Programming and Databases Trends: Survey Findings and Analysis

Sayed Rahaman

19-09-2024

OUTLINE

- Executive Summary

- Introduction

- Methodology

- Results
  - Visualization – Charts
  - Dashboard

- Discussion
  - Findings & Implications

- Conclusion

- Appendix

IBM Developer

SKILLS NETWORK

EXECUTIVE SUMMARY

- Data Interpterion and analysis goal
- Demographic
  - Data Gathering
  - Data Analysis
  - Data Findings
- Results are presented with Visualization and trends
- Discussion of overall findings and Inferences regarding the previous results
- Final Conclusion

INTRODUCTION

- Stack Overflow's Annual Developer Survey is the largest and most comprehensive survey of people who code around the world.

- Programming plays a vital role in today's world, it drives innovation, automates tasks, and powers technology across all industries

- This presentation aims to explore the technologies currently utilized by developers and forecast future tech trends

- The Problem that has been focused here are:
  - What are the current trends in programming and database languages ?
  - What are the future trends in programming and database languages ?

IBM **Developer**

SKILLS NETWORK

METHODOLOGY

- Collection of Survey Data & its exploration
  - Web Scrapping
  - APIs (Application Programming Interfaces)
  - Data Queries

- Data Wrangling

- Exploratory Data Analysis

- Data Visualization
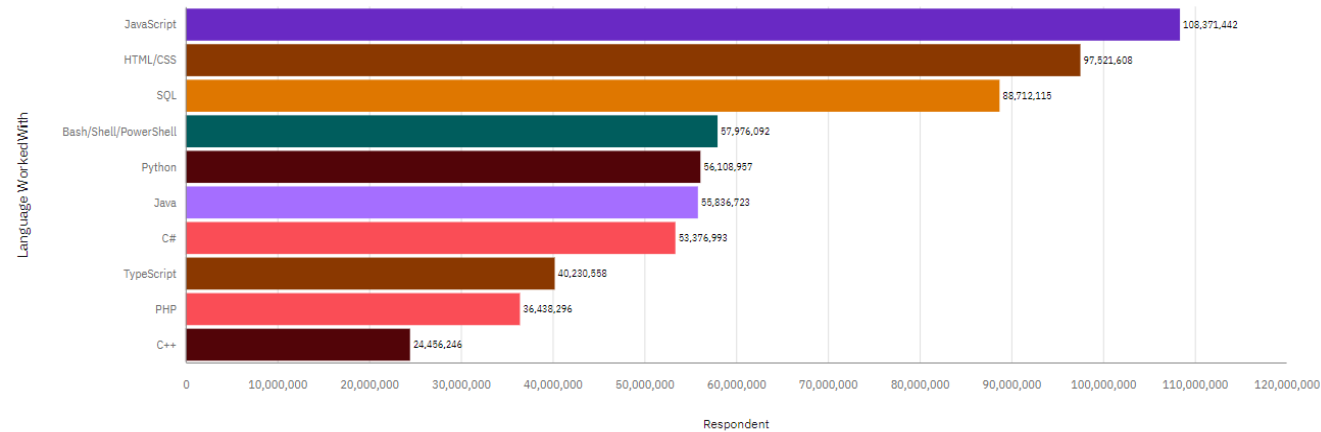 - Highlighting the distribution, relationships, composition and comparison of data

- Dashboard

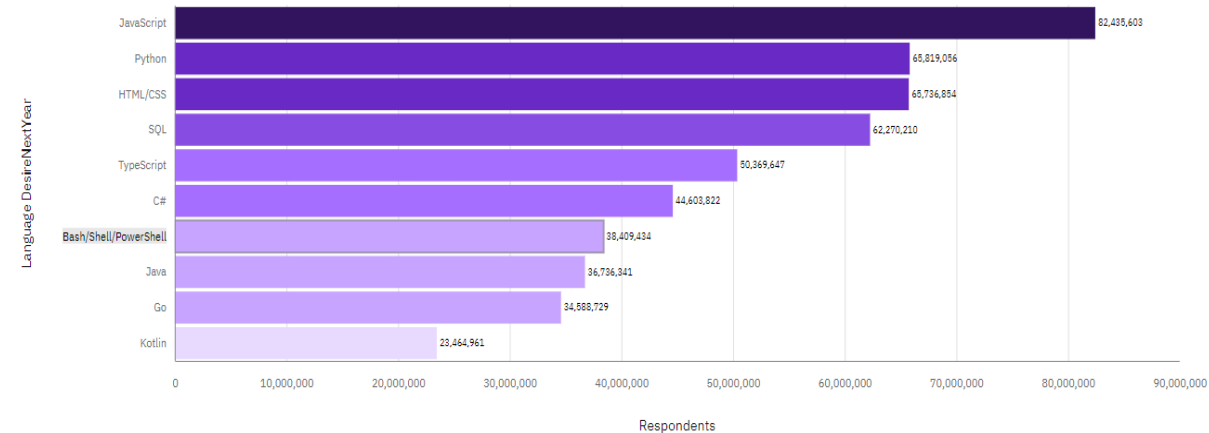# RESULTS

PROGRAMMING LANGUAGE TRENDS

Current Year

Next Year

Top 10 Language Trend

Top 10 Language Desired to learn

PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript seems to keep as leading language.

- With growth of AI, increased in popularity of Python

- Web Development language continue to be in the top, e.g. HTML & CSS and JavaScript
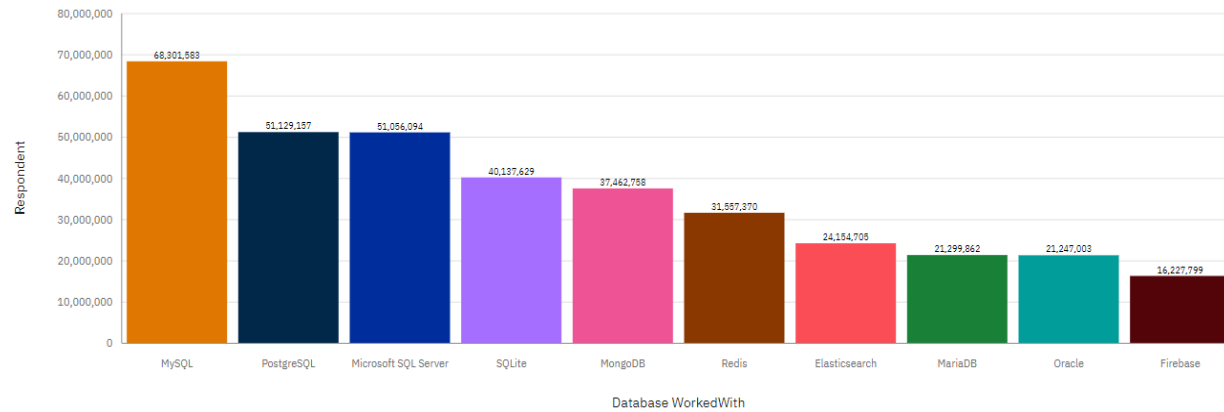
Implications

- Python will in be top , With rise of AI Python will also grow .

- Possible developers migration from JavaScript to TypeScript.

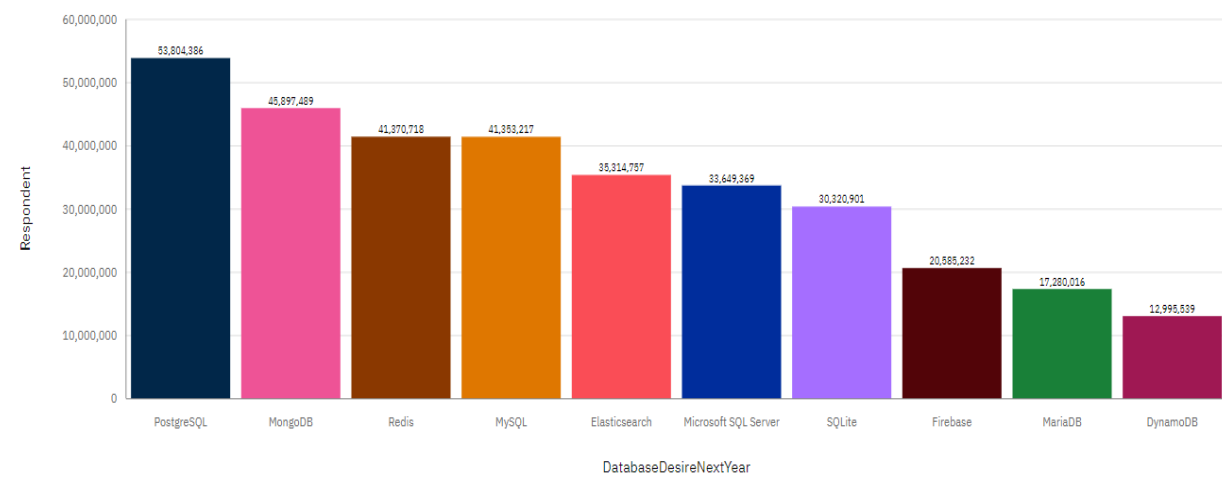IBM **Developer**

SKILLS NETWORK

DATABASE TRENDS

Current Year

Next Year

Top 10 Database Trend

Top 10 Database Desired to learn

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Increase in Interest in PostgreSQL and MongoDB.

- MongoDB is growing significantly.

- Lack of interest in Oracle

Implications

- PostgreSQL and MongoDB establishment in the market.

- There has been a shift in investment from MySQL and Microsoft SQL Server to modern databases like PostgreSQL, MongoDB, and Redis.
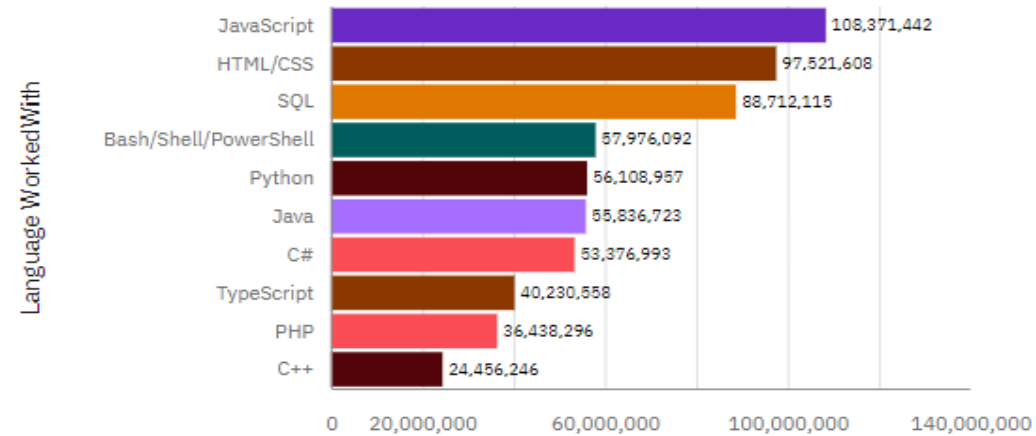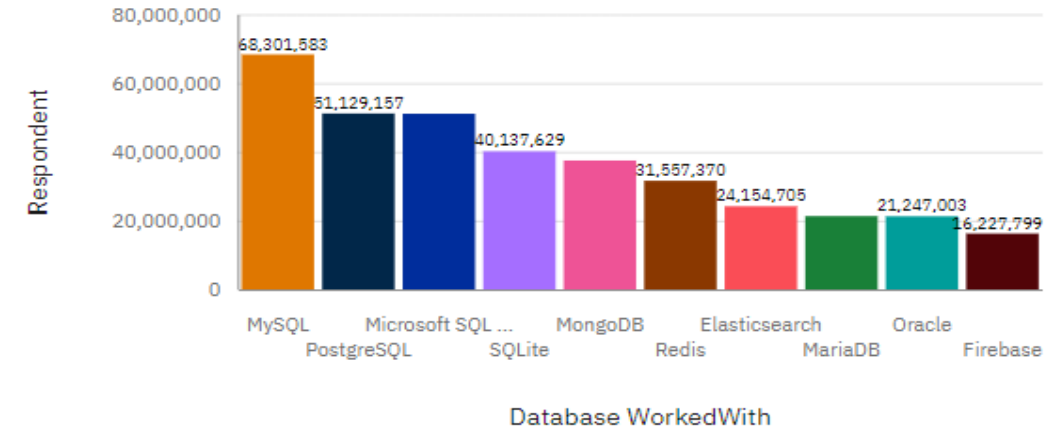
IBM Developer

SKILLS NETWORK

DASHBOARD

Check out My Dashboard here:

https://github.com/Sayed27-Dev/Capstone.git

DASHBOARD TAB 1

Top 10 Language: Usage Trends and Insights

Language WorkedWith	Value
JavaScript	108,371,442
HTML/CSS	97,521,608
SQL	88,712,115
Bash/Shell/PowerShell	57,976,092
Python	56,108,957
Java	55,836,723
C#	53,376,993
TypeScript	40,230,558
PHP	36,438,296
C++	24,456,246

Top 10 Databases: Usage Trends and Insights

- MySQL — 68,301,583
- PostgreSQL — 51,129,157
- Microsoft SQL ... — (51,129,157)
- SQLite — 40,137,629
- MongoDB — 31,557,370
- Redis — 24,154,705
- Elasticsearch
- MariaDB — 21,247,003
- Oracle
- Firebase — 16,227,799

Database WorkedWith

Top Platform interacted

AWS · Linux · Arduino · IBM Cloud or Watson · Docker · Android · kubernetes · Slack · Windows · Google Cloud Platform · Microsoft Azure · Heroku · MacOS · iOS · Raspberry Pi · WordPress · Other(s)

Top 10 Frame Work Used

Flas... · ASP.NET · L... · jQuery · Angular/Angular.js · O... · Spring · Vue.js · Express · React.js · R... · Dj...

Respondent (Sum)
67,310,840
3,768,692

WebFrameWorked...
- ASP.NET
- Angular/Angular.js
- Django
- Drupal
- Express
- Flask
- Laravel
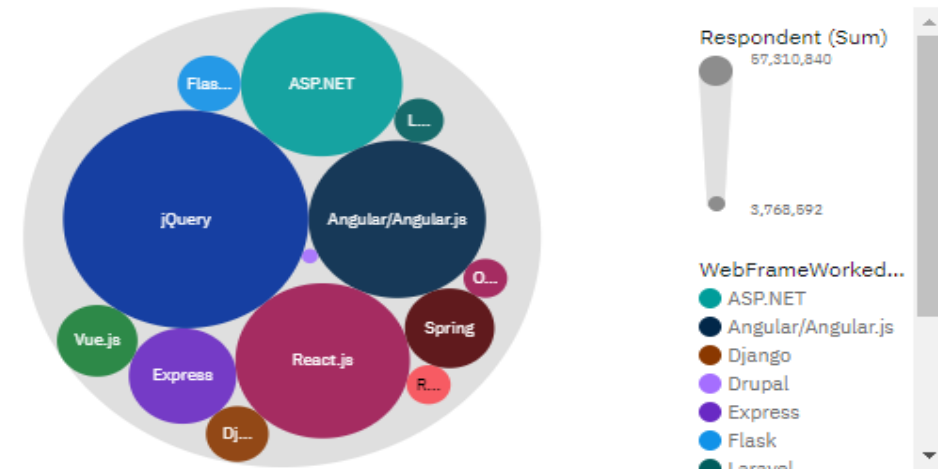
DASHBOARD TAB 2

Top Language Desire To Learn Next Year

Language DesireNextYear	Respondents
JavaScript	82,435,603
Python	65,819,056
HTML/CSS	65,736,854
SQL	62,270,210
TypeScript	50,369,647
C#	44,603,822
Bash/Shell/PowerShell	38,409,434
Java	36,736,341
Go	34,588,729
Kotlin	23,464,961
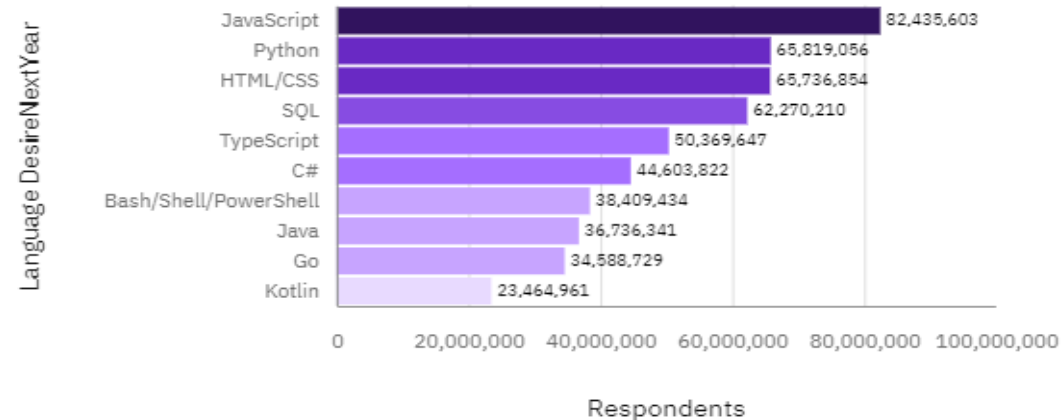
Top Database Developers Want to Learn Next Year

PostgreSQL 53,804,386
MongoDB 45,897,489
Redis 41,370,718
MySQL
Elasticsearch 35,314,757
Microsoft SQL ...
SQLite 30,320,901
Firebase 20,585,232
MariaDB
Dyn... 12,995,539

DatabaseDesireNextYear
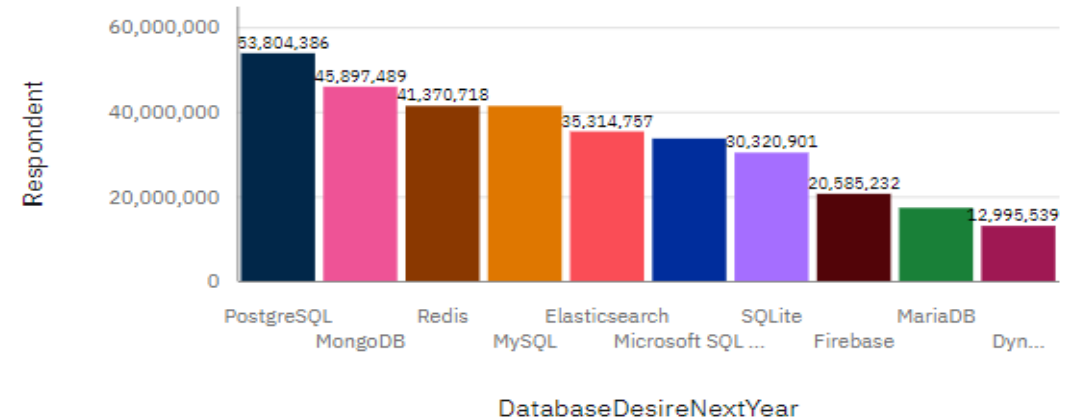
Next Year's Most Desired Platforms

Linux
Docker
AWS
Windows
Android
Kubernetes
Raspberry Pi
Google Cloud Platform
MacOS
Slack
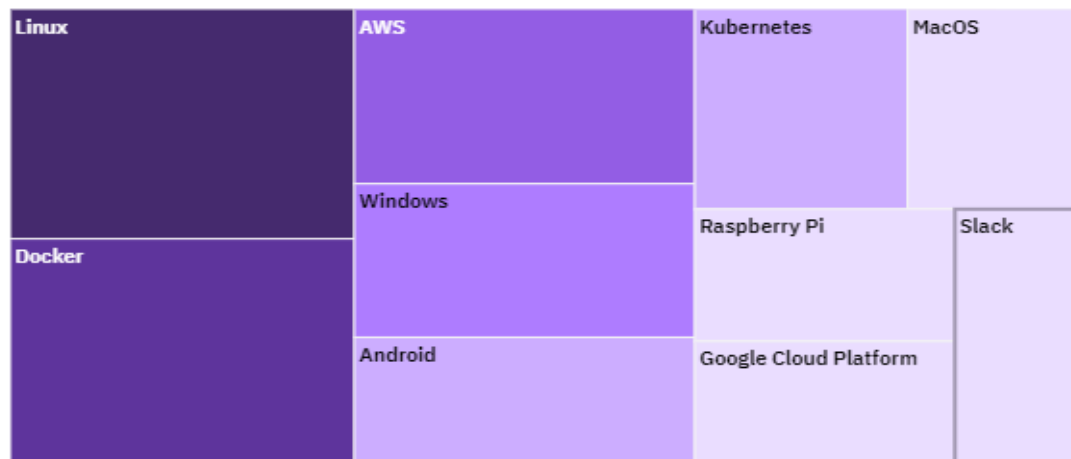
Top Web Frameworks on Developers' Wish List
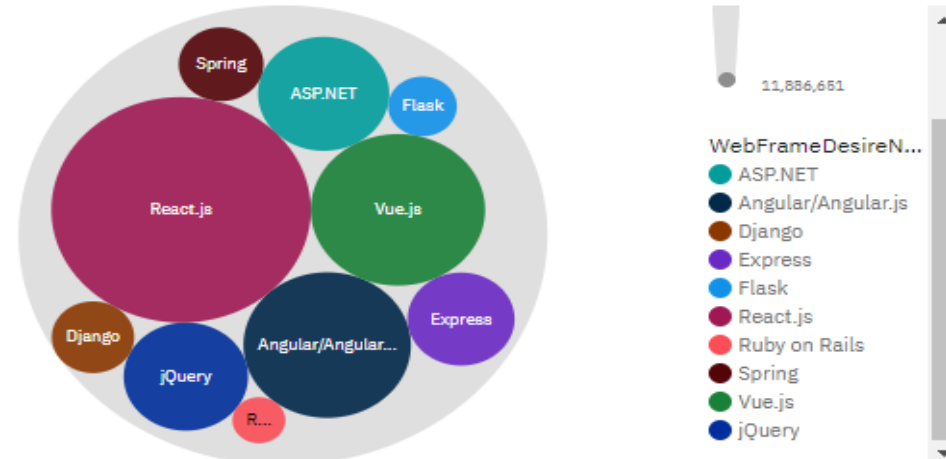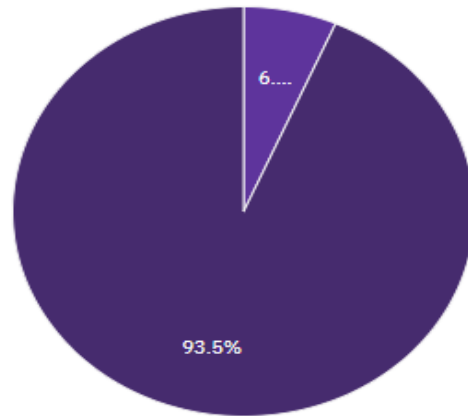
11,886,651

WebFrameDesireN...
- ASP.NET
- Angular/Angular.js
- Django
- Express
- Flask
- React.js
- Ruby on Rails
- Spring
- Vue.js
- jQuery

Spring
ASP.NET
Flask
React.js
Vue.js
Django
jQuery
Angular/Angular...
Express
R...

IBM Developer

SKILLS NETWORK

DASHBOARD TAB 3
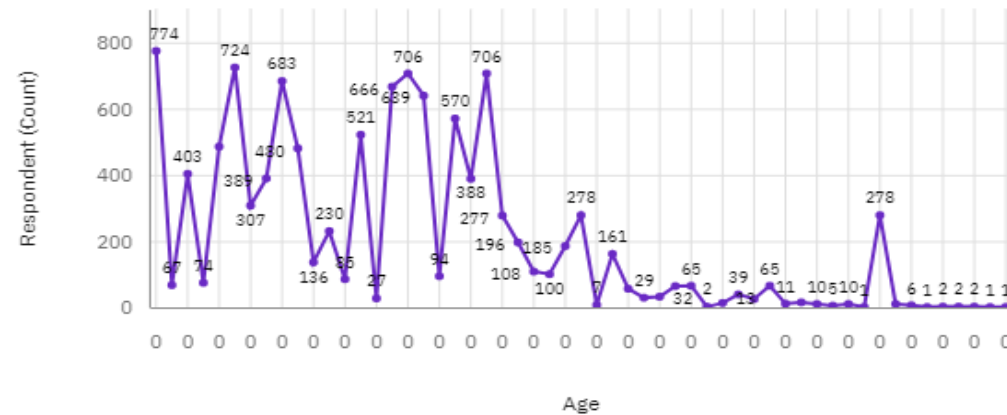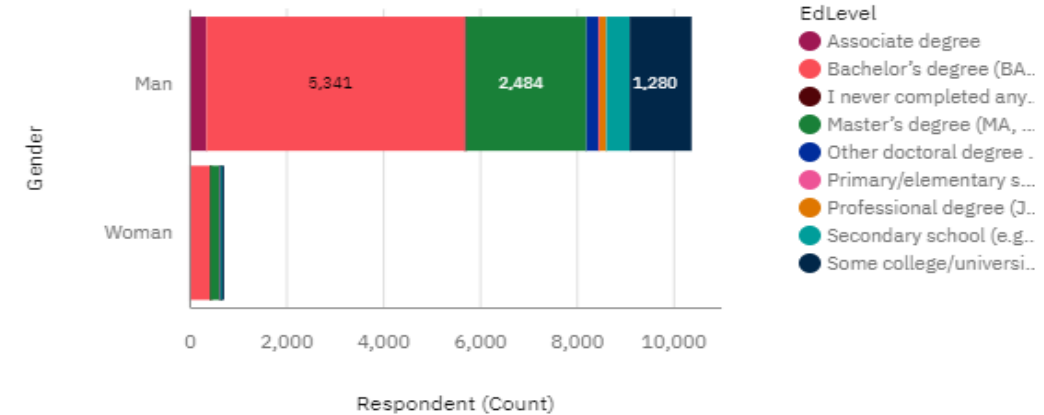
DISCUSSION

OVERALL FINDINGS & IMPLICATIONS

Findings

- JavaScript is one of the popular Programming language. TypeScript is getting popular

- Over 90% young male developers

- Most of the developers are from developed country.

- Linux and Docker presented to be at the top instead of Windows.

Implications

- JavaScript and TypeScript web frames gaining followers.

- The most popular database is expected to be PostgreSQL.

- Linux will be at top.

- Global polarization of developers location and gender.
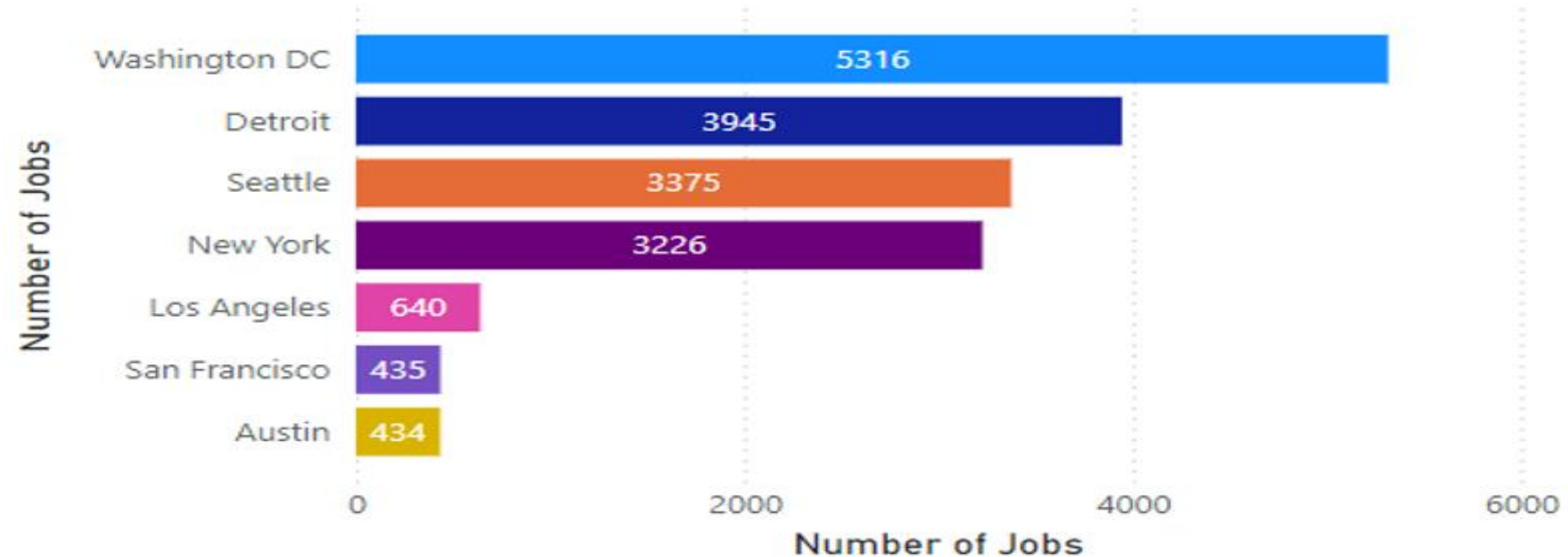
IBM Developer

SKILLS NETWORK

CONCLUSION

- Web Development programming language estimated to be at top.

- Python will gain more user , with the rise of AI.

- PostgreSQL will be the most demanding database beating MySQL.

- Developers are people with very marked characteristics.
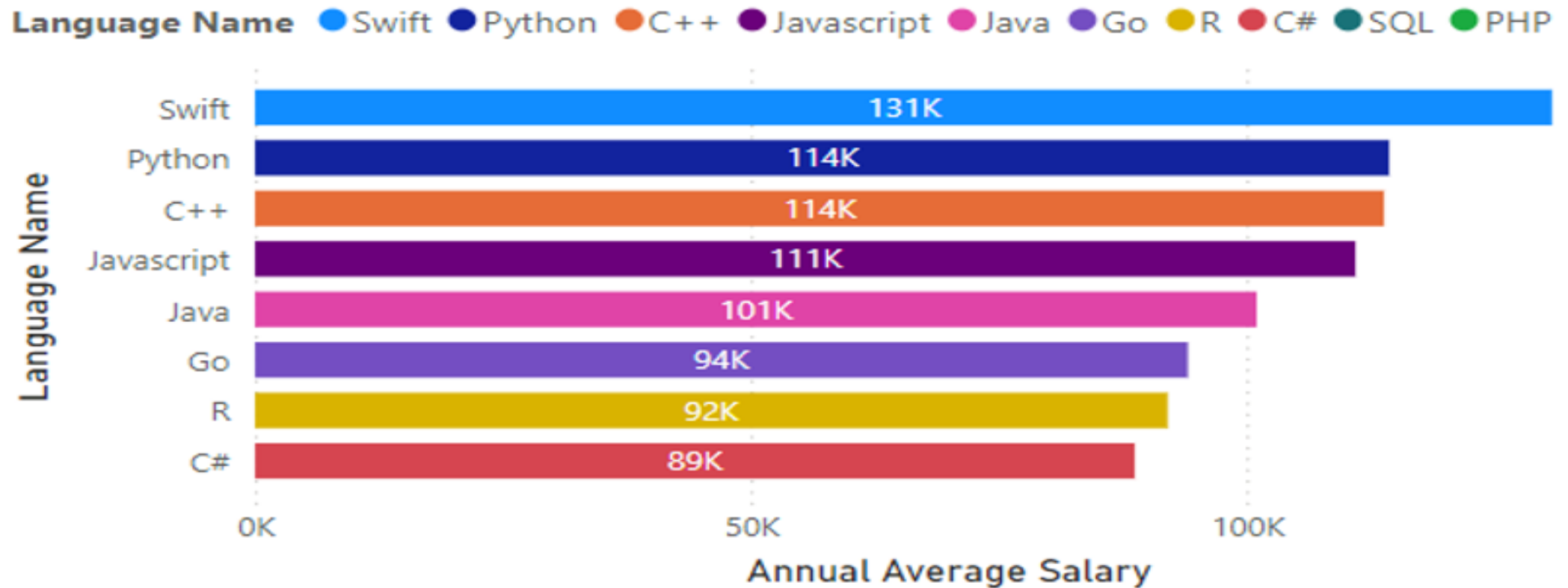
APPENDIX

JOB POSTINGS

Number of Jobs by Location

Location	Number of Jobs
Washington DC	5316
Detroit	3945
Seattle	3375
New York	3226
Los Angeles	640
San Francisco	435
Austin	434

POPULAR LANGUAGES

Annual Average Salary by Language

Language Name ● Swift ● Python ● C++ ● Javascript ● Java ● Go ● R ● C# ● SQL ● PHP

Language Name	Annual Average Salary
Swift	131K
Python	114K
C++	114K
Javascript	111K
Java	101K
Go	94K
R	92K
C#	89K

Annual Average Salary

Thank You