Emerging Technologies Trends

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EXECUTIVE SUMMARY

- Trends in Current Technology Usage
  - Language
  - Database
  - Platform
  - Web frame
- Trends in Future Technology Usage
  - Language
  - Database
  - Platform
  - Web frame
- Trends in Demographic Survey Results
  - Gender
  - Country
  - Age
  - Formal Education Level

INTRODUCTION

ABOUT:

Understanding the current leading programming languages, databases, platforms, and web frameworks in global demand is essential for staying relevant and competitive in the technology industry.

PURPOSE:

- Determine future skill requirements.
- Anticipate emerging trends in the tech industry.
- Identify talent gaps and provide insights into workforce needs.

AUDIENCE:

- Software Developers and Engineers
- Human Resources and Business Leaders
- Students and educators in STEM-related fields

METHODOLOGY

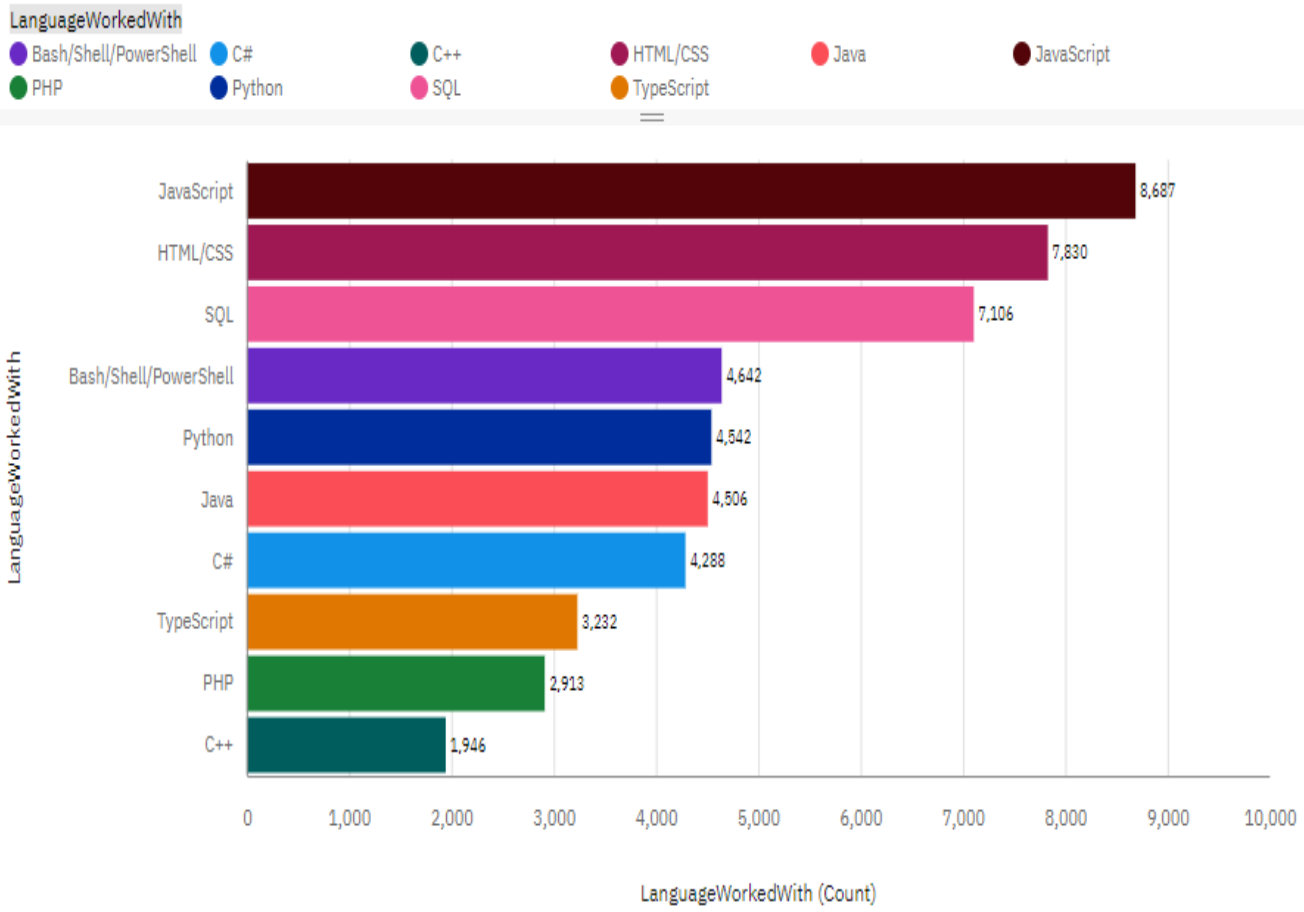
- Data Collection (Sources)
  - Stack Overflow Developer 2019 Survey
  - GitHub Job Postings
  - Programming Languages Annual Salary
- Data Wrangling
- Data Exploration
- Data Cleaning
- Data Visualization
  - IBM Cognos
- Presentation

RESULTS

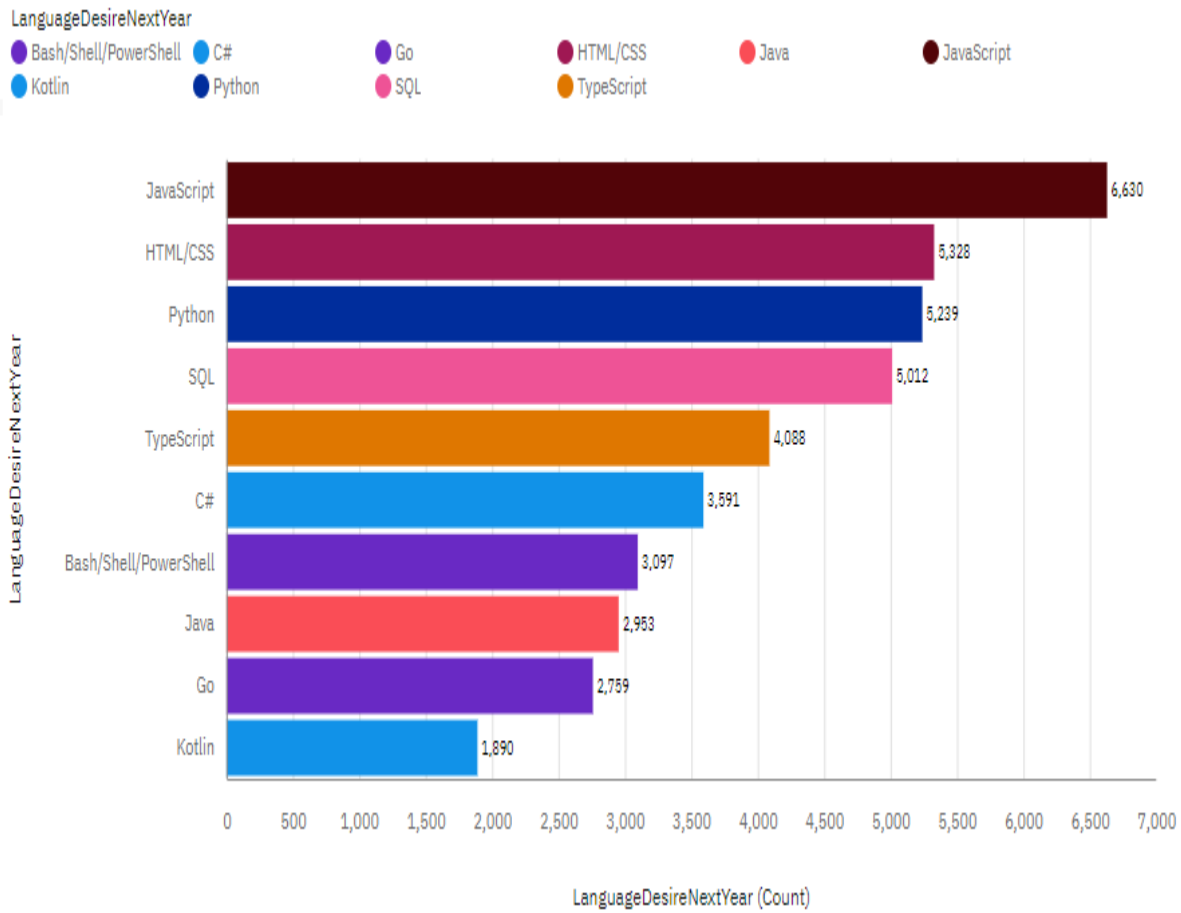
Respondent	LanguageWorkedWith	LanguageDe...eNextYear	DatabaseWorkedWith	DatabaseDe...eNextYear	PlatformWorkedWith	PlatformDesireNextYear	WebFrameWorkedWith	WebFrameD...eNextYear	DevEnviron
50	C	JavaScript	Firebase	PostgreSQL	AWS	Docker	Express	Flask	Visual Studio Code
50	C++	Python	MariaDB	Redis	Heroku	Heroku	Flask	jQuery	Null
50	HTML/CSS	Null	MongoDB	Other(s):	Linux	Kubernetes	jQuery	React.js	Null
50	Java	Null	MySQL	Null	MacOS	Linux	Null	Vue.js	Null
50	JavaScript	Null	Oracle	Null	Raspberry Pi	MacOS	Null	Null	Null
50	PHP	Null	SQLite	Null	WordPress	WordPress	Null	Null	Null
50	Python	Null	Other(s):	Null	Null	Null	Null	Null	Null
50	SQL	Null	Null	Null	Null	Null	Null	Null	Null
53	Bash/Shell/PowerShell	Bash/Shell/PowerShell	DynamoDB	DynamoDB	AWS	AWS	Angular/Angular.js	Angular/Angular.js	IntelliJ
53	HTML/CSS	HTML/CSS	MySQL	MySQL	Docker	Docker	Spring	Spring	Visual Studio Code
53	Java	Java	Oracle	PostgreSQL	Null	Null	Null	Null	Null
53	JavaScript	JavaScript	Redis	Redis	Null	Null	Null	Null	Null
53	PHP	SQL	Null	Null	Null	Null	Null	Null	Null
53	SQL	TypeScript	Null	Null	Null	Null	Null	Null	Null

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



IBM Developer

SKILLS NETWORK

PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

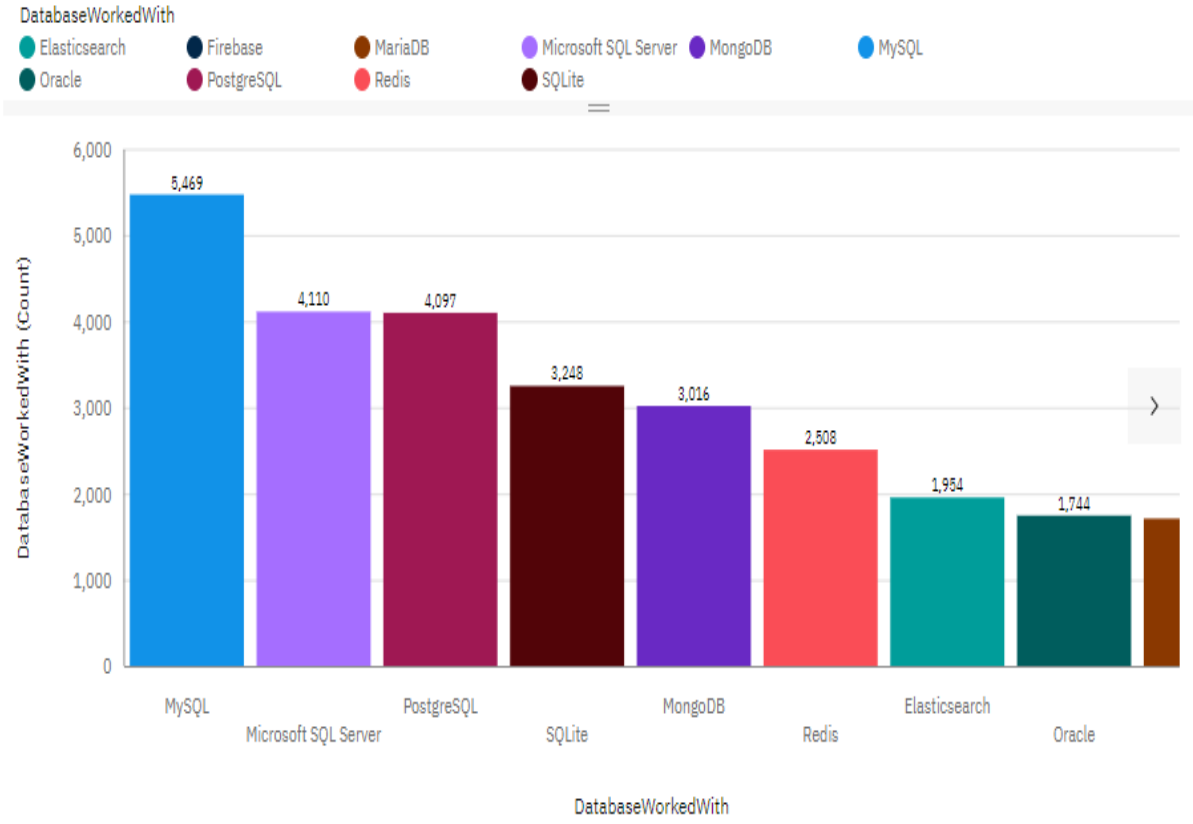
- JavaScript is the top trending language globally
- Python and Typescript are becoming more popular
- HTML/CSS and SQL remain the second and third most popular languages in current usage trends.

Implications

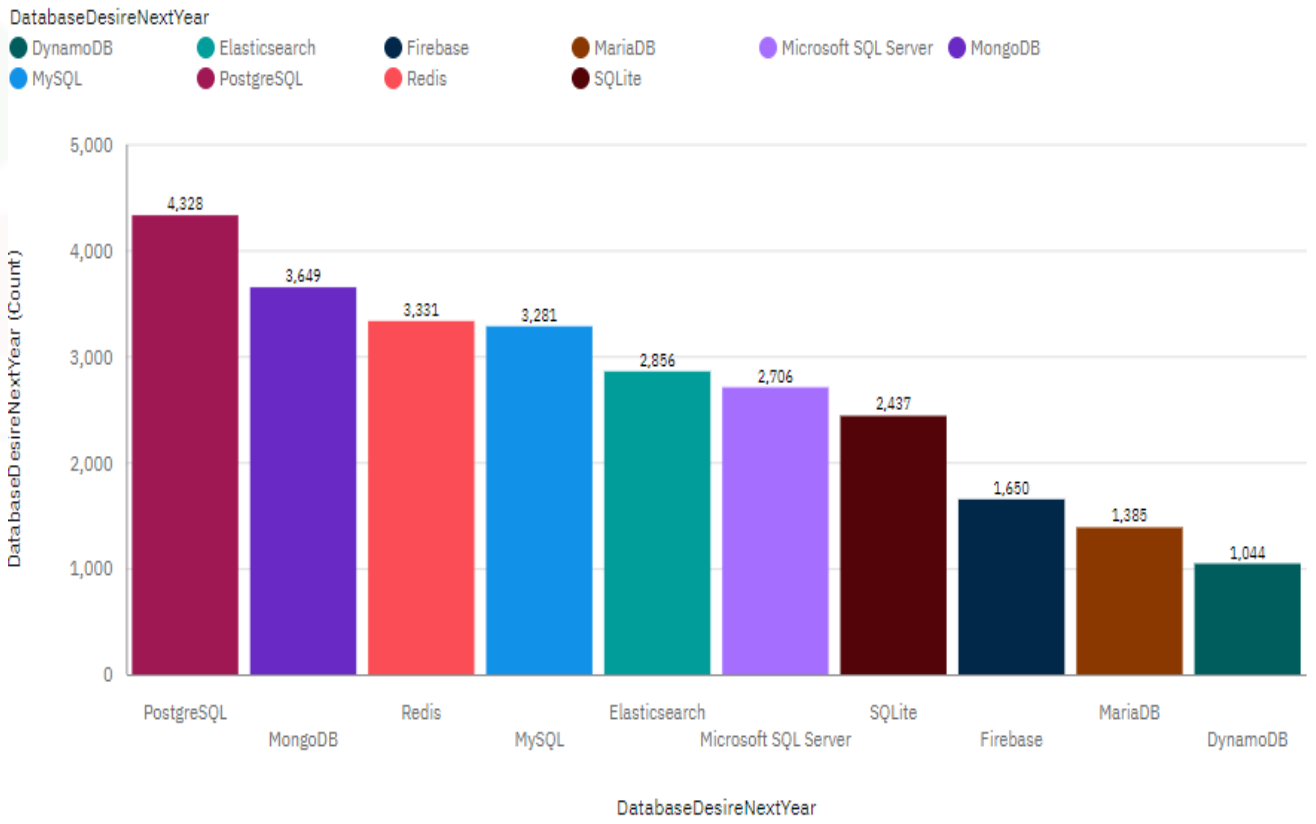
- Web development and developers are in high demand.
- JavaScript, SQL, and TypeScript are essential skills for anyone interested in working in technology.
- With the rising demand for artificial intelligence (AI) and machine learning (ML), Python has become the leading language, especially popular in AI.

DATABASE TRENDS

Current Year



Next Year



IBM Developer

SKILLS NETWORK

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL is the most popular database
- Many companies are using Microsoft SQL Server which ranks second.
- MongoDB and Redis are the most favourable and upcoming NoSQL database

Implications

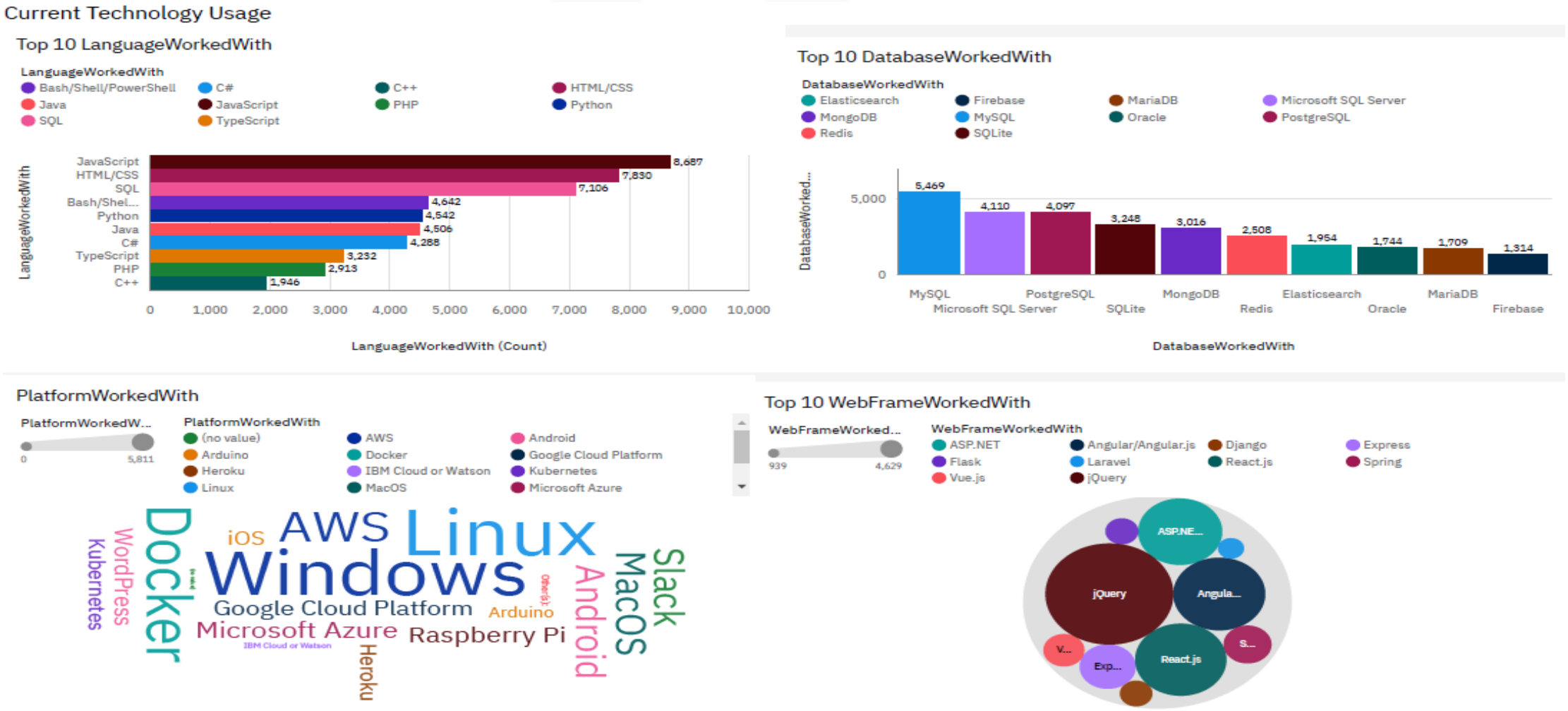
- Open-source databases like MySQL are still preferable
- NoSQL databases will significantly impact the storage of non-relational data and challenge traditional relational databases.
- Software development and Big Data technology still require SQL

DASHBOARD

GitHub Link

IBM Cognos Analytics Link

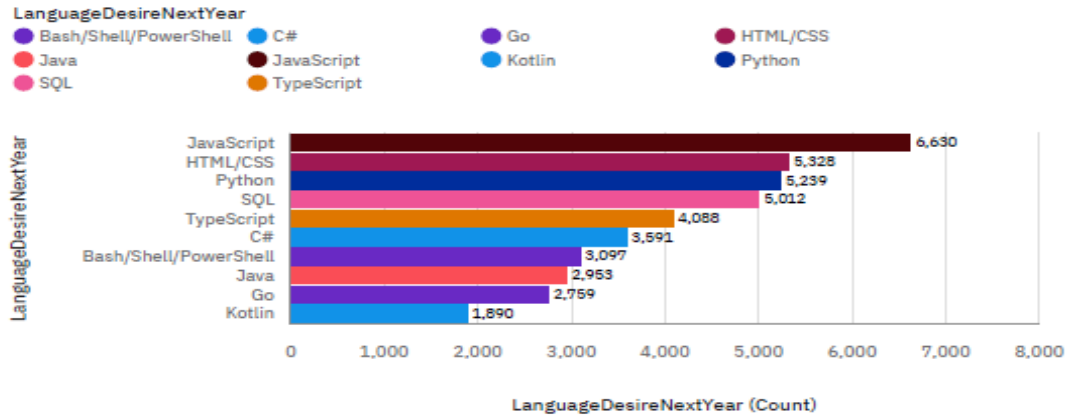
DASHBOARD TAB 1



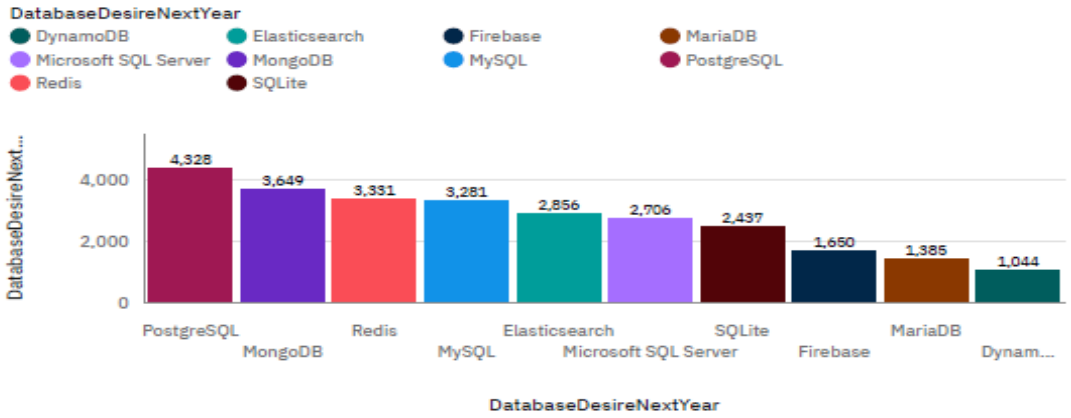
DASHBOARD TAB 2

Future Technology Trend

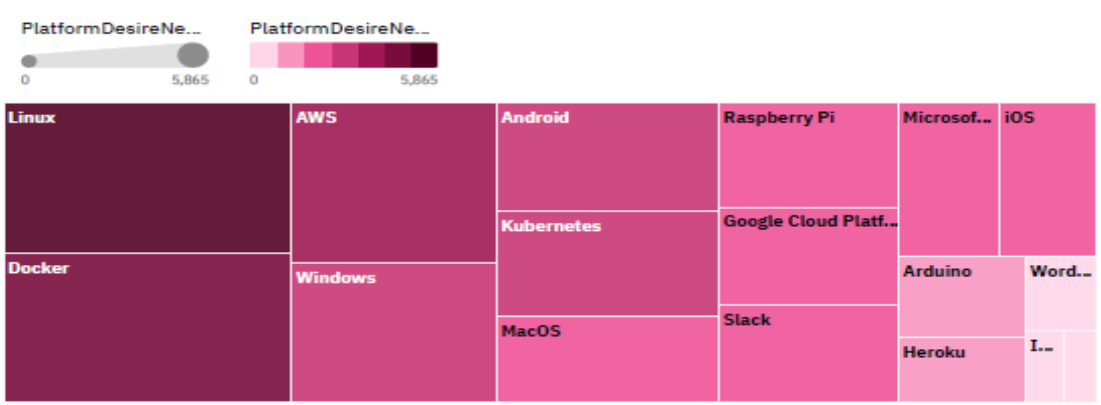
Top 10 LanguageDesireNextYear



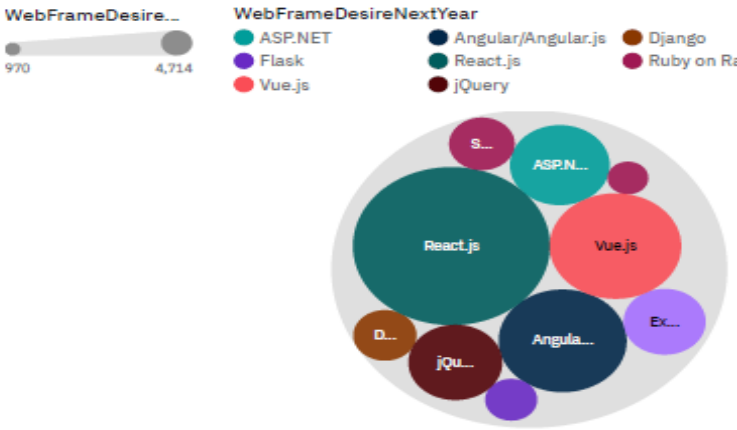
Top 10 DatabaseDesireNextYear



PlatformDesireNextYear



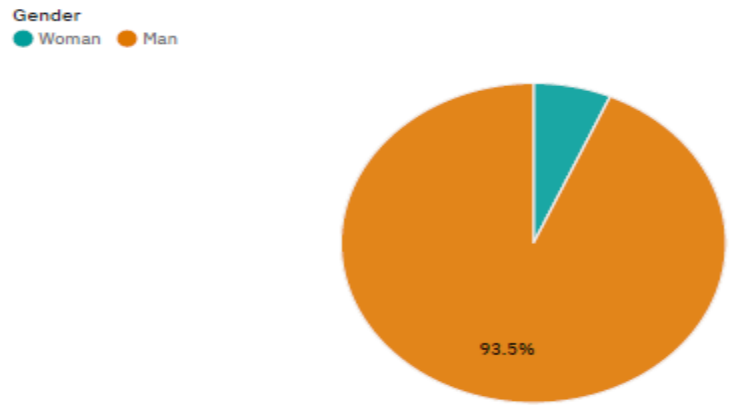
Top 10 WebFrameDesireNextYear



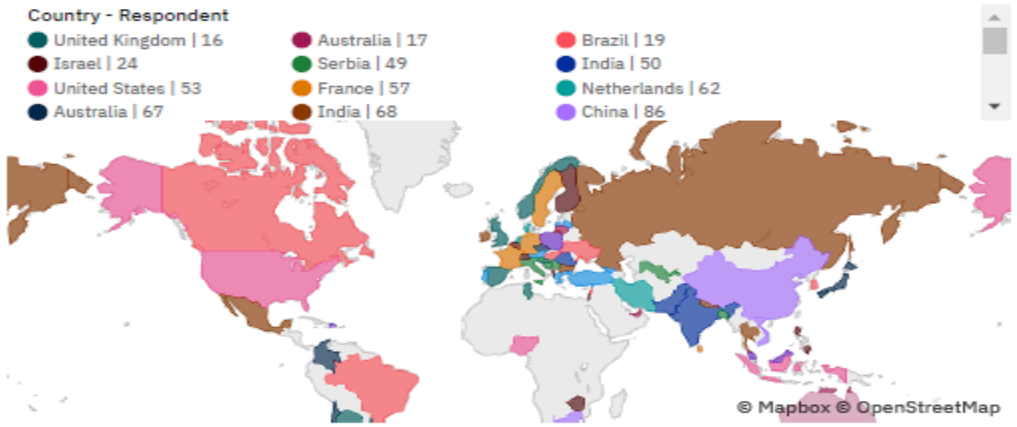
DASHBOARD TAB 3

Demographics

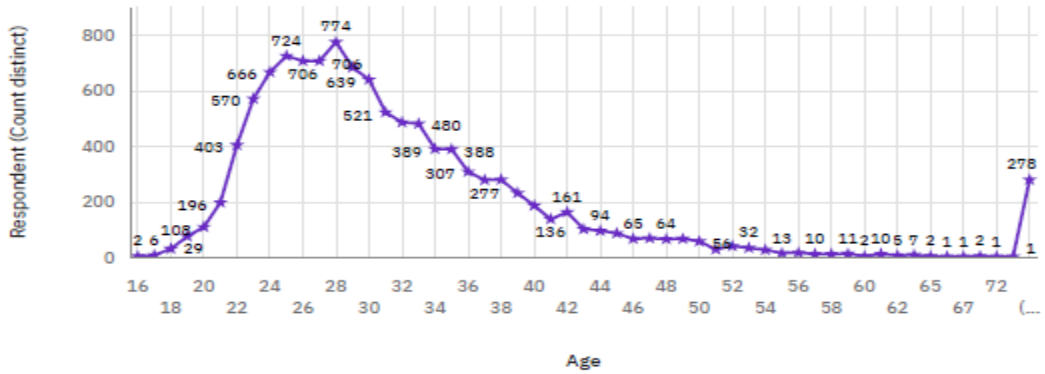
Respondent classified by Gender



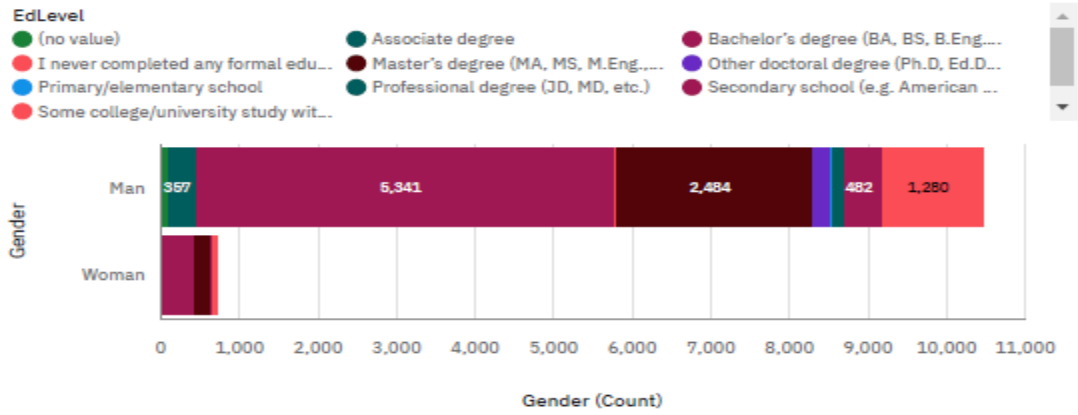
Respondent Count for Countries



Respondent Count by Age



Respondent Count by Gender, classified by Formal Education Level



DISCUSSION

- Current and future technology trends.
- The need for training and reskilling workers.
- Increasing female participation in technology.
- Closing technology gaps in developing countries.
- Addressing age and education discrimination in tech jobs.

OVERALL FINDINGS & IMPLICATIONS

Findings

- The USA and India are among the leading technology hubs
- There is a significant gender gap and age discrimination in technology jobs.
- Docker and AWS are among the most popular and rapidly expanding platforms.

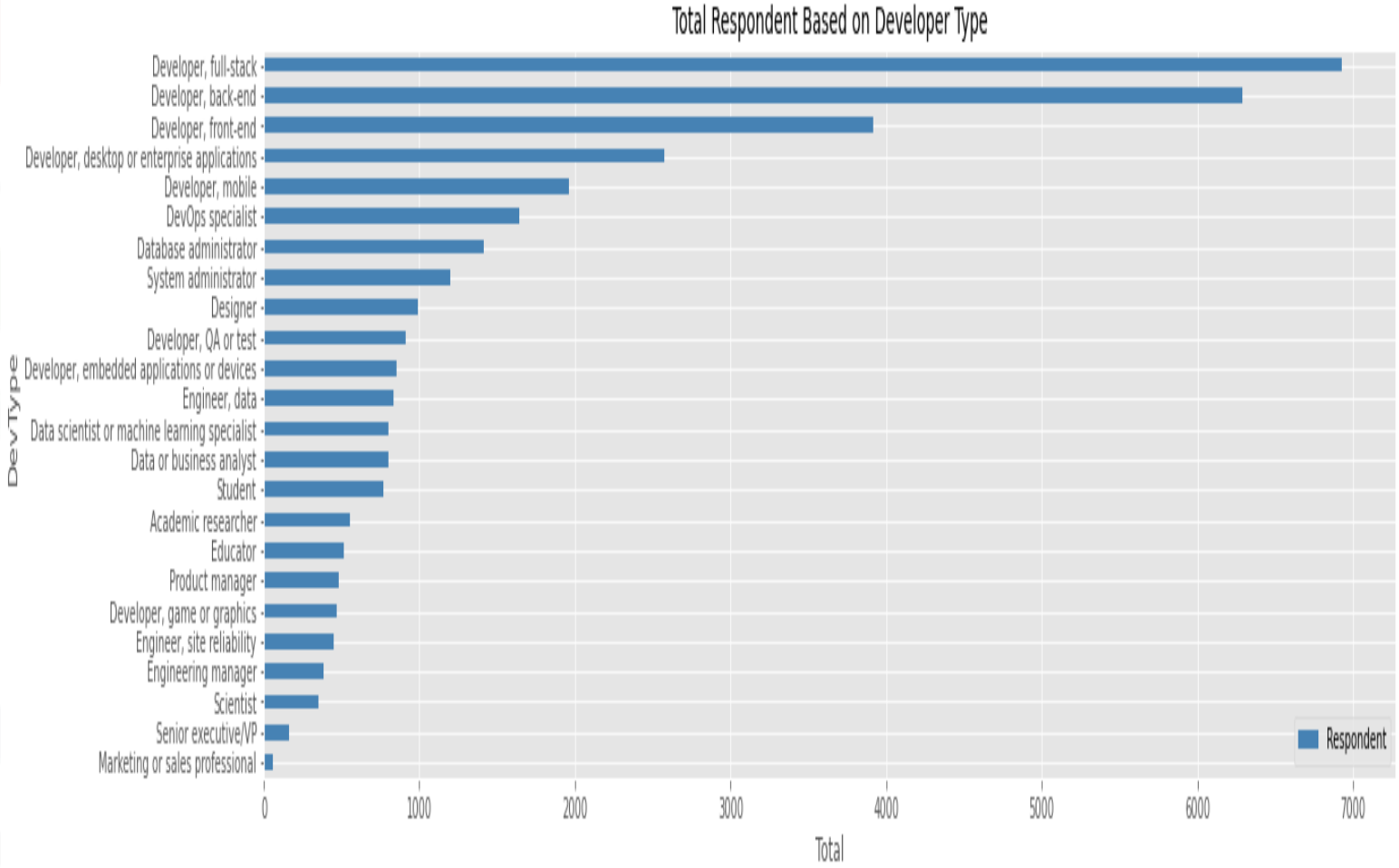
Implications

- Programmers should stay updated with the latest technology trends to remain competitive.
- More countries need equal opportunities to access and benefit from new technology
- Employment practices should be free from gender and age discrimination, and companies should drive equity when hiring.
- There is a growing need to expand technology access to underserved regions and accelerate shifts towards faster app deployments and cloud services.

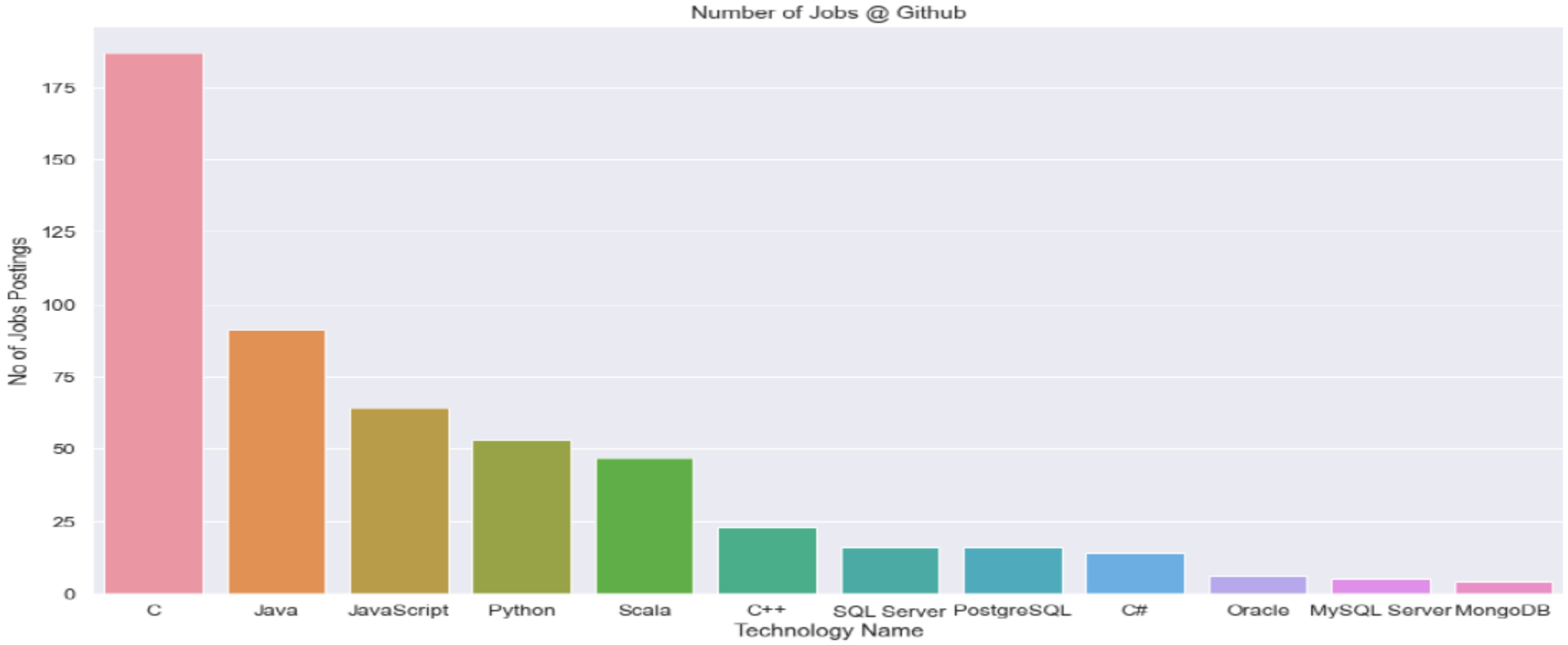
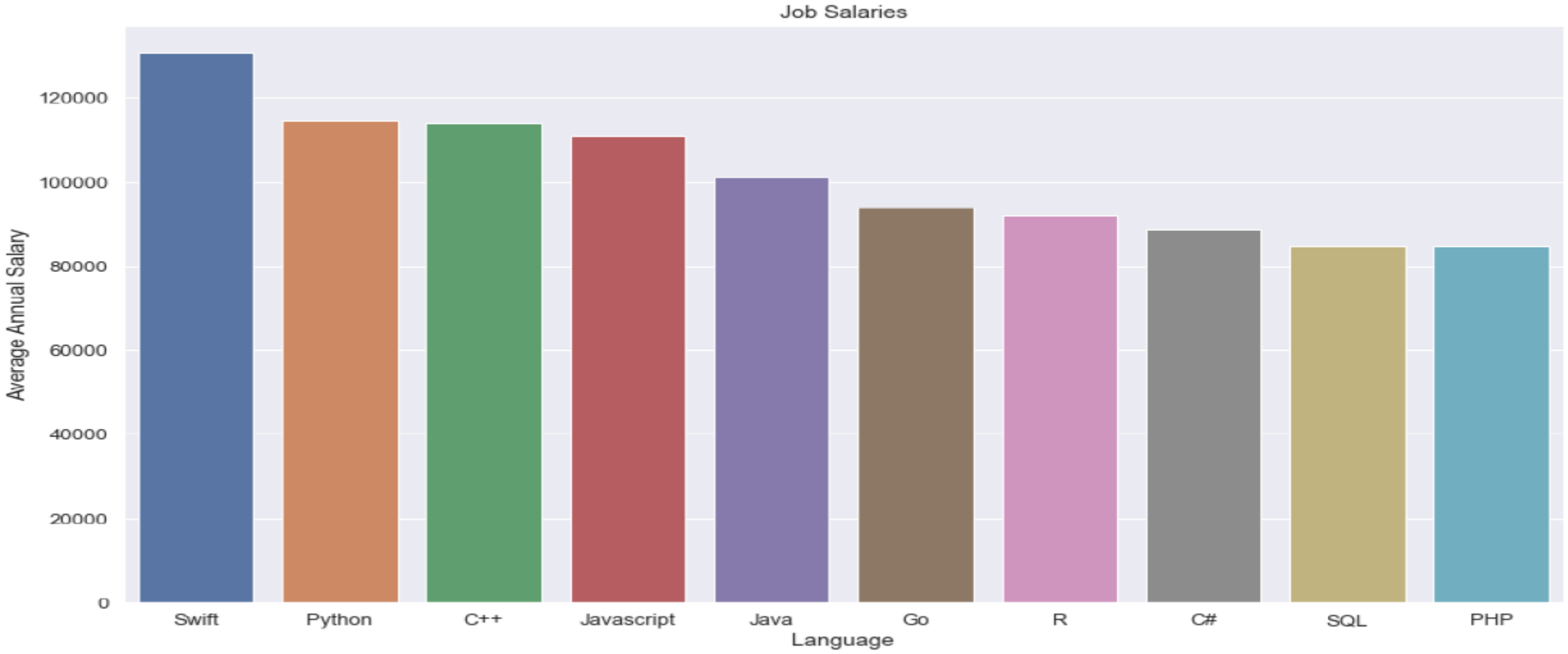
CONCLUSION

- Technology trends are rapidly evolving, with significant shifts expected in the current and upcoming years.
- Key programming languages, databases, platforms, and web frameworks are changing, influencing industry standards and practices.
- Demographic trends, including gender and education disparities, reshaping the technology workforce and highlighting areas for improvement.
- Action must be taken to address skill gaps, ensure equitable technology access, and promote diversity in tech roles.
- Future trends should incorporate machine learning to predict developments in technology and salary trends.

APPENDIX


Total Respondent Based on Developer Type
DevType
Developer, full-stack
Developer, back-end
Developer, front-end
Developer, desktop or enterprise applications
Developer, mobile
DevOps specialist
Database administrator
System administrator
Designer
Developer, QA or test
Developer, embedded applications or devices
Engineer, data
Data scientist or machine learning specialist
Data or business analyst
Student
Academic researcher
Educator
Product manager
Developer, game or graphics
Engineer, site reliability
Engineering manager
Scientist
Senior executive/VP
Marketing or sales professional
0
1000
2000
3000
4000
5000
6000
7000
Total
Respondent

JOB POSTINGS



POPULAR LANGUAGES