



STACK OVERFLOW DEVELOPER SURVEY 2019

Part 1

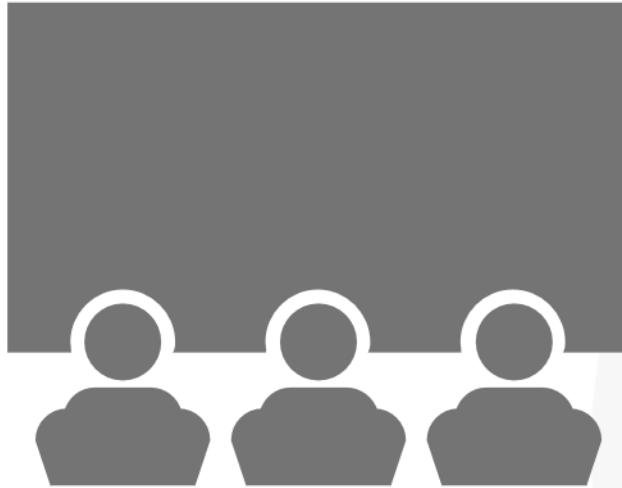
Keya Dobriyal

January 24/2026

<https://www.linkedin.com/in/alvaroj-ortegab/>

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OUTLINE



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



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.
 - Final conclusions of the research.



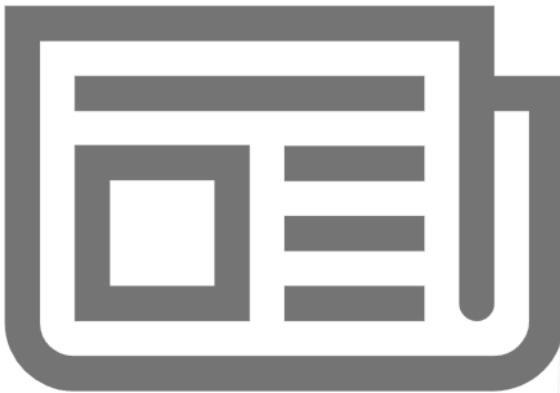
INTRODUCTION



- The Stack Overflow Developer Survey stands as the world's most extensive and detailed census of the global coding community.
- While vast, the survey results do not offer a perfectly proportional representation of the entire developer landscape.
- The data is derived from the input of nearly 90,000 international participants.
- The findings serve to identify emerging trends and forecast the future direction of the industry.
- It provides a comprehensive profile of developer demographics and behaviors on a global scale.



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 distribution of data, relationships, the composition and comparison of data.
- Dashboards



RESULTS

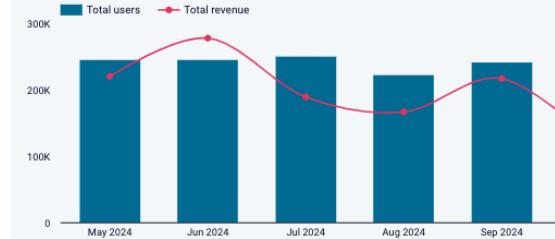


All channels

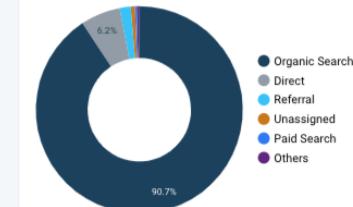
Total users
1.4M

Total revenue
\$992.46K

Total users Total revenue



Top traffic sources



Paid channels

Total users
4.3K

Total revenue
\$2.11K

Channel

Total users Total revenue



Ads performance



↑ ↓

⋮

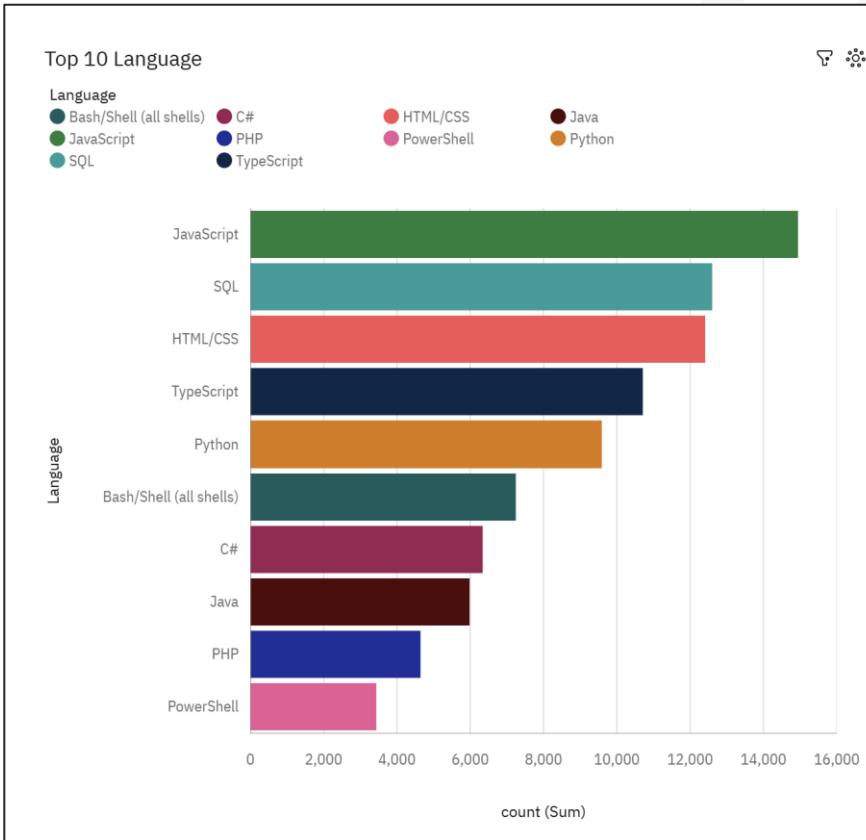
Report date	Impressions	Clicks	CTR	Amount spend	CPC
Oct 2024	855.9K	10.1K	1.17%	\$3,985.5	\$0.4
Sep 2024	711K	8.1K	1.14%	\$4,423.48	\$0.55
Aug 2024	619.5K	6.3K	1.02%	\$3,388.19	\$0.54
Jul 2024	659.8K	6.4K	0.98%	\$3,880.12	\$0.6
Jun 2024	648.4K	6.1K	0.93%	\$5,072.04	\$0.84
May 2024	524.6K	5.7K	1.09%	\$4,544.11	\$0.79
Grand total	4M	42.7K	1.06%	\$25,293.43	\$0.59

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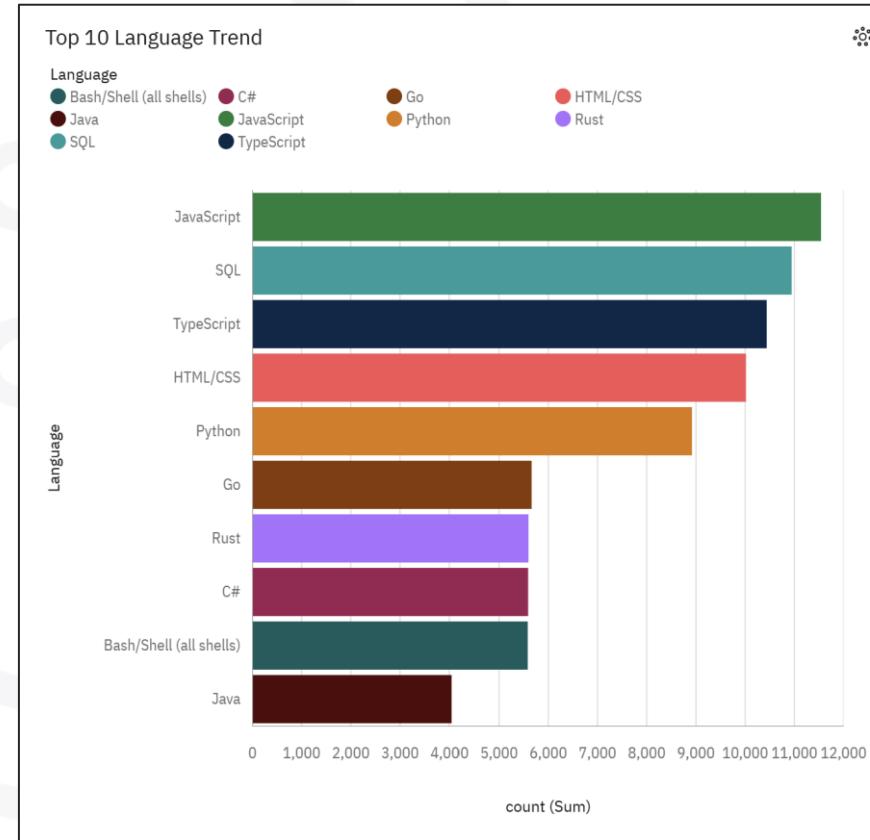


PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript holds its ground at the top of the charts, continuing its long-standing reign as the #1 language.
- The rise of Python remains unmatched, securing its title as the most high-growth language.
- TypeScript is seeing a massive surge in popularity, reflecting a strong shift in developer preference.

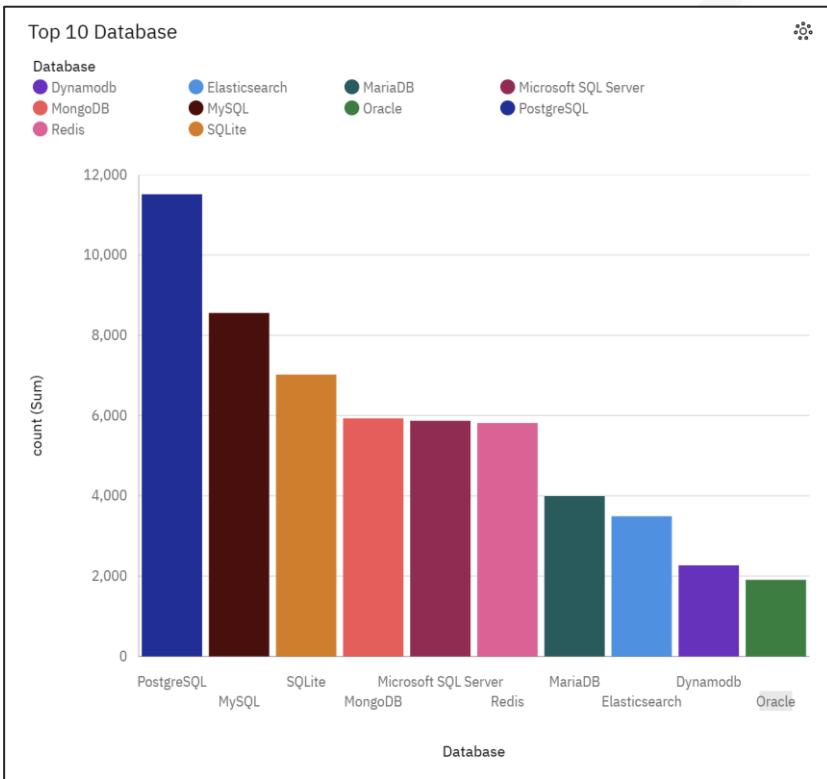
Implications

- The data indicates a growing adoption rate for TypeScript among the existing JavaScript user base.
- Developers are increasingly supplementing or replacing JavaScript workflows with TypeScript for better codebase scalability.
- There is a notable pivot in the ecosystem, where TypeScript is becoming the primary language for developers formerly focused on JavaScript.

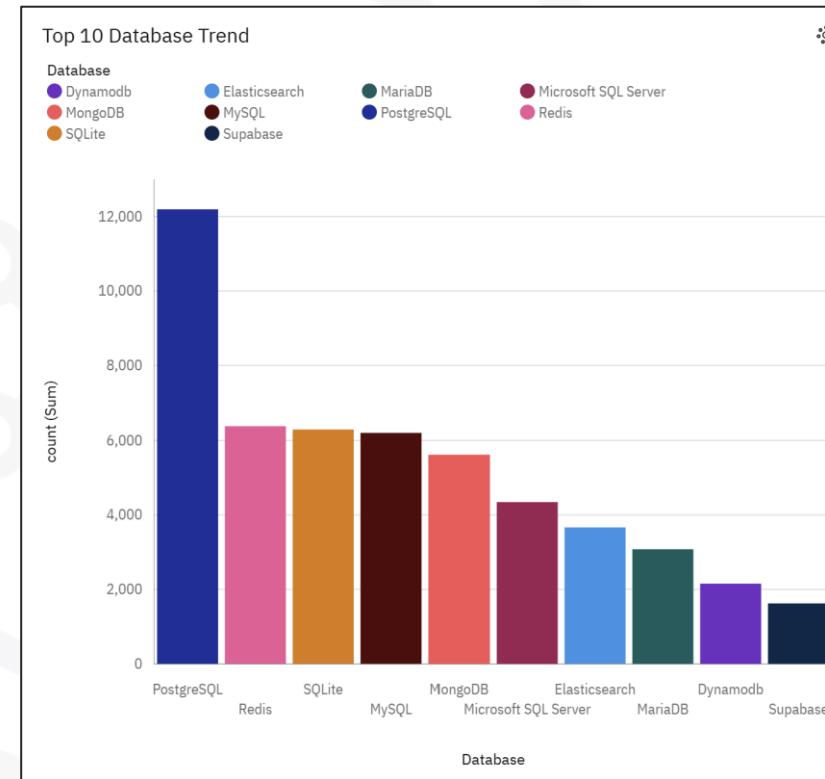


DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Established Standard: MySQL reinforces its status as the industry's go-to database solution.
- Market Stagnation: Interest in traditional mainstays like Microsoft SQL Server and SQLite appears to be plateauing or cooling off.
- Modern Shift: The developer ecosystem is pivoting toward PostgreSQL and MongoDB, driven by their increasing popularity in modern architectures.

Implications

- Market Contraction: Microsoft SQL Server and SQLite are experiencing a notable reduction in market share and developer mindshare.
- Strategic Growth: PostgreSQL and MongoDB have successfully solidified their positions, moving from emerging technologies to established market leaders.
- Competitive Shift: Traditional relational databases like SQL Server are losing momentum as modern alternatives like PostgreSQL achieve greater industry entrenchment.



DASHBOARD



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DASHBOARD TAB 1

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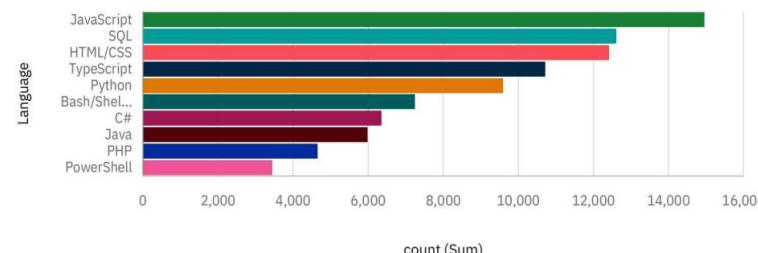
IBM-Data_Analytics_Capstone

Current Technology Usage

Top 10 Language

Language

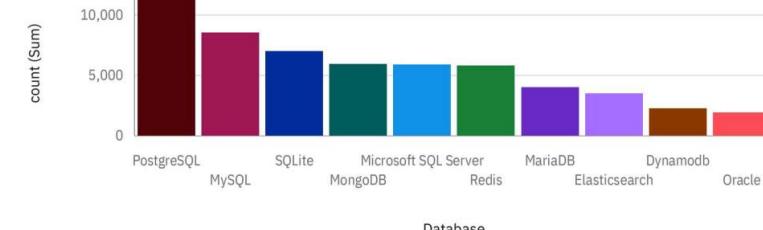
- Bash/Shell (all shells)
- C#
- HTML/CSS
- Java
- JavaScript
- PHP
- PowerShell
- Python
- SQL
- TypeScript



Top 10 Database

Database

- Dynamodb
- MongoDB
- Redis
- Elasticsearch
- MySQL
- SQLite
- Oracle
- Microsoft SQL Server
- PostgreSQL



Top 10 Platforms

Platform

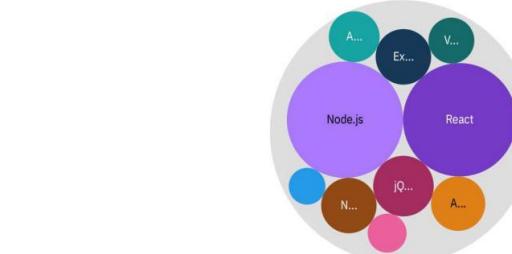
- Amazon Web Services (AWS)
- Digital Ocean
- Google Cloud
- Hetzner
- Cloudflare
- Firebase
- Heroku
- Microsoft Azure



Top 10 Web Frame

WebFrame

- ASP.NET
- Next.js
- Vue.js
- Cloudflare
- Express
- Angular
- React
- jQuery
- Node.js
- Spring Boot



DASHBOARD TAB 2

Future Technology Trend

Top 10 Language Trend

Language

Bash/Shell (all shells)
Java
SQL

C#

JavaScript

Go

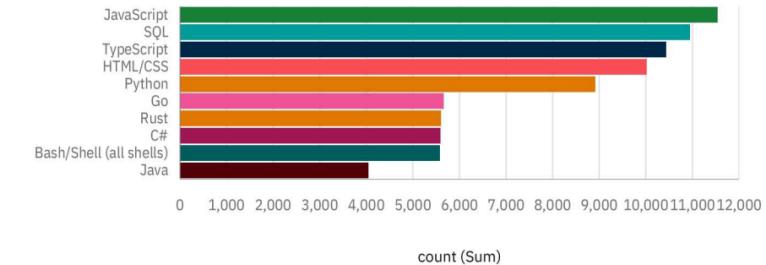
Python

TypeScript

HTML/CSS

Rust

Language



Top 10 Database Trend

Database

Dynamodb
MongoDB
SQLite

Elasticsearch

MySQL

PostgreSQL

Supabase

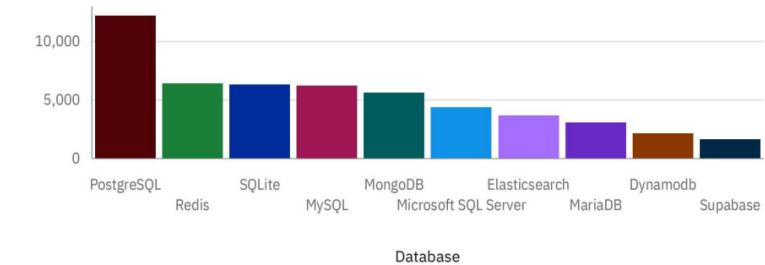
MariaDB

Redis

Microsoft SQL Server

Redis

count (Sum)



Top 10 Trending Platform

count (Sum)



Amazon Web Services (AWS)

Google Cloud

Digital Ocean

Vercel

Firebase

Microsoft Azure

Cloudflare

Hetzner

Supabase

Netlify

Cloudflare

Hetzner

Supabase

Netlify

Cloudflare

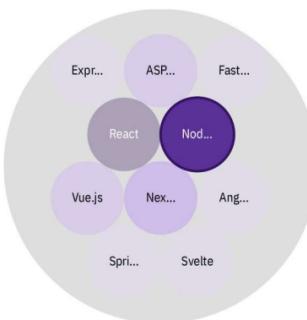
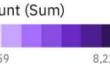
Hetzner

Supabase

Netlify

Top 10 Trending Web Frame

count (Sum)



DASHBOARD TAB 3

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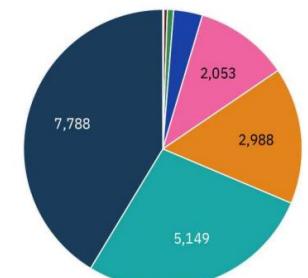
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Demographics

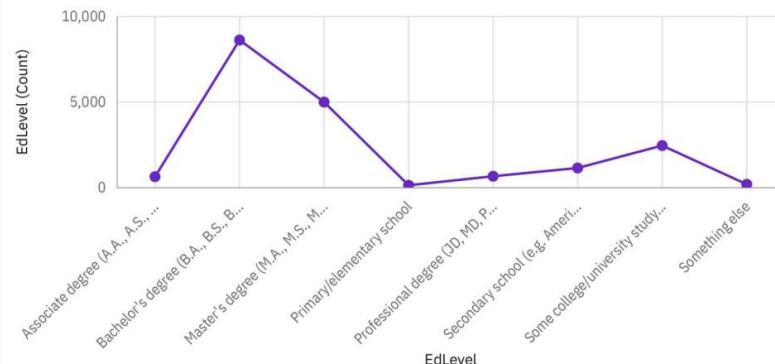
Demographics - Age

Age

- Prefer not to say
- 65 years or older
- Under 18 years old
- 55-64 years old
- 45-54 years old
- 18-24 years old
- 35-44 years old
- 25-34 years old



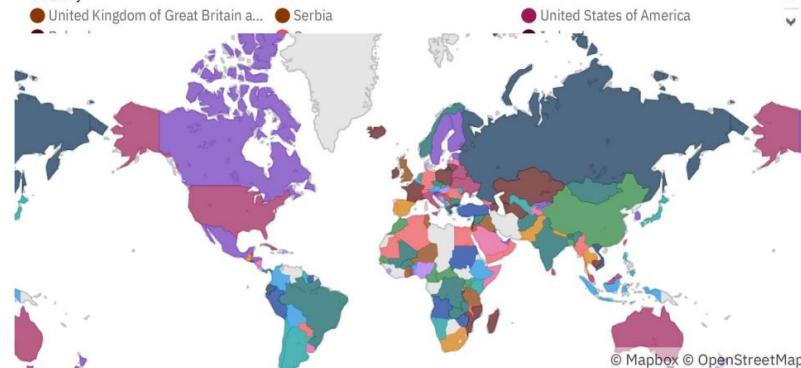
Demographics - Education



Respondents by Country

Country

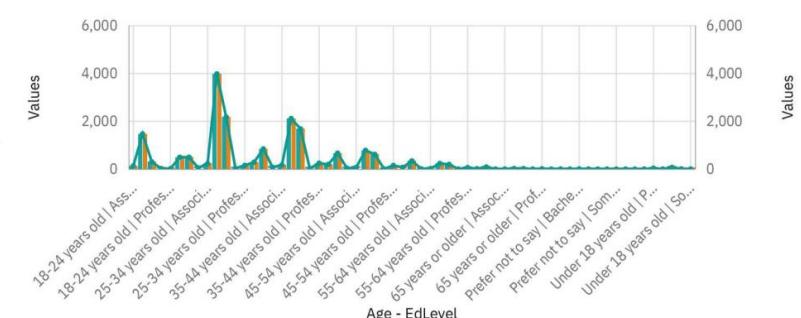
- United Kingdom of Great Britain and Northern Ireland
- Serbia
- United States of America



Education By Age

- Measures
- Age
- EdLevel

- Measures
- Age
- EdLevel



DISCUSSION



Skills Network



OVERALL FINDINGS & IMPLICATIONS

Findings

- Technological Shift: While JavaScript maintains its status as the industry standard, TypeScript is experiencing a significant surge in adoption and popularity.
- Demographic Concentration: The survey reveals a stark gender and age imbalance, with the demographic being over 90% young male developers.
- Geographic Distribution: The global developer population remains heavily concentrated within developed economies.

Implications

- Framework Adoption: JavaScript and TypeScript web frameworks are rapidly gaining followers and market share.
- The Diversity Gap: Global developer data shows strong polarization in terms of geographic location and gender balance.
- New Gen Developers: Most young developers are entering the industry with undergraduate or self-taught backgrounds rather than postgraduate degrees.



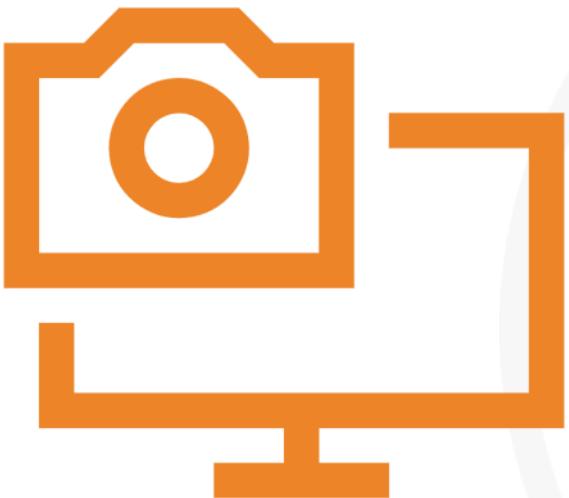
CONCLUSION



- The Developer Persona: Software creators share a very well-defined set of traits and professional habits.
- Tech Barometer: The results offer a comprehensive roadmap of the current tool and language landscape.
- Closing the Gap: Work must be done to empower developers in developing countries by improving their access to global employment opportunities.
- Strategic Insights: The survey provides a robust benchmark for understanding the popularity and adoption trajectories of various tools, platforms, and programming languages.
- Global Equity: There is a significant opportunity to expand workforce accessibility and bridge the digital divide for developers in emerging economies.



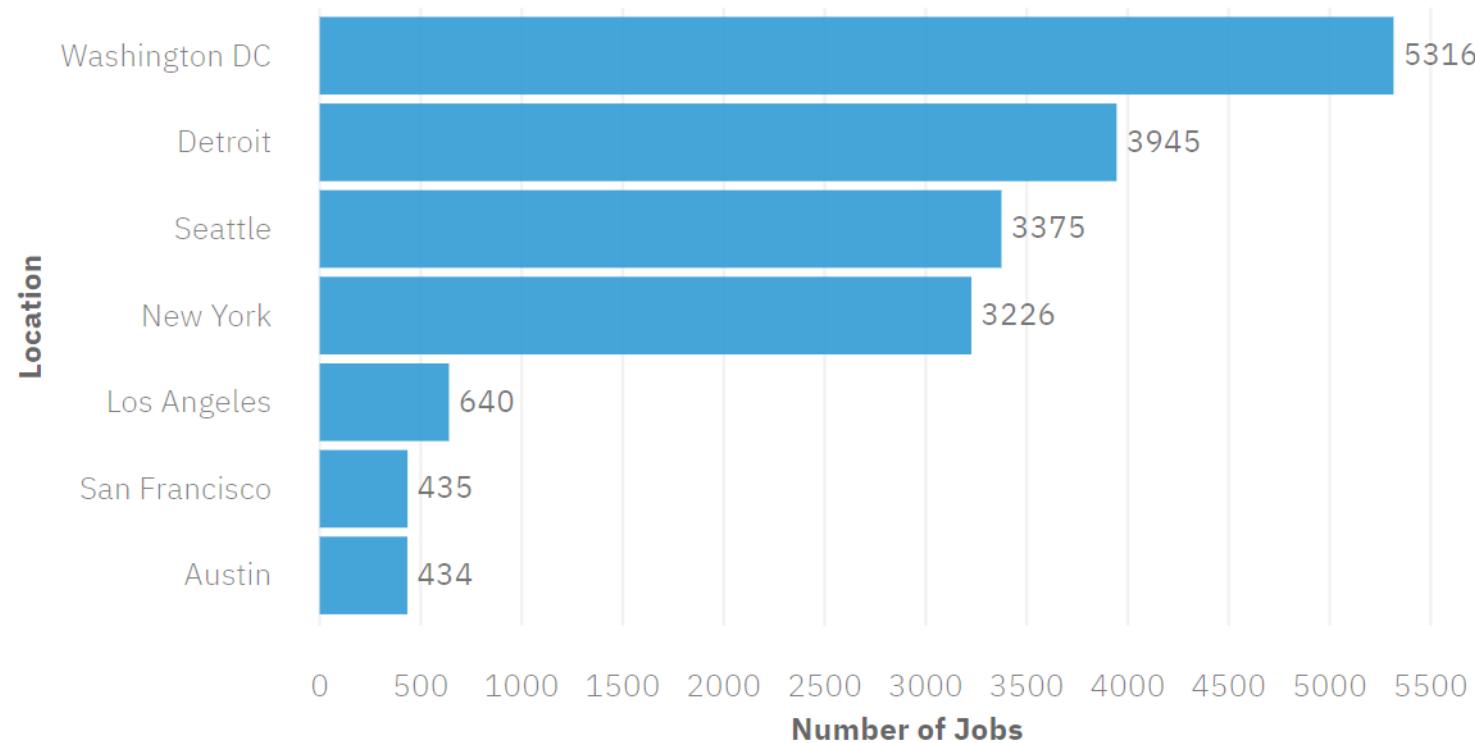
APPENDIX



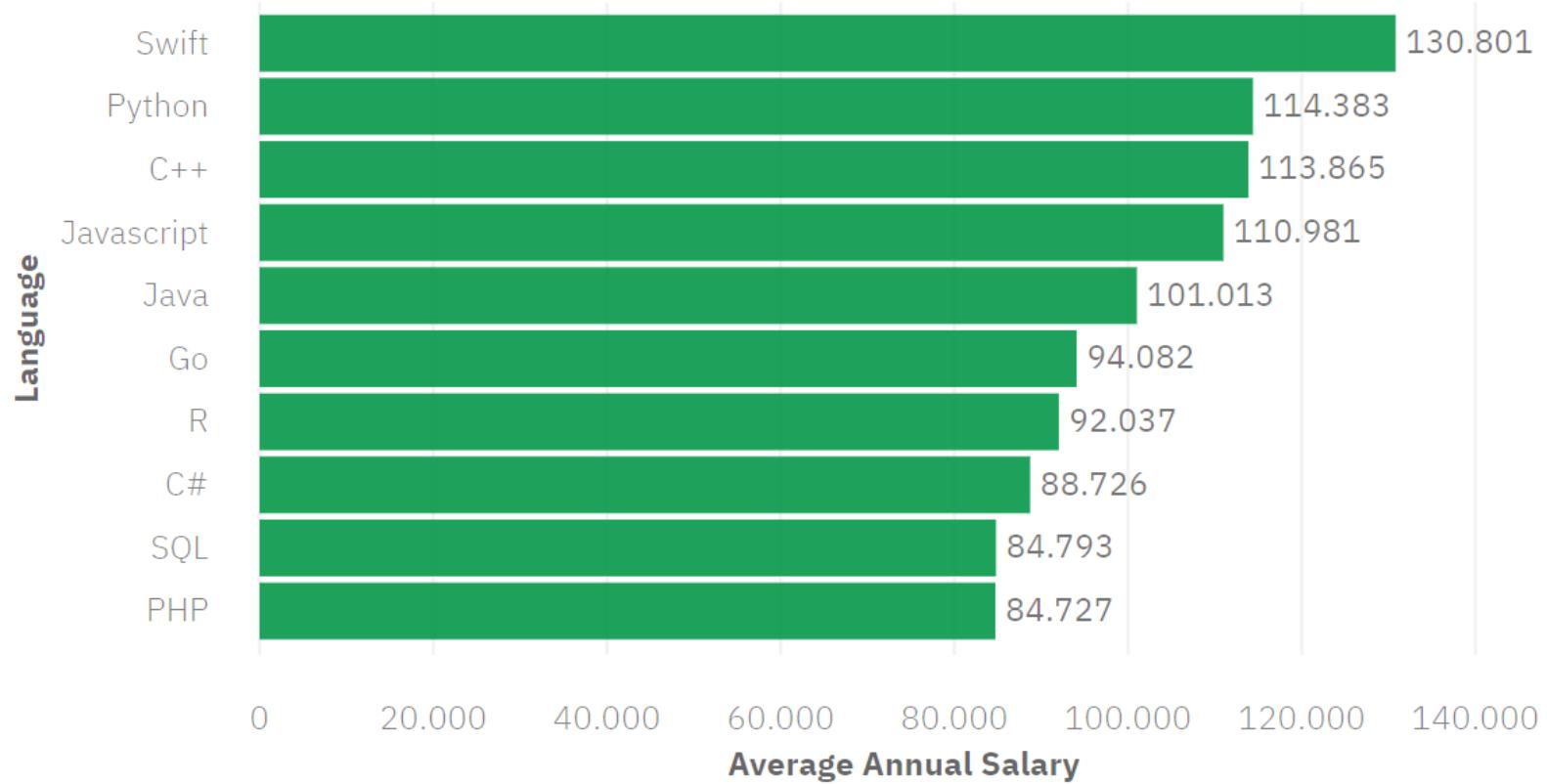
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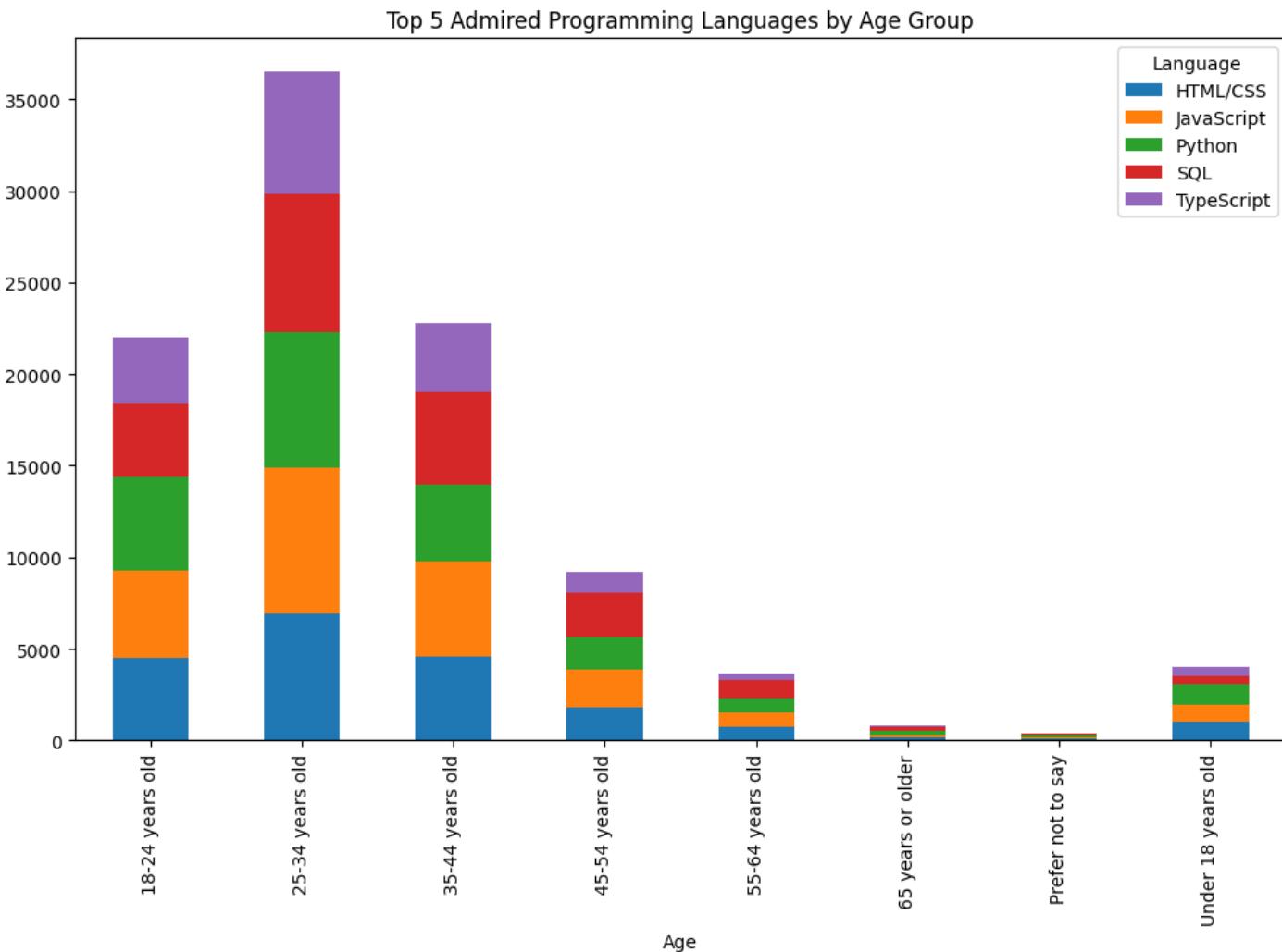
JOB POSTINGS



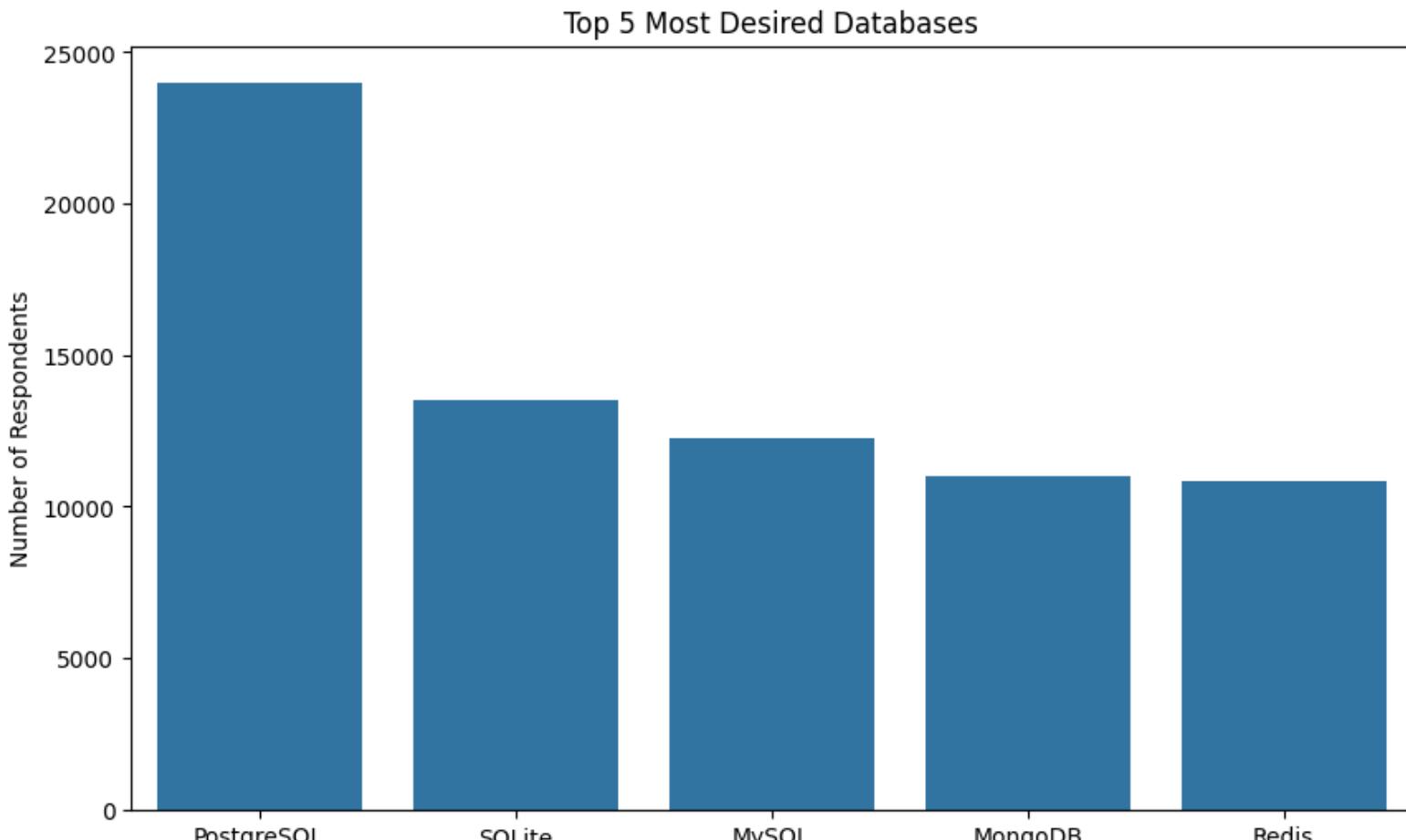
POPULAR LANGUAGES



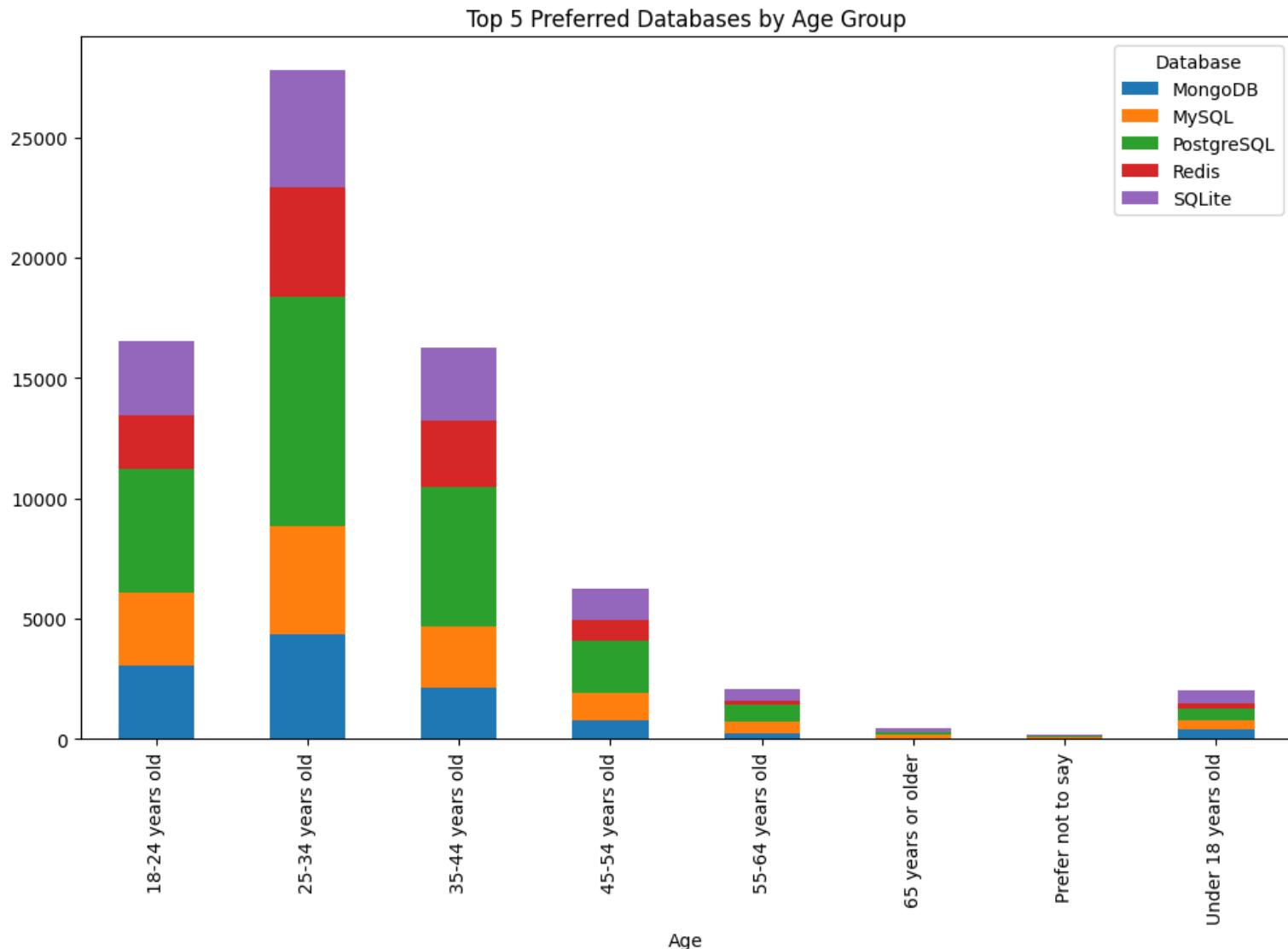
ADMIRE PROGRAMMING LANGUAGE BY AGE



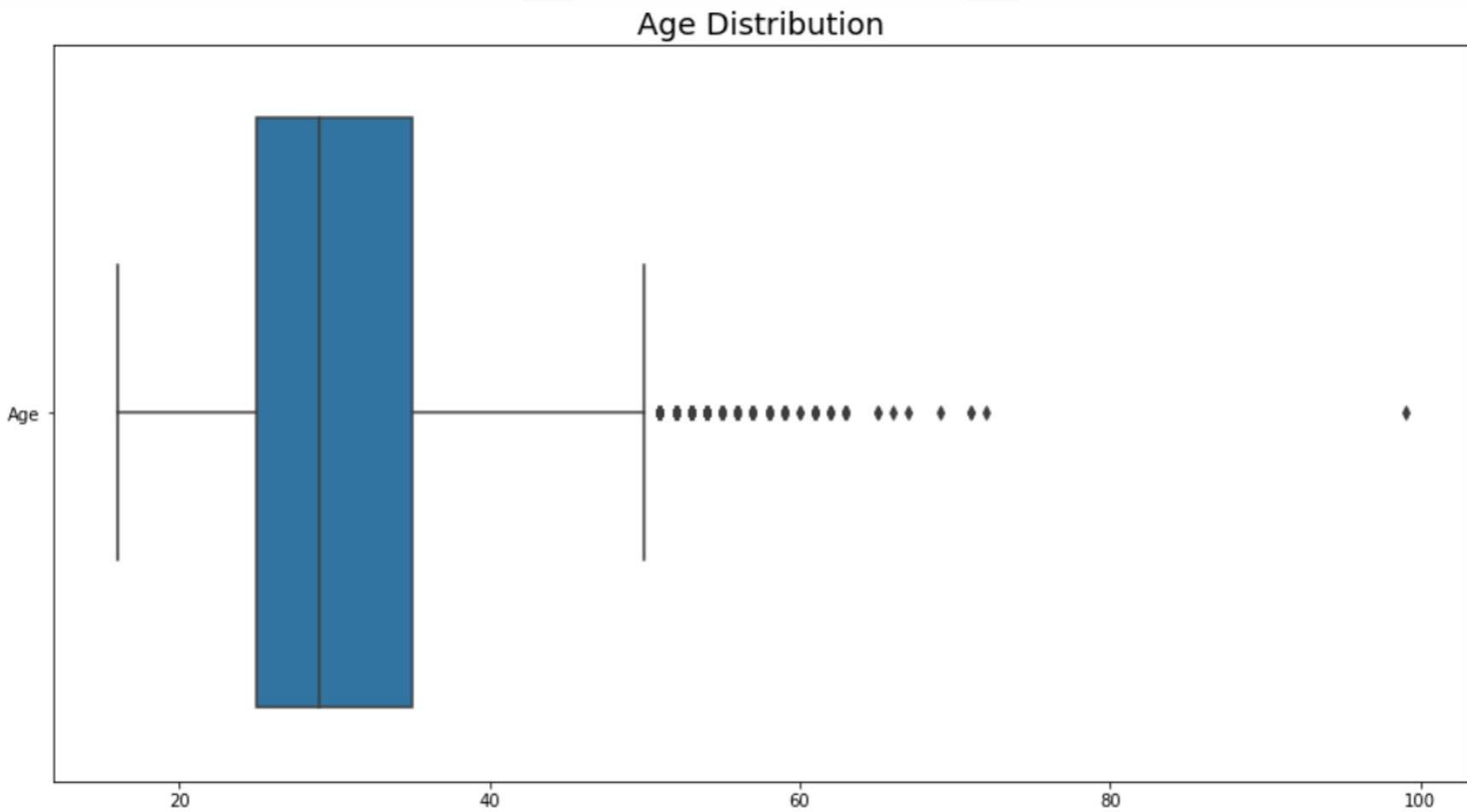
POPULAR DATABASES



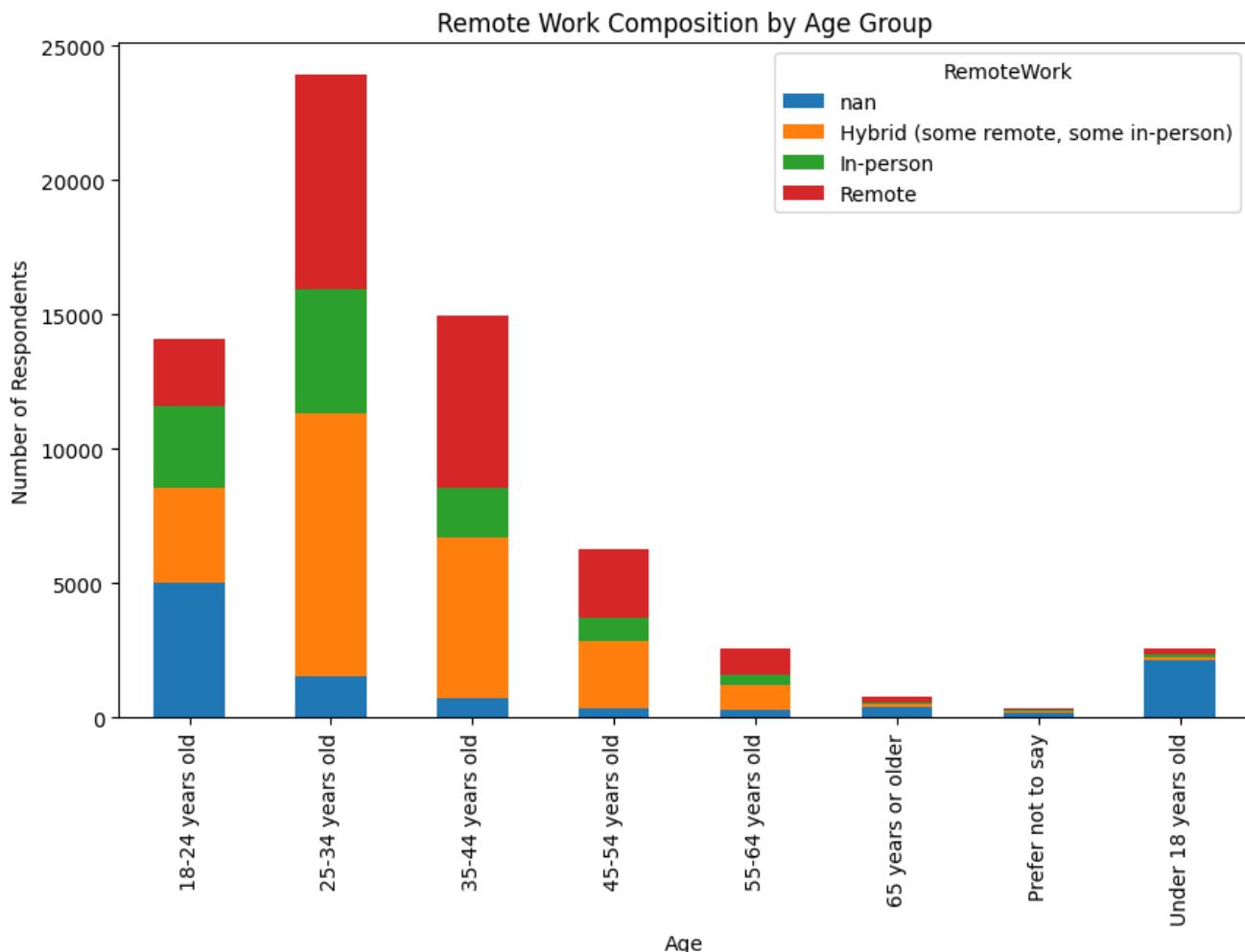
PREFERRED DATABASES BY AGE



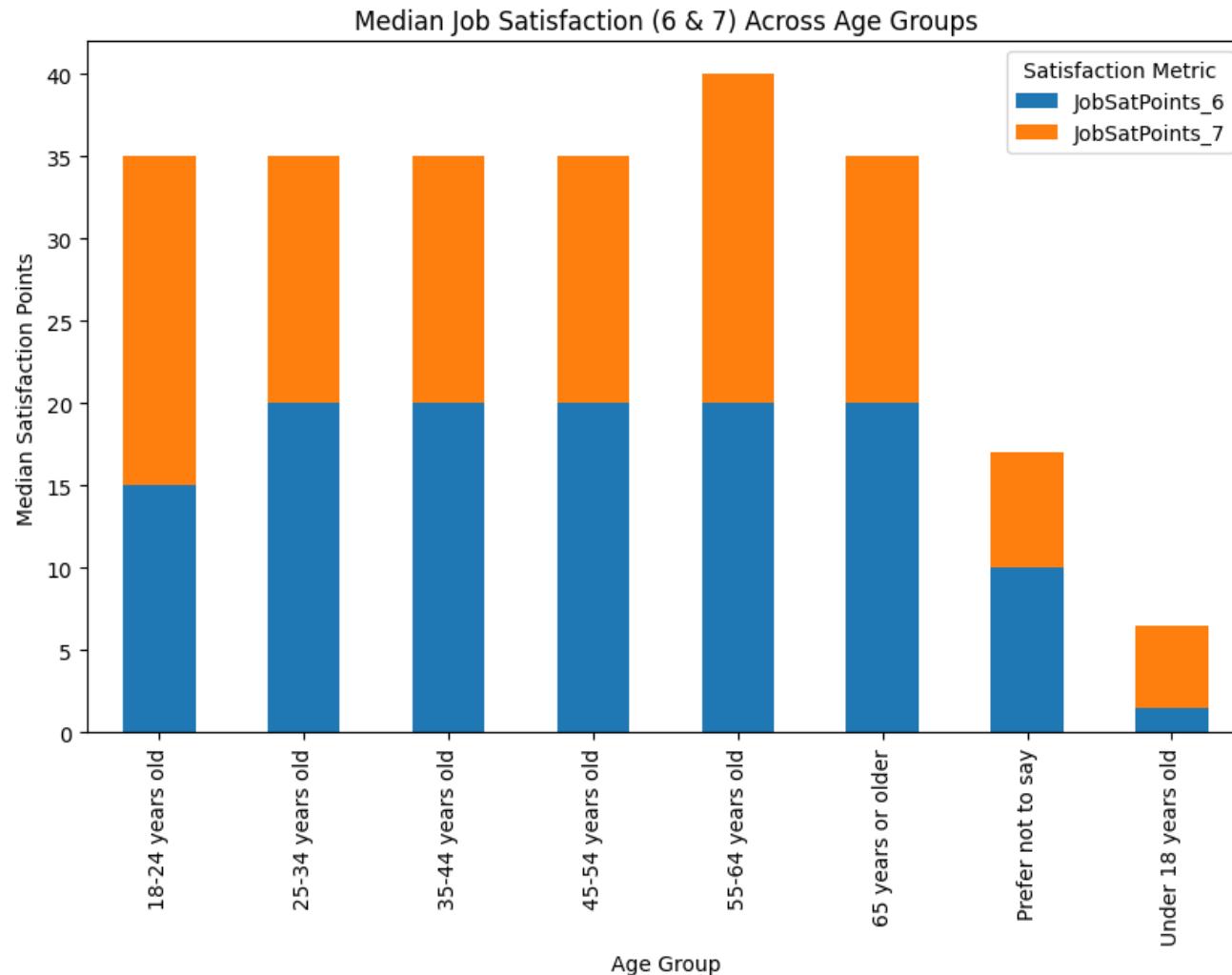
AGE DISTRIBUTION BOXPLOT



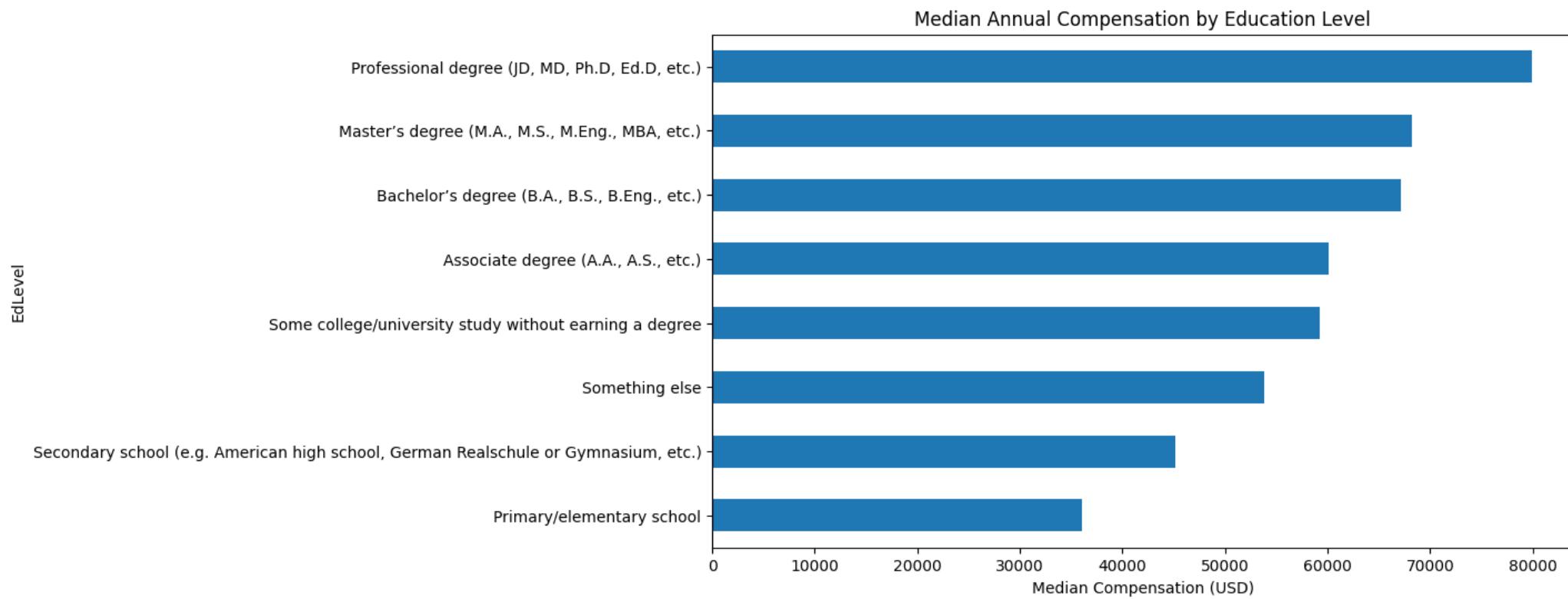
Remote Work Composition by Age



Median Job Satisfaction



Median Annual Compensation



Job Satisfaction by Coding Experience

