STACK OVERFLOW DEVELOPER SURVEY 2019

Part 1

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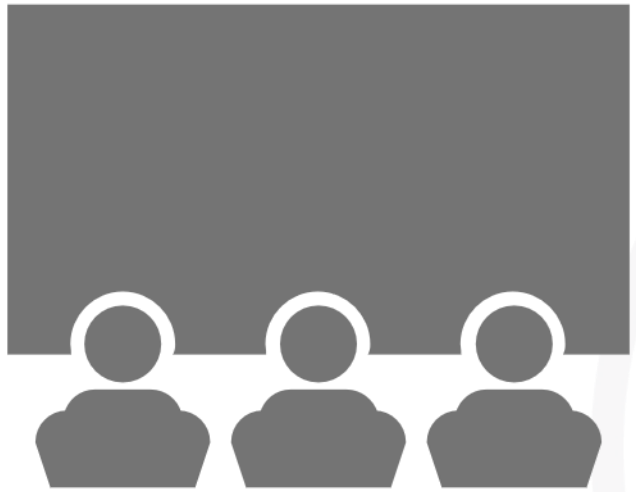
OUTLINE



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

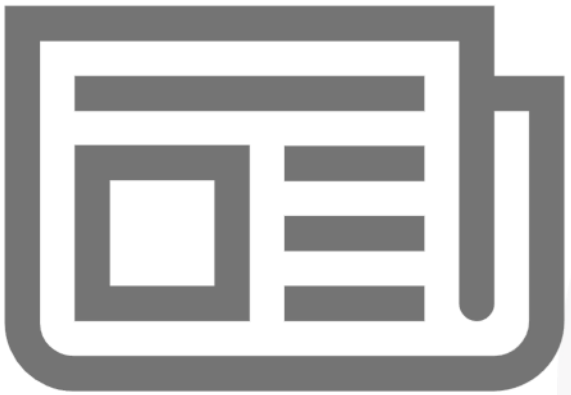
EXECUTIVE SUMMARY

- 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
300K
200K
100K
0
250K
200K
150K
100K
50K
0
May 2024
Jun 2024
Jul 2024
Aug 2024
Sep 2024
Oct 2024
Top traffic sources
6.2%
90.7%
Organic Search
Direct
Referral
Unassigned
Paid Search
Others
Paid channels
Total users
4.3K
Total revenue
$2.11K
Channel
Total users
Total revenue
250K
200K
150K
100K
50K
0
May 2024
Jun 2024
Jul 2024
Aug 2024
Sep 2024
Oct 2024
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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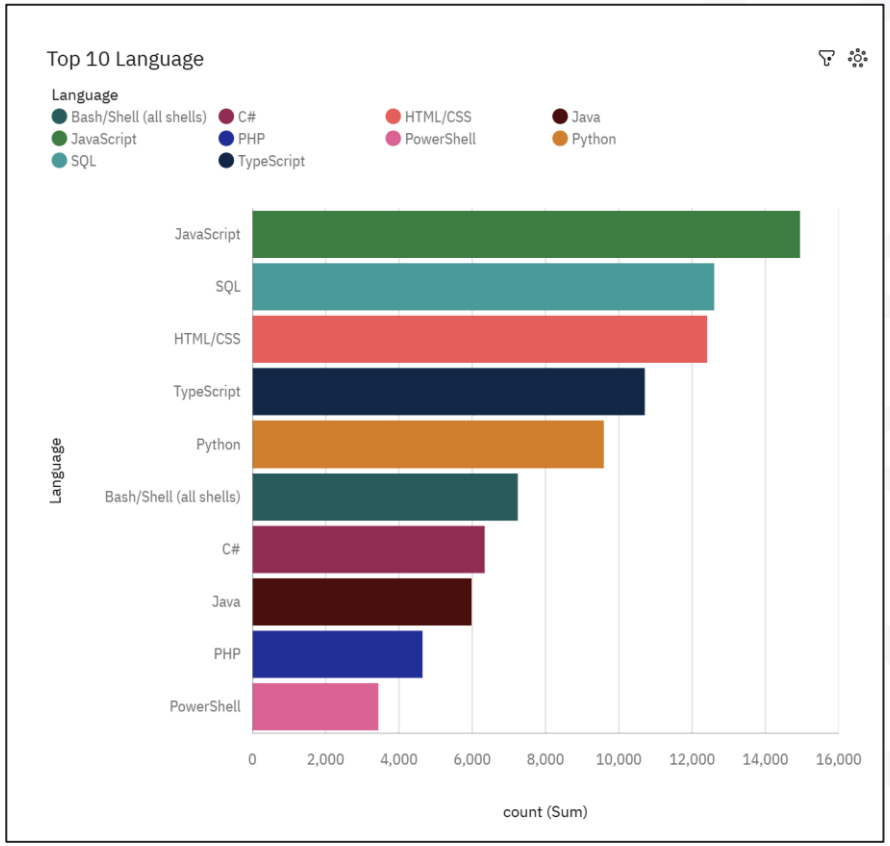
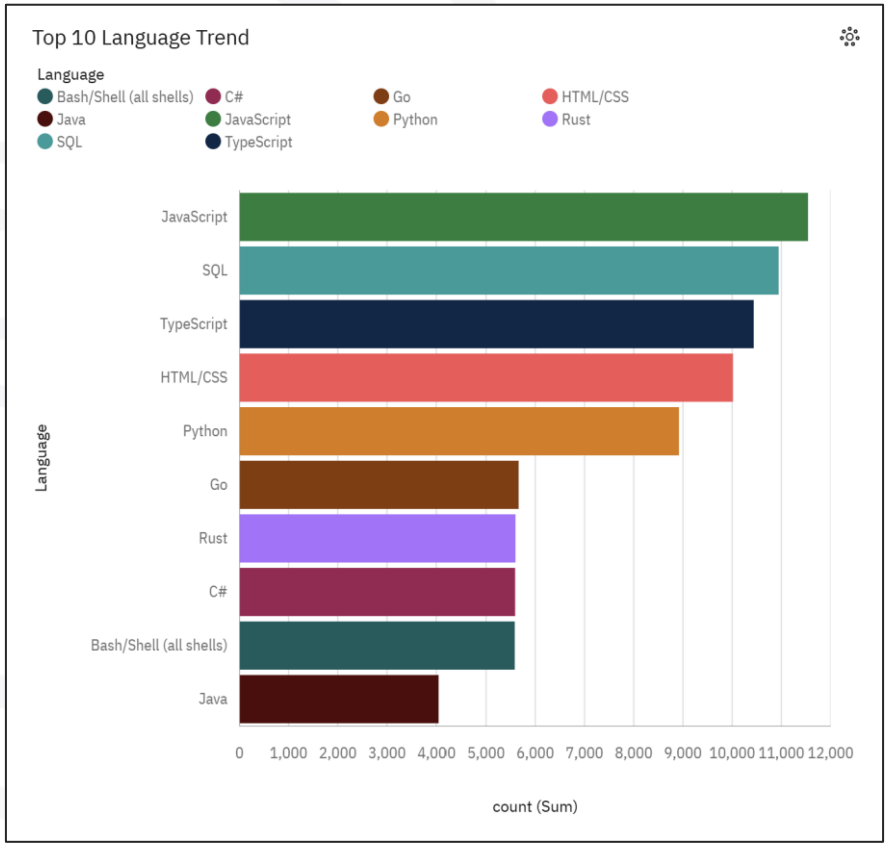
PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

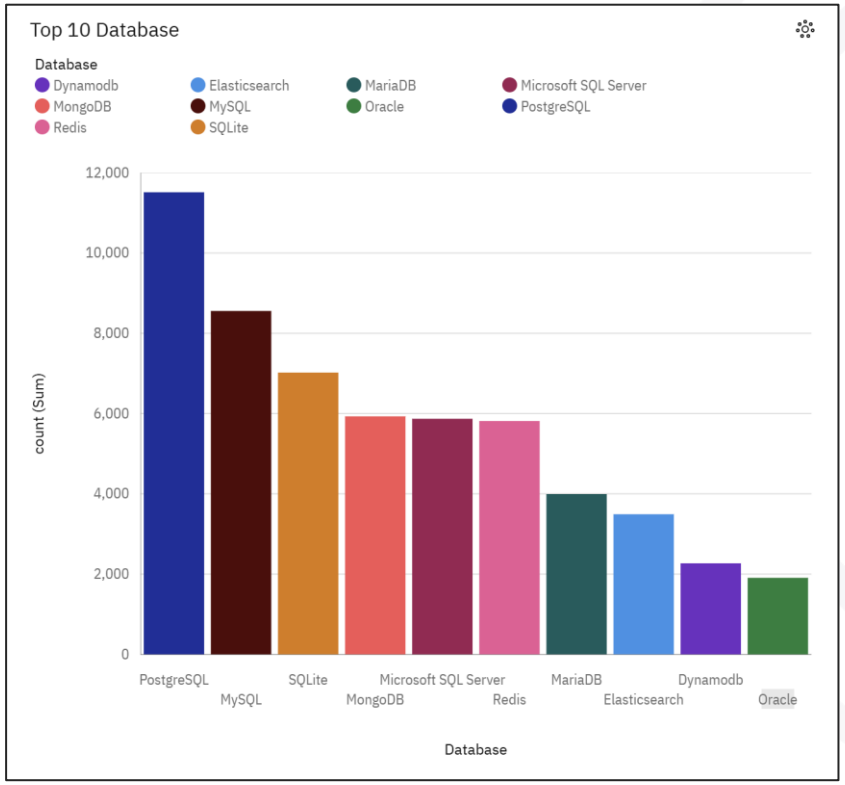
- JavaScript holds its ground at the top of the charts, continuing its long-standing reign as the #1 language.
- The rise of Python remains unmatched, securing its title as the most high-growth language.
- TypeScript is seeing a massive surge in popularity, reflecting a strong shift in developer preference.

Implications

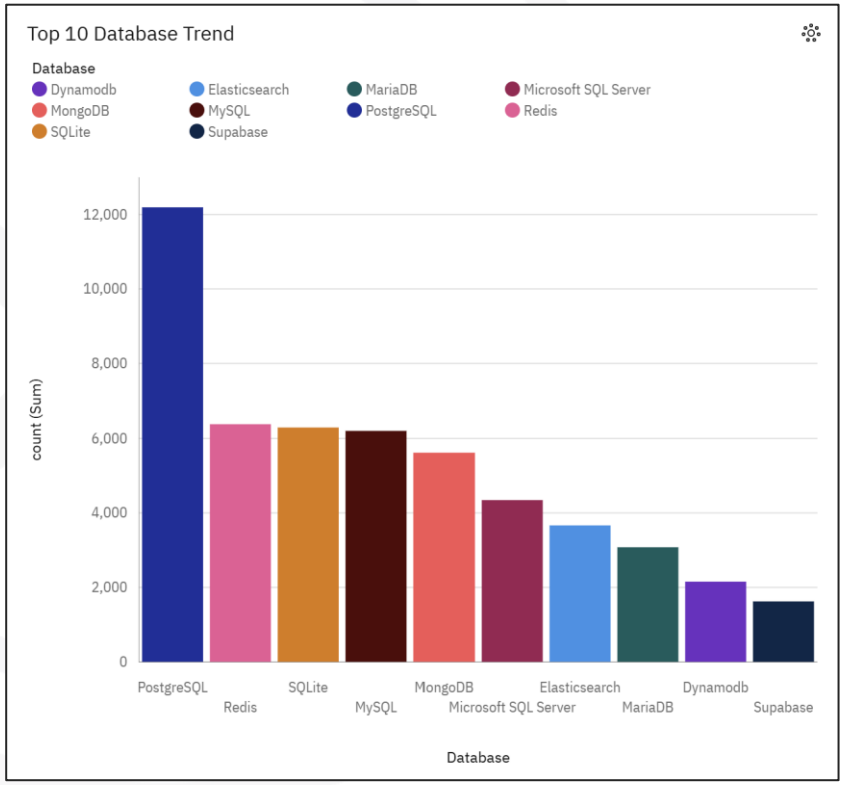
- The data indicates a growing adoption rate for TypeScript among the existing JavaScript user base.
- Developers are increasingly supplementing or replacing JavaScript workflows with TypeScript for better codebase scalability.
- There is a notable pivot in the ecosystem, where TypeScript is becoming 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 plateuing or cooling off.
- Modern Shift: The developer ecosystem is pivoting toward PostgreSQL and MongoDB, driven by their increasing popularity in modern architectures.

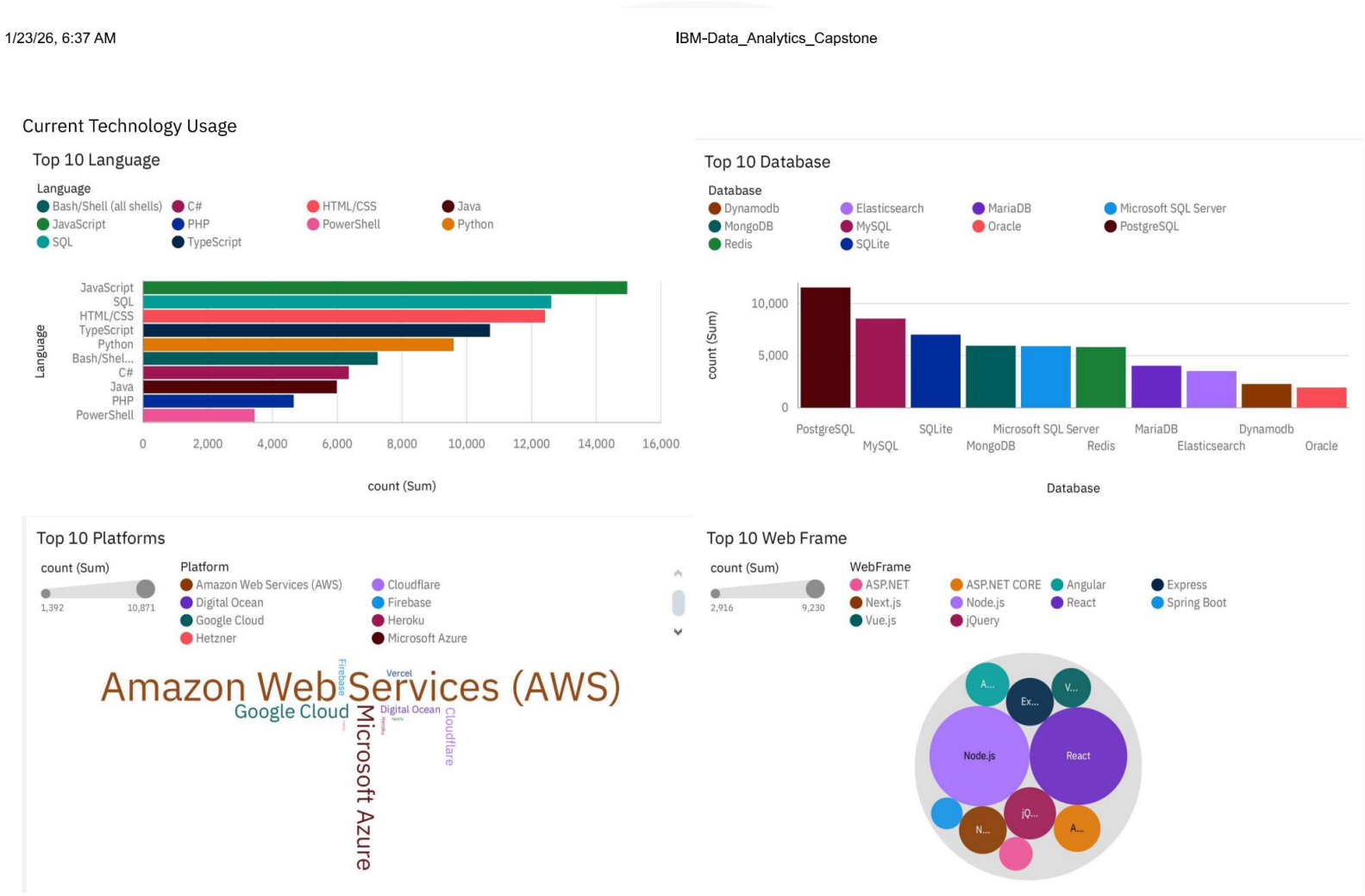
Implications

- 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.

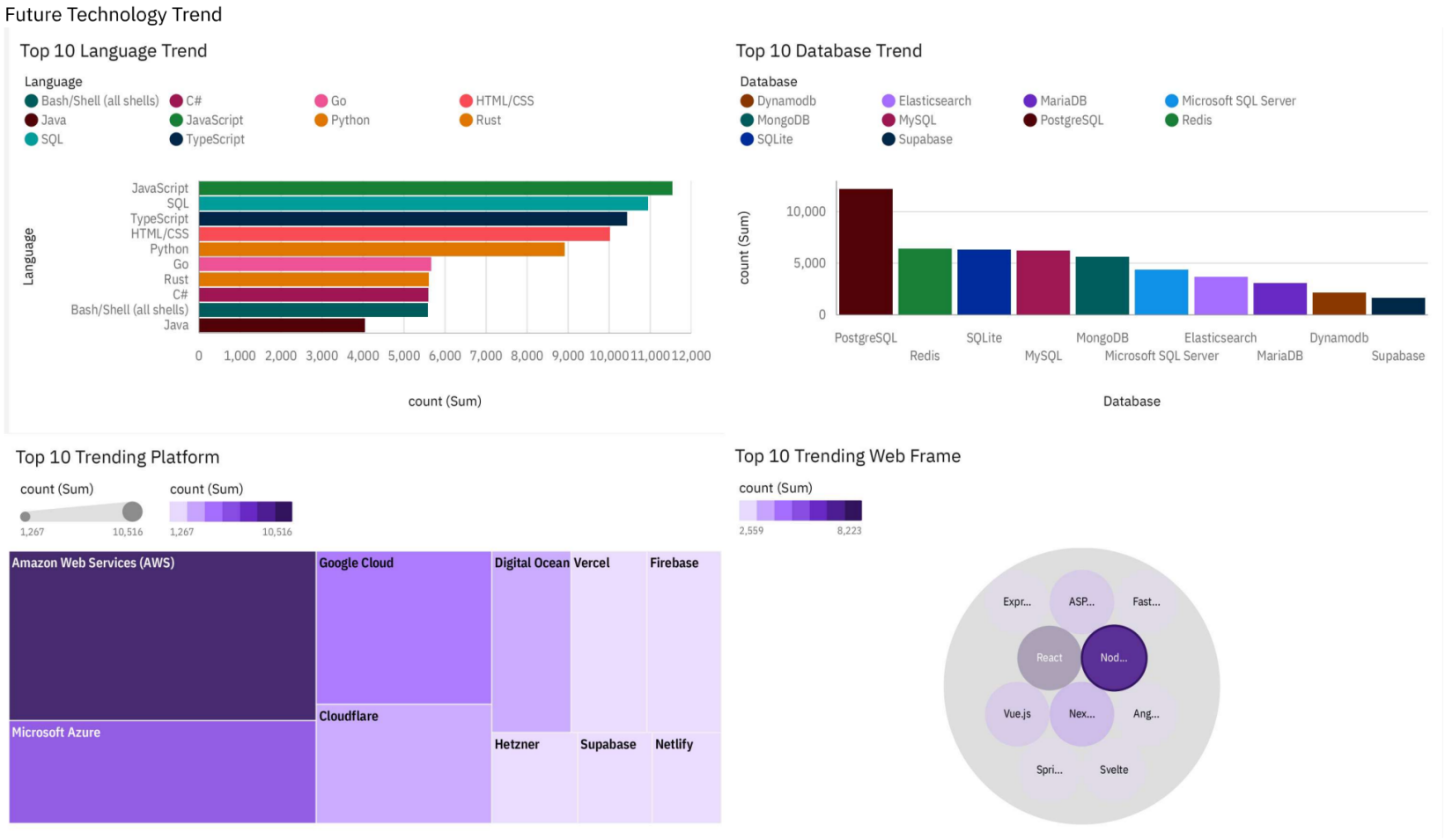
DASHBOARD

<https://eu2.ca.analytics.ibm.com/bi/?perspective=dashboard&pathRef=.my_folders%2FIBM-Data_Analytics_Capstone&action=view&mode=dashboard&subView=model0000019be264286d_00000000&nav_filter=true

DASHBOARD TAB 1



DASHBOARD TAB 2



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DASHBOARD TAB 3

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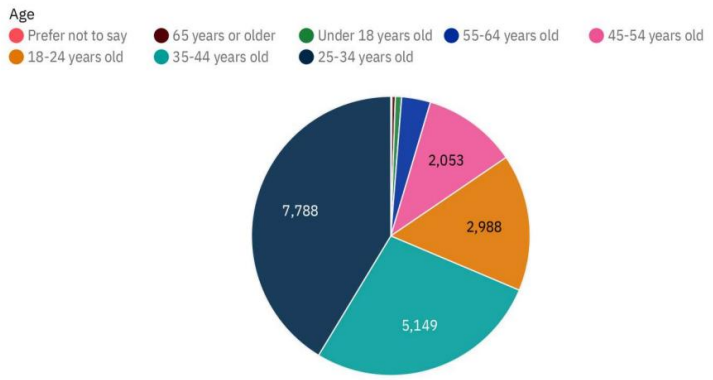
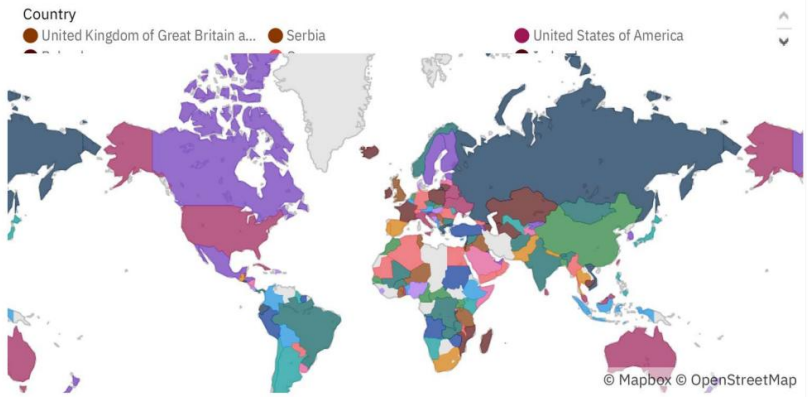
Demographics

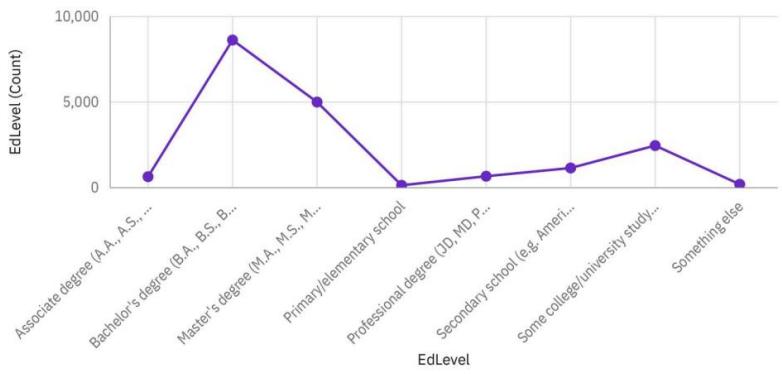
Demographics - Age



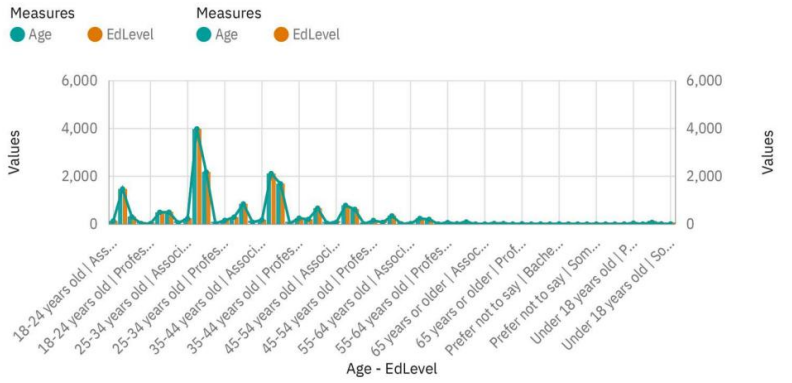
Respondents by Country



Demographics - Education



Education By Age



DISCUSSION

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.

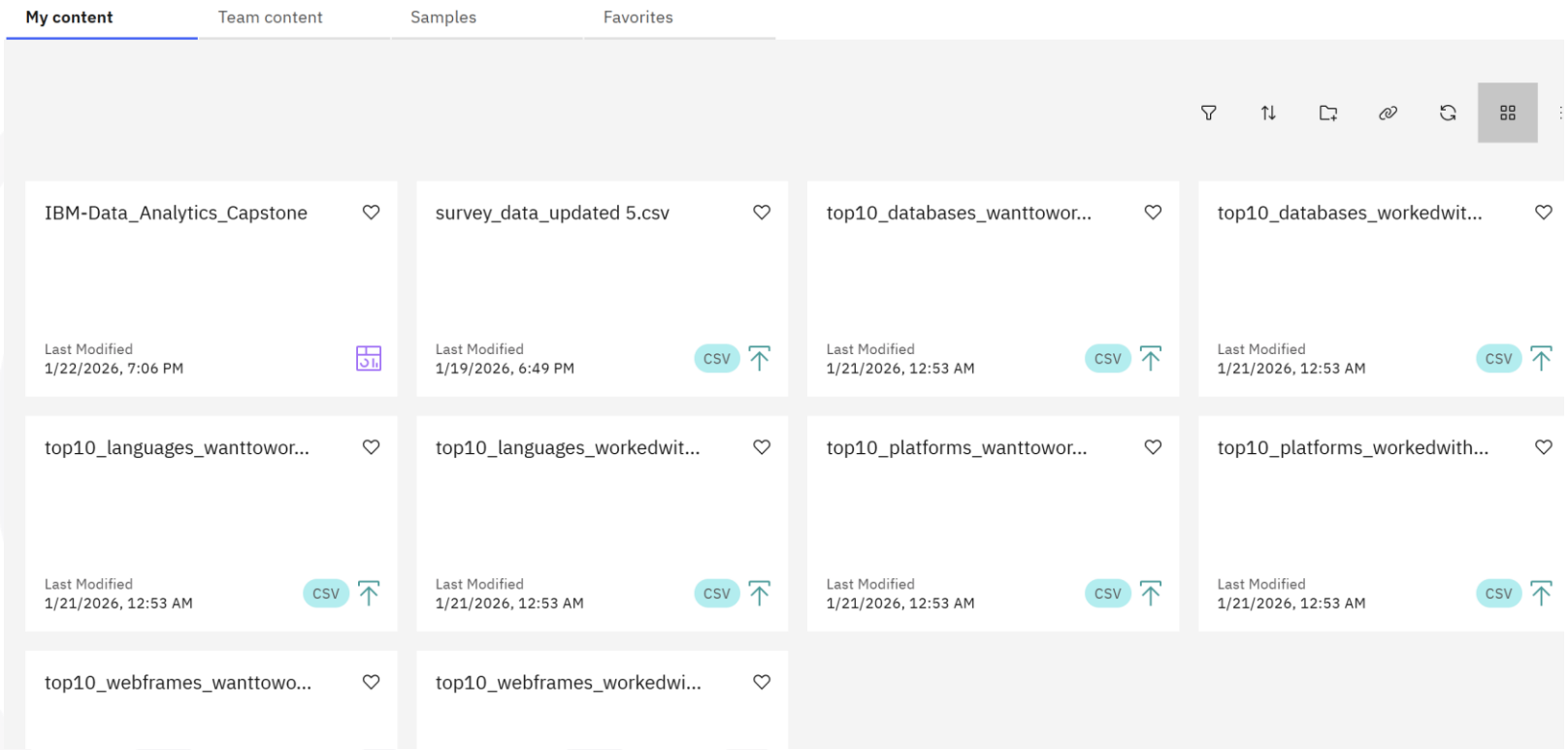
Implications

- 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

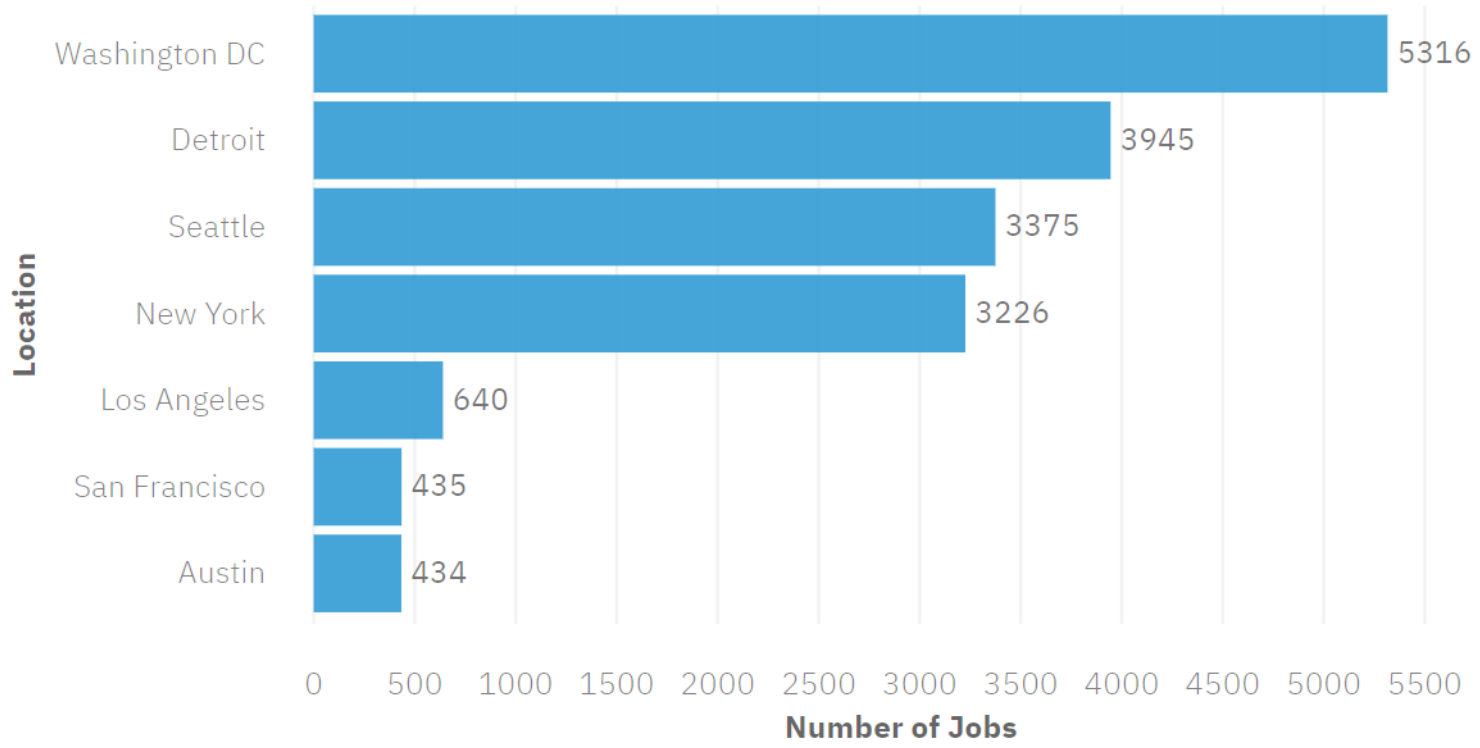
- The Developer Persona: Software creators share a very well-defined set of traits and professional habits.
- Tech Barometer: The results offer a comprehensive roadmap of the current tool and language landscape.
- Closing the Gap: Work must be done to empower developers in developing countries by improving 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

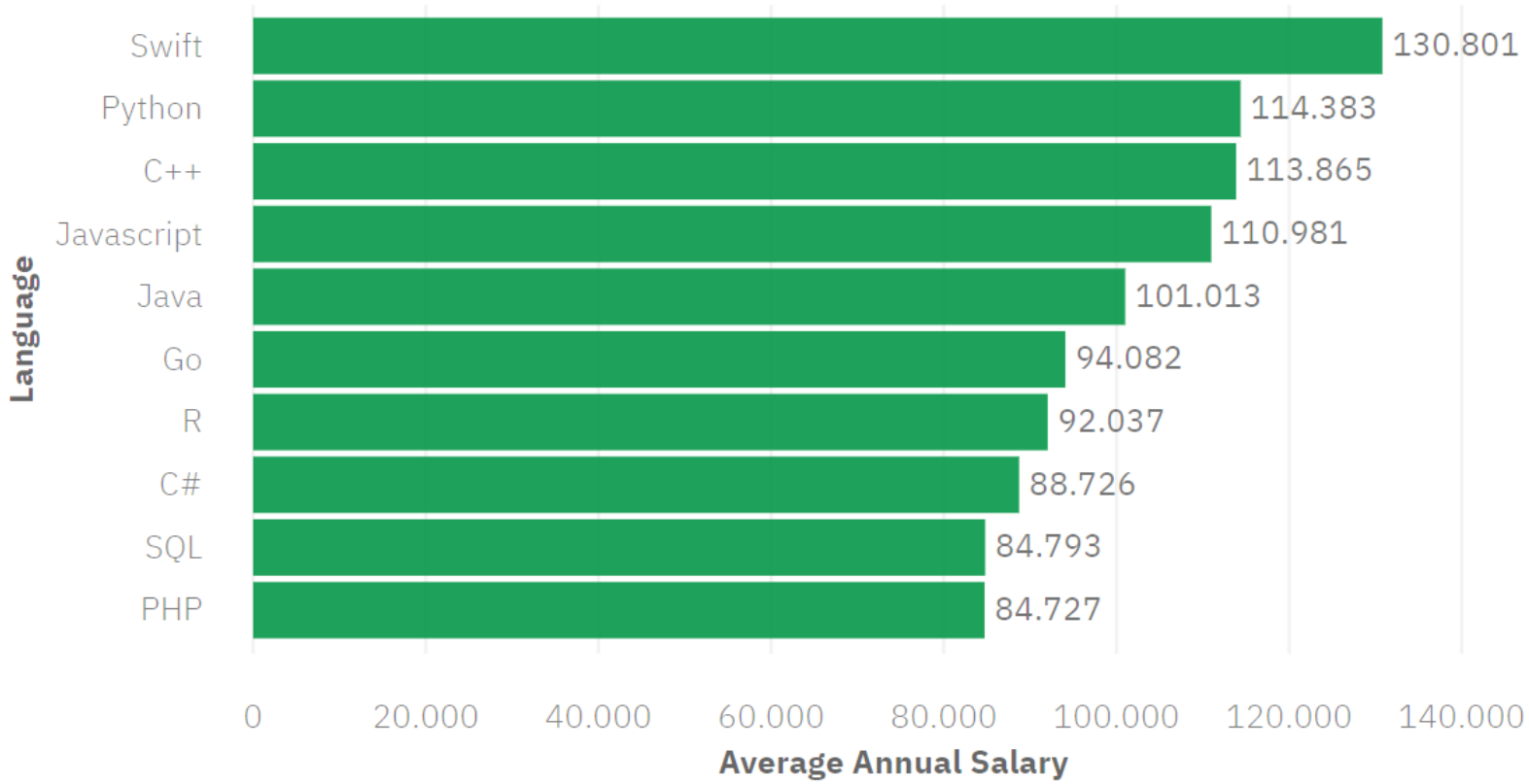


https://github.com/keyadobriyal/IBM_Data_Analytics_Professional_Certificate/tree/main/Capstone_Project

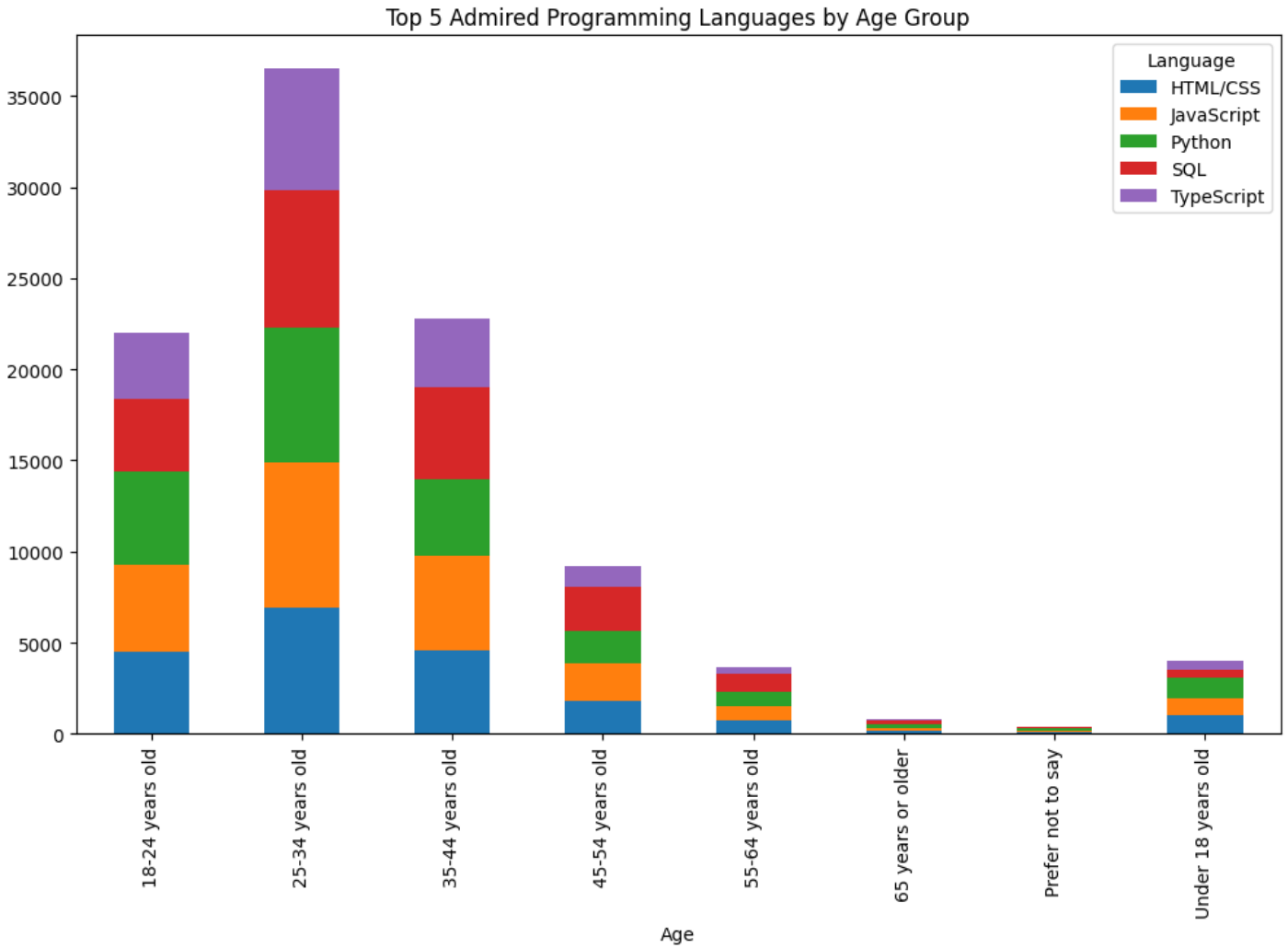
JOB POSTINGS



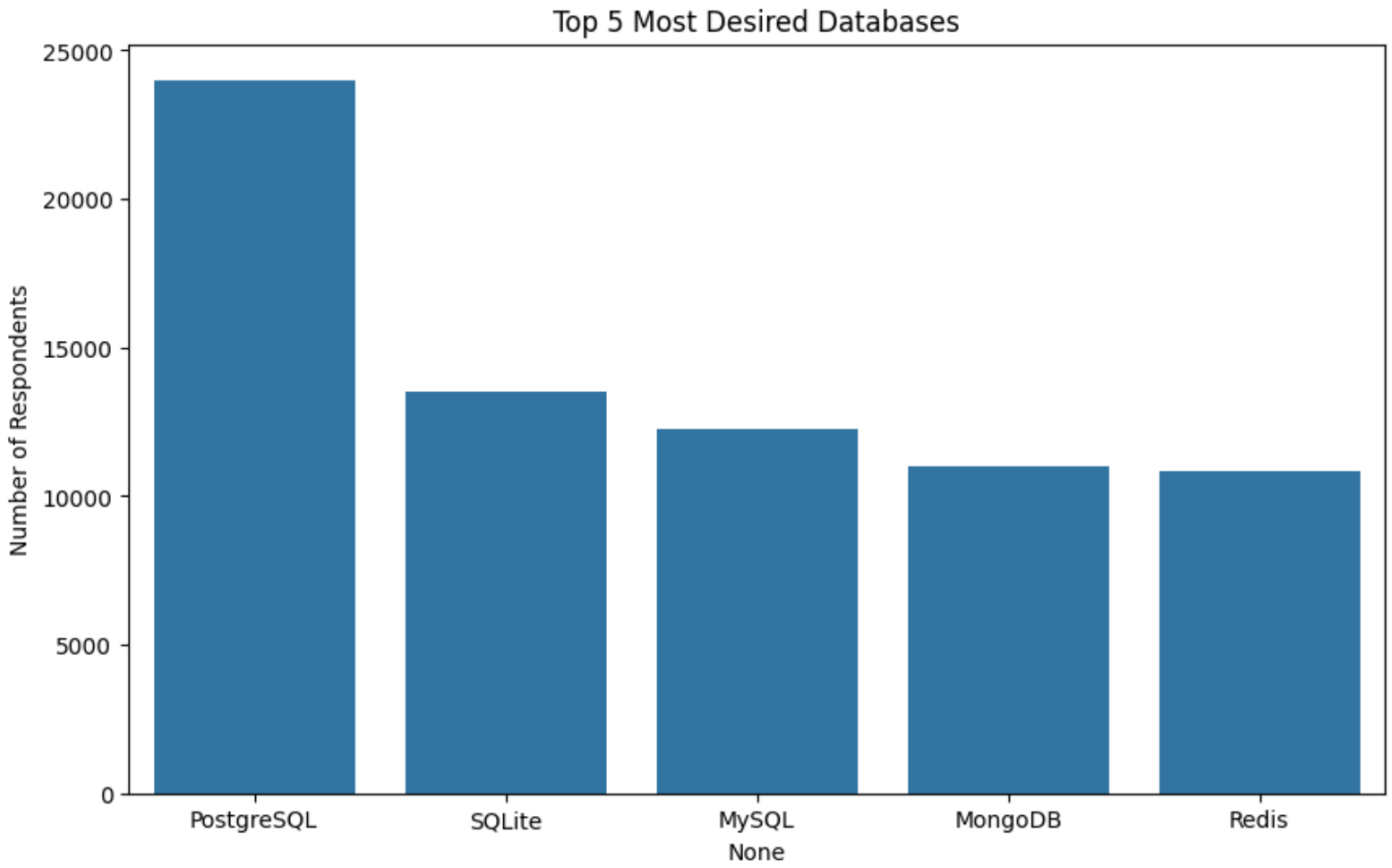
POPULAR LANGUAGES



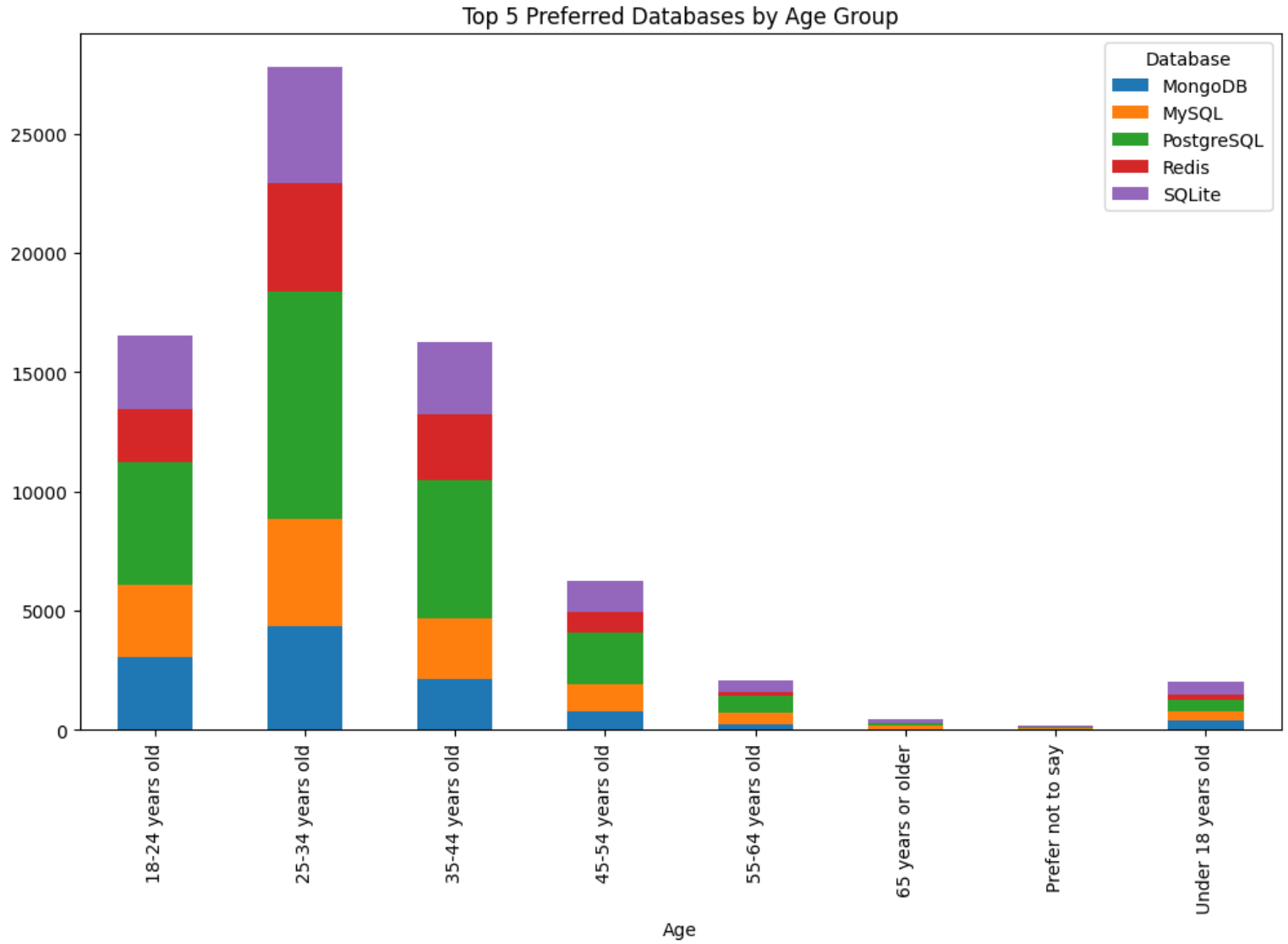
ADMIRED PROGRAMMING LANGUAGE BY AGE



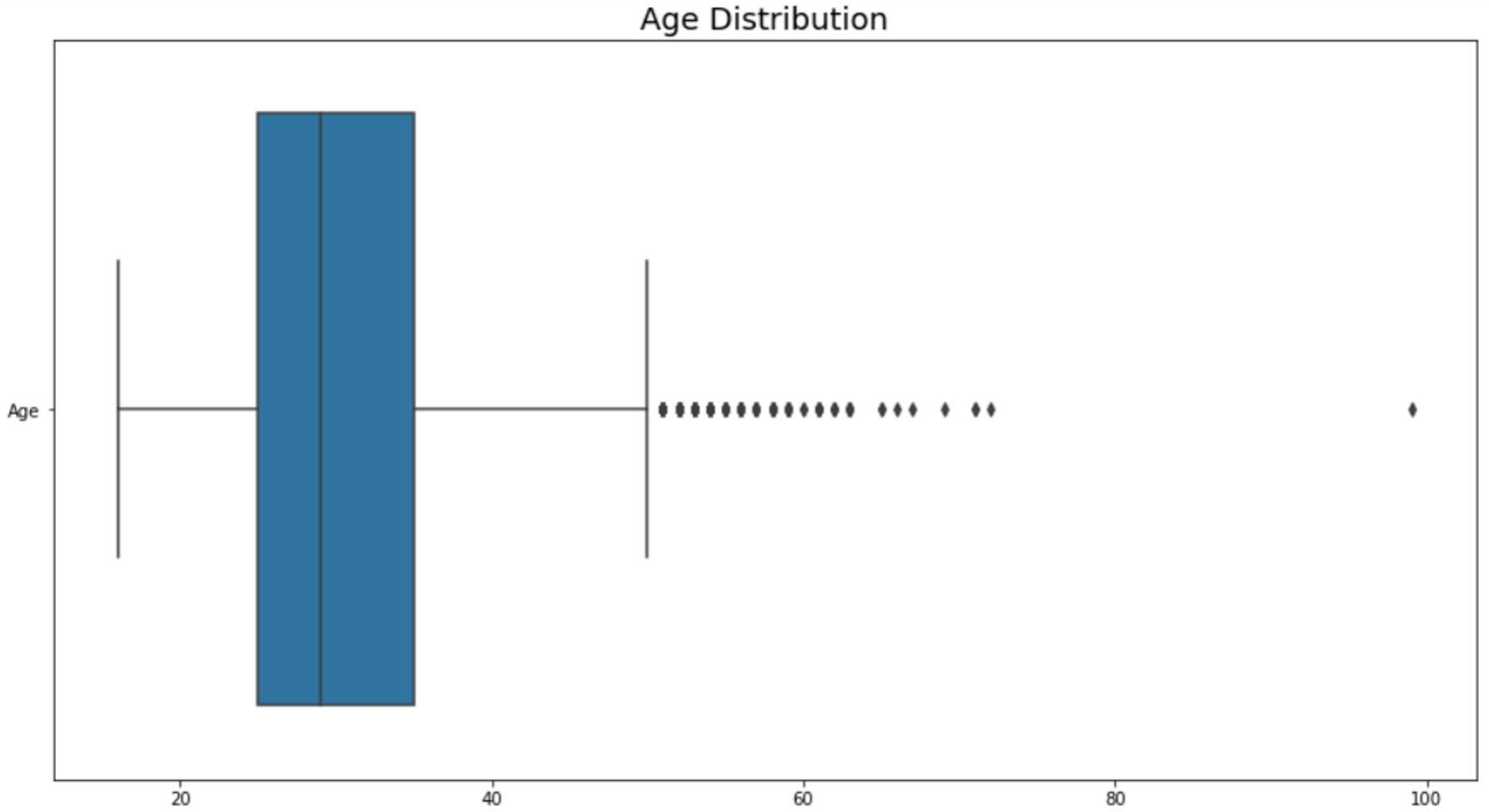
POPULAR DATABASES



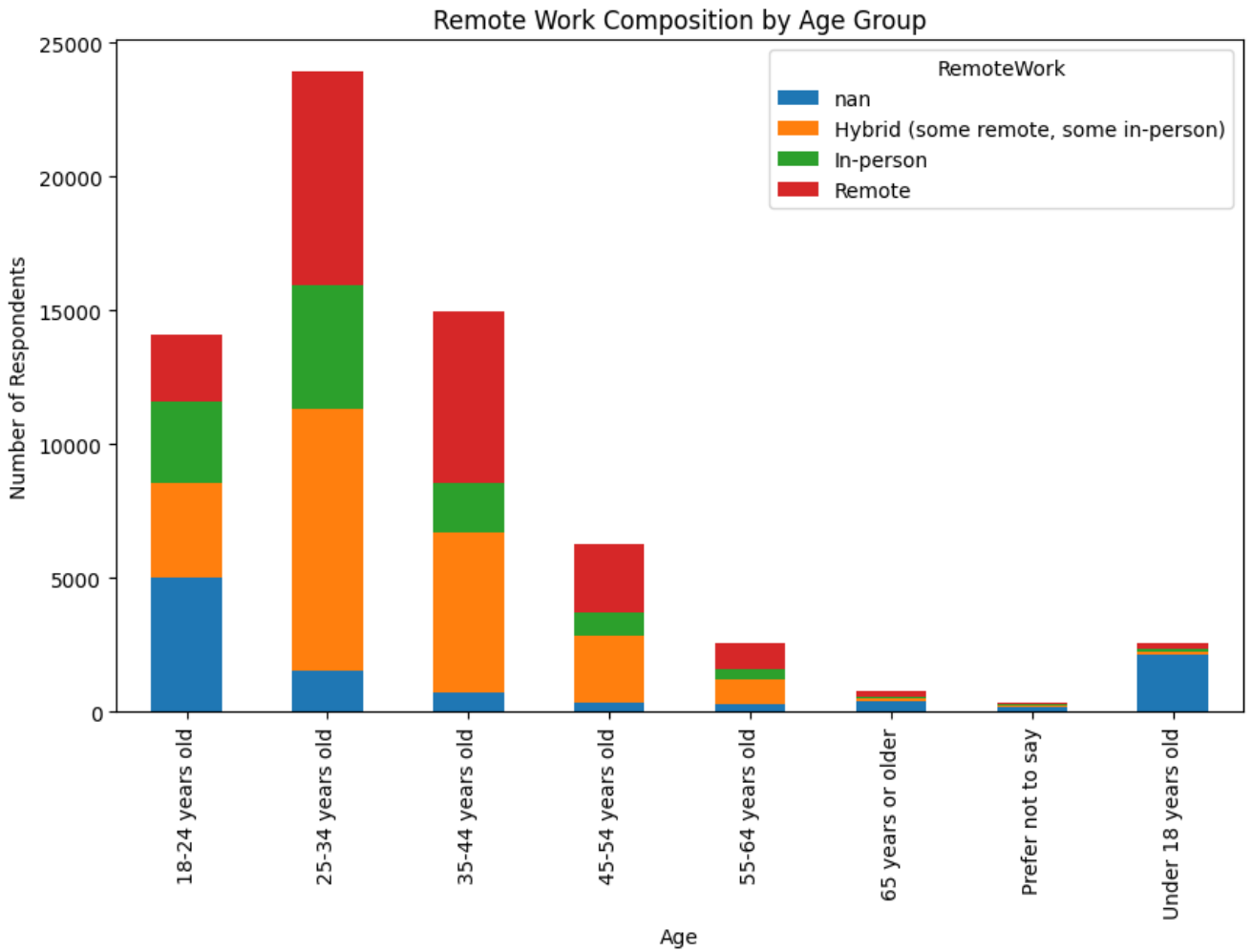
PREFERRED DATABASES BY AGE



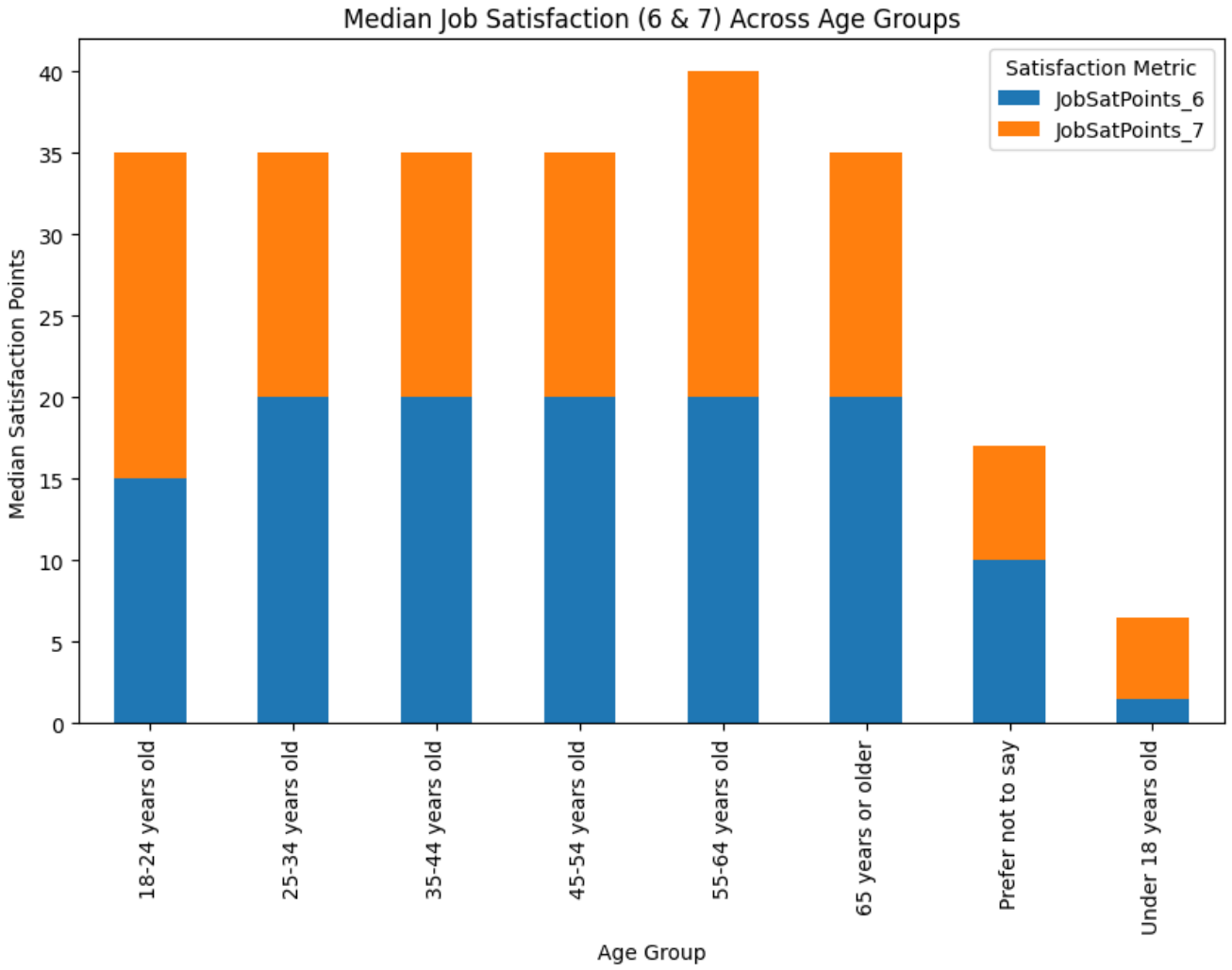
AGE DISTRIBUTION BOXPLOT



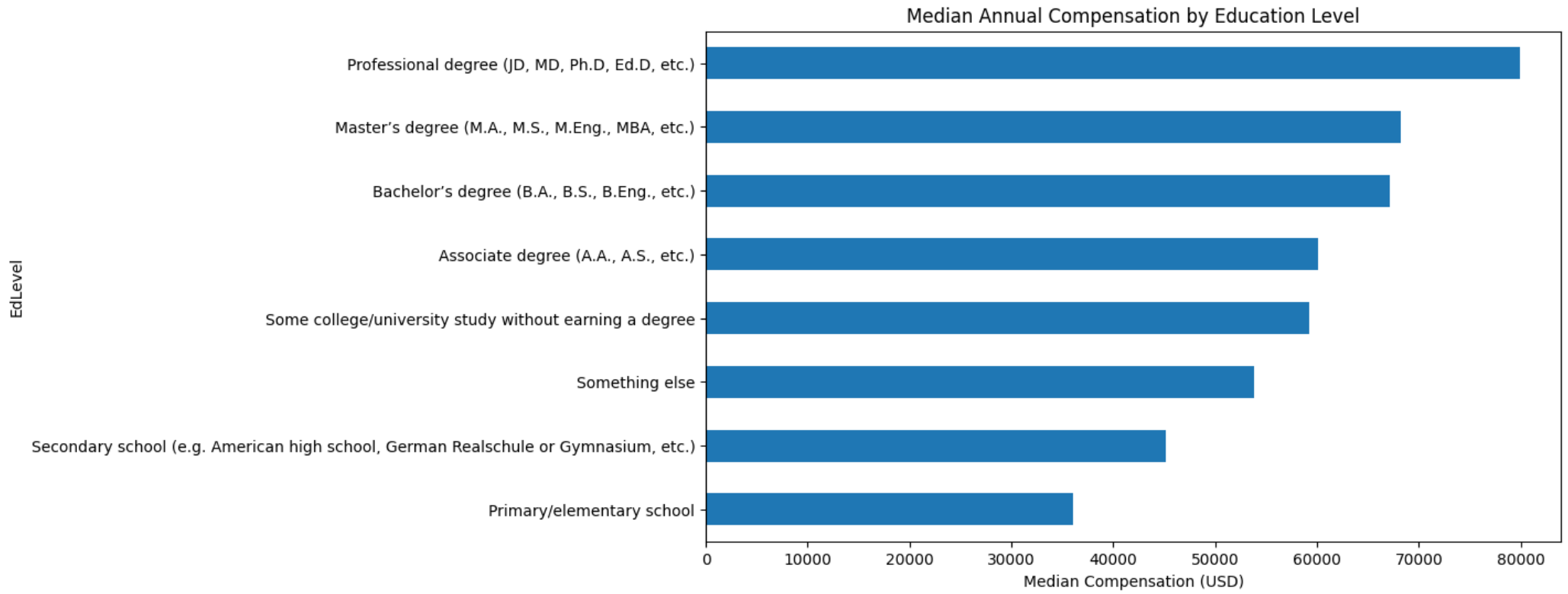
Remote Work Composition by Age



Median Job Satisfaction



Median Annual Compensation



Job Satisfaction by Coding Experience