

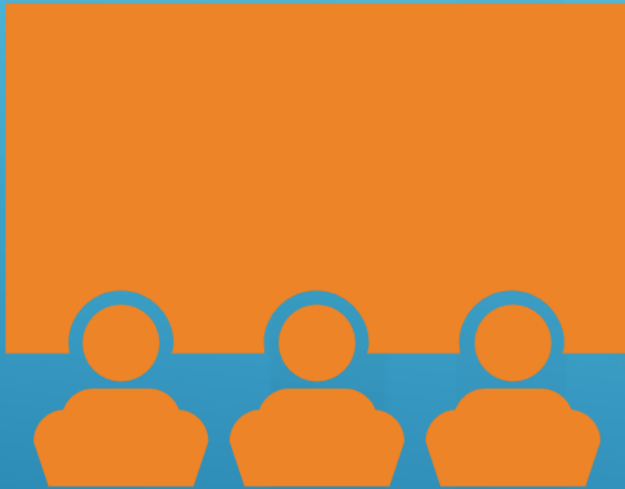
TECHNOLOGY TRENDS & ANALYSIS PRESENTATION



Foad Pouladi

May 2023

OUTLINE



- ▶ Executive Summary
- ▶ Introduction
- ▶ Methodology
- ▶ Results
 - ▶ Visualization – Charts
 - ▶ Dashboard
- ▶ Discussion
 - ▶ Findings & Implications
- ▶ Conclusion
- ▶ Appendix

EXECUTIVE SUMMARY



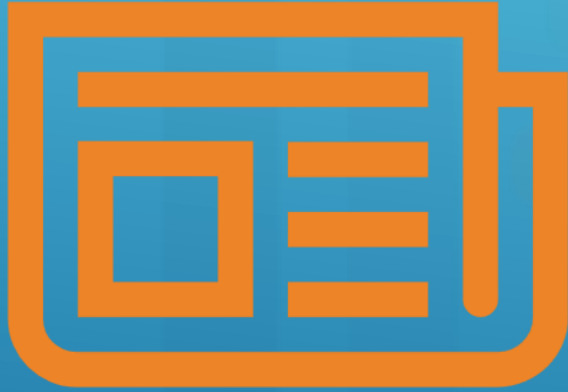
- ▶ Trends in programming languages and databases
- ▶ Demographics survey
- ▶ Technological gap in countries
- ▶ Gender gap in jobs

INTRODUCTION



- About: Analyzing the trends in software development
- Purpose:
 - Identify skill requirements for future
 - What are the top programming languages in demand?
 - What are the top database skills in demand?
 - What are the popular IDEs?
- Audience: Human Resource and IT Head

METHODOLOGY



- ▶ Data Collection Sources
 - ▶ Stack Overflow Developer 2019 Survey
 - ▶ GitHub Job Postings
 - ▶ Programming Languages Annual Salary
- ▶ Data Exploration
- ▶ Data Cleaning
- ▶ Data Visualization
- ▶ Presentation

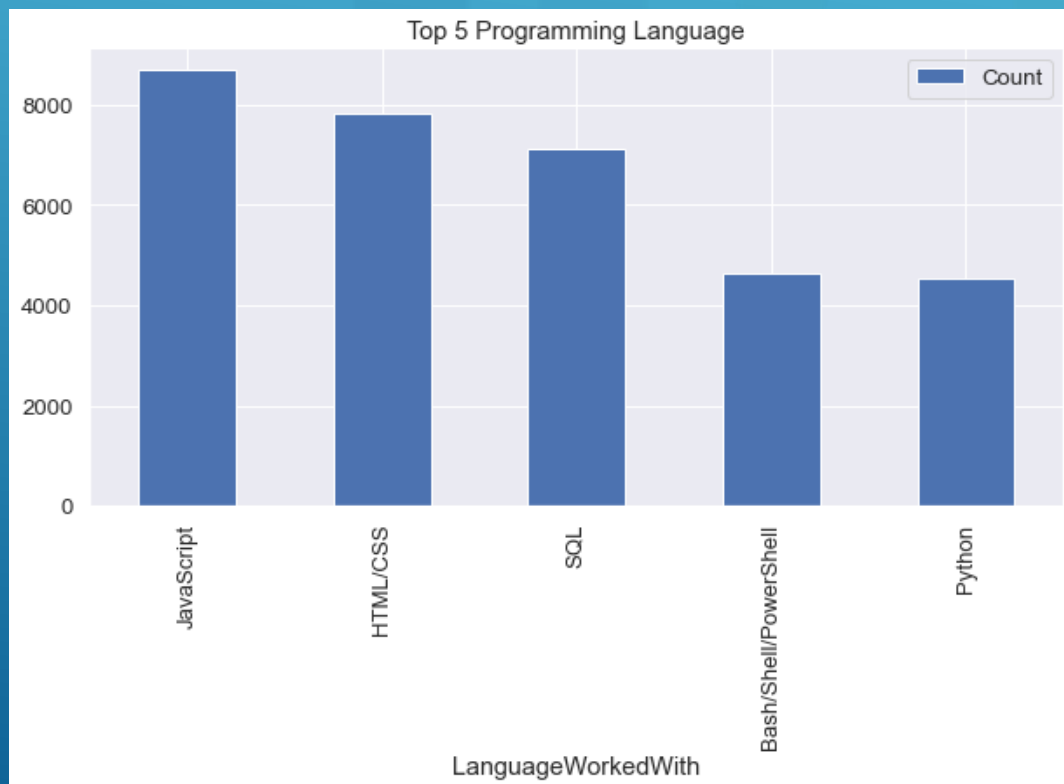
RESULTS

Results are based on this table:

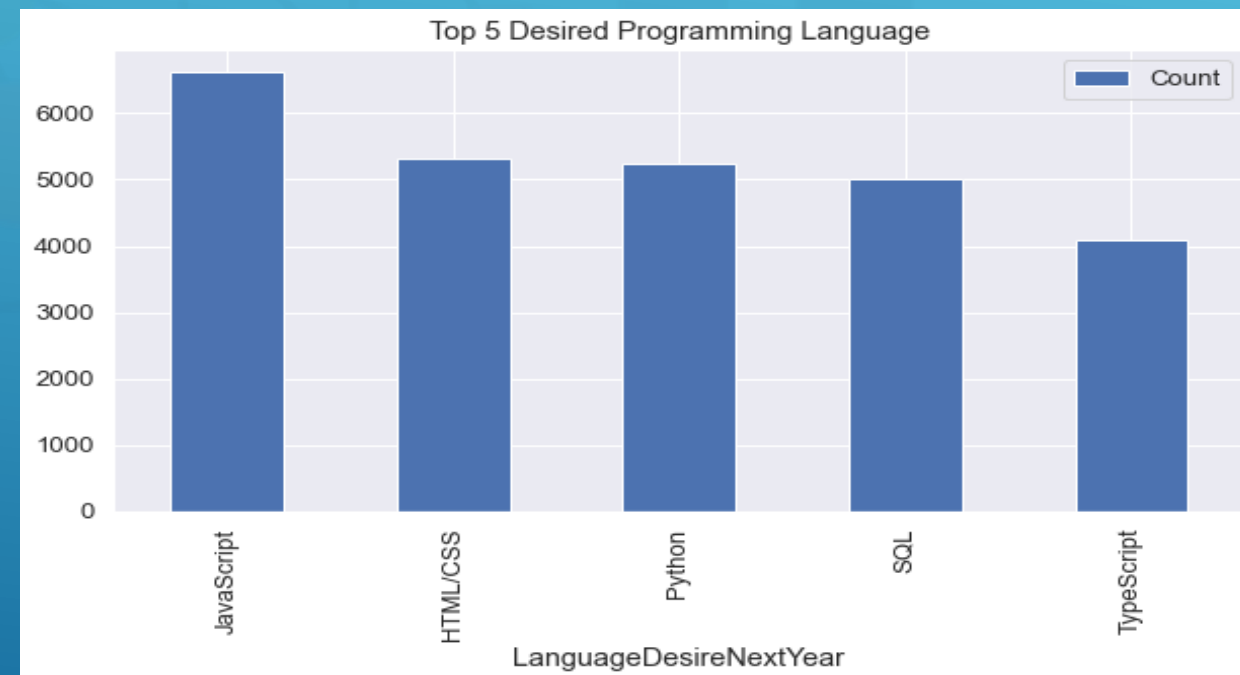
	Respondent	LanguageWorkedWith	LanguageDesireNextYear	DatabaseWorkedWith	DatabaseDesireNextYear	PlatformWorkedWith
0	4	C	C	MySQL	MySQL	Linux
1	4	C++	C#	SQLite	SQLite	Windows
2	4	C#	JavaScript	NaN	NaN	NaN
3	4	Python	SQL	NaN	NaN	NaN
4	4	SQL	NaN	NaN	NaN	NaN
...
74584	25142	Go	Python	NaN	NaN	NaN
74585	25142	HTML/CSS	R	NaN	NaN	NaN
74586	25142	PHP	NaN	NaN	NaN	NaN
74587	25142	Python	NaN	NaN	NaN	NaN
74588	25142	R	NaN	NaN	NaN	NaN

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

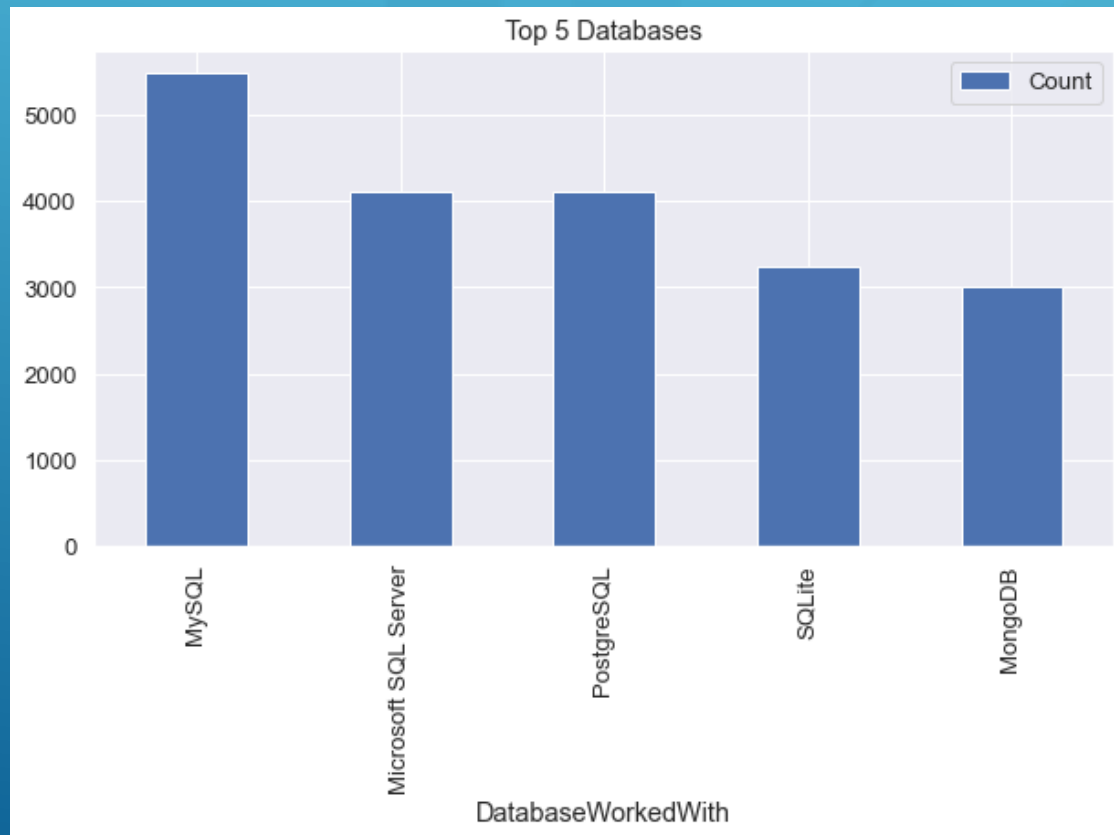
- ▶ JavaScript, HTML/CSS, SQL are top 3 this year
- ▶ Python and Typescript becoming popular next year
- ▶ PowerShell edged out in next year

Implications

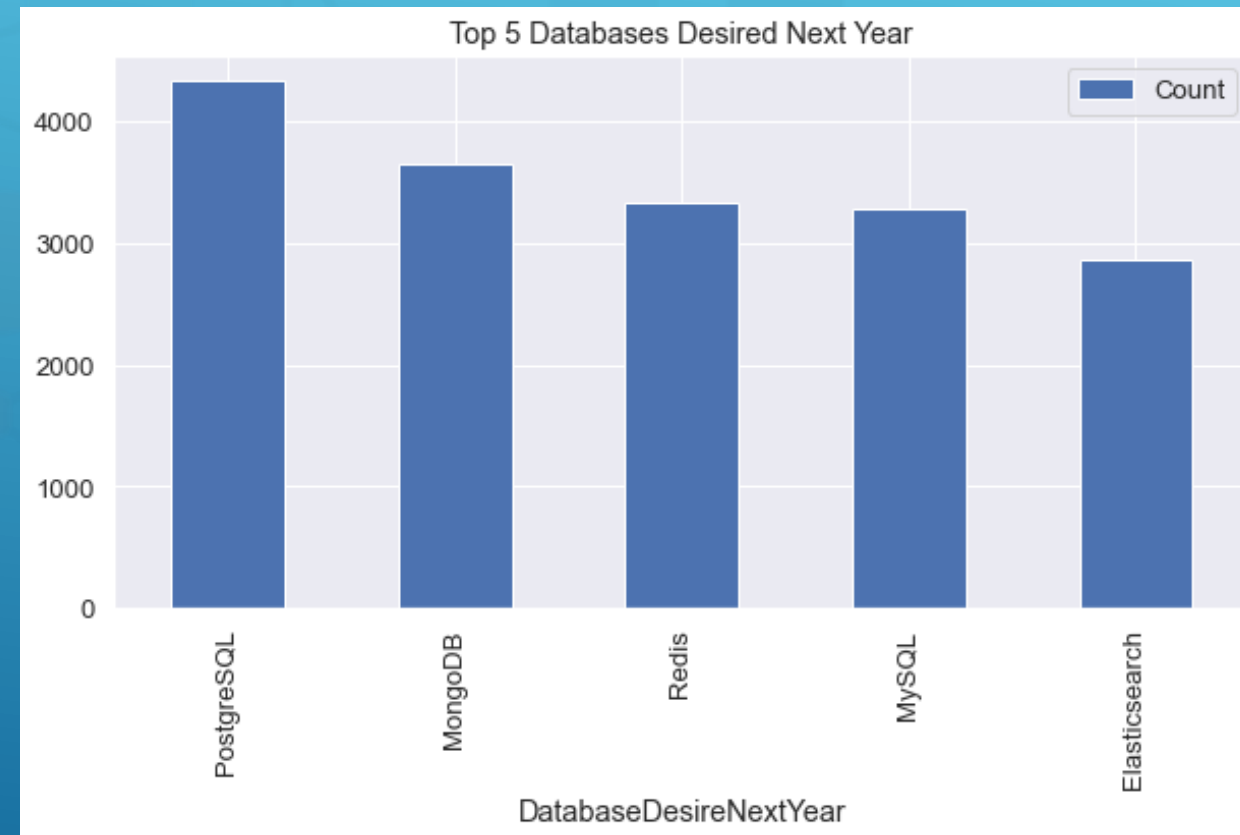
- ▶ Web development are still in high demand
- ▶ Big Data technology in companies still requires SQL
- ▶ With AI and ML in rising demand, Python is best choice

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- ▶ MySQL most popular
- ▶ Behind is Microsoft SQL
- ▶ MongoDB and Redis are upcoming favorites
- ▶ New kid on the block: Elasticsearch

Implications

- ▶ Open-source databases are still preferable in companies
- ▶ NoSQL databases will make an impact for storing non-relational data
- ▶ Redis supports abstract data types
- ▶ Pre-tuned search to website, app, or ecommerce store



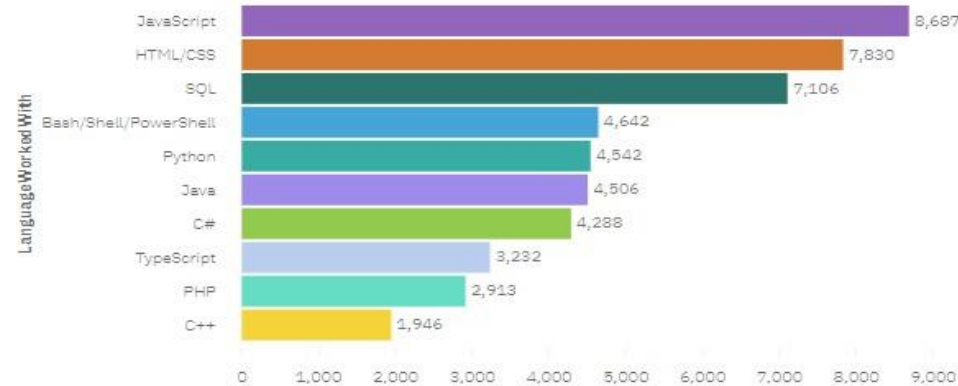
DASHBOARD

GitHub Project Link:

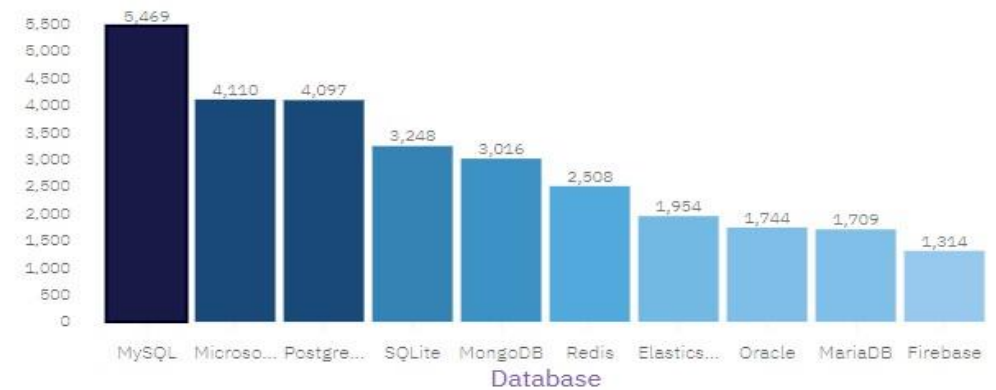
<https://github.com/FoadPouladi/IBM-Data-Analyst-Capstone-Project.git>

CURRENT TECHNOLOGY USAGE DASHBOARD

Top 10 Languages



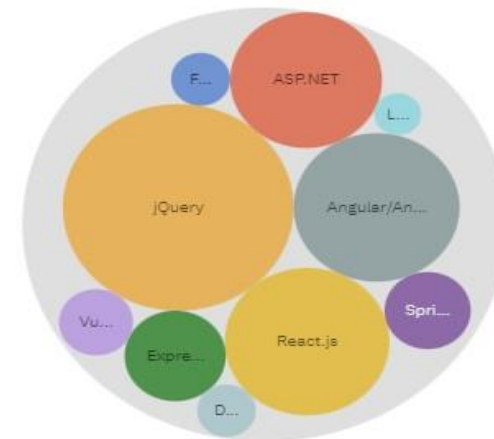
Top 10 Databases



Platform Worked with

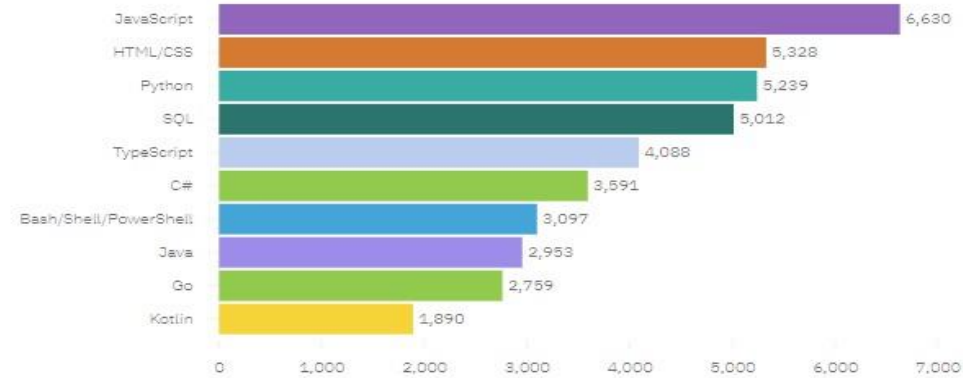


Top 10 WebFrame

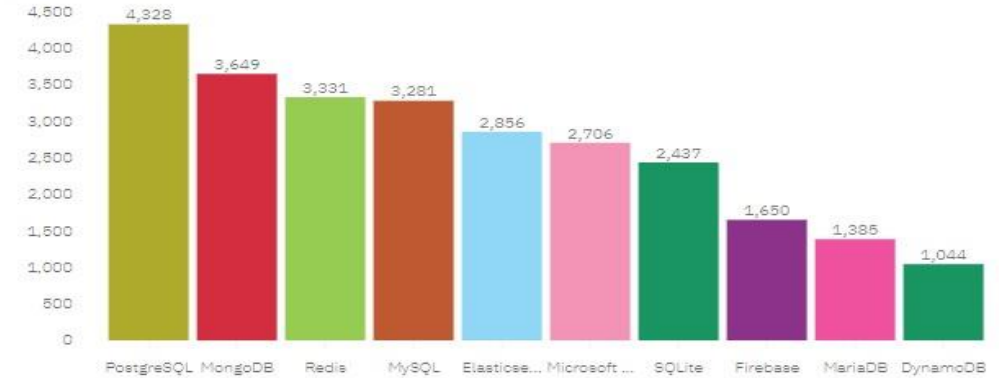


FUTURE TECHNOLOGY TREND DASHBOARD

Top 10 Language Desire Next Year



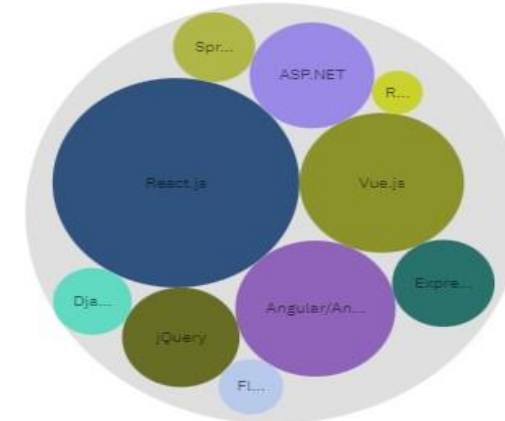
Top 10 Database Desire Next Year



Top Platform Desire Next Year



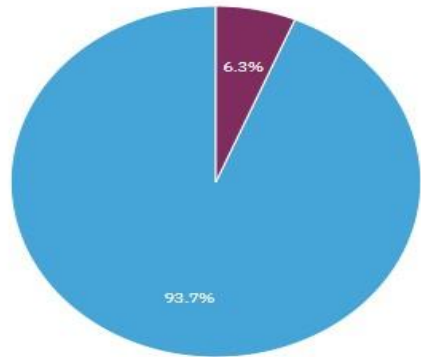
Top WebFrame Desire Next Year



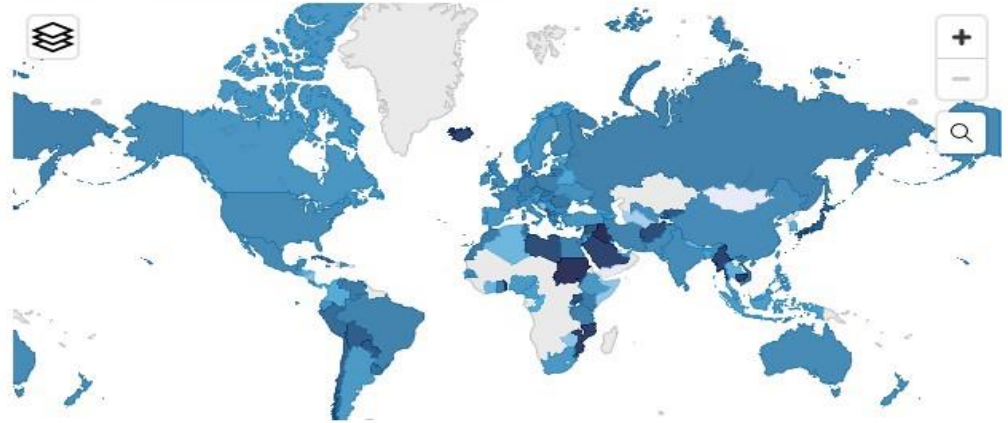
DEMOGRAPHICS DASHBOARD

Respondent classified by Gender

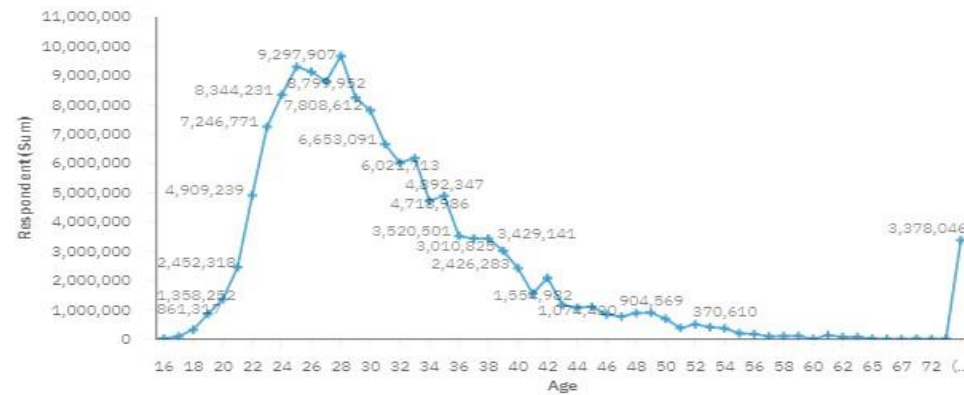
Gender
Woman Man



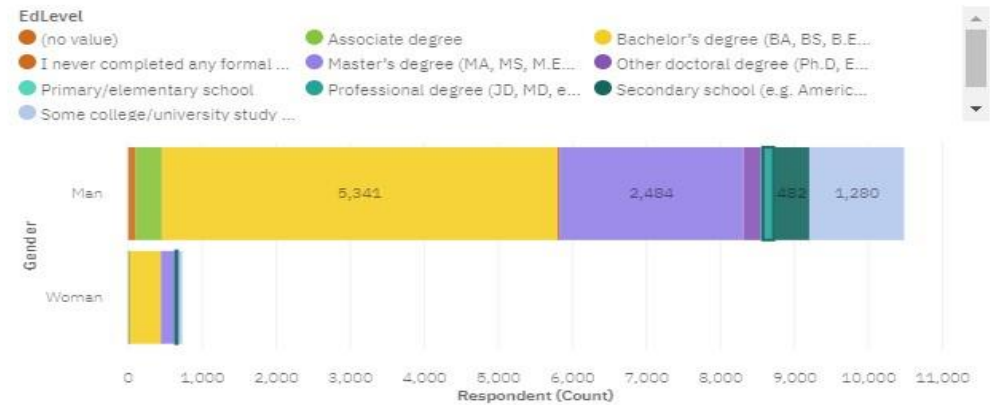
Respondent Avg(Count) for Countries



Respondent Count by Age



Respondent Count by Gender, classified by Formal Education Level



DISCUSSION

- ▶ Technology Trends now and future
- ▶ Training and Reskilling workers
- ▶ Females participation in Technology field
- ▶ Bridge divide of technology gaps in developing countries
- ▶ Eliminate age and education discrimination in employment



OVERALL FINDINGS & IMPLICATIONS

Findings

- ▶ Fast changing technology every year
- ▶ Concentration on several countries like USA and India
- ▶ Gender gap in technology jobs
- ▶ Platforms like Docker and AWS are growing

Implications

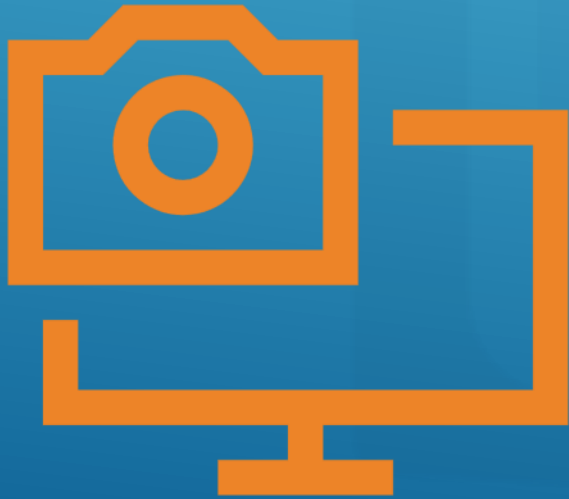
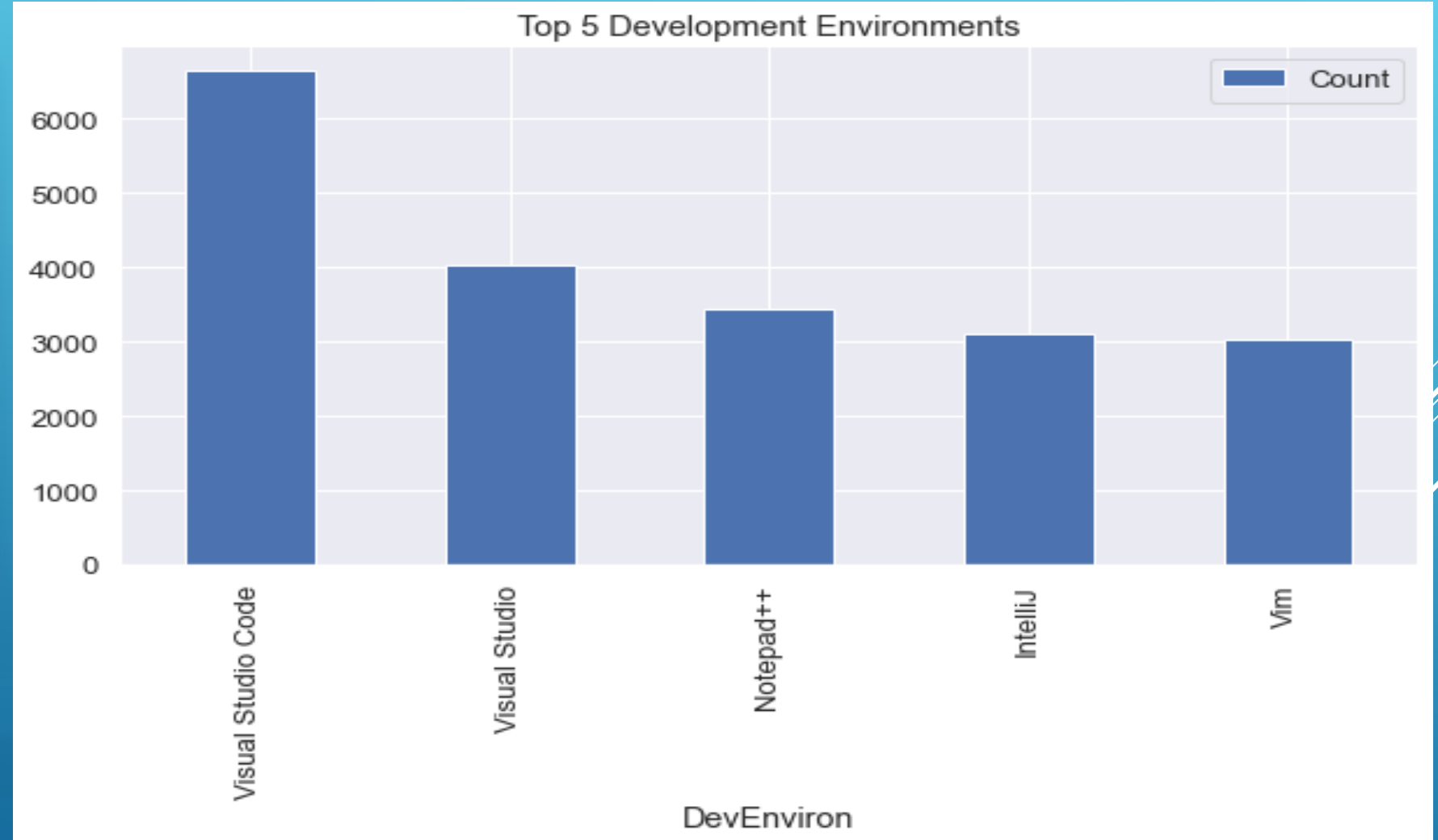
- ▶ Companies need to be flexible and adjust to rapid changes
- ▶ Need to spread technology out to lagging countries
- ▶ Impact of job hiring's
- ▶ Shift to faster app deployments and cloud services in future

CONCLUSION

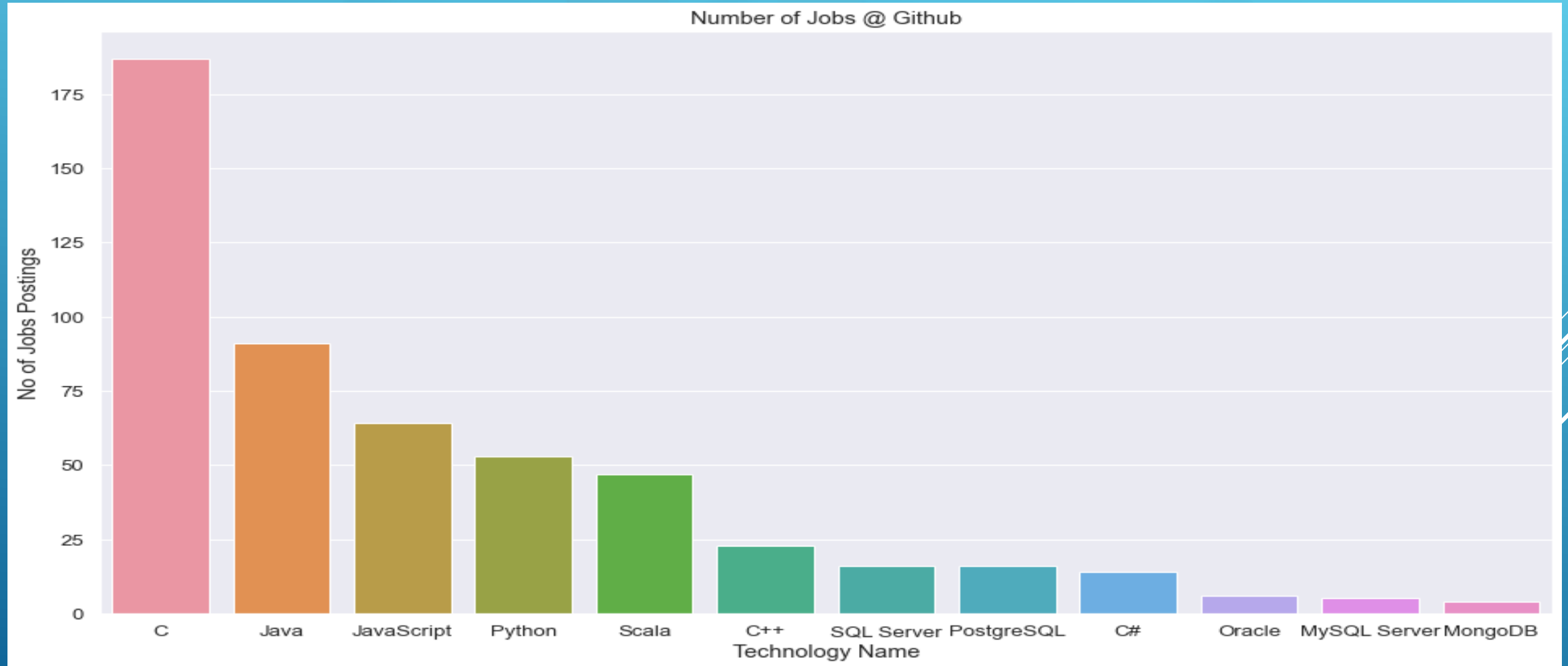
- ▶ Technology Trends for current and next year
- ▶ Programming Languages, Database and Platform overview
- ▶ Demographics overview
- ▶ Actions to be taken
- ▶ In future, incorporate Machine Learning to predict trends and salaries



APPENDIX



GITHUB JOB POSTINGS



POPULAR LANGUAGES BY SALARY

