STACK OVERFLOW DEVELOPER SURVEY 2019

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OUTLINE

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

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EXECUTIVE SUMMARY

- Data contextualization and analysis goal.

- Methodology description.
  - Data gathering.
  - Data analysis.
  - Data visualizations.

- Results presentation supported with graphs and trends.

- Discussion of overall findings and implications regarding the results previously exposed.

- Conclusions of the carried out research.

INTRODUCTION

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

- Results don't represent everyone in the developer community evenly.

- Nearly 90,000 developers.

- Trends to predict where the developers are going.

- Characterization of developers around the globe.

METHODOLOGY

- Collect survey data & explore its content
  - Web Scraping
  - APIs.
  - Request library.

- Data Wrangling

- Exploratory data analysis
  - Analyzing data distribution.
  - Handling outliers.
  - Correlations.

- Data Visualization
  - Highlight data distribution, relationships, composition, and data comparison.
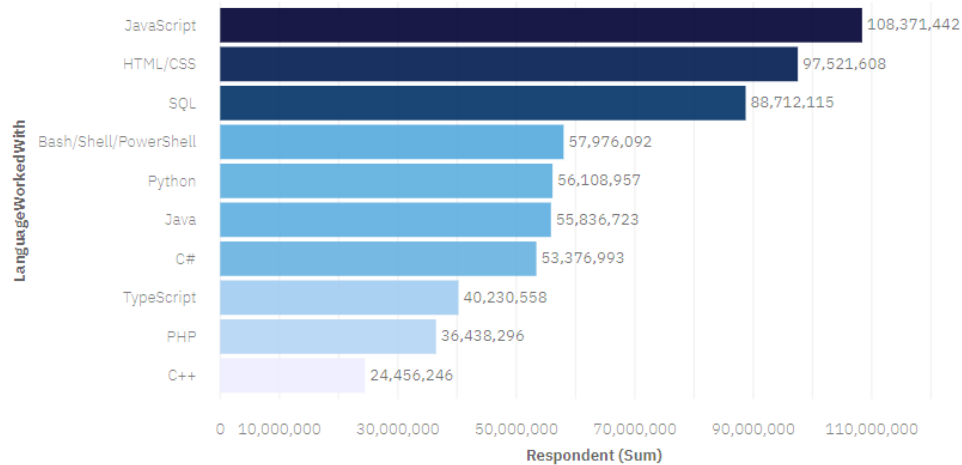 - Dashboards.

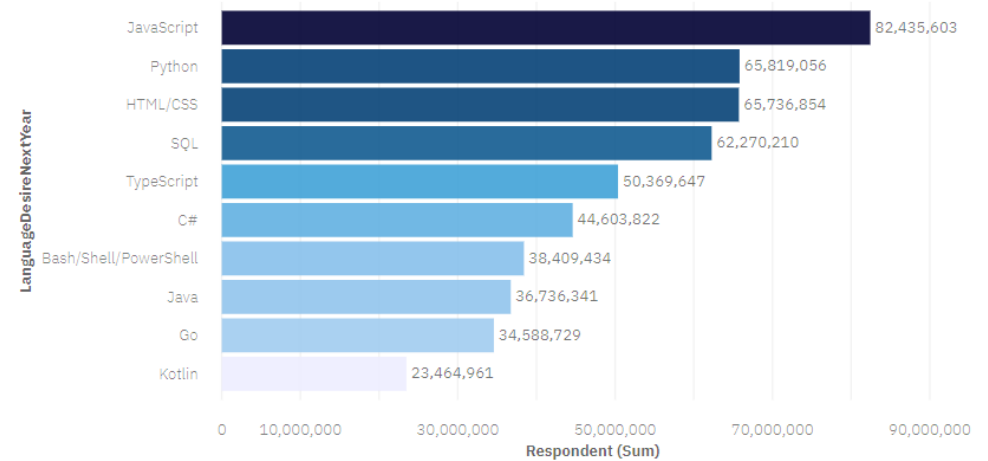# RESULTS

PROGRAMMING LANGUAGE TRENDS

Current Year

Top 10 Language Worked With's Bar Chart

Language	Respondent (Sum)
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

Next Year

Top 10 Language Desire Next Year's Bar Chart

Language	Respondent (Sum)
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

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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript seems to keep as leading language.

- Python fastest-growing.
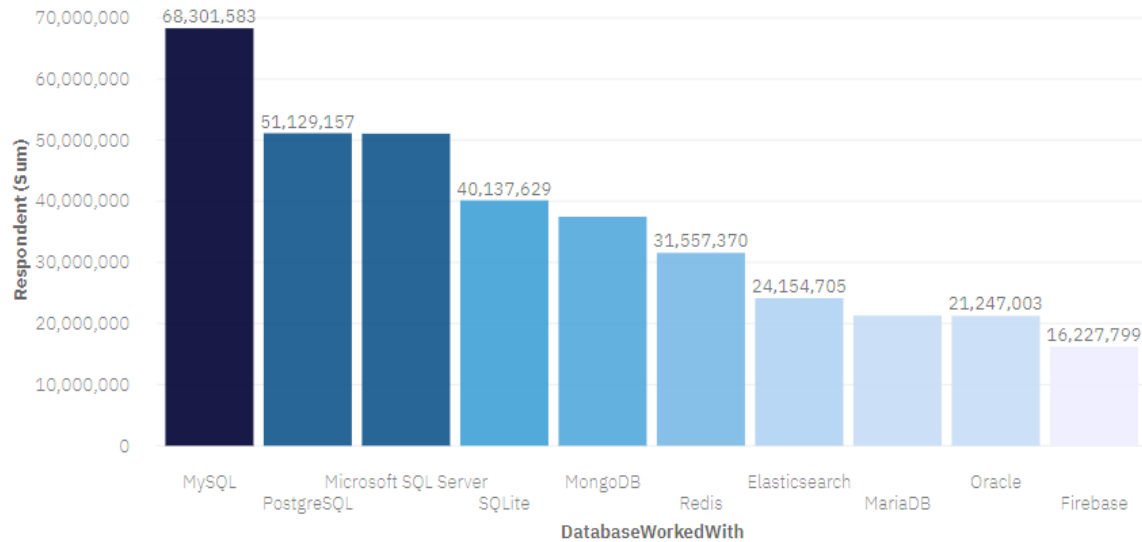
- Great interest in TypeScript.

Implications

- Possible developer migration from JavaScript to TypeScript.

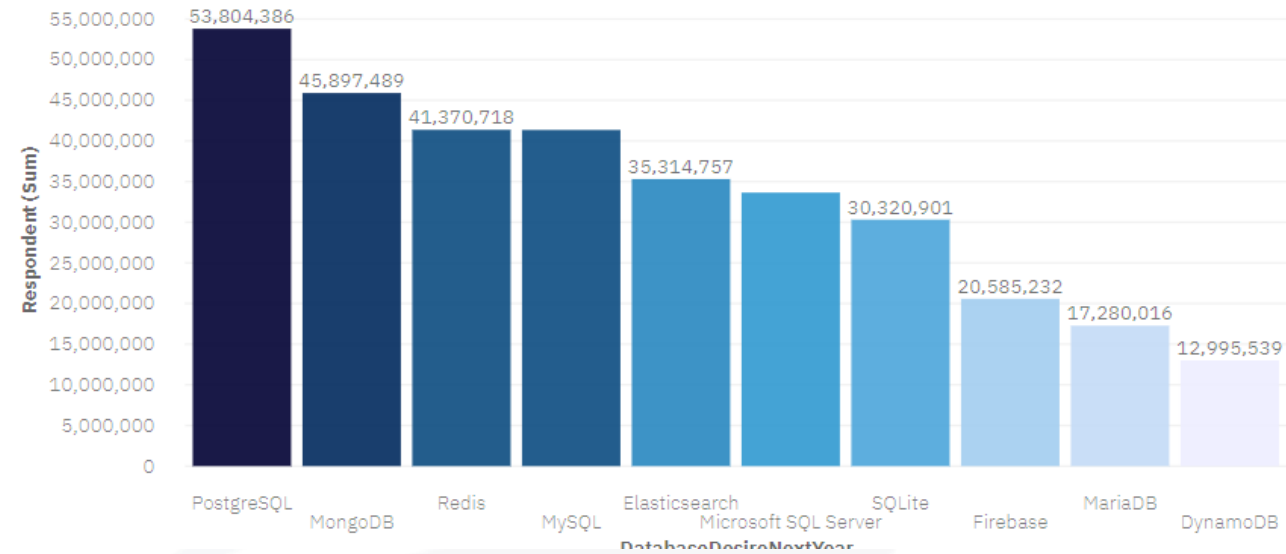**IBM Developer**

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DATABASE TRENDS

Current Year

Next Year

Top 10 Database Worked With's Column Chart

Top 10 Database Desire Next Year's Column Chart

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL as most used database.
- Lack of interest in Microsoft SQL Server and SQLite.
- Increasing interest in PostgreSQL and MongoDB.

Implications

- Microsoft SQL Server and SQLite losing ground in the market.
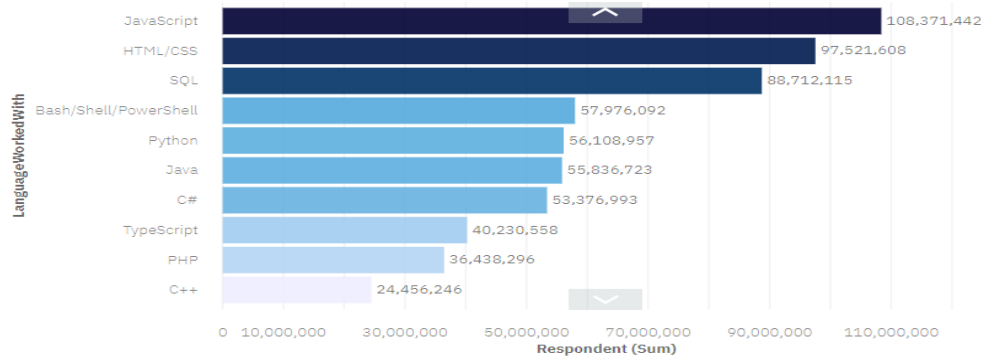- PostgreSQL and MongoDB establishment in the market.
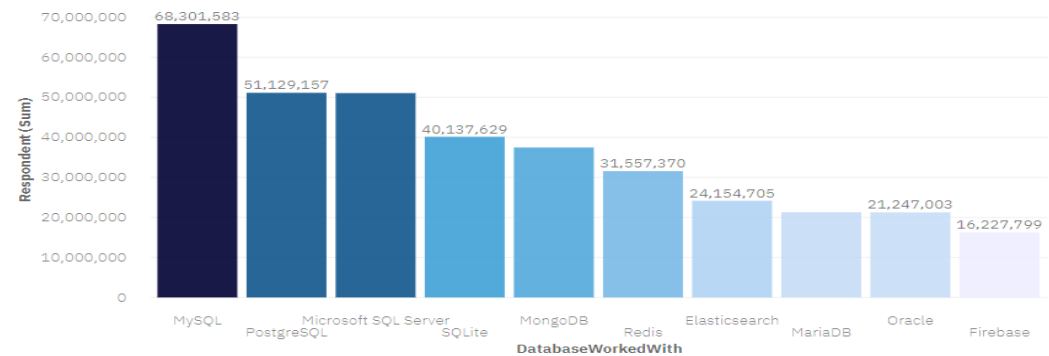
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DASHBOARD

https://dataplatform.cloud.ibm.com/dashboards/84b03464-a5bf-4889-a110-d9c606b59917/view/6f36f53d3c8d30c871e6cce407cc7e527a34240bb4bb8b50888c7b495c692297f36f1498c87d485cd9420d31f5bf17589b

CURRENT TECHNOLOGY USAGE

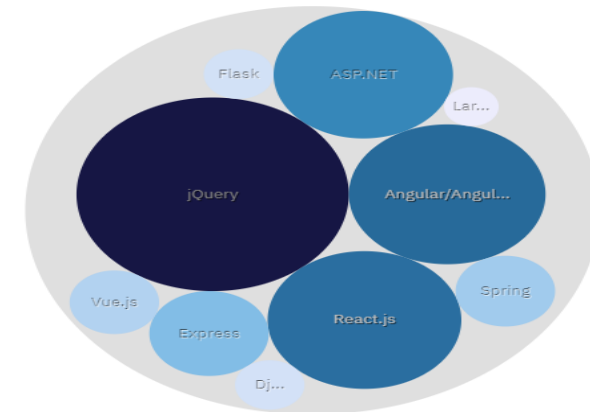**Top 10 Language Worked With's Bar Chart**

Top 10 Database Worked With's Column Chart
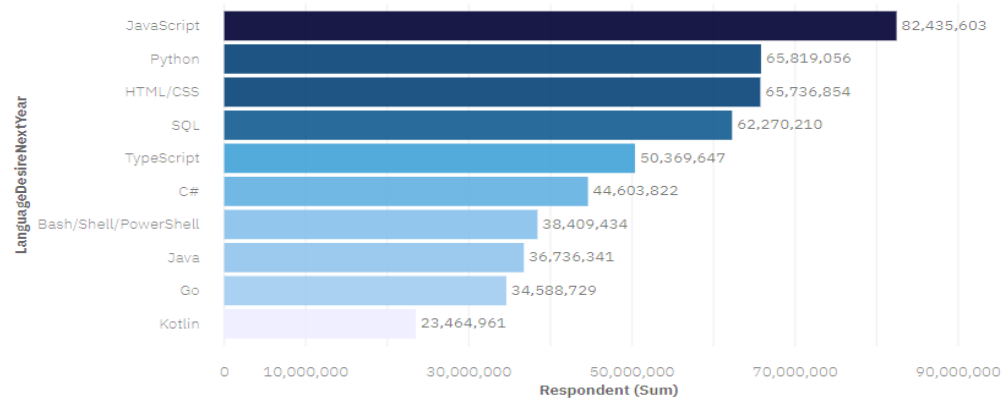

Platform Worked With's Word Cloud Chart
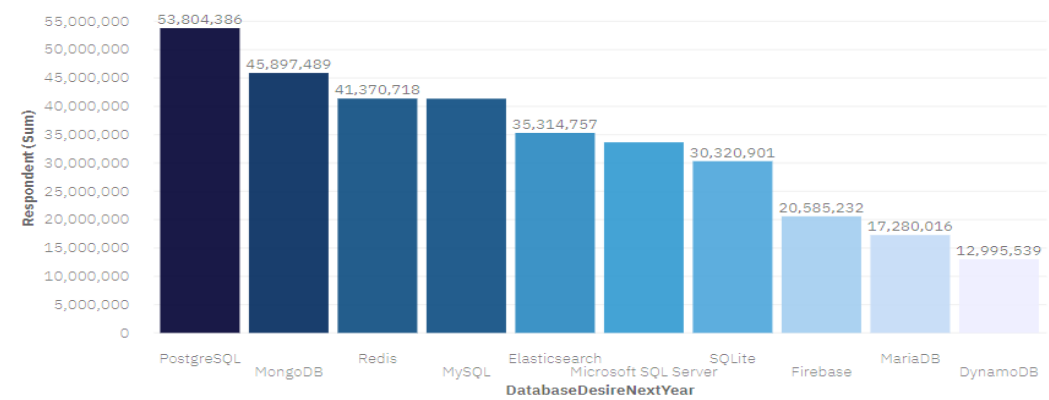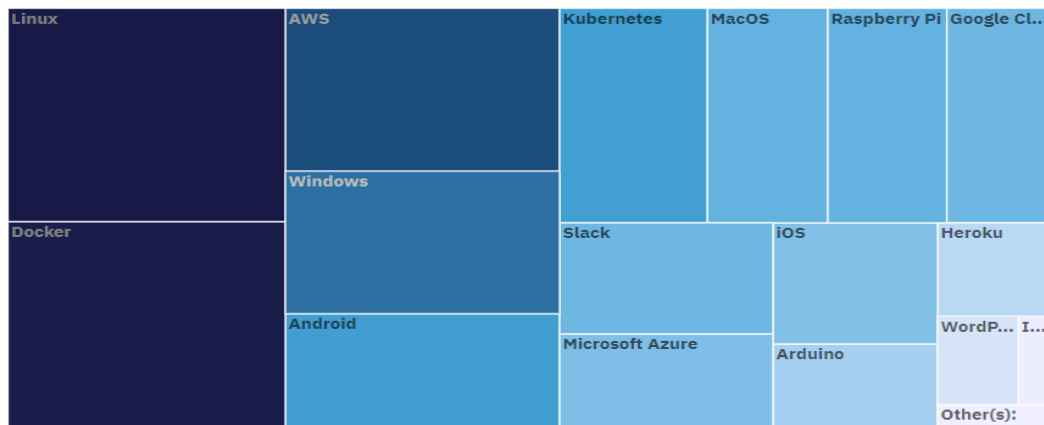

Top 10 Web Frame Worked With's Hierarchy Bubble Chart

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FUTURE TECHNOLOGY TREND

Top 10 Language Desire Next Year's Bar Chart

Language	Respondent (Sum)
JavaScript	82,435,603
Python	65,819,056
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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 10 Database Desire Next Year's Column Chart

Database	Respondent (Sum)
PostgreSQL	53,804,386
MongoDB	45,897,489
Redis	41,370,718
MySQL	
Elasticsearch	35,314,757
Microsoft SQL Server	
SQLite	30,320,901
Firebase	20,585,232
MariaDB	17,280,016
DynamoDB	12,995,539

Platform Desire Next Year's Tree Map Chart

Top 10 Web Frame Desire Next Year's Hierarchy Bubble Chart

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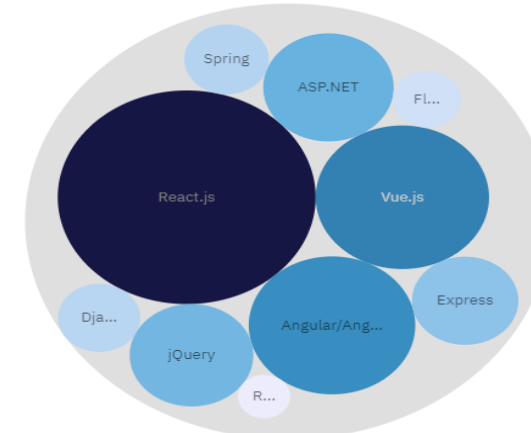
DEMOGRAPHICS

Respondent Classified by Gender's Pie Chart
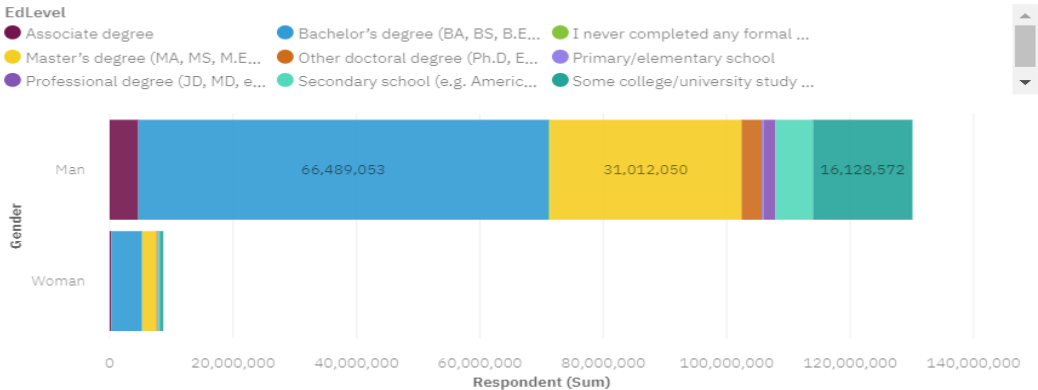
Gender
- Woman
- Man

6.3%

93.7%
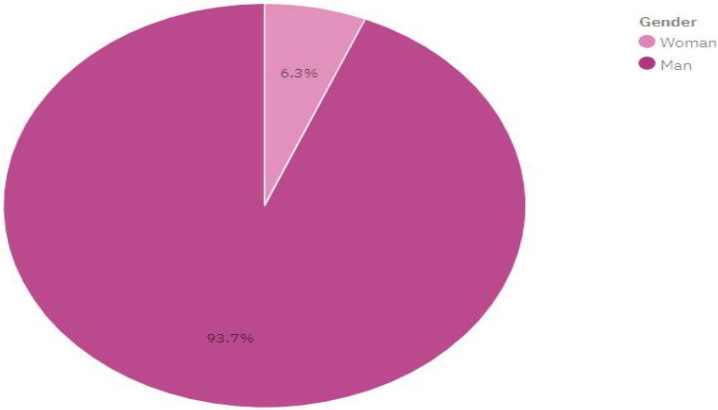
Respondent Count for Countries's Map Chart
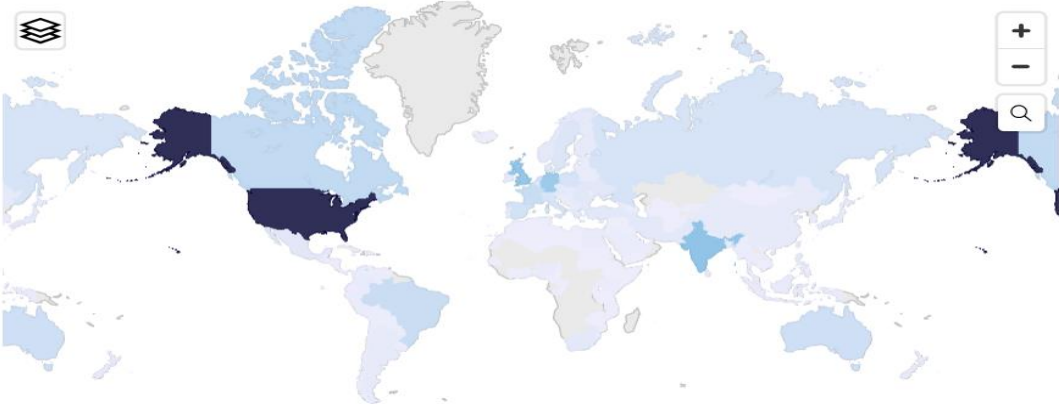
Respondent Count by Age's Line Graph
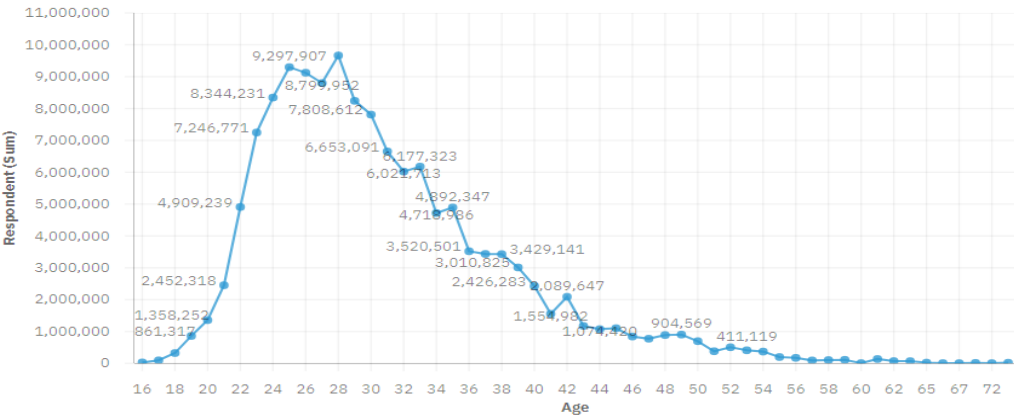
Respondent Count by Gender, classified by Formal Education Level's Stacked Bar Chart

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

Man: 66,489,053   31,012,050   16,128,572

Woman

0   20,000,000   40,000,000   60,000,000   80,000,000   100,000,000   120,000,000   140,000,000

Respondent (Sum)

Gender

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DISCUSSION

OVERALL FINDINGS & IMPLICATIONS

Findings

- JavaScript is widely used and TypeScript getting popular.

- Over 90% of young male developers.

- Developers are mostly located in developed countries.

Implications

- JavaScript and TypeScript web frames gaining followers.

- Global polarization of developer location and gender.

- Young developers without postgrad studies on its majority.
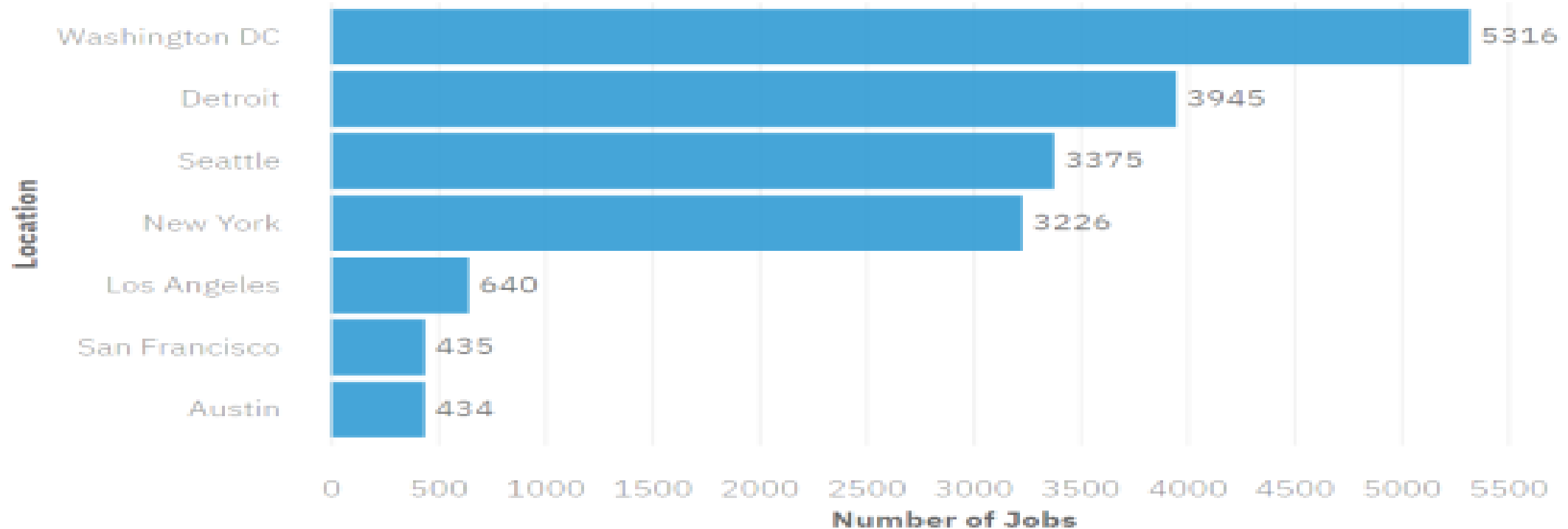
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CONCLUSION

- Developers are people with very marked characteristics.

- A good idea of the popularity trends of different tools, platforms, and languages can be obtained.

- There is a job to be done to spread accessibility of this labor market to countries in development.

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APPENDIX

JOB POSTINGS

POPULAR LANGUAGES