Final Capstone Story

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OUTLINE

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

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EXECUTIVE SUMMARY

Overlook current and future technological trends considering programming languages, Databases, Platforms and Web Frames.

INTRODUCTION

The dynamics of technological trends and how they evolve. There is a clear indication of different popularity between technologies. The presentation demonstrates the current technology usage compared with the future technology desired to learn based on millions of respondents worldwide. The job postings (U.S) associated with a particular programming language and their salaries are provided at the end of the presentation.

METHODOLOGY

- Web Scraping
- Data Wrangling
- Exploratory Data Analysis
- Data Visualisation
  - Technological Trend
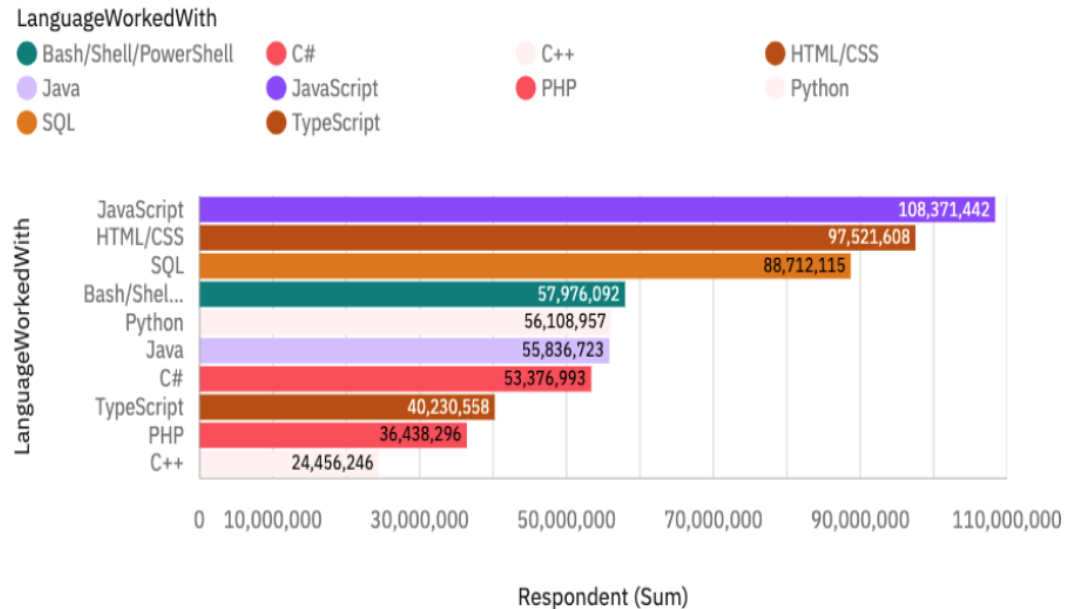 - Demographics of Respondents

RESULTS

- Current Technological Trend
  - Top 10 Language Worked With
  - Top 10 Database Worked With
  - Platform Worked With
  - Top 10 Web Frame Worked With

- Future Technological Trend
  - Top 10 Language Desire Next Year
  - Top 10 Databases Desire Next Year
  - Platform Desire Next Year
  - Top 10 Web Frame Desire Next Year

- Respondents' Demographics Summary
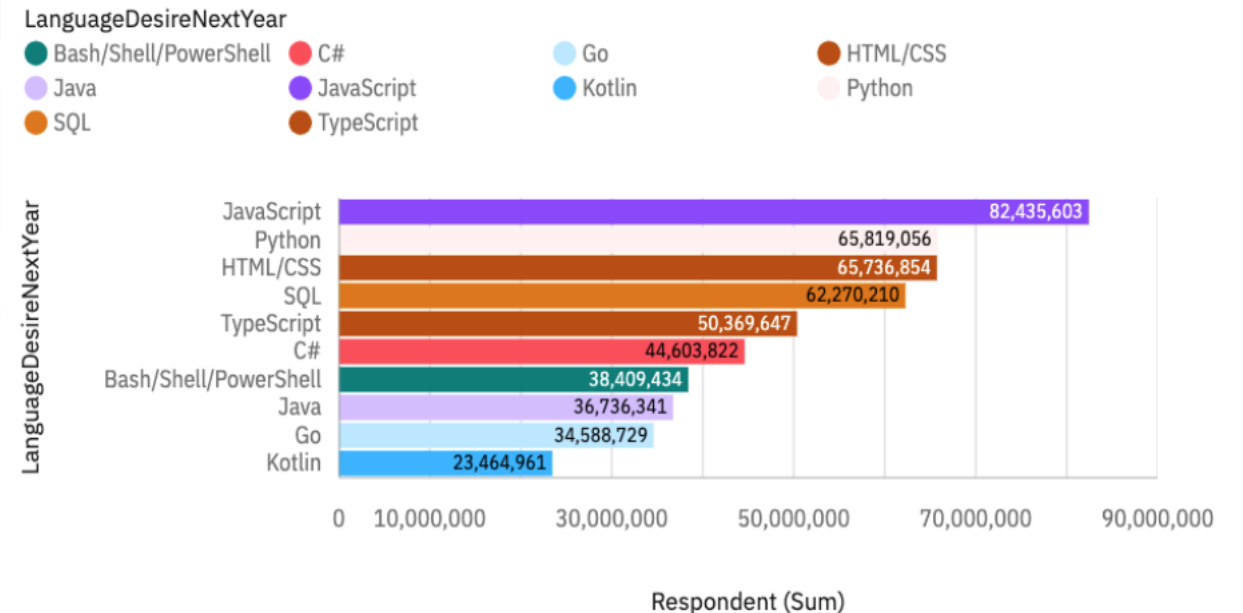
PROGRAMMING LANGUAGE TRENDS

Current Year

Next Year

Top 10 Language Worked With

LanguageWorkedWith

- Bash/Shell/PowerShell
- C#
- C++
- HTML/CSS
- Java
- JavaScript
- PHP
- Python
- SQL
- TypeScript

Top 10 Language Desire Next Year

LanguageDesireNextYear

- Bash/Shell/PowerShell
- C#
- Go
- HTML/CSS
- Java
- JavaScript
- Kotlin
- Python
- SQL
- TypeScript

PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Current JavaScript/ HTML/ SQL users add up to 47.6% of the total
- JavaScript stay top in desired language to learn
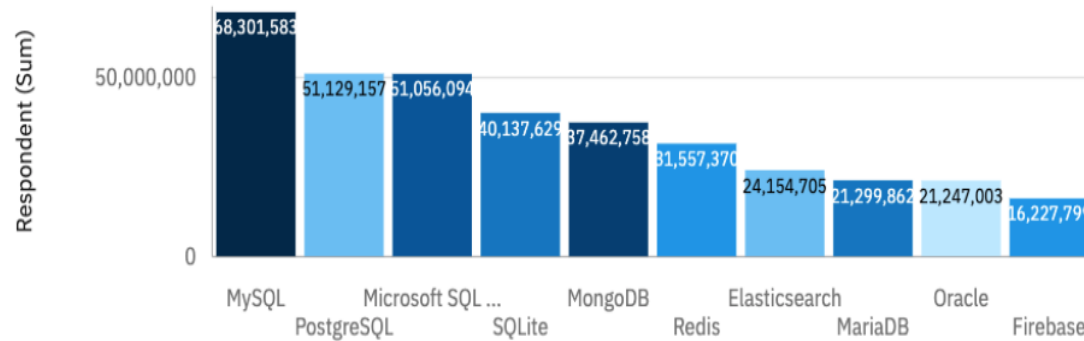- Python in the top 3 languages desired to learn nest year

Implications

- The versatility of the tops three languages
- The prominence of JavaScript
- Increasing popularity of Python in future trend

DATABASE TRENDS

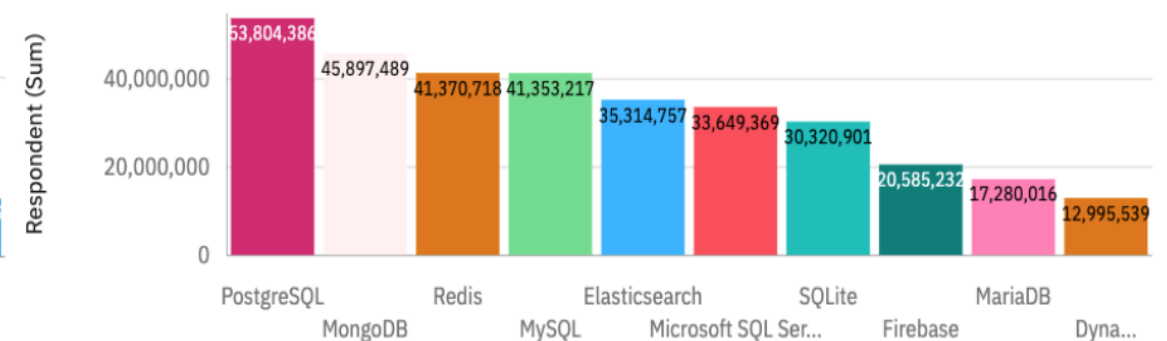## Current Year

Top 10 Database Worked With

DatabaseWorkedWith
- Elasticsearch
- Firebase
- MariaDB
- Microsoft SQL Server
- MongoDB
- MySQL
- Oracle
- PostgreSQL
- Redis
- SQLite

Next Year

Top 10 Database Desire Next Year

DatabaseDesireNextYear
- DynamoDB
- Elasticsearch
- Firebase
- MariaDB
- Microsoft SQL Server
- MongoDB
- MySQL
- PostgreSQL
- Redis
- SQLite

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Difference in top 3 databases in use and desired to learn in the future

- Current HTML/CSS users contributed the most for MongoDB as the desired database to learn in the future

Implications

- The prominence of SQL-associated databases might decrease

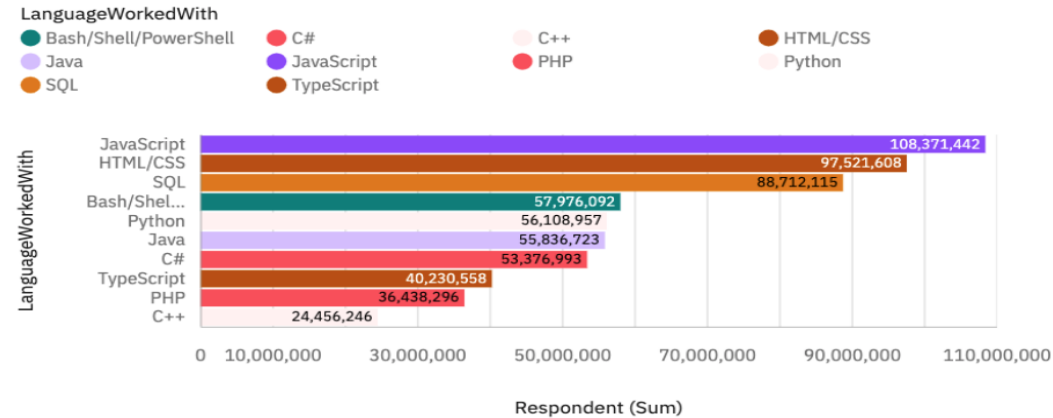- Strong correlation between HTML/CSS language and MongoDB database

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DASHBOARD

<GitHub link:

[Dashboard- All Visualisations](#)

DASHBOARD TAB 1

Current Technology Usage

Top 10 Language Worked With

LanguageWorkedWith
- ● Bash/Shell/PowerShell
- ● C#
- ● C++
- ● HTML/CSS
- ● Java
- ● JavaScript
- ● PHP
- ● Python
- ● SQL
- ● TypeScript

Language	Respondent (Sum)
JavaScript	108,371,442
HTML/CSS	97,521,608
SQL	88,712,115
Bash/Shel...	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

Respondent (Sum)

Top 10 Database Worked With

DatabaseWorkedWith
- ● Elasticsearch
- ● Firebase
- ● MariaDB
- ● Microsoft SQL Server
- ● MongoDB
- ● MySQL
- ● Oracle
- ● PostgreSQL
- ● Redis
- ● SQLite

Database	Respondent (Sum)
MySQL	68,301,583
PostgreSQL	51,129,157
Microsoft SQL ...	51,056,094
SQLite	40,137,629
MongoDB	37,462,758
Redis	31,557,370
Elasticsearch	24,154,705
MariaDB	21,299,862
Oracle	21,247,003
Firebase	16,227,799

DatabaseWorkedWith

Platform Worked With

Respondent (Sum) 2,532,293 — 72,858,619

PlatformWorkedWith
- ● AWS
- ● Android
- ● Arduino
- ● Docker
- ● Google Cloud Platform
- ● Heroku
- ● IBM Cloud or Watson
- ● Kubernetes
- ● Linux
- ● MacOS
- ● Microsoft Azure
- ● Other(s):

Top 10 WebFrame Worked With

Respondent (Sum) 11,517,716 — 57,310,840

WebFrameWorkedWith
- ● ASP.NET
- ● Angular/Angular.js
- ● Django
- ● Express
- ● Flask
- ● Laravel
- ● React.js
- ● Spring
- ● Vue.js
- ● jQuery

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DASHBOARD TAB 2

Future Technology Trend

Top 10 Language Desire Next Year
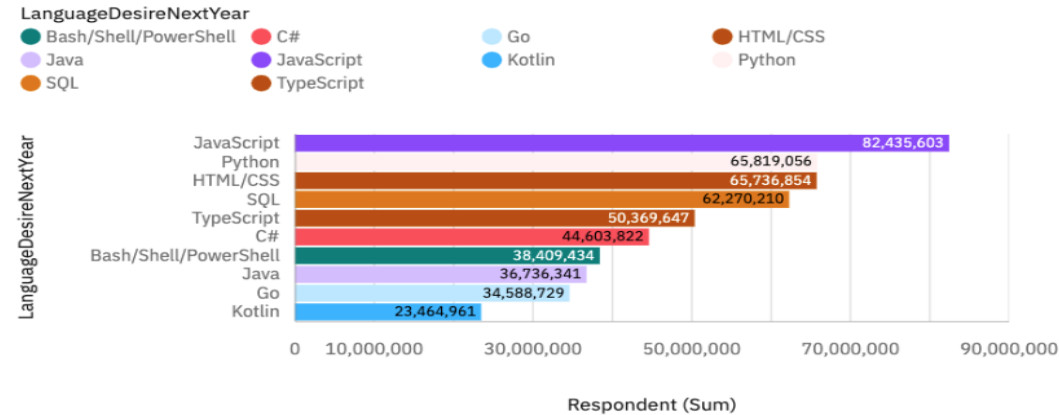
LanguageDesireNextYear
- 🟢 Bash/Shell/PowerShell
- 🔴 C#
- 🔵 Go
- 🟤 HTML/CSS
- 🟣 Java
- 🟣 JavaScript
- 🔵 Kotlin
- ⬜ Python
- 🟤 SQL
- 🟤 TypeScript

Top 10 Database Desire Next Year

DatabaseDesireNextYear
- 🟠 DynamoDB
- 🔵 Elasticsearch
- 🟢 Firebase
- 🔴 MariaDB
- 🔴 Microsoft SQL Server
- ⬜ MongoDB
- 🟢 MySQL
- 🔴 PostgreSQL
- 🟠 Redis
- 🟢 SQLite

PlatformDesireNextYear

Respondent (Sum)
3,752,980 — 73,486,491

Respondent (Sum)
3,752,980 — 73,486,491

Top 10 Web Frame Desire Next Year

Respondent (Sum)
11,886,651 — 58,321,909

Respondent (Sum)
11,886,651 — 58,321,909

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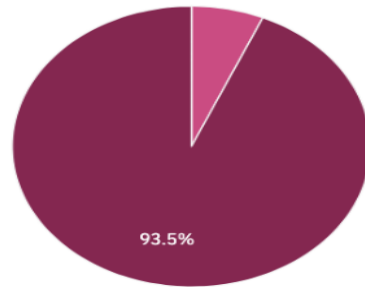
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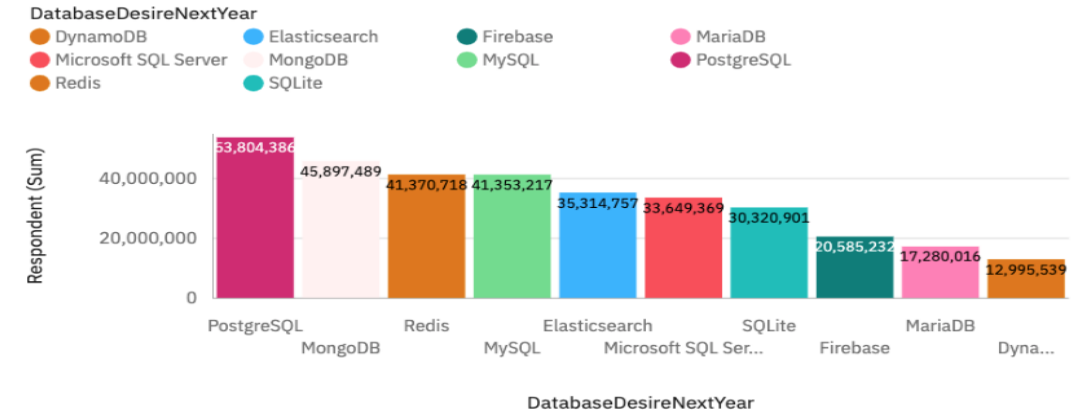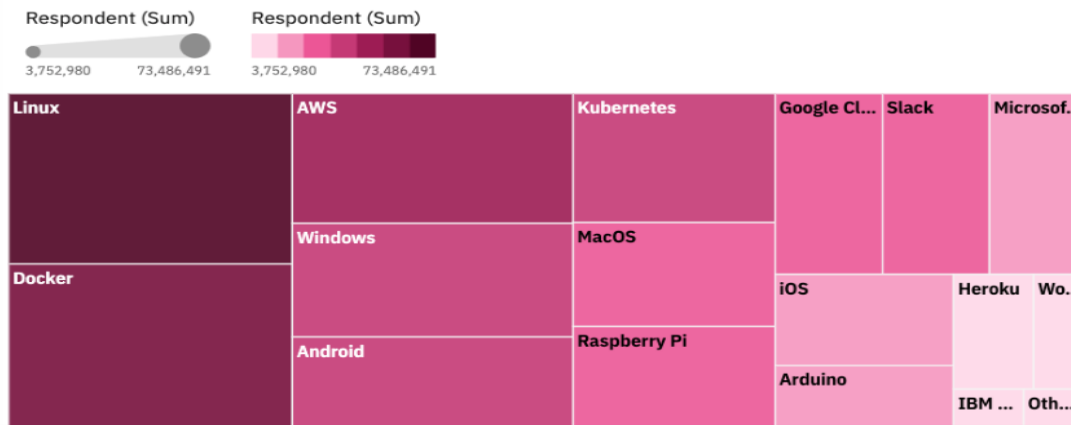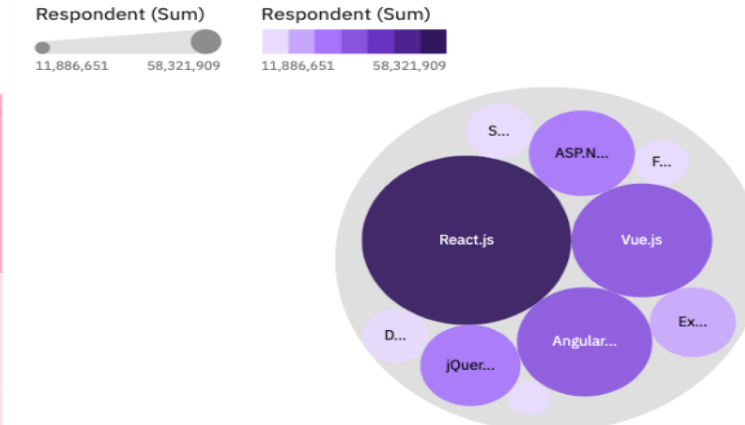
DASHBOARD TAB 3

Demographics

Respondent classified by Gender

Gender
● Woman ● Man

93.5%

Respondent Count for Countries

Respondent (Count)

1   3,127
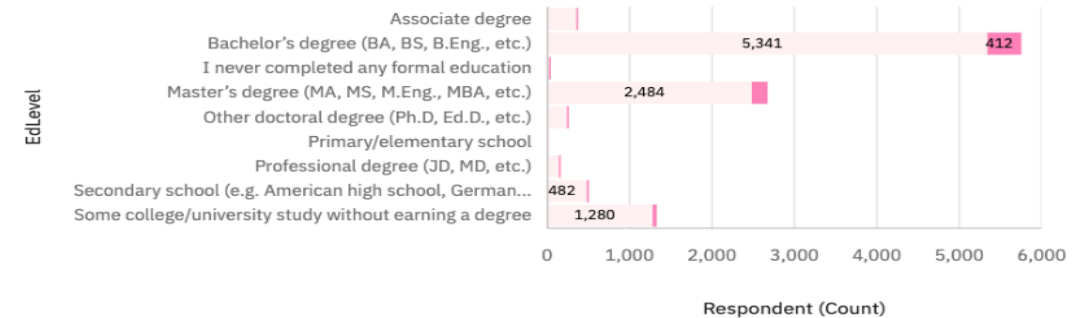

© Mapbox © OpenStreetMap

Respondent Count by Age
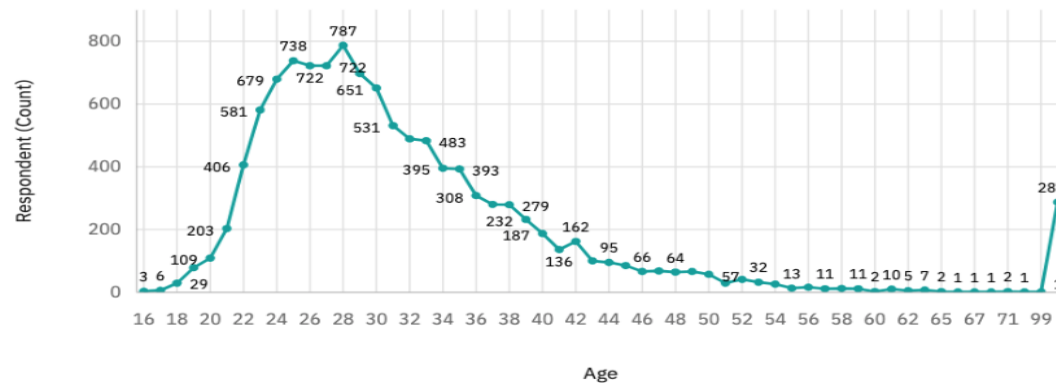
Respondent Count by Gender, classified by Formal Education Level

Gender
● Man ● Woman

DISCUSSION

- The correlations between programming languages and databases

- Release of new technology

- The gender gap in IT industry

- Whether the diversity in locations produce different result

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OVERALL FINDINGS & IMPLICATIONS

Findings

- Current and future popularity in technologies shuffled

- Gender gap in respondents

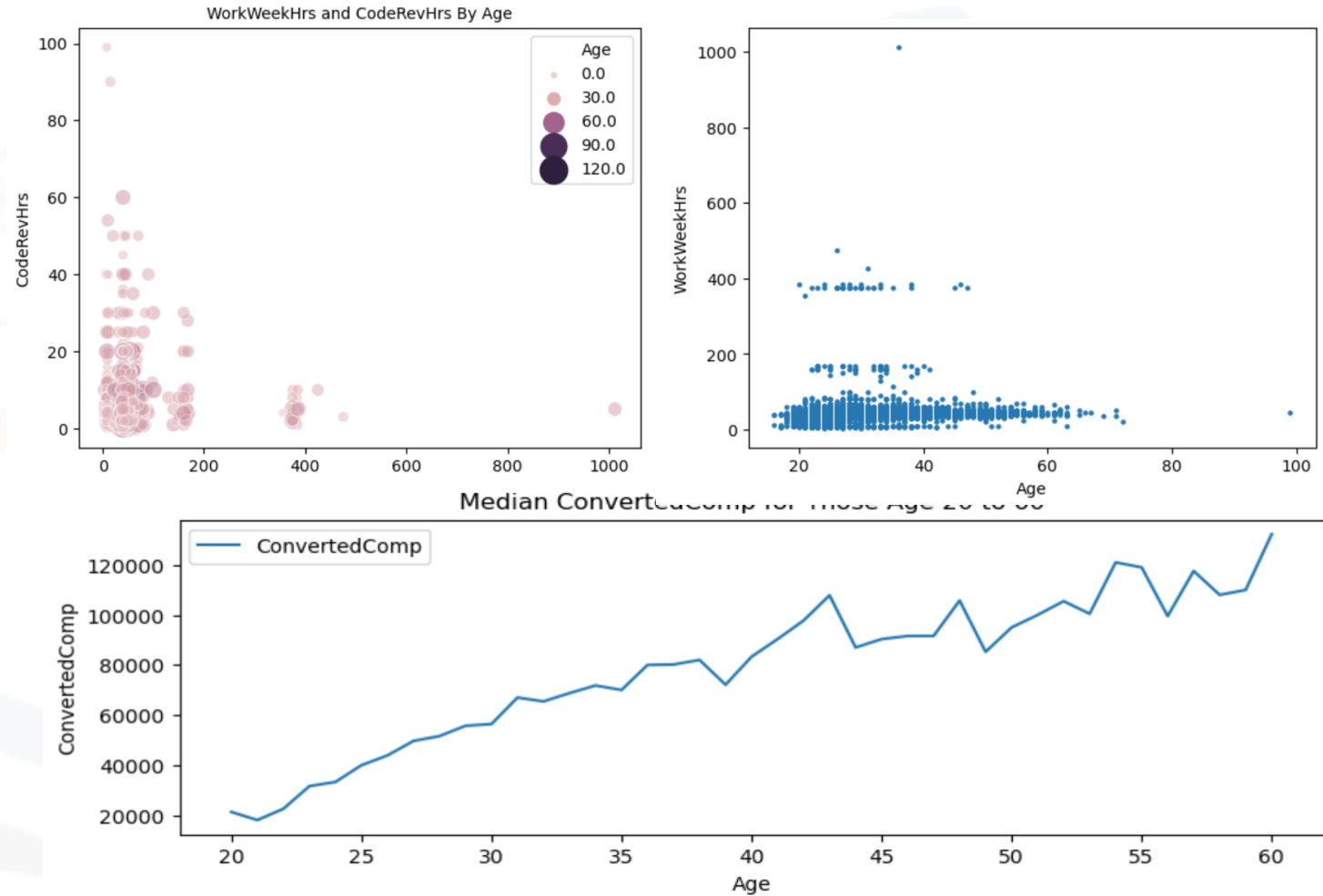- Higher density of respondents from particular countries

Implications

- Dynamics of technological trends

- Possibility of gender gap in the industry or sampling

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CONCLUSION

- Necessity to follow the technological trends and their evolvement

- The existence of the gender gap in IT industry

- JavaScript has strong prominence in current and future technological trends

- Linux maintain top popularity in Platform preference

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APPENDIX- Age

WorkWeekHrs and CodeRevHrs By Age

Median ConvertedComp for Those Age 20 to 60

JOB POSTINGS

Technology	Los Angeles	New York	San Francisco	Washington DC	Seattle	Austin	Detroit
C	296	1622	214	2664	1668	224	1973
C#	5	41	3	68	49	5	60
C++	3	43	3	55	41	4	32
Java	43	326	38	516	354	32	353
JavaScript	7	51	7	61	52	5	41
Python	24	143	17	258	133	15	170
Scala	0	8	0	3	4	1	5
Oracle	17	95	19	143	110	11	115
SQL Server	3	36	2	53	31	5	34
MySQL Server	0	0	0	0	0	0	0
PostgreSQL	0	1	0	3	1	0	2
MongoDB	2	25	2	32	21	1	25

POPULAR LANGUAGES

Average Annual Salary