Stack Overflow Developer Survey 2019

Asif Dawood

16 July 2024

IBM Developer

SKILLS NETWORK

OUTLINE

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

IBM Developer

SKILLS NETWORK

EXECUTIVE SUMMARY

- Trends in Programming languages and Databases

- Gender Gap

- Demographics Survey

INTRODUCTION

- Identifying the Programing languages and Databases expected to be popular and in demand for the future

- Can fill in the skill gaps

- Identifying top Programming languages in demand at present

- Identifying top Databases and Frameworks in demand

- Gender gap in Technology

METHODOLOGY

- Collect data using the following technologies
  - Web Scrapping
  - Requests Library
  - API's
  From GitHub Postings, Stack overflow survery

- Data Cleaning and wrangling

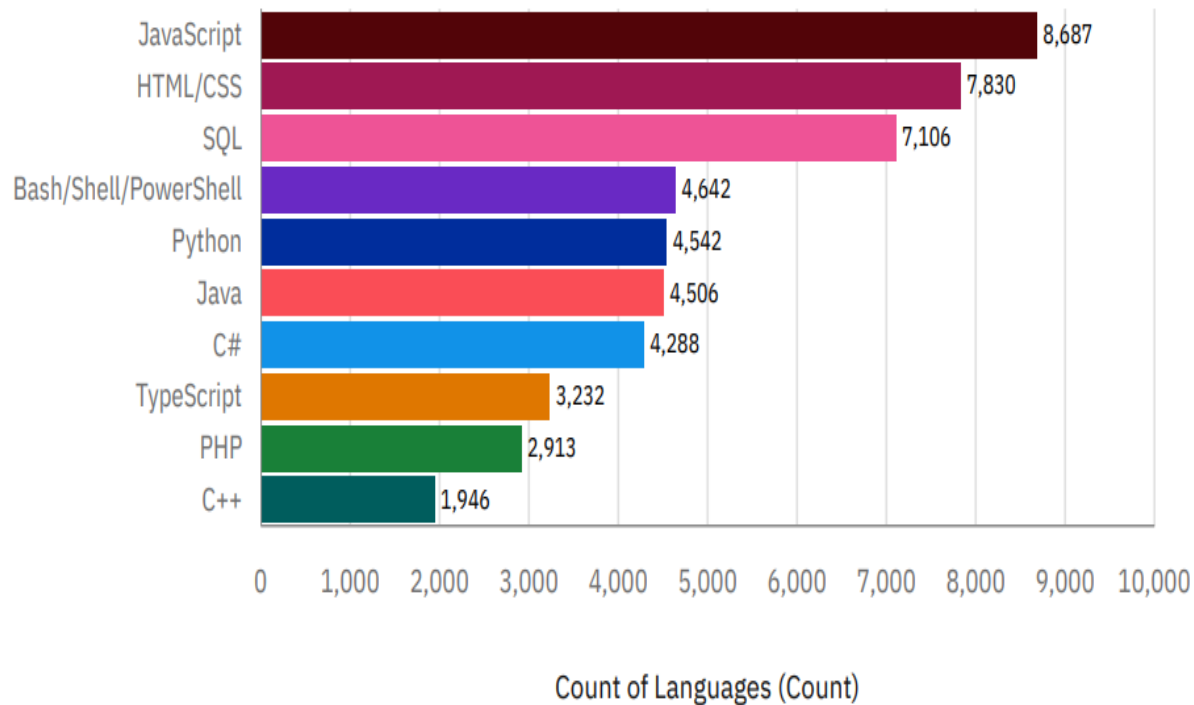- Exploratory Data Analysis

- Data Visualization

- Reports

RESULTS
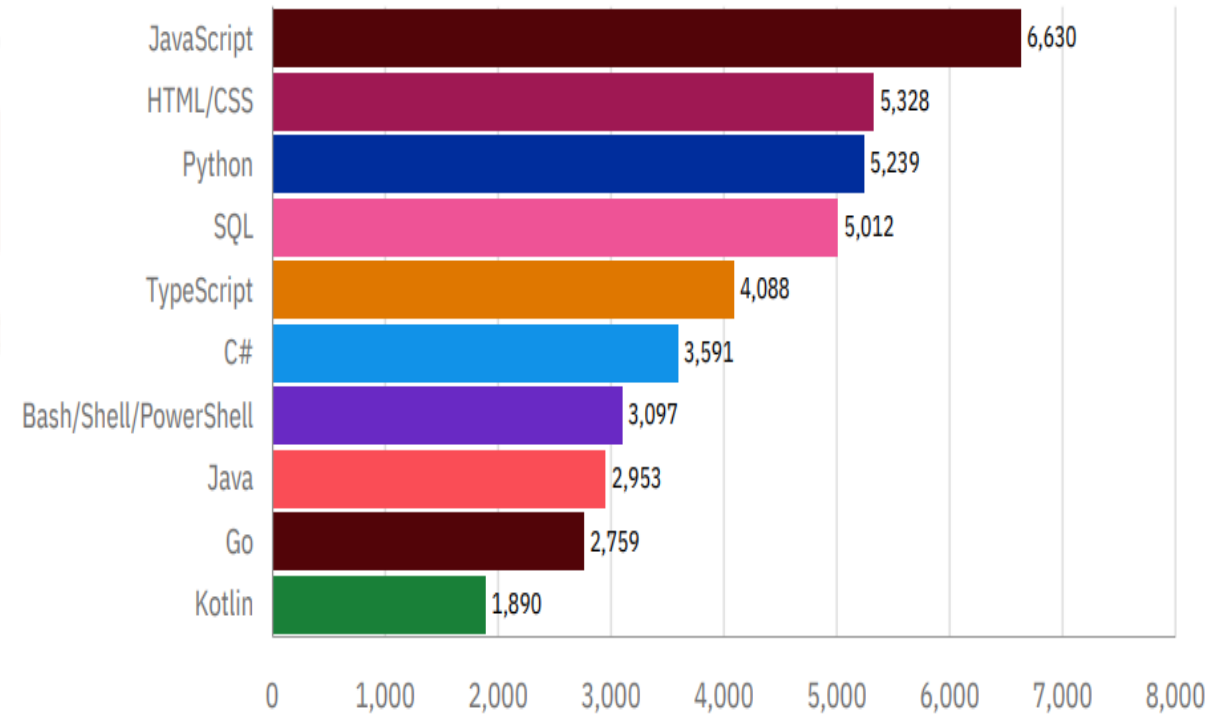
Snapshot of the Result Database

	A	B	C	D	E	F	G	H	I	J
	Respondent	LanguageWorkedWith	LanguageDesireNextYear	DatabaseWorkedWith	DatabaseDesireNextYear	PlatformWorkedWith	PlatformD	WebFrameWorkedWith	WebFrameDesireNextYear	DevEnviron
	22	Bash/Shell/PowerShell	Bash/Shell/PowerShell	Elasticsearch	Elasticsearch	Docker	Docker	Angular/Angular.js	Angular/Angular.js	Sublime Text
	22	C++	C++	MySQL	MySQL	Linux	Linux	Ruby on Rails	Ruby on Rails	Visual Studio
	22	HTML/CSS	HTML/CSS	Oracle	Oracle	Raspberry Pi	Raspberry Pi			Visual Studio Code
	22	JavaScript	JavaScript	Redis	Redis	Windows	Windows			
	23	Bash/Shell/PowerShell	Bash/Shell/PowerShell	Oracle	Couchbase	Docker	Docker	React.js	Express	Visual Studio Code
	23	HTML/CSS	Go	SQLite	DynamoDB	Google Cloud Platform	iOS	Ruby on Rails	React.js	
	23	JavaScript	HTML/CSS		Elasticsearch		Slack		Ruby on Rails	
	23	Python	Java		Firebase				Vue.js	
	23	Ruby	JavaScript		Oracle					
	24	HTML/CSS	Go	Firebase		AWS	Android	Express	Vue.js	Visual Studio Code
	24	JavaScript		MongoDB		WordPress	Docker	jQuery		
	24	PHP		MySQL			Slack	React.js		
	24	TypeScript								
	25	HTML/CSS	HTML/CSS	MySQL	MySQL	Linux	Linux	Angular/Angular.js	Angular/Angular.js	Visual Studio Code
	25	JavaScript	JavaScript			Windows	Windows	jQuery	jQuery	
	25	PHP	PHP					Laravel	Laravel	
	25	SQL	SQL						React.js	
	25	TypeScript	TypeScript						Vue.js	
	26	Bash/Shell/PowerShell	C#	Microsoft SQL Server	Microsoft SQL Server	AWS	Android	Angular/Angular.js	Angular/Angular.js	Notepad++
	26	C++	HTML/CSS	MySQL	MySQL	Docker	Docker	ASP.NET	ASP.NET	Sublime Text
	26	C#	JavaScript	Redis	Redis	Linux	iOS	Drupal		Vim
	26	HTML/CSS	Objective-C	SQLite	SQLite	MacOS	Linux	Express		Visual Studio
	26	JavaScript	Ruby			Microsoft Azure	MacOS	jQuery		Xcode
	26	PHP	SQL			Windows	Microsoft A	Ruby on Rails		
	26	Python	Swift			WordPress	Windows			
	29	Bash/Shell/PowerShell	Bash/Shell/PowerShell	Firebase	PostgreSQL		Docker	Express	Angular/Angular.js	Visual Studio Code

PROGRAMMING LANGUAGE TRENDS

Current Year

Language	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

Count of Languages (Count)

Next Year

Language	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

PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Javascript and HTML are top choices
- Followed by SQL for data data driven decisions
- Python is also rising due to its versatility

Implications

- Javascript and HTML still remains at the top implying Web development will be the way forward
- Python will also be in demand to its role in AI and ML
- Since data is everywhere , SQL retains is hold

IBM **Dev**_oper_

SKILLS NETWORK

DATABASE TRENDS

Current Year

Top 10 Databases

Next Year

IBM Developer

SKILLS NETWORK
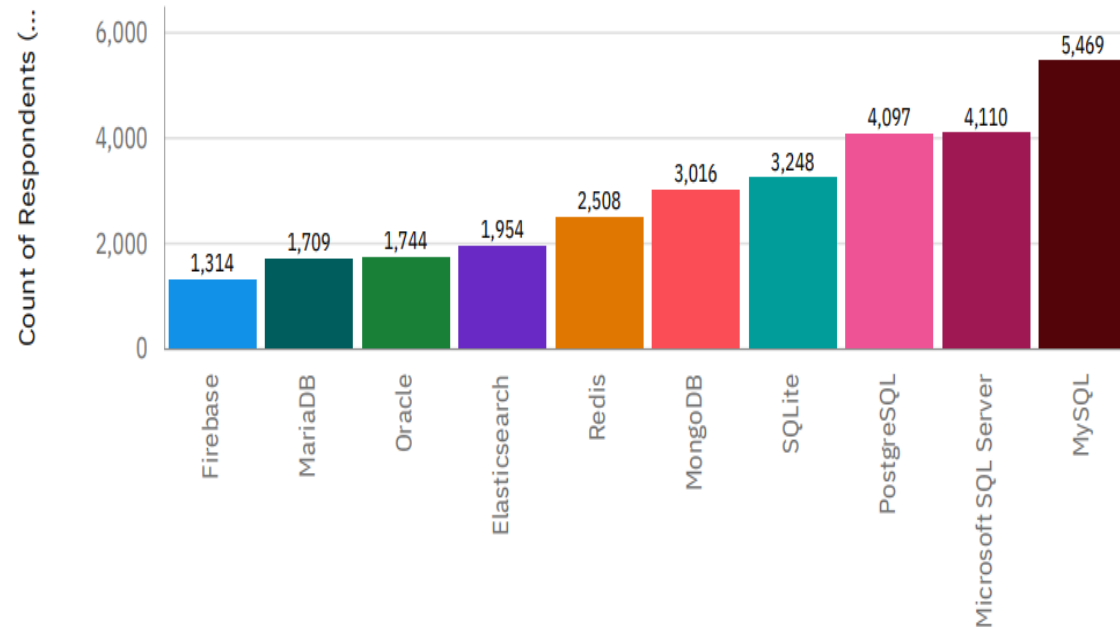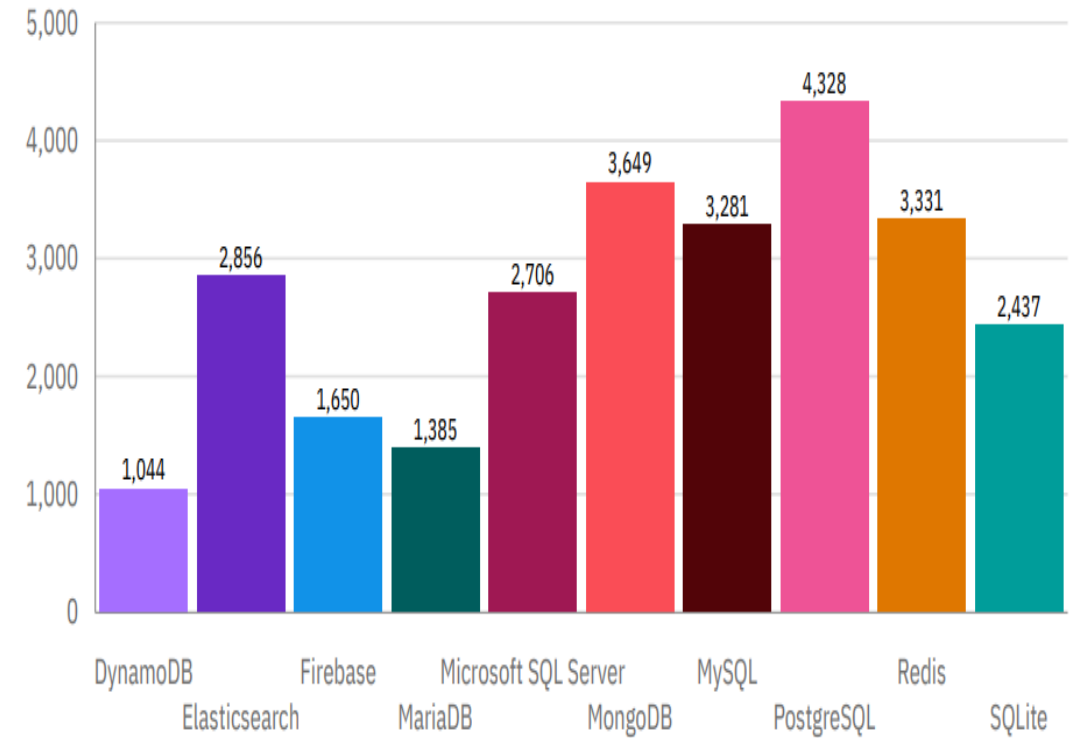
DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL is reigning at the top
- Followed by Miscrosoft SQL
- And Postgress SQL

Implications

- Postgress becoming the favorite
- Since non structed, data is being analyzed Mongo DB has risen in popularity
- Redis is also rising due to its capability is analyzing NoSQL DBs

IBM Developer

SKILLS NETWORK

DASHBOARD

Find the dashboard for this study here:

https://github.com/asifdawood/IBM-Data-Analytics-CapStone-Project/blob/7244819e0baf39ff70ad2d40a5b5987425cca21b/Task5/IBM%20Data%20Analytics%20Cognos%20Project.pdf

IBM **Developer**

SKILLS NETWORK

DASHBOARD TAB 1
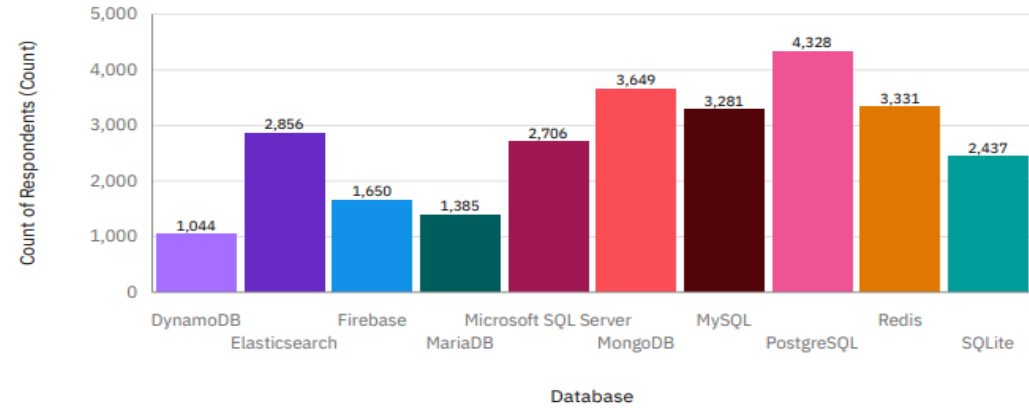

Current Technology Usage
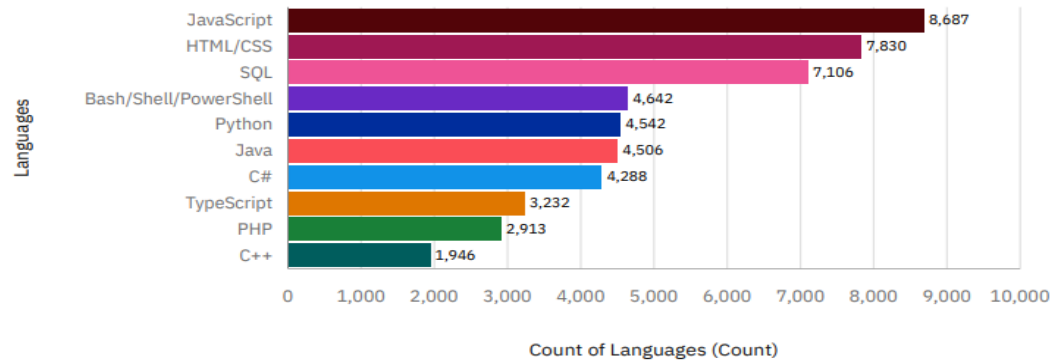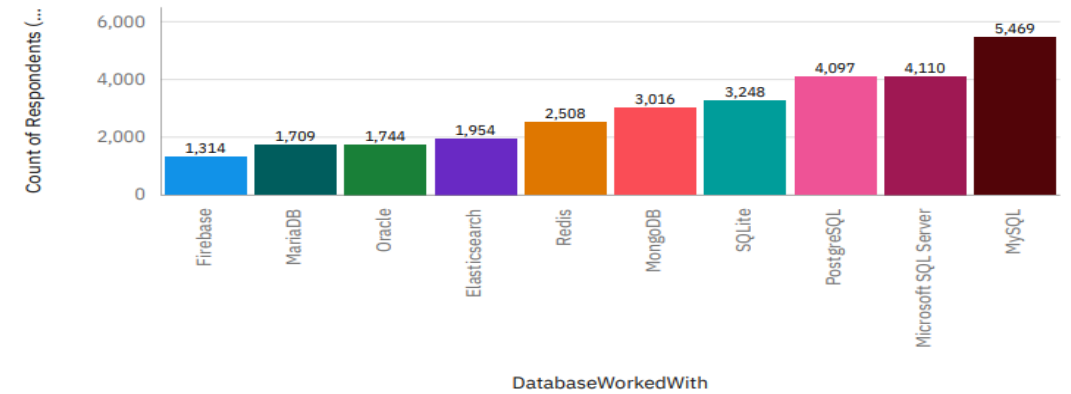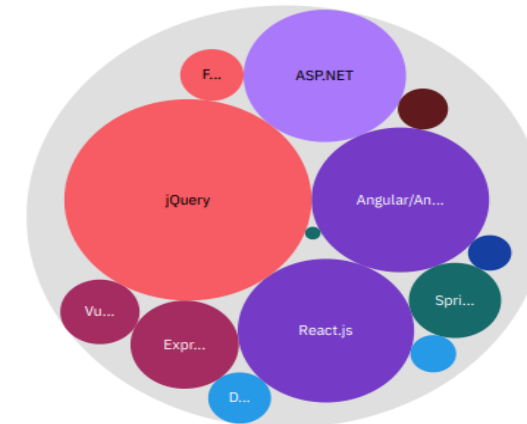
DASHBOARD TAB 2

Future Technology Trend
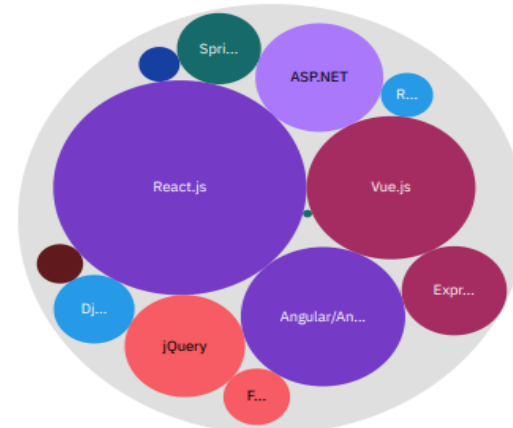
Top 10 languages desired next year
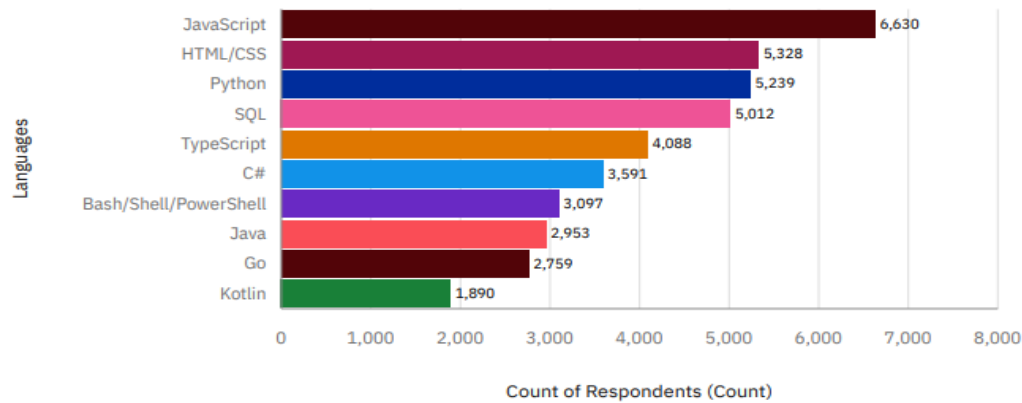
Top 10 Databases desired next year
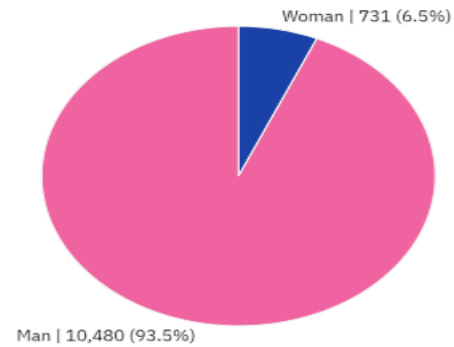

Platform desired next year
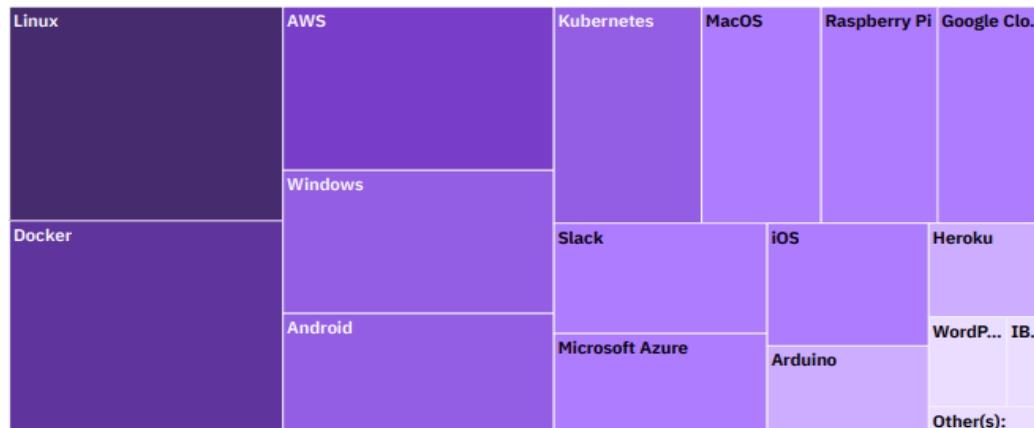
Web Frame desired next year

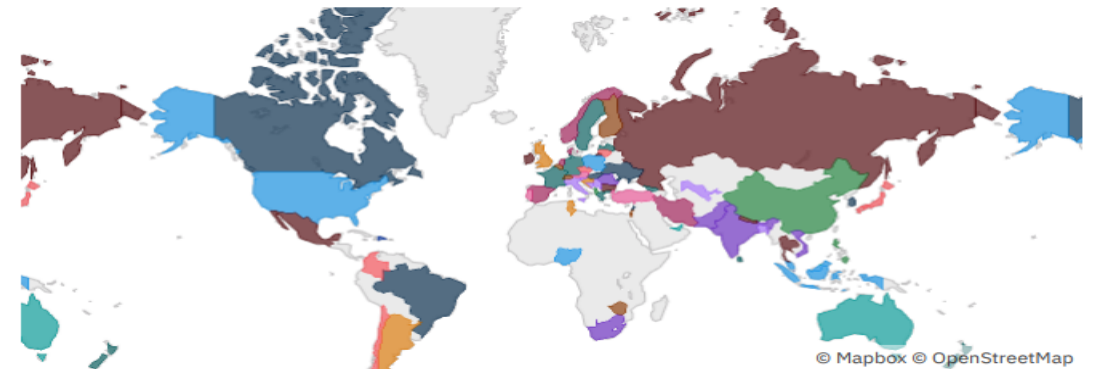# DASHBOARD TAB 3
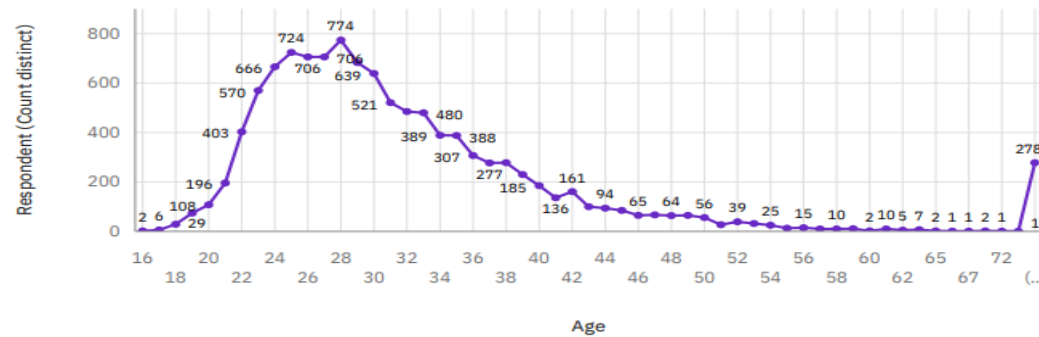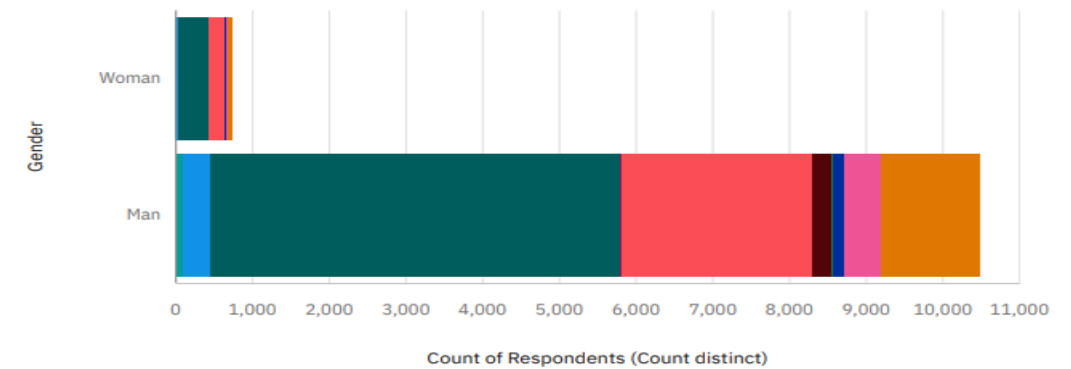
DISCUSSION

- Training and filling of Skill-gaps

- Trend in Technology

- Gender disparity in the field of technology

- Technology gaps between developed and developing regions

IBM Developer

SKILLS NETWORK

OVERALL FINDINGS & IMPLICATIONS

Findings

- Concentration of technology in select countries
- Gender gap only around 6% women in the field of technology
- Rise of No SQL databases

Implications

- The Rise of NoSQL databases like MogoDB,Redis etc implies the data in any form is important and needs to be analysed for better data driven decisions
- The gender gap and gap in technologies between Regions to be bridged
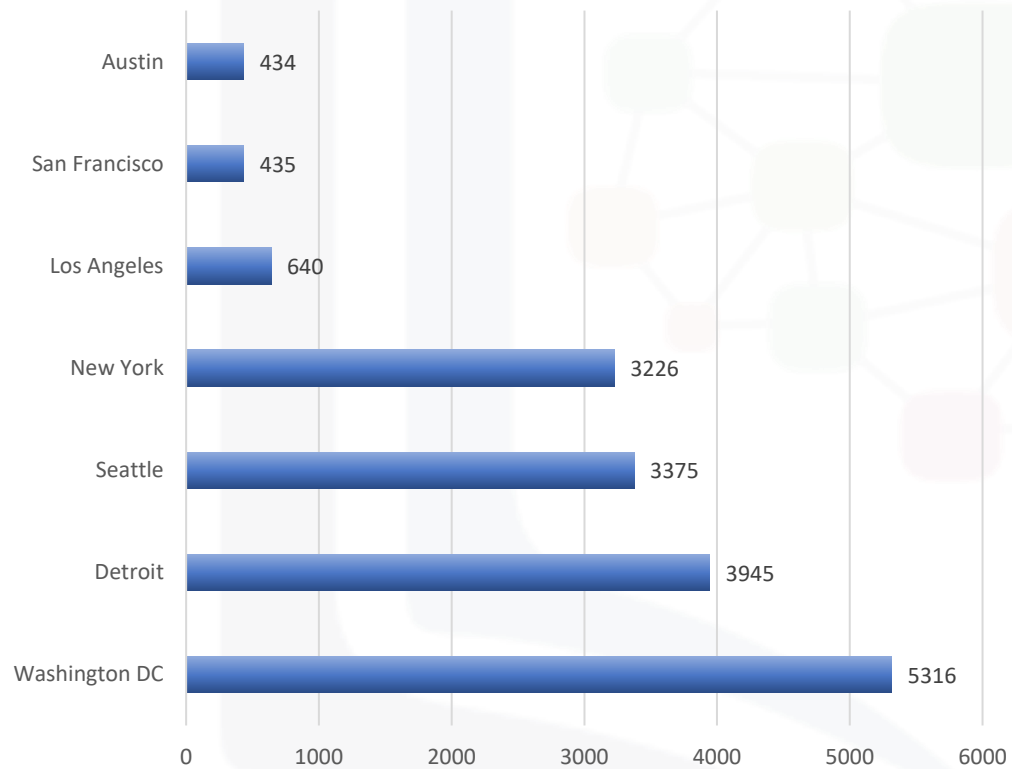
IBM Developer
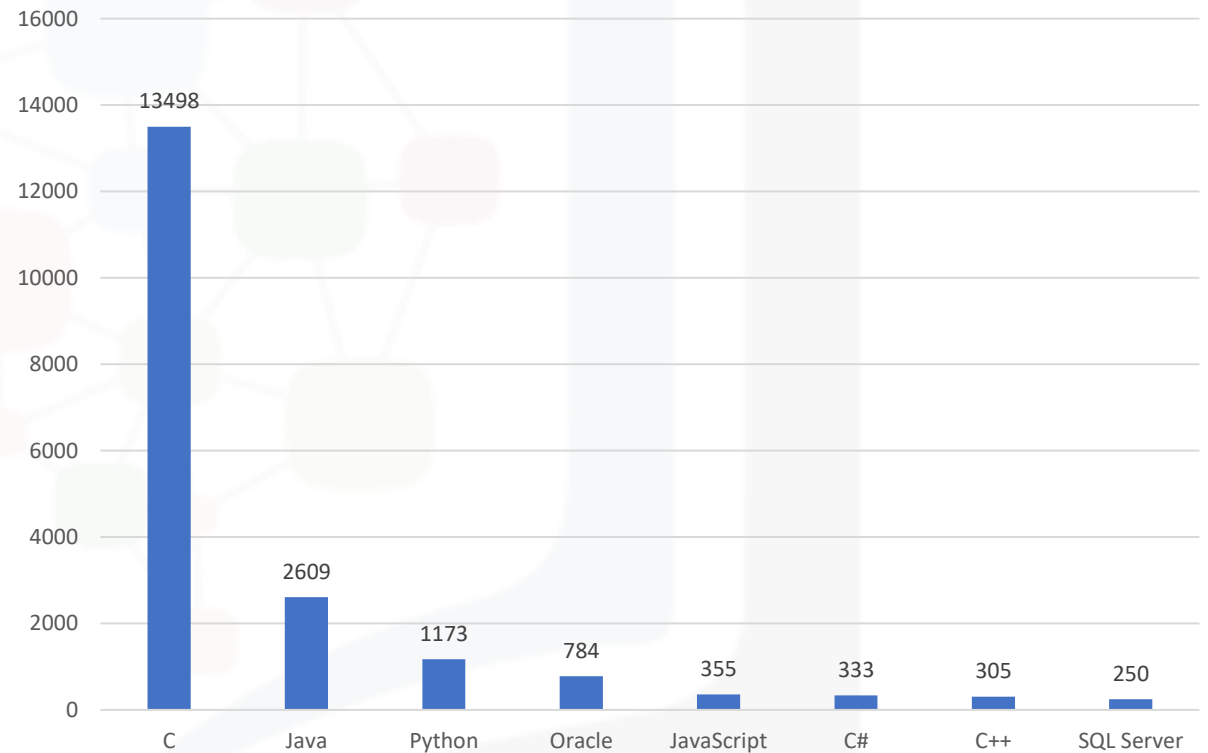
SKILLS NETWORK

CONCLUSION

- A good overview of the rising technology trends

- Identified the Gender gaps in technology

- Also Noticed that technology gap was prevalent between regions

- NoSQL is gaining ground indicates that non structured data is now increasingly utilized for analysing data

JOB POSTINGS

Number of Vacancies by Region

Region	Vacancies
Austin	434
San Francisco	435
Los Angeles	640
New York	3226
Seattle	3375
Detroit	3945
Washington DC	5316

Number of Jobs by Language

Language	Jobs
C	13498
Java	2609
Python	1173
Oracle	784
JavaScript	355
C#	333
C++	305
SQL Server	250

POPULAR LANGUAGES

Average Annual Salary

Language	Salary
Swift	$1,30,801.00
Python	$1,14,383.00
C++	$1,13,865.00
Javascript	$1,10,981.00
Java	$1,01,013.00
Go	$94,082.00
R	$92,037.00
C#	$88,726.00
SQL	$84,793.00
PHP	$84,727.00