

# Technology Trend Analysis

Bui Xuan Nam  
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# Outline

- Executive Summary
- Introduction
- Methodology
- Results
- Visualization - Charts
- Dashboard
- Discussion
- Conclusion

# Executive Summary

- Current Technology Usage Trend

- Language

- Database

- Platform

- Web frame

- Future Technology Trend

- Language

- Database

- Platform

- Web frame

- Demographics Survey

- Country & Gender Difference

# Introduction

- Analyze technology trend in software and web development among developers around the world
- Purpose of this Analysis
  - Identify the top programming languages, database, platform and web frame skills in demand
  - Identify skill requirements for future
  - Identify human resource gap in the industry
- Audience for this Presentation
  - Programmers
  - IT industry leaders
  - Computer science students

# Methodology

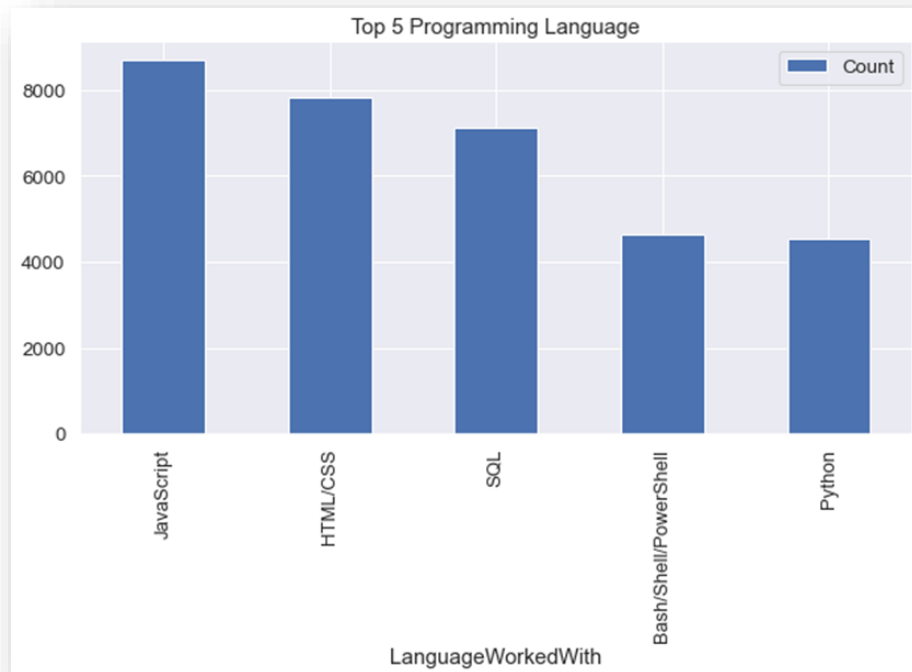
- Data Collection (Sources)
  - Stack overflow developer 2019 survey
  - GitHub job postings
  - Programming languages annual salary
- Data Wrangling
- Data Exploration
- Data Cleaning
- Data Visualization
  - Python matplotlib & turtle
  - IBM Cognos
- Presentation

# Results

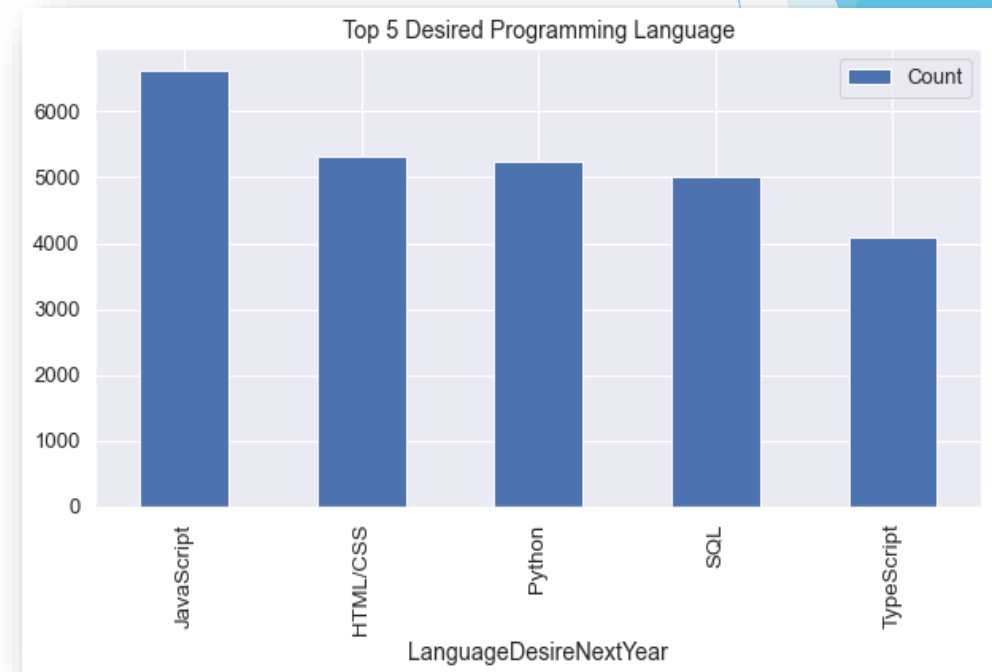
	Respondent	LanguageWorkedWith	LanguageDesireNextYear	DatabaseWorkedWith	DatabaseDesireNextYear	PlatformWorkedWith
0	4	C	C	MySQL	MySQL	Linux
1	4	C++	C#	SQLite	SQLite	Windows
2	4	C#	JavaScript	NaN	NaN	NaN
3	4	Python	SQL	NaN	NaN	NaN
4	4	SQL	NaN	NaN	NaN	NaN
...	...	...	...	...	...	...
74584	25142	Go	Python	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



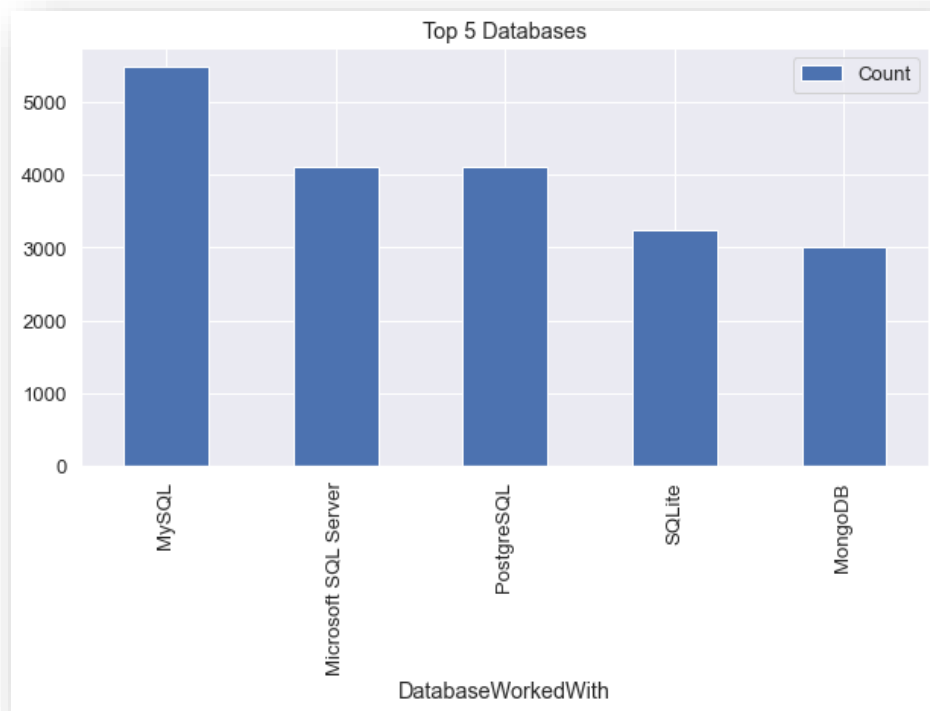
# Programming language trends

- JavaScript is top trending language in the world
- Python and TypeScript are becoming more and more popular
- HTML/CSS and SQL still has great portion in language usage trend

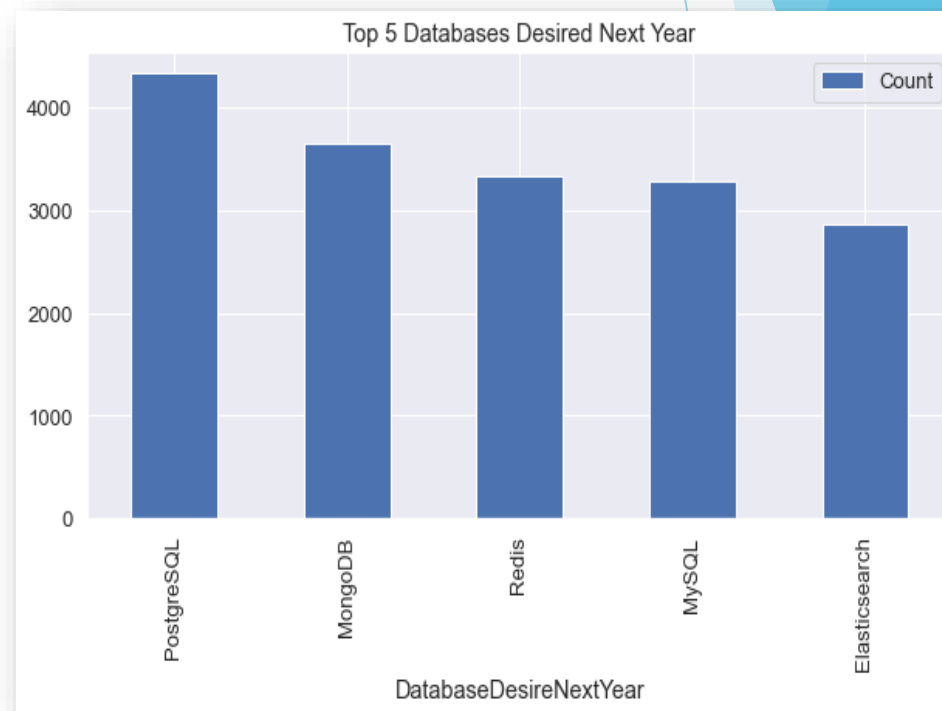


# Database trends

Current Year



Next Year



# Database trends

## Findings

- MySQL is the most popular database
- There are still a lot of companies using Microsoft SQL Server
- MongoDB and Redis are the most favorable NoSQL database

# Database trends

## Implications

- Open-source databases like MySQL are still preferable
- Software development and Big Data technology still requires SQL
- NoSQL databases will make an impact for relational databases

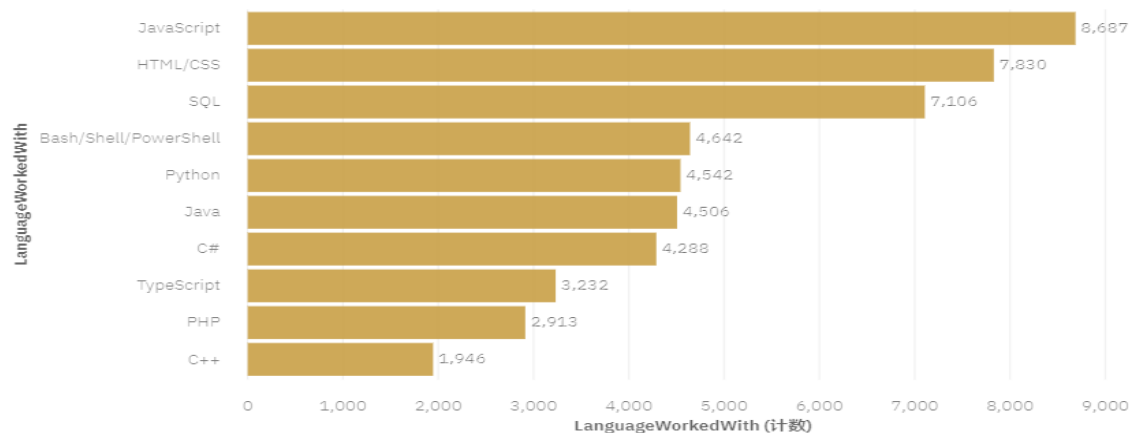
# Dashboard

Link at Github

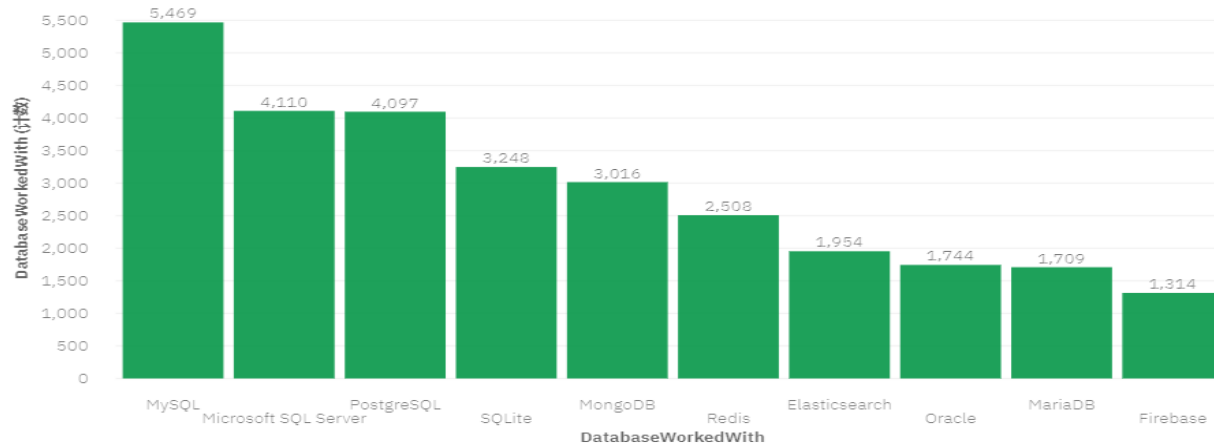
<https://github.com/BXNam/Dashboard>

# Current technology usage

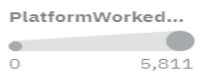
Top 10 LanguageWorkedWith



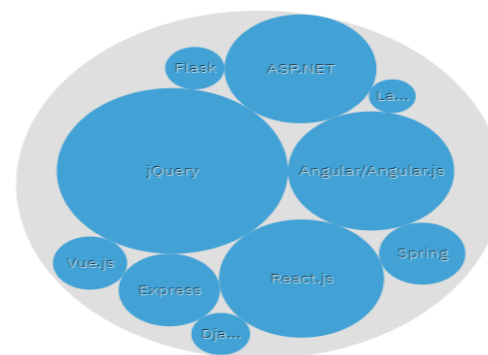
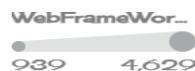
Top 10 DatabaseWorkedWith



PlatformWorkedWith

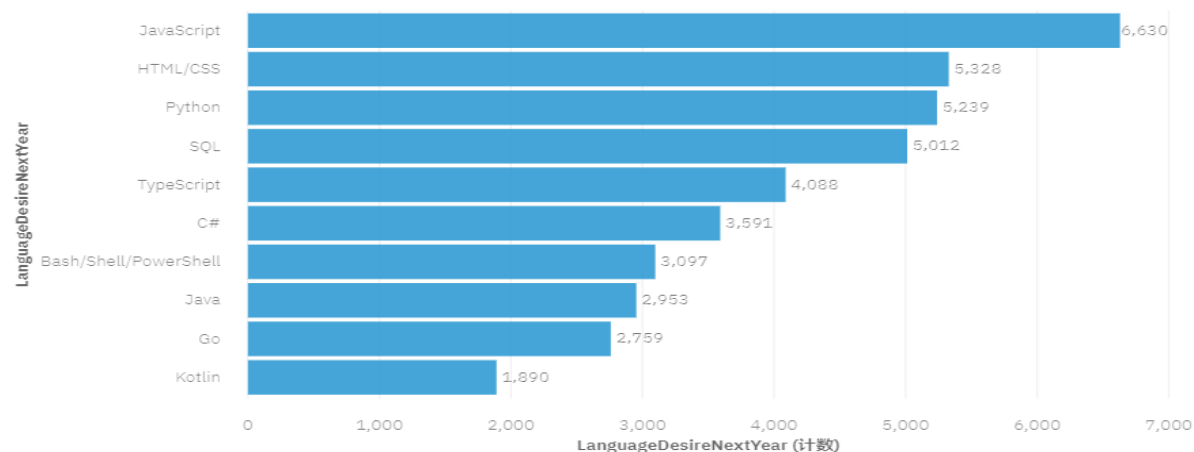


Top 10 WebFrameWorkedWith

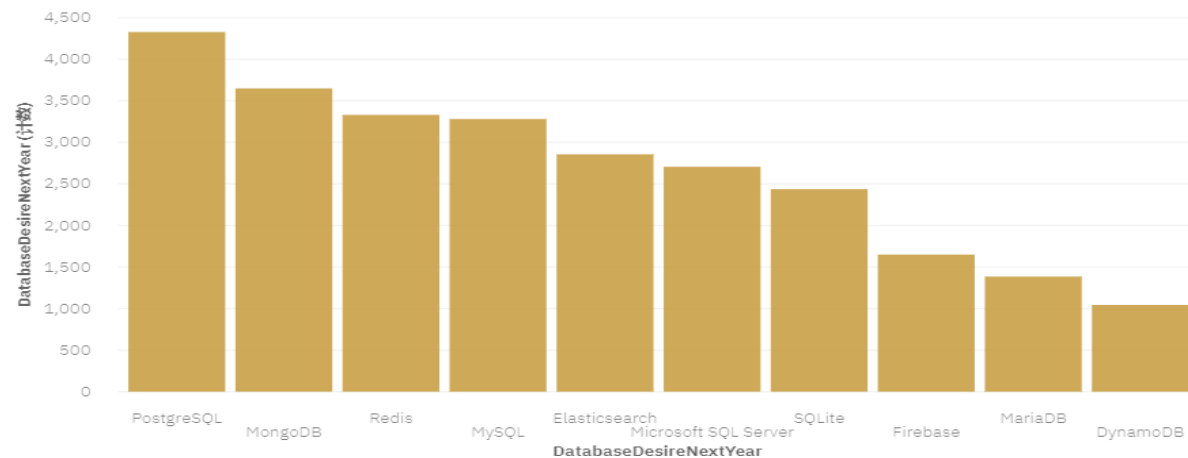


# Future technology trend

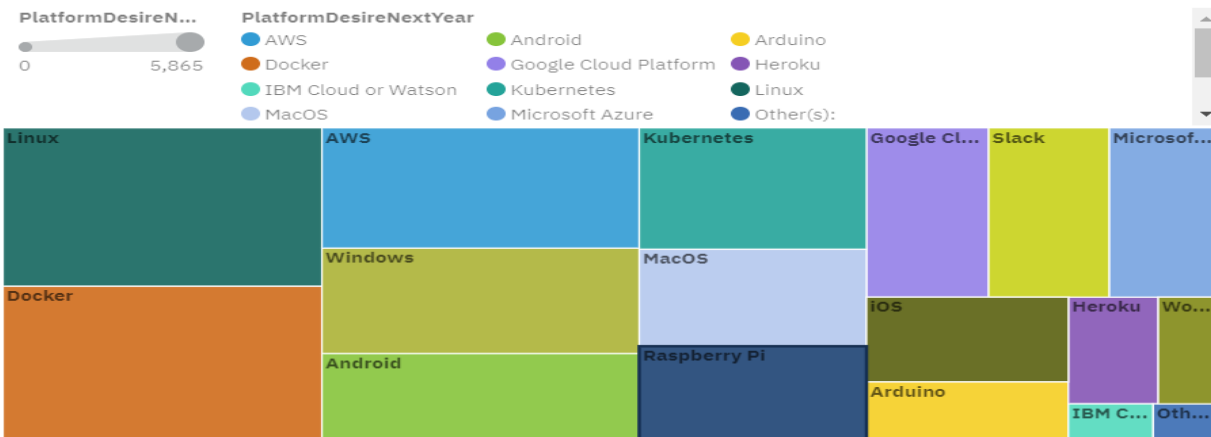
Top 10 LanguageDesireNextYear



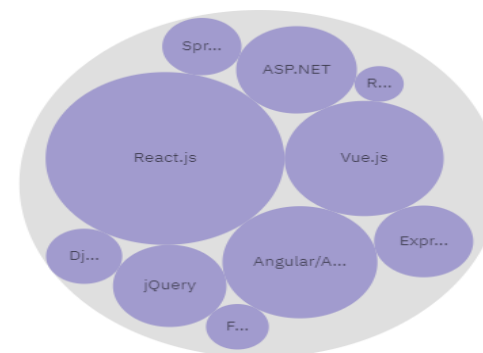
Top 10 DatabaseDesireNextYear



PlatformDesireNextYear



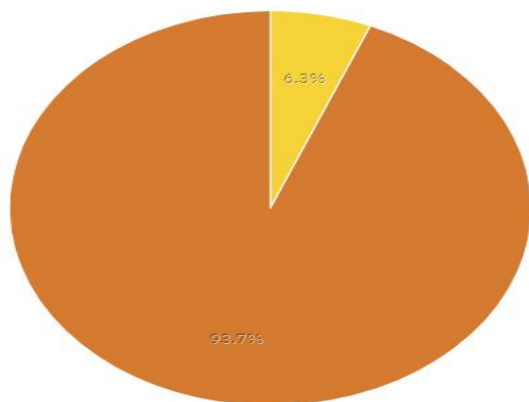
Top 10 WebFrameDesireNextYear



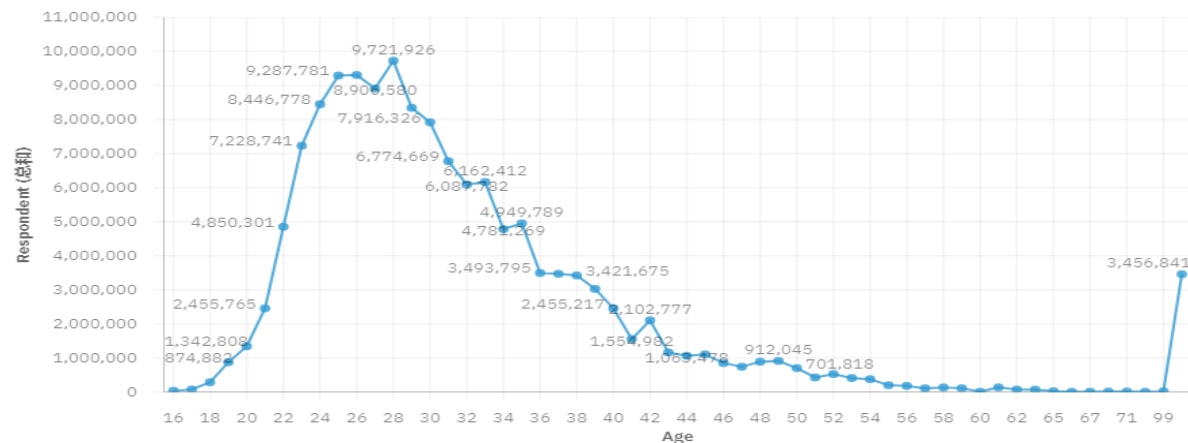
# Demographics

Respondent classified by Gender

Gender  
● Woman ● Man

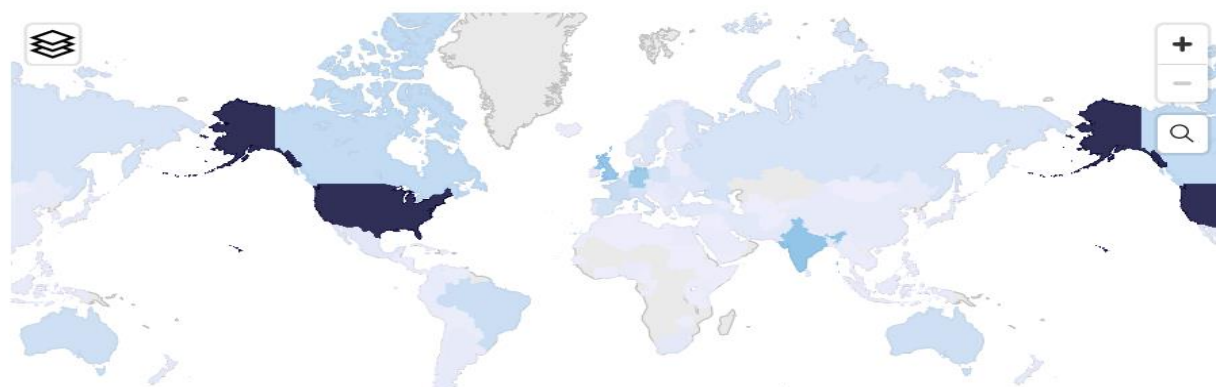


Respondent Count by Age



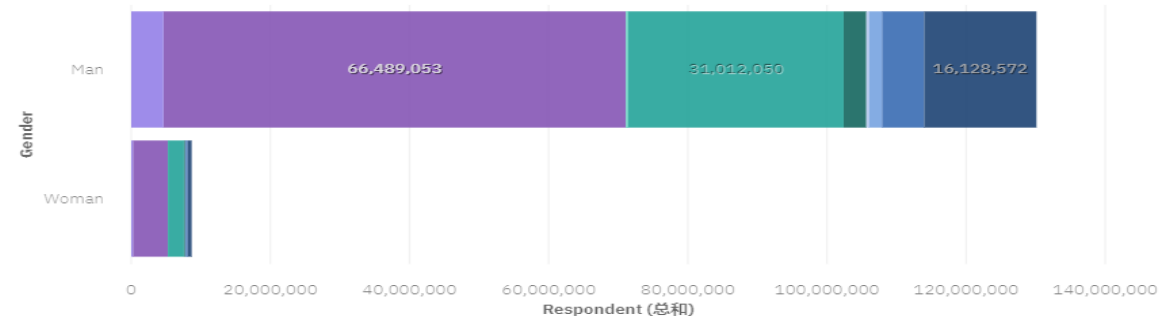
Respondent Count for Countries

Respondent (总和)  
865 39,054,714



Respondent Count by Gender, classified by Formal Education Level

EdLevel  
● Associate degree ● Bachelor's degree (BA, BS, B.E... ● I never completed any formal ...  
● Master's degree (MA, MS, M.En... ● Other doctoral degree (Ph.D, E... ● Primary/elementary school  
● Professional degree (JD, MD, e... ● Secondary school (e.g. Americ... ● Some college/university study ...



# Discussion

- Technology Usage Trend Now and Future
- Gender, Age and Education Discrimination in IT Industry



# Conclusion

- Technology Trends
- Programming Languages, Database, Platform and Web frame Trends
- Demographics Trends
- Gender and Education
- Programming Languages Trends and Salary Trends

# Overall findings & implications

## Findings

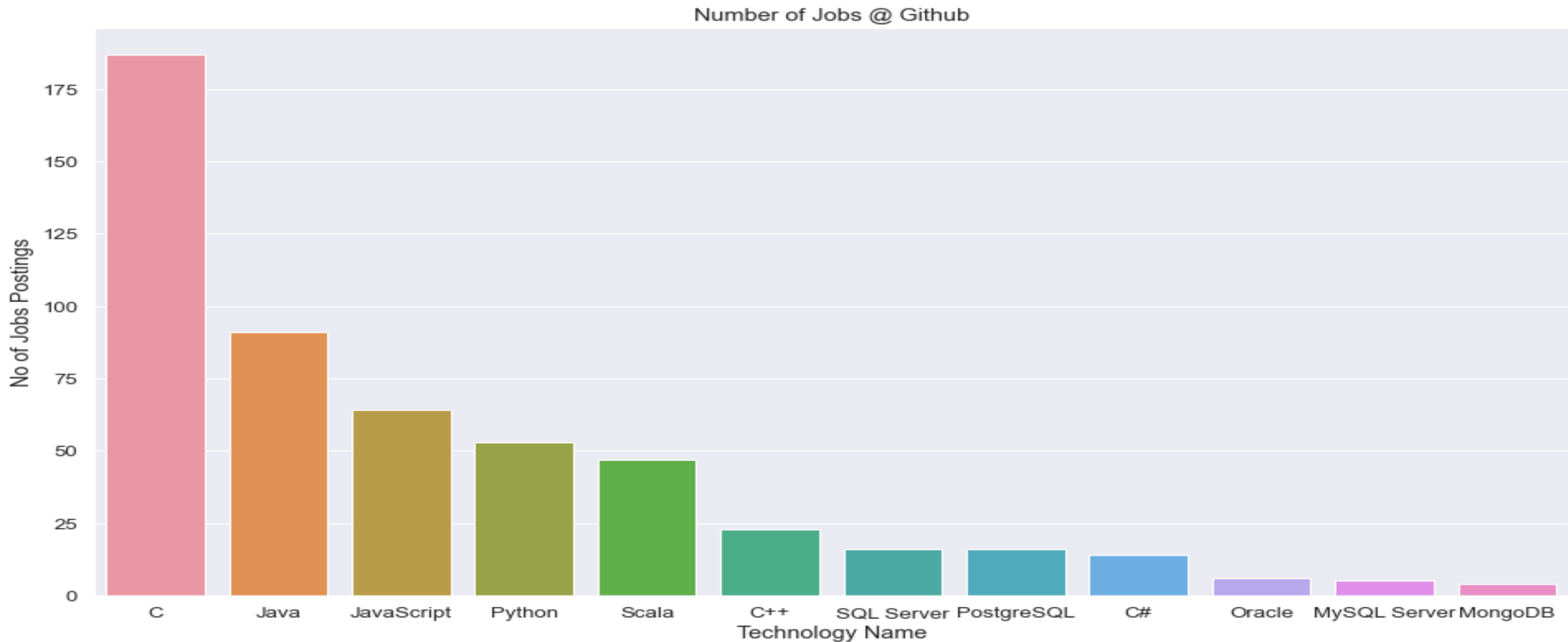
- Technology trends changes every year
- USA is the top technology country
- There are extreme gender and age discrimination
- Docker and AWS are the most popular platform

# Overall findings & implications

## Implications

- Programmers should always follow the latest technology trends
- More countries should have the equal chance to be exposed to new technology
- Gender and Age should not be one of the concerns or benefits of Employment

# GITHUB Job postings



# Popular languages

