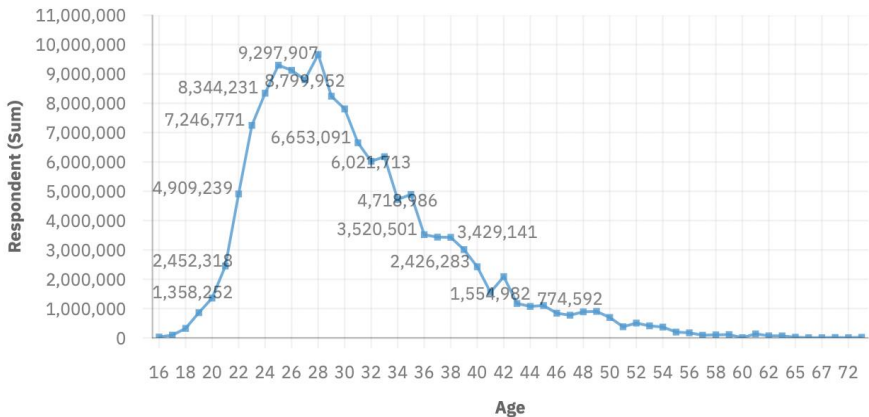
Respondent classified by Gender



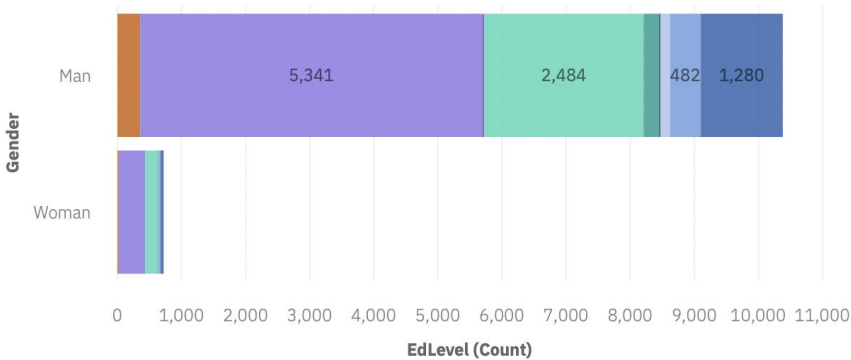
Respondent Count for Countries



Respondent Count by Age



Respondent Count by Gender, classified by Formal Education Level



DISCUSSION



- Programming trend for the next years
- Females working in technology based industries
- Technology gap in developing countries
- Reducing age and education discrimination in employment

OVERALL FINDINGS & IMPLICATIONS

Findings

- Fast changing technologies
- Knowledge concentration in few countries (USA, India)
- Gender gap

Implications

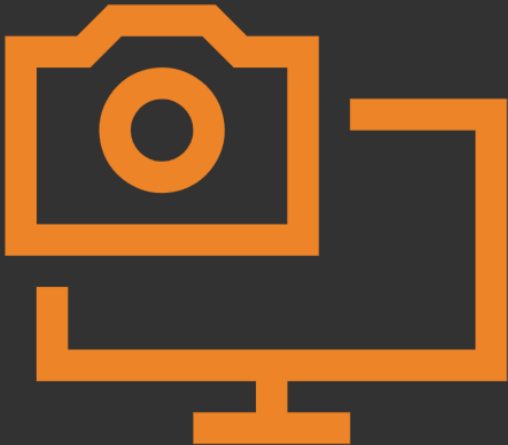
- Companies need to be flexible and adaptable
- Spread knowledge across borders to reduce the gaps
- Impact on job hiring

CONCLUSION



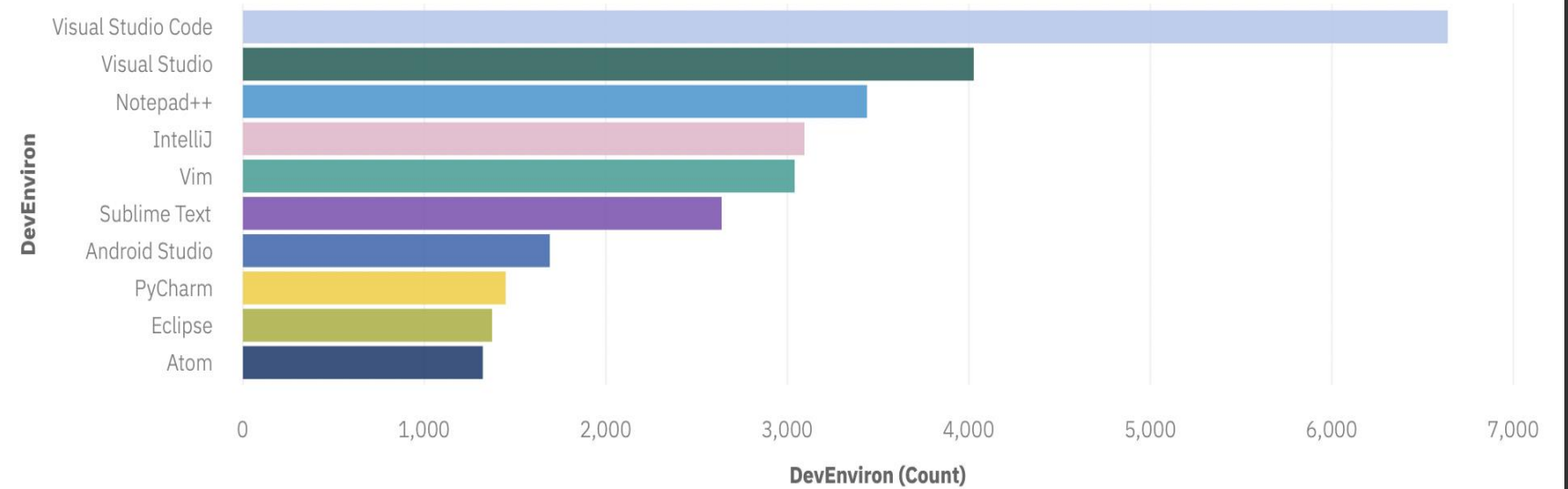
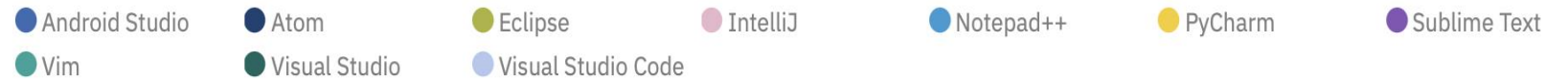
- AI and Big Data are part of the technology trend for next year
- Knowledge of Programming Languages and Databases that follow this trend are required
- Action to be taken in order to reduce demographic and gender gaps in the industry

APPENDIX



Top 10 Development Environment

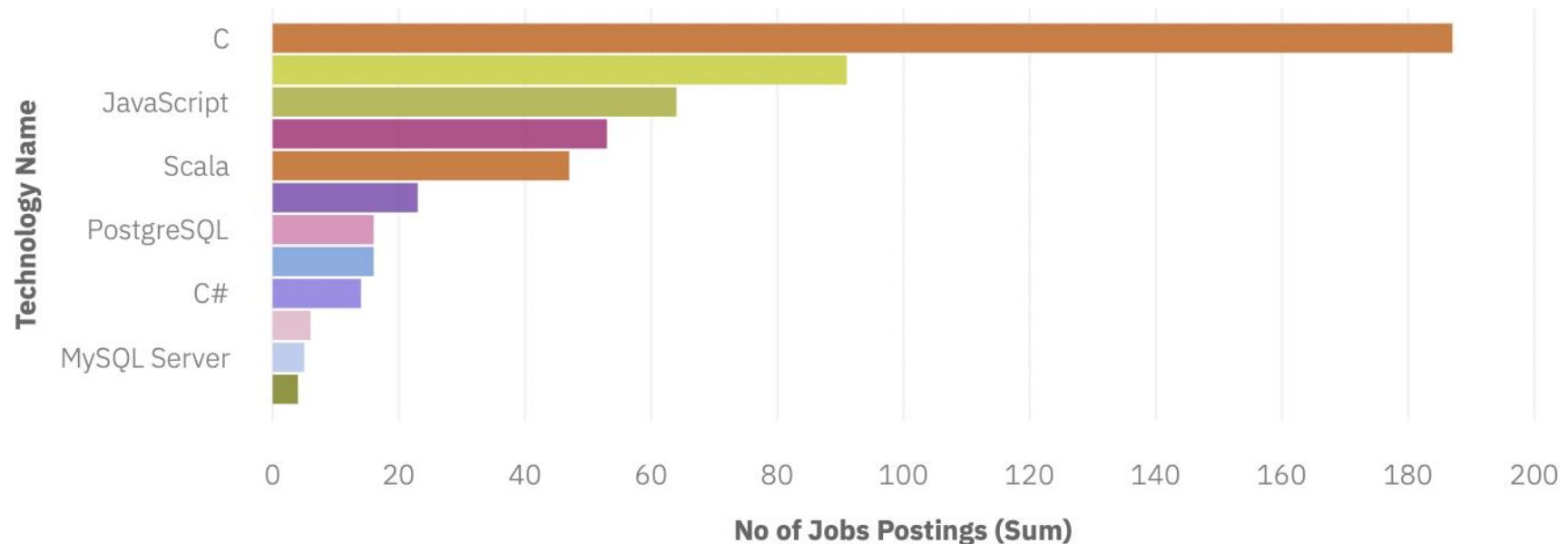
DevEnviron



GITHUB JOB POSTINGS

GitHub Job Posting

Technology Name



POPULAR LANGUAGES

Programming Languages vs AVG Annual Salary

