



Technology Trend Analysis

Xiaoqian Yang

2023-08-01

OUTLINE



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

EXECUTIVE SUMMARY



- Trends in languages and databases
- Demographic survey
- Technology gap by countries
- Gender gap in jobs

INTRODUCTION



- About:
Analyze software development trend
- Purpose
 - Identify skills for the future
 - Top programming languages needed
 - Top database skill needed
 - Popular IDE

METHODOLOGY



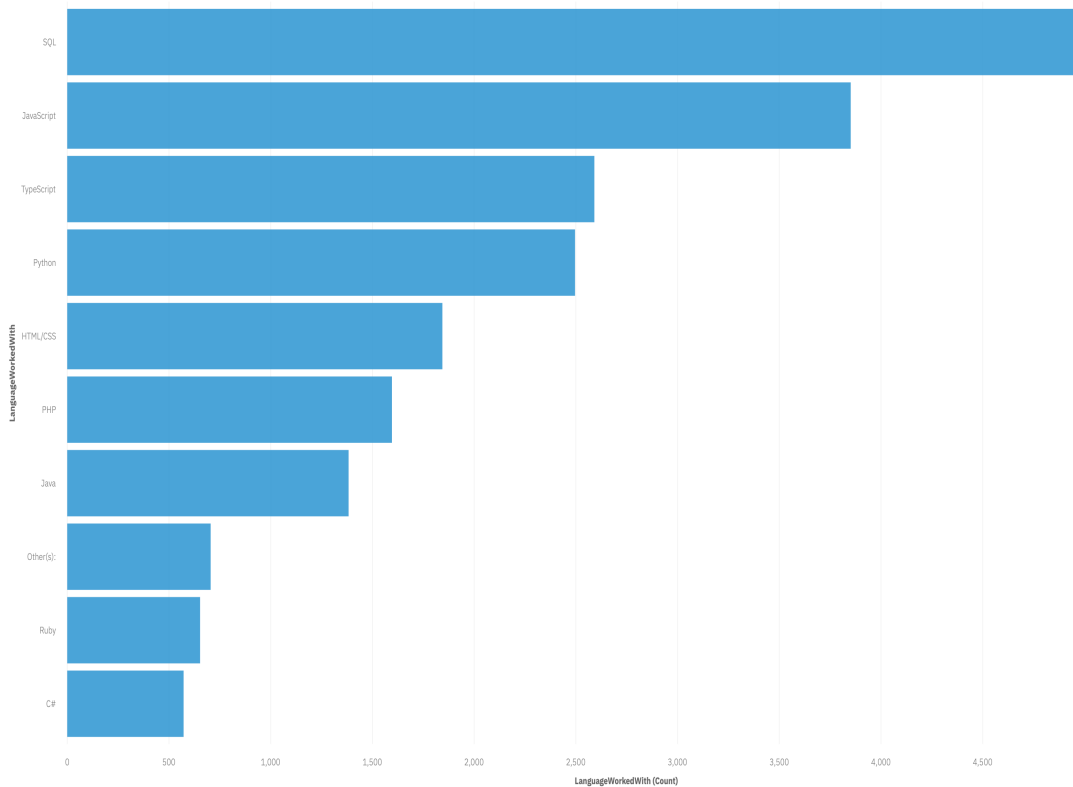
- Data collection sources
 - survey data technologies
 - survey data demographics
- Data exploration
- Data cleaning
- Data visualization
- Presentation

RESULTS

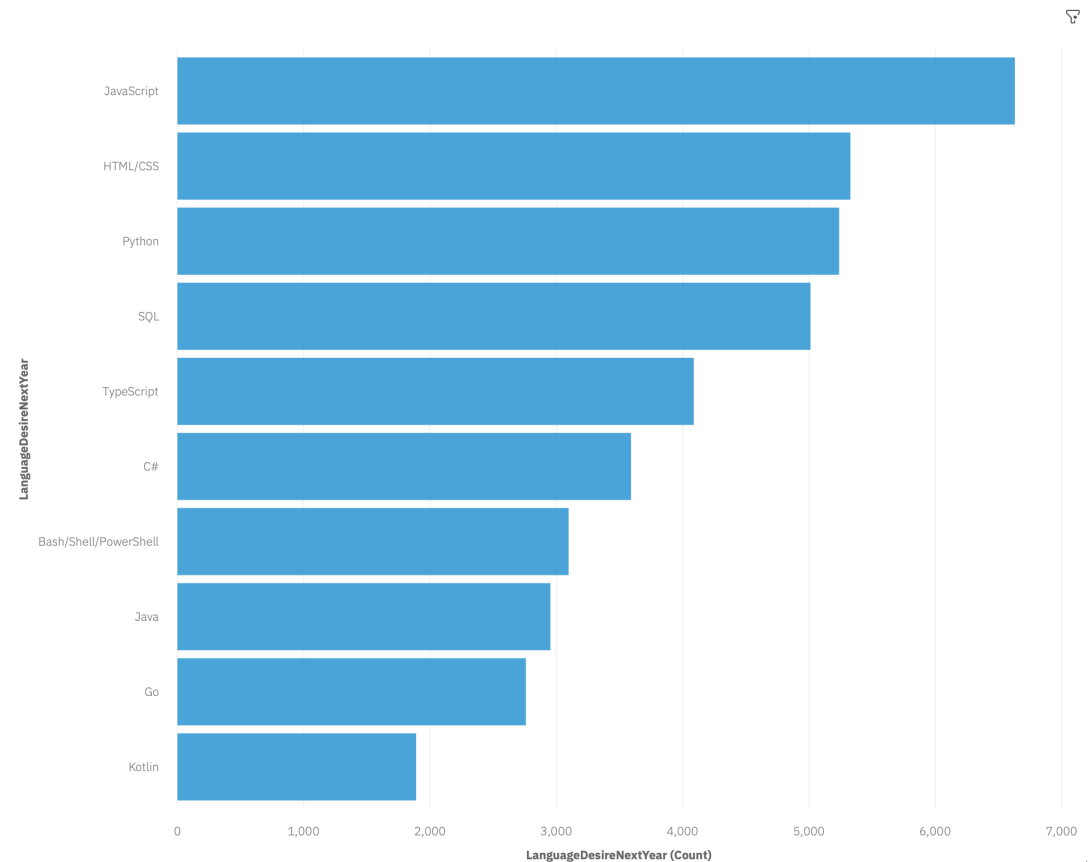
Respondent	LanguageWorkedW...	LanguageDesireNextY...	DatabaseWorkedW...	DatabaseDesireNextY...	PlatformWorkedW...	PlatformDesireNextY...	WebFrameWorkedW...	V
4	C	C	MySQL	MySQL	Linux	Linux		
4	C++	C#	SQLite	SQLite	Windows	Windows		
4	C#	JavaScript						
4	Python	SQL						
4	SQL							
9	Bash/Shell/PowerShell	Bash/Shell/PowerShell	DynamoDB	PostgreSQL	AWS	AWS	Express	E
9	C#	C	PostgreSQL	Redis	Docker	Docker	Ruby on Rails	F
9	HTML/CSS	HTML/CSS	SQLite	SQLite	Heroku	Heroku	Other(s):	C
9	JavaScript	JavaScript			Linux	Linux		
9	Python	Ruby			MacOS	MacOS		
9	Ruby	Rust			Slack	Slack		
9	Rust	SQL				Other(s):		
9	SQL	TypeScript						
9	TypeScript	WebAssembly						
9	WebAssembly	Other(s):						
9	Other(s):							
13	Bash/Shell/PowerShell	Bash/Shell/PowerShell	Couchbase	Firebase	Android	Android	Angular/Angular.js	E
13	HTML/CSS	HTML/CSS	DynamoDB	MySQL	AWS	AWS	ASP.NET	V
13	JavaScript	JavaScript	Firebase	Redis	Docker	Docker	Express	
13	PHP	Rust	MySQL		IBM Cloud or Watson	IBM Cloud or Watson	jQuery	
13	SQL	SQL			iOS	Linux	Vue.js	

PROGRAMMING LANGUAGE TRENDS

Top 10 language worked with



Top 10 language desired next year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

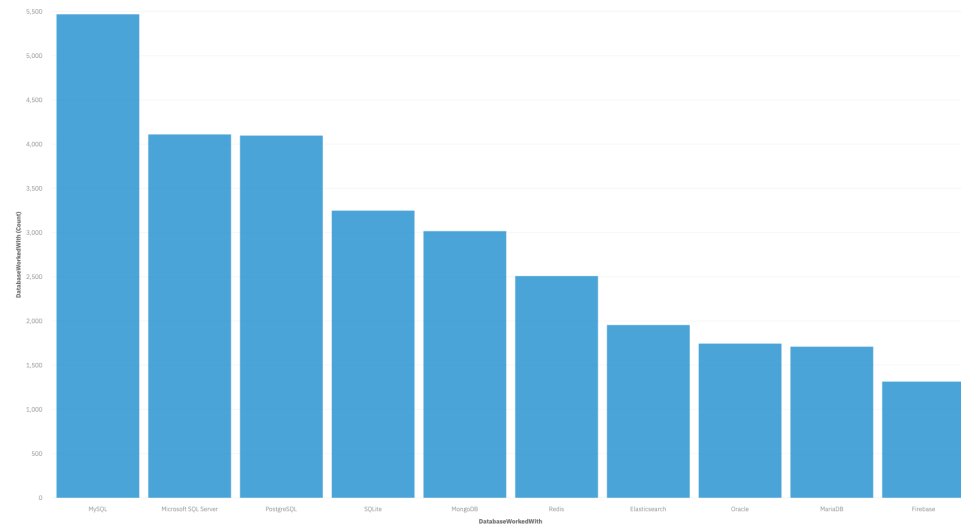
- Current top 3 languages are SQL, JavaScript and TypeScript
- Top 3 languages next year are JavaScript, HTML/CSS, Python
- PHP edge out in the trend, SQL goes to No. 4

Implications

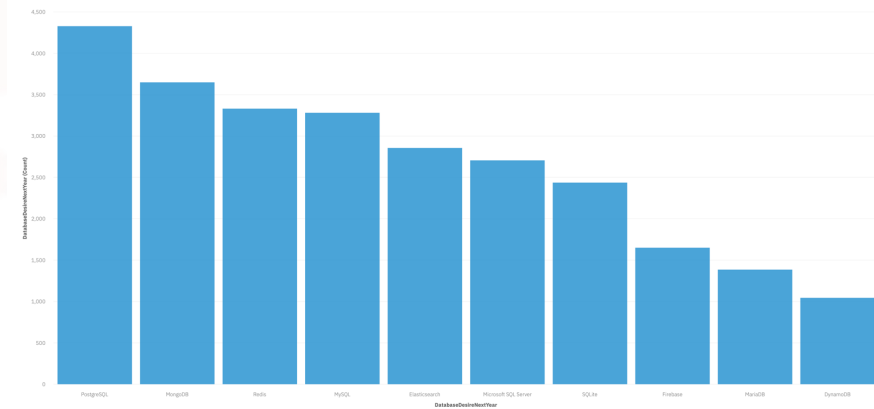
- Web development is the No.1 demand
- Due to AI, Python become more popular than before
- SQL is still useful tool in data query with Big Data, and PHP give way to more popular back end language

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL, Microsoft SQL Server, PostgreSQL are top 3 database this year
- PostgreSQL, MongoDB, Redis are top 3 database next year
- ElasticSearch is also popular

Implications

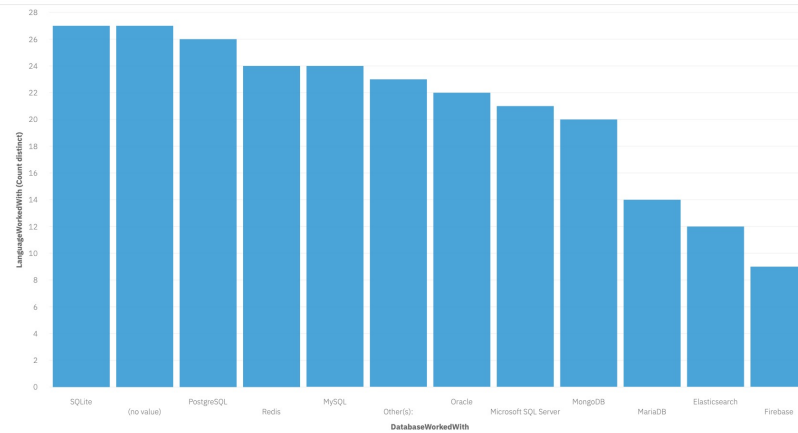
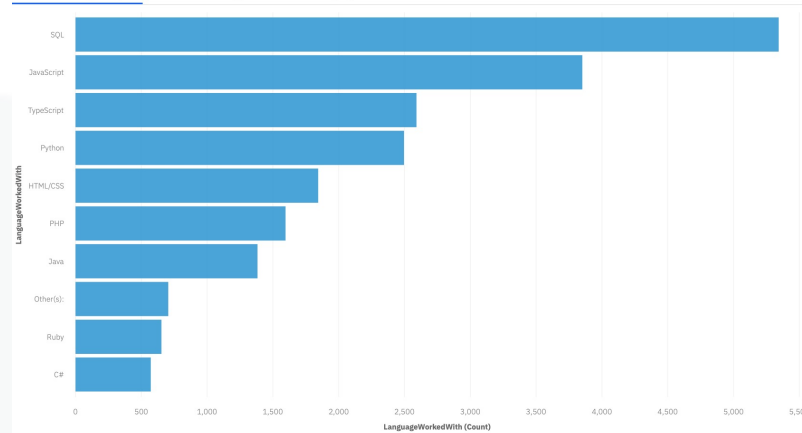
- Structured data base are the most popular ones
- No SQL database(MongoDB and Redis) would become popular too next year
- ElasticSearch is search tool for Big Data

DASHBOARD

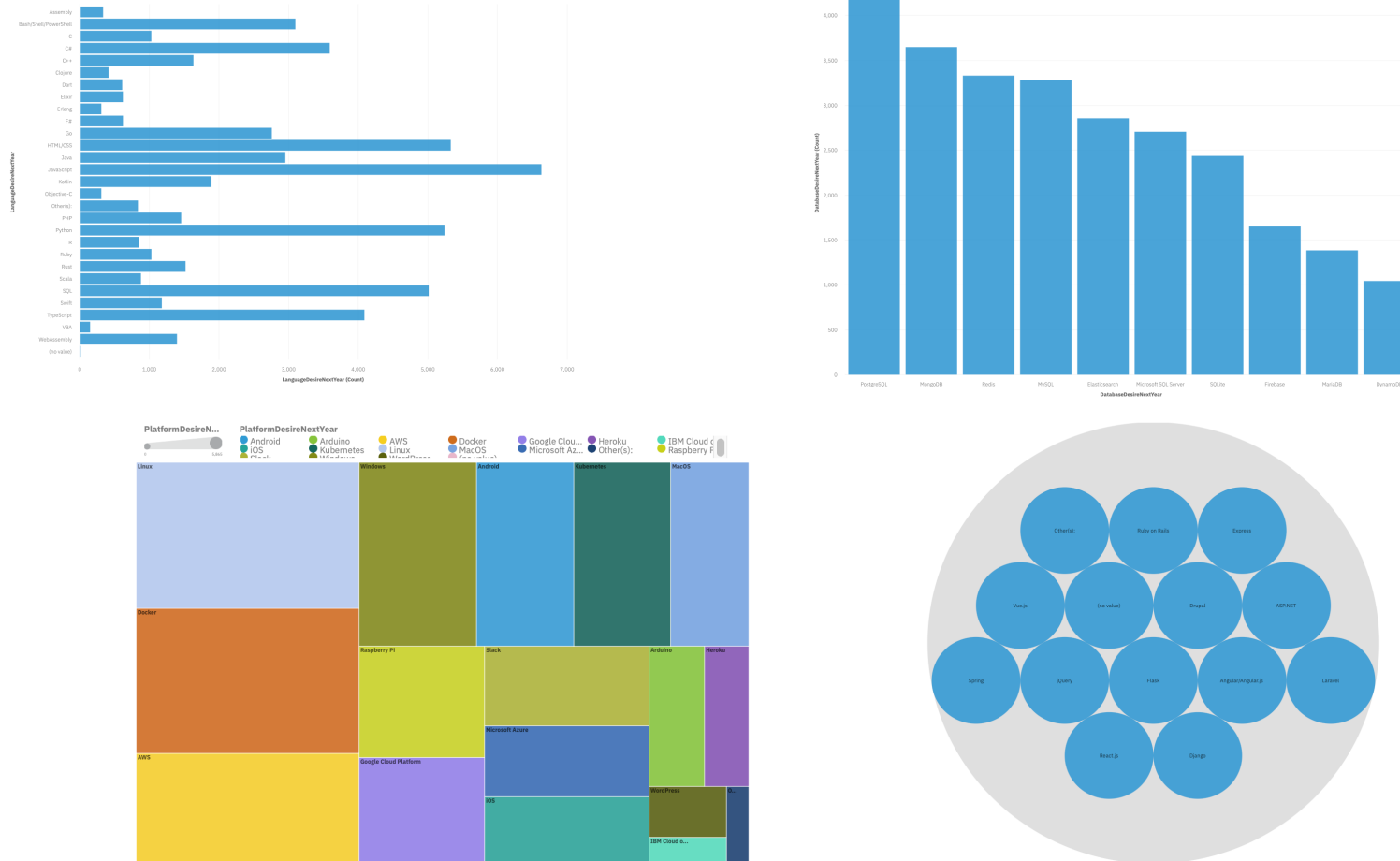


<https://dataplatform.cloud.ibm.com/dashboards/f45c2a65-c6ff-4377-b12b-f8c748998d9e/view/7d01a42723ab02d46dc7d4e4079025522b63765ebbbb-d204d48d7b490e687297f36c4795c82c4a58da475135f2ea115aca>

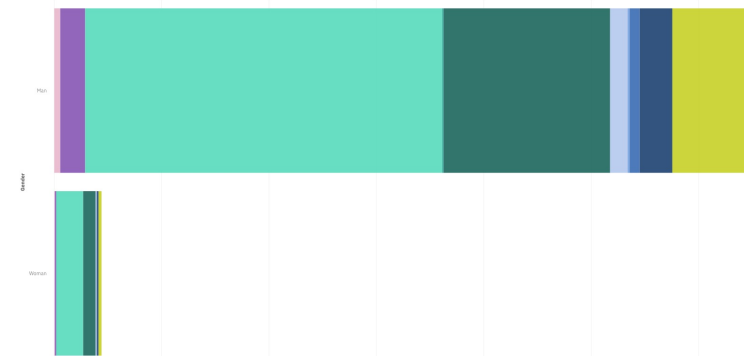
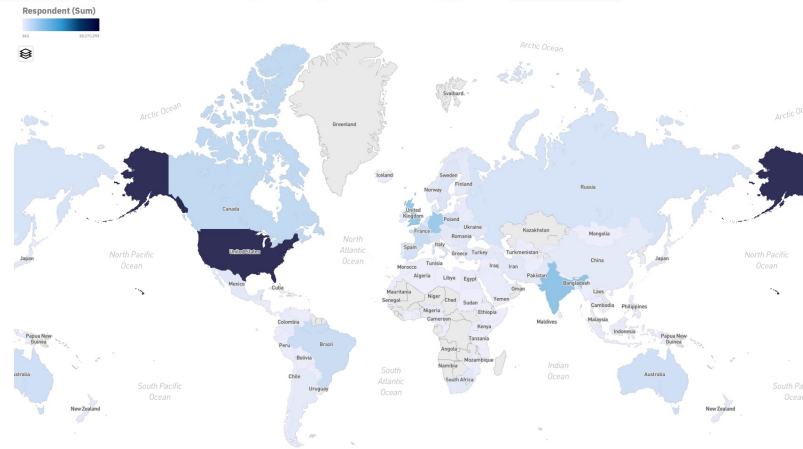
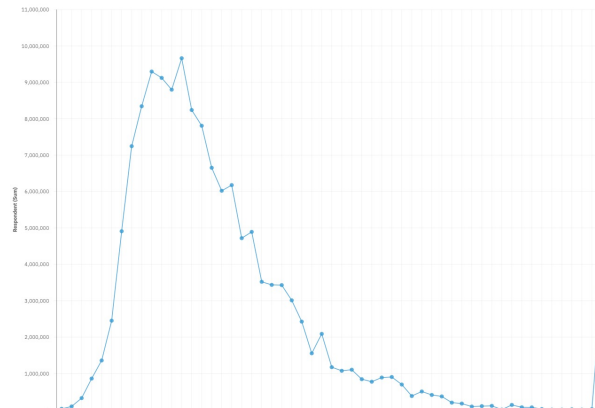
DASHBOARD TAB 1



DASHBOARD TAB 2



DASHBOARD TAB 3



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
- Gender gap in technology jobs
- Shift to faster app deployments and cloud services in future
- Platforms like Docker and AWS are growing

Implications

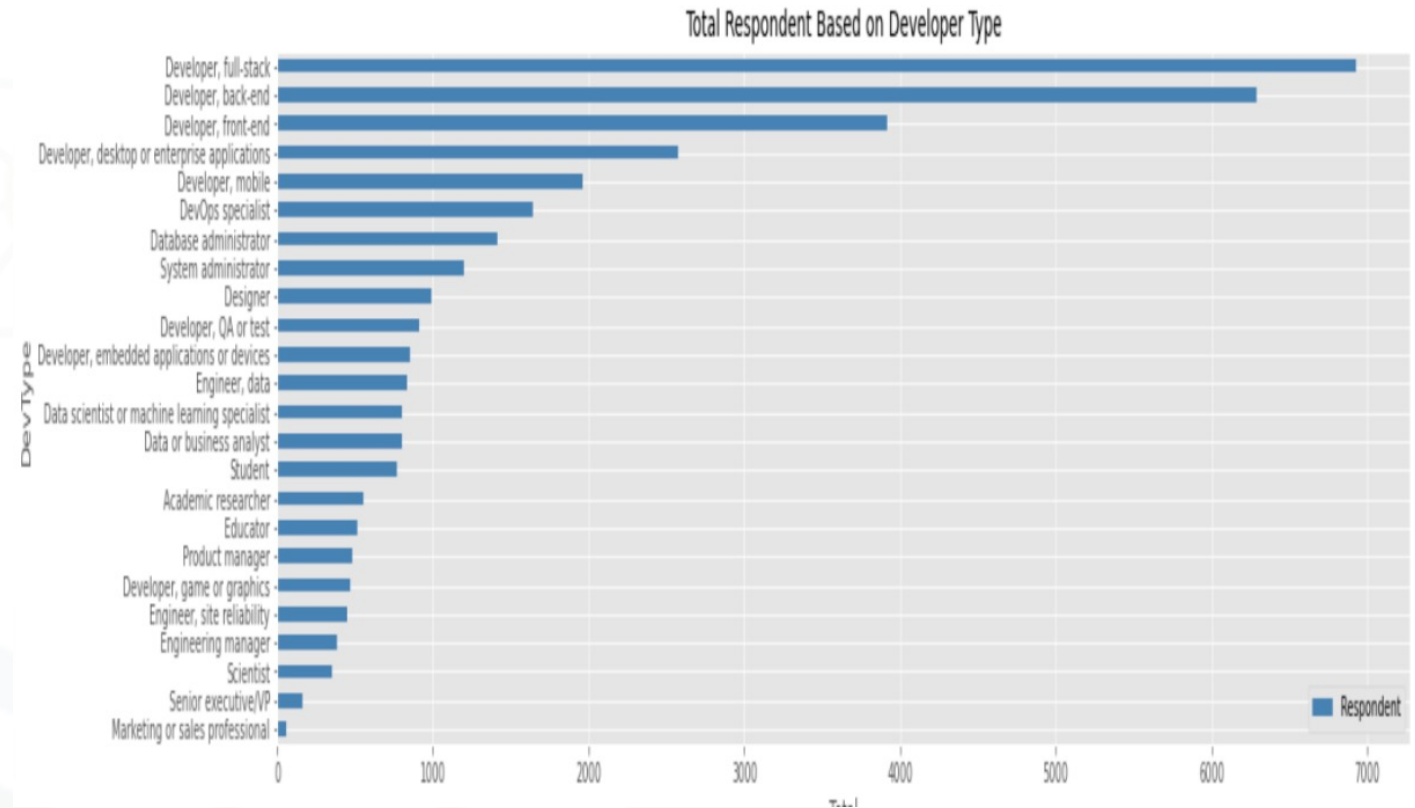
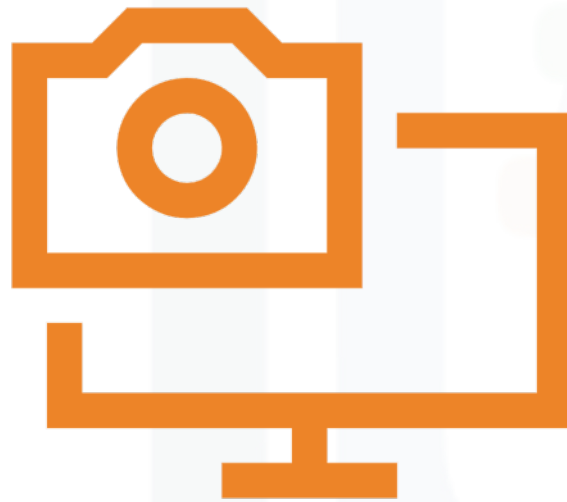
- Companies need to be flexible and adjust to rapid changes
 - Need to spread technology out to lagging countries
 - Concentration on several countries like USA and India
- Impact of job hiring's

CONCLUSION

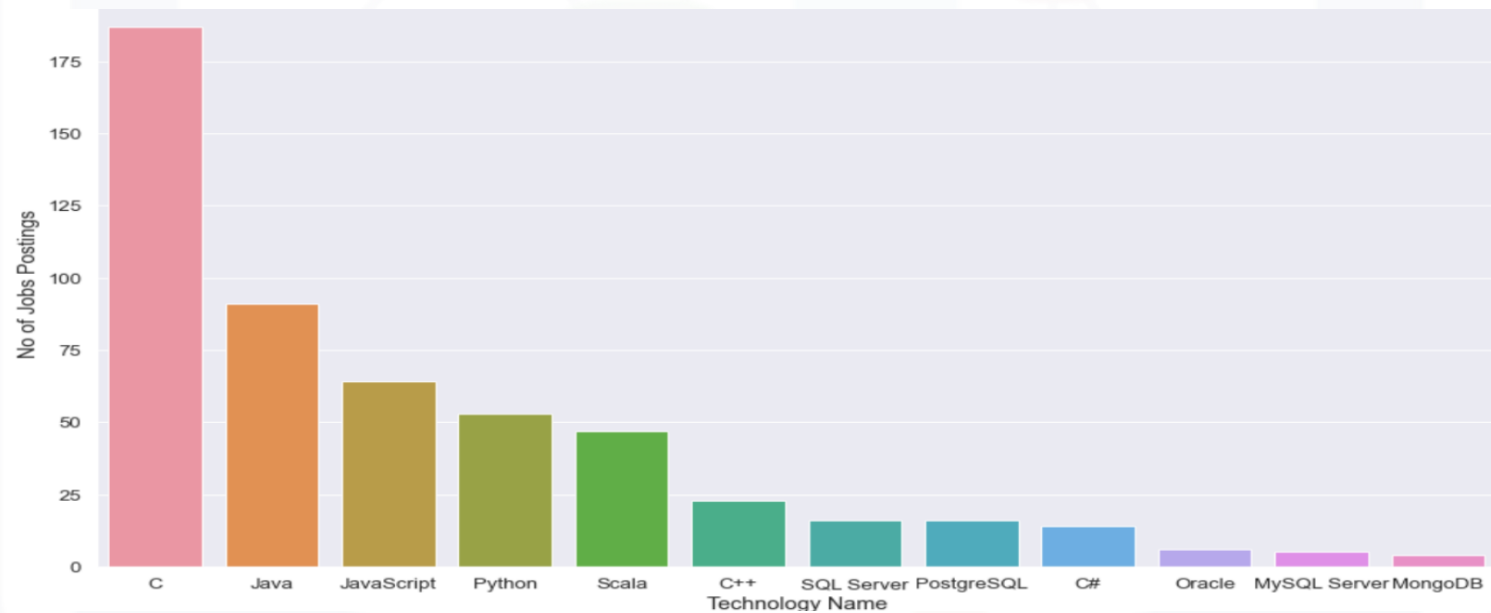


- Technology Trends for current and next year
- Programming Languages, Database and Platform overview
- Demographics overview
- Actions to be taken
- In future, incorporate Machine Learning to predict trends and salaries

APPENDIX



JOB POSTINGS



POPULAR LANGUAGES

