



The 2019 Stack Overflow Developer Survey Results Are In

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OUTLINE



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

EXECUTIVE SUMMARY



Company details with its survey and goals

Methodology Description

- Data collection and cleaning
- Data analysis
- Data visualization

Result presentation with charts of trends

Discussion and depth regarding of each database declared in results

Dashboard presentation of all trends with demographics

Conclusion of each research



INTRODUCTION

- Stack Overflow's annual Developer Survey is the largest and most comprehensive survey of people who code around the world
- But the results don't represent everyone in the developer community evenly.
- We'll make the anonymized results of this year's survey publicly available under the Open Database License ([ODbL](#)) in May.
- To address these characteristics of our survey sample, we often summarize results by
 - Country
 - Gender
- highlight results for underrepresented racial/ethnic group and use survey weighting to correct for demographic skew.

METHODOLOGY



Data collection

- Collecting Data using APIs
- Collecting Data using Web Scraping

Data Wrangling

- Finding and removing Duplicates
- Finding and Imputing Missing Values
- Normalizing Data

Exploratory Data Analysis

- Analyzing Data Distribution
- Hanging Outliers
- Correlations

Data Visualization

- Visualizing Distribution of Data
- Finding Relation using different types of graphs and comparing them

Dashboards Cognos

RESULTS

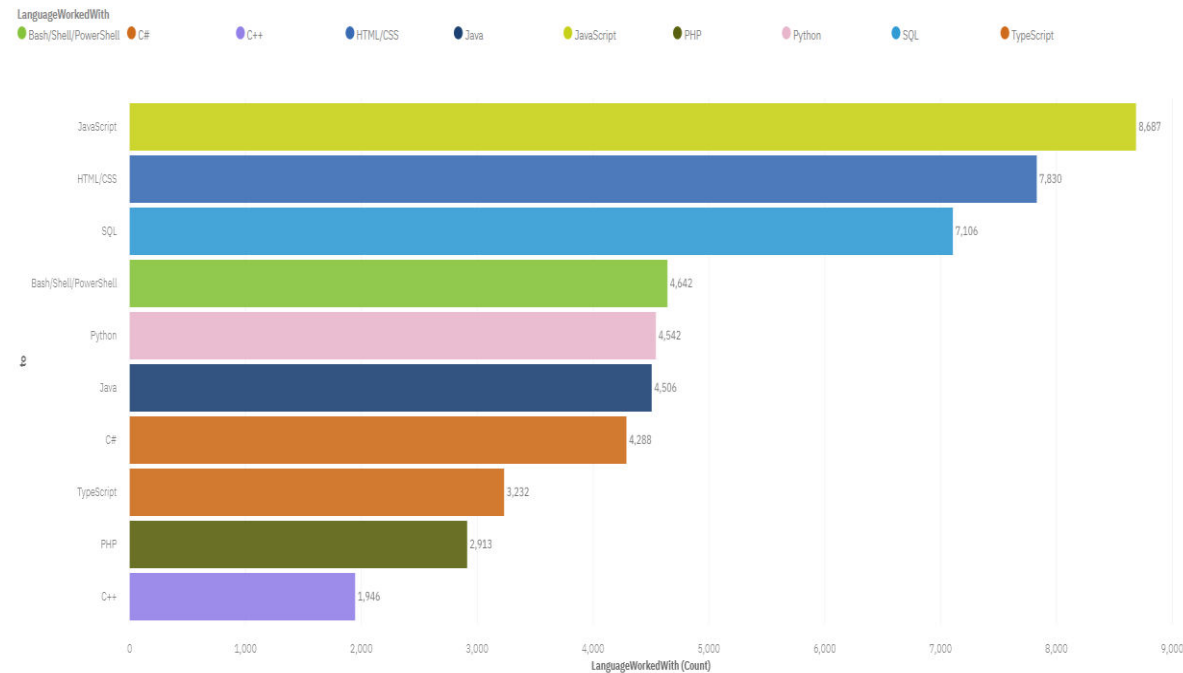
- **Creating visualizations using the developer survey data. The visualizations highlight the distribution of data, relationships between data, the composition of data, and comparison of data.**
- **Creating dashboards using IBM Cognos Analytics .**
- **Dashboards will contain data analysis, which should be intuitive and allow for the drill-down of data.**

PROGRAMMING LANGUAGE TRENDS

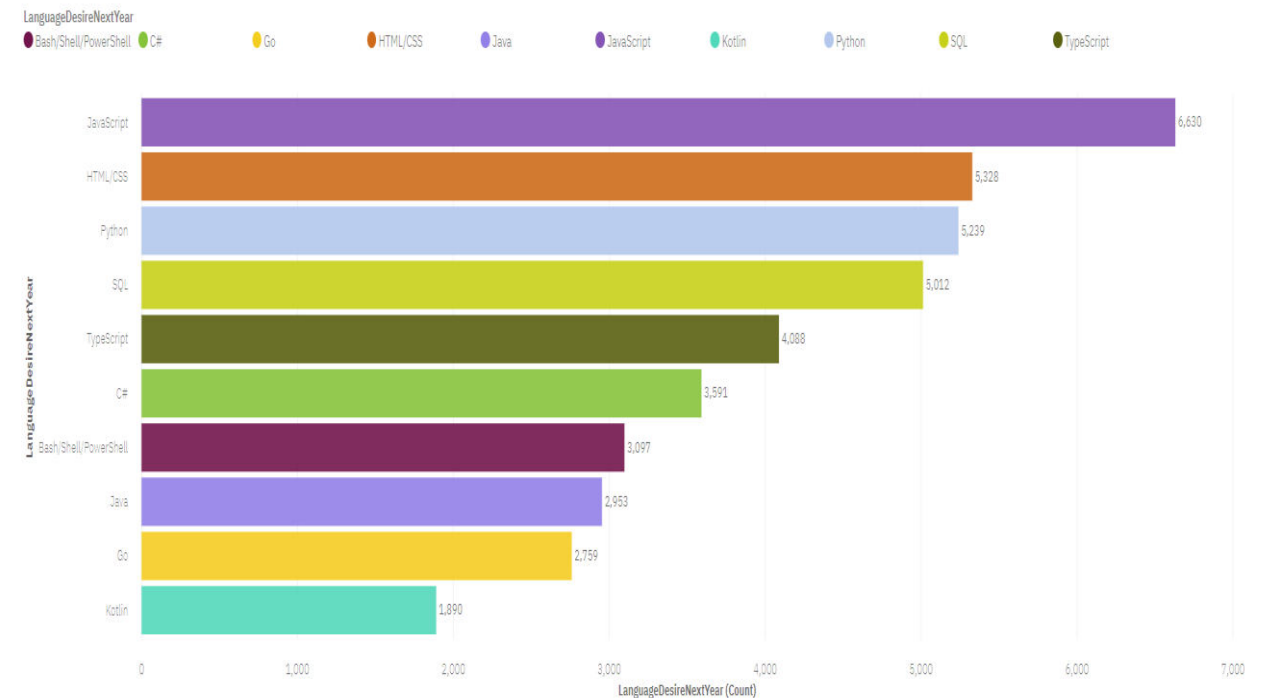
Current Year

Next Year

Top 10 languages used in this year



Top 10 Language Desire Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript is the most leading programming language
- Python, the fastest-growing major programming language
- Interest in TypeScript

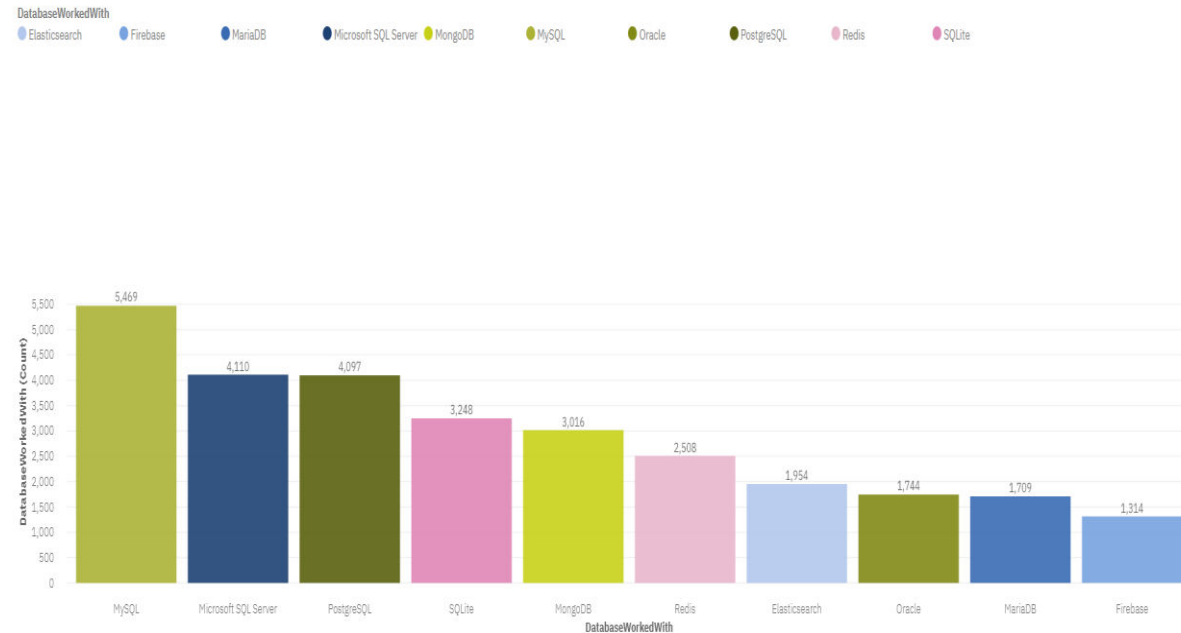
Implications

- Python is the Future of the Programming World
- Shift of programmers from JavaScript to TypeScript

DATABASE TRENDS

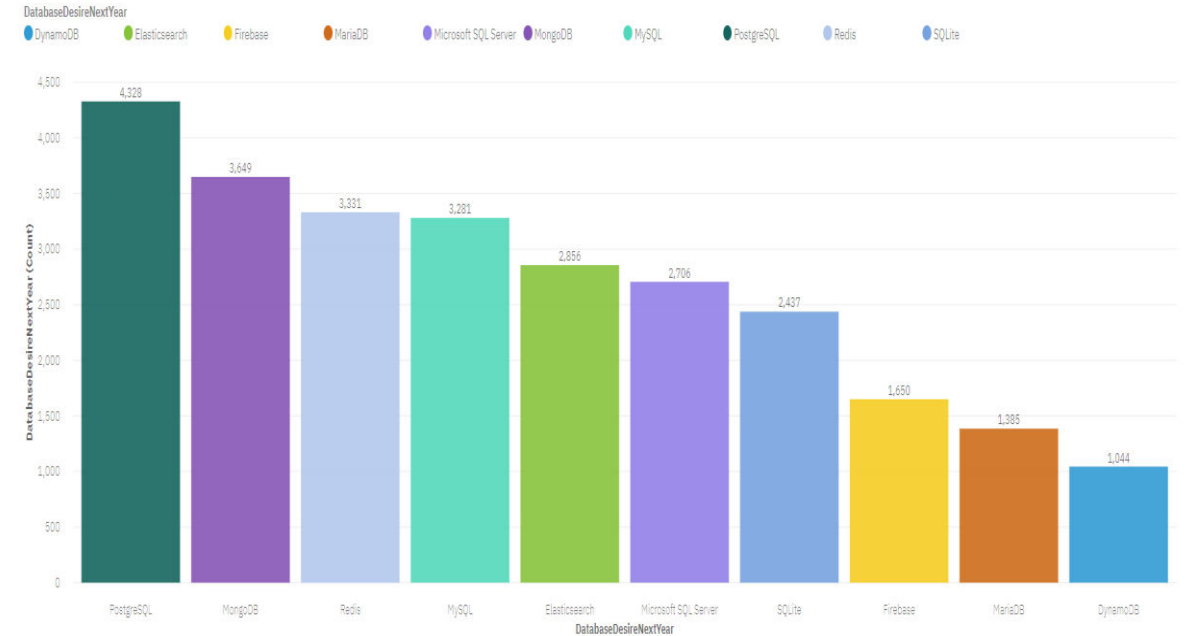
Current Year

Top 10 Database worked with this year



Next Year

Top 10 Database Desire Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL is the most leading database
- Increase interest in MongoDB and PostgreSQL
- Decrease in passion towards Microsoft Server and SQLite

Implications

- PostgreSQL and MongoDB will establish the future Database market
- MySQL losing its pinnacle in the market
- Microsoft Server and SQLite losing feats in the market



DASHBOARD

- <https://dataplatform.cloud.ibm.com/dashboards/0518a081-a7c1-429c-a6e8-a1cfa017a590/view/6c62d42a358f0b9243c1eee4079b7a527a3f7159babb8601d2817b490c617897f06c1296c87c4f5edf110167f6bd440bce>

DASHBOARD TAB 1

Bar

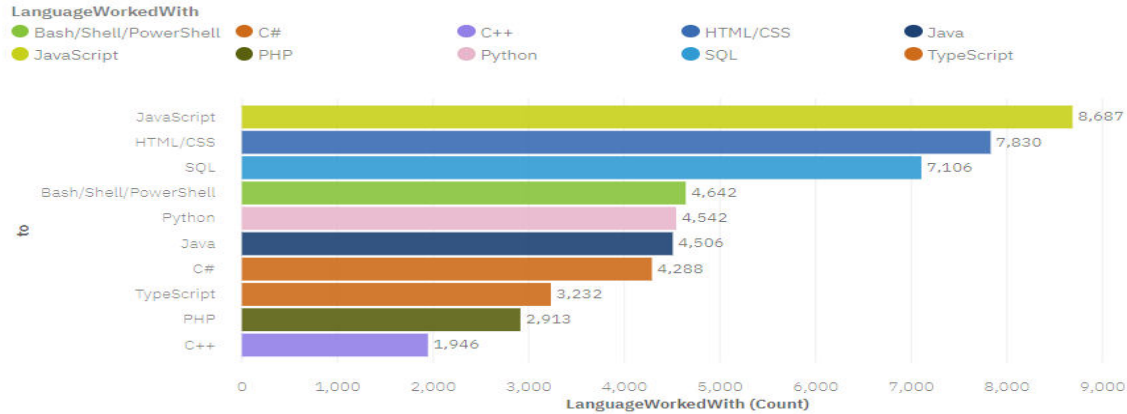
Filters

Current Technology Usage.-1

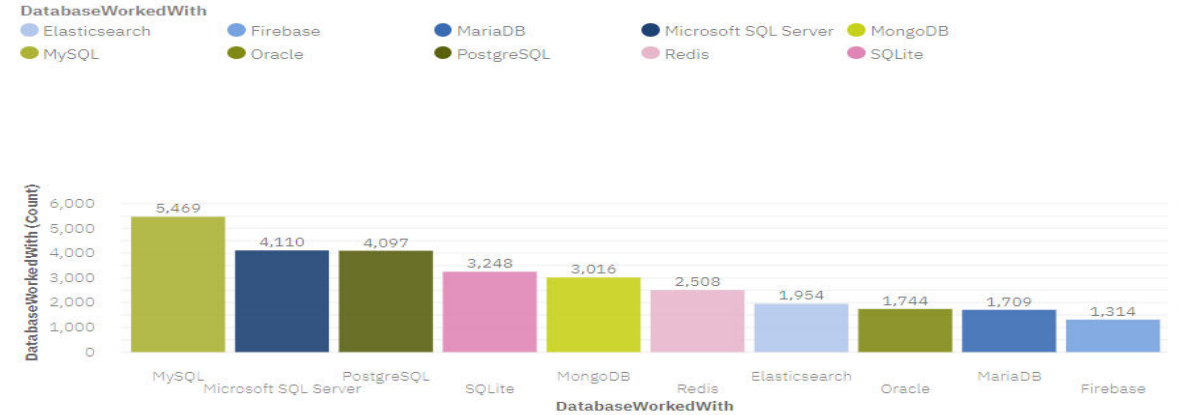
Future Technology Trend.

Demographics.

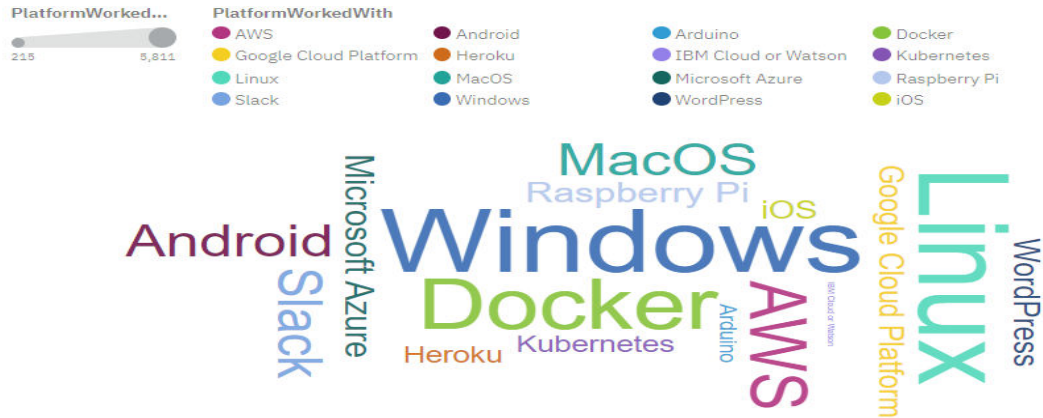
Top 10 languages used in this year



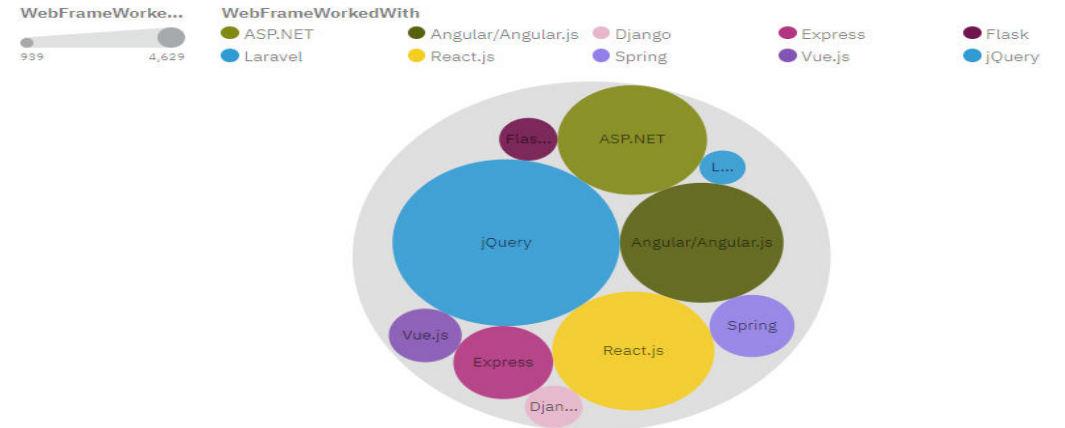
Top 10 Database worked with this year



Platform Worked With.



Top 10 WebFrame Worked With



IBM Developer

SKILLS NETWORK

powered by IBM Cloud Pak for Data

DASHBOARD TAB 2

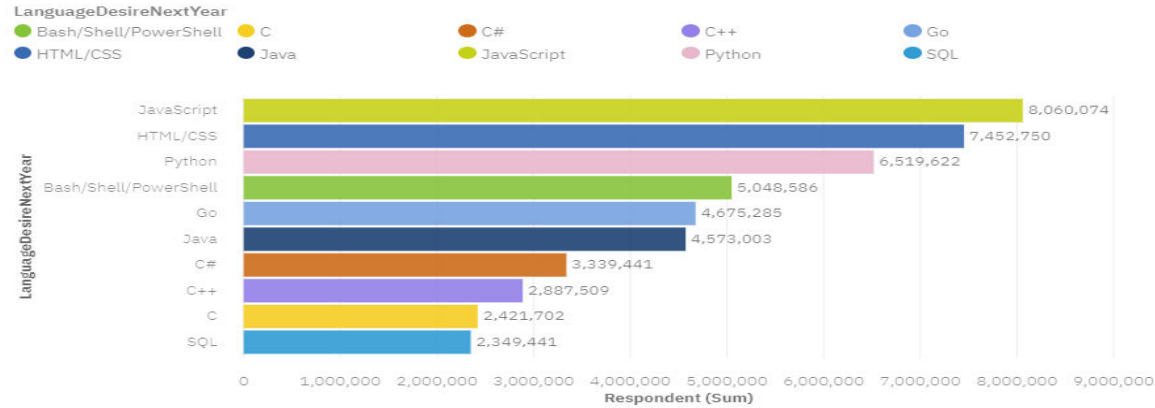
Filters

Current Technology Usage.-1

Future Technology Trend.

Demographics.

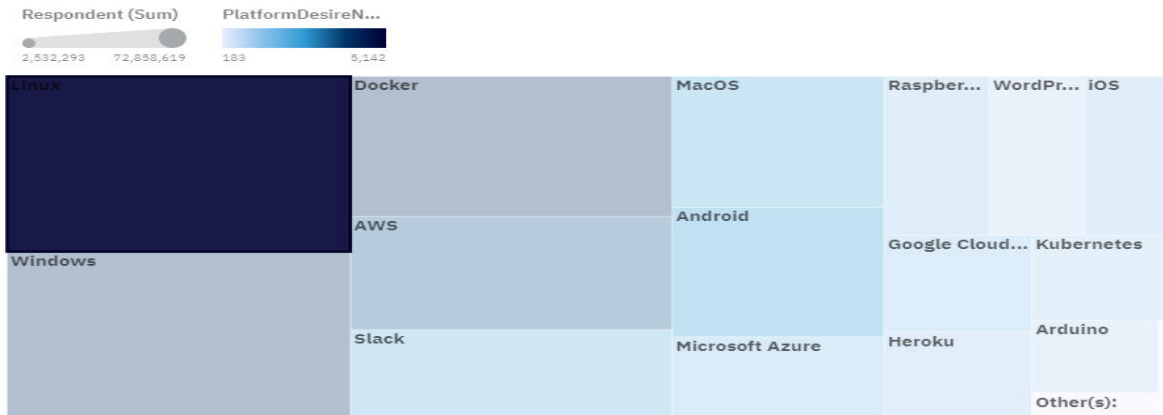
TOP 10 LANGUAGES DESIRED NEXT YEAR



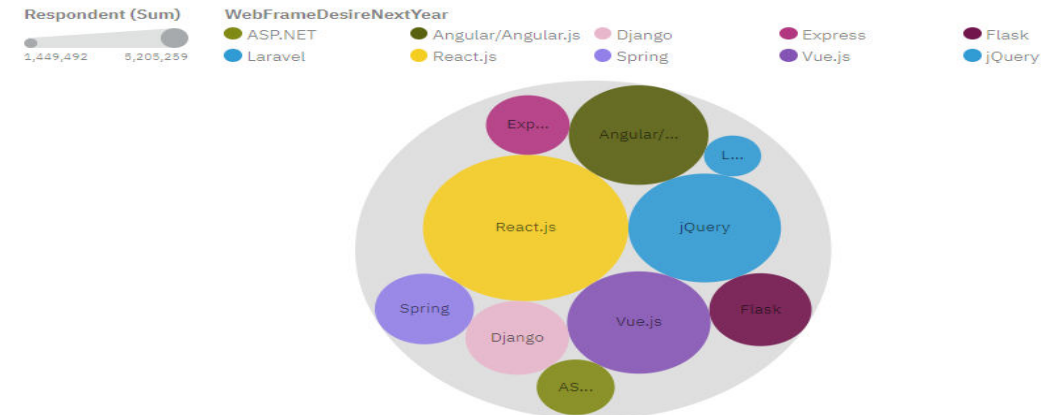
Top 10 Database Desire Next Year.



Platform Desire Next Year



Top 10 WebFrame Desire Next Year.



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IBM Developer

SKILLS NETWORK



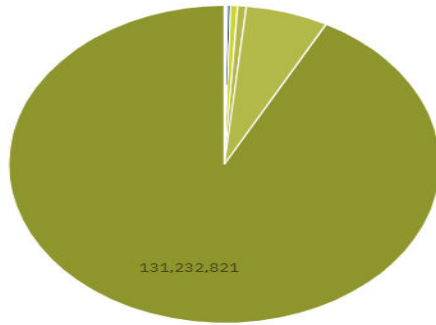
 Pie

 Filters

Demographics.

Gender

- Woman;Man;Non-binary, genderqueer, or genderfluid
- Woman;Man
- Woman;Non-binary, genderqueer, or genderfluid
- Woman;Non-binary, genderqueer, or genderfluid
- Woman
- Man
- Woman;Non-binary, genderqueer, or genderfluid
- (no value)



The graph displays the sum of respondents for each age group. The data shows a clear upward trend from age 16 to a peak at age 28, followed by a gradual decline until age 60. After age 60, the sum remains very low for most ages, with a notable spike at age 99.

Age	Respondent (Sum)
16	0
17	0
18	200,000
19	800,000
20	1,300,000
21	2,500,000
22	5,000,000
23	7,400,000
24	8,500,000
25	9,300,000
26	9,300,000
27	9,000,000
28	9,800,000
29	8,400,000
30	8,000,000
31	6,800,000
32	6,100,000
33	6,100,000
34	6,300,000
35	4,800,000
36	5,000,000
37	3,500,000
38	3,500,000
39	3,500,000
40	3,100,000
41	2,400,000
42	1,500,000
43	2,100,000
44	1,100,000
45	1,100,000
46	1,100,000
47	800,000
48	800,000
49	900,000
50	800,000
51	400,000
52	500,000
53	400,000
54	300,000
55	200,000
56	100,000
57	100,000
58	100,000
59	100,000
60	100,000
61	100,000
62	100,000
63	100,000
64	100,000
65	100,000
66	100,000
67	100,000
68	100,000
69	100,000
70	100,000
71	100,000
72	100,000
73	100,000
74	100,000
75	100,000
76	100,000
77	100,000
78	100,000
79	100,000
80	100,000
81	100,000
82	100,000
83	100,000
84	100,000
85	100,000
86	100,000
87	100,000
88	100,000
89	100,000
90	100,000
91	100,000
92	100,000
93	100,000
94	100,000
95	100,000
96	100,000
97	100,000
98	100,000
99	3,500,000

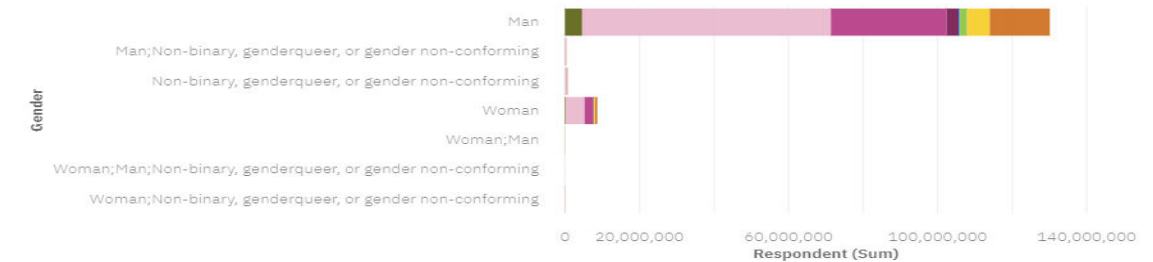
Respondent (Sum)

865 39,154,240



EdLevel

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



powered by IBM Cloud Pak for Data

DISCUSSION



OVERALL FINDINGS & IMPLICATIONS

Findings

- Python, the fastest-growing major programming language, has risen in the ranks of programming languages.
- Edging out Java this year and standing as the second most loved language (behind Rust).
- Over half of respondents had written their first line of code by the time they were sixteen, although this experience varies by country and by gender.

Implications

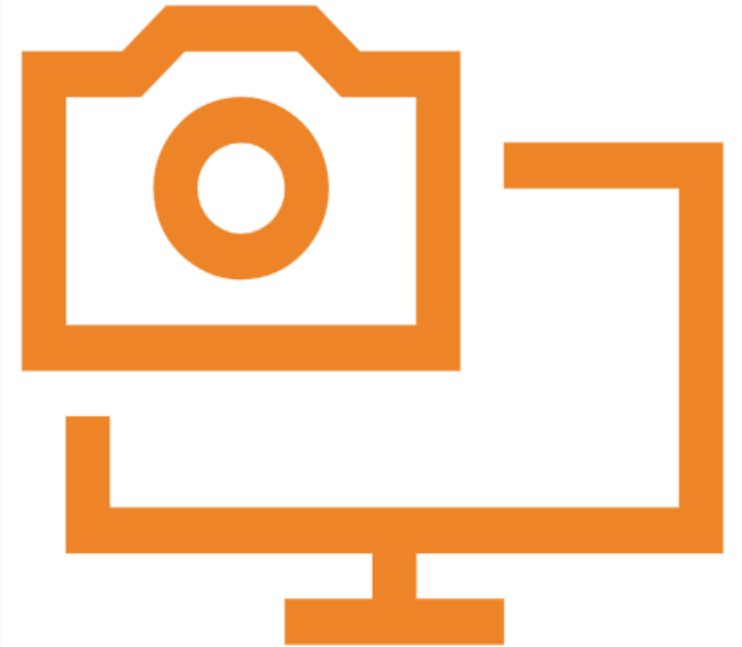
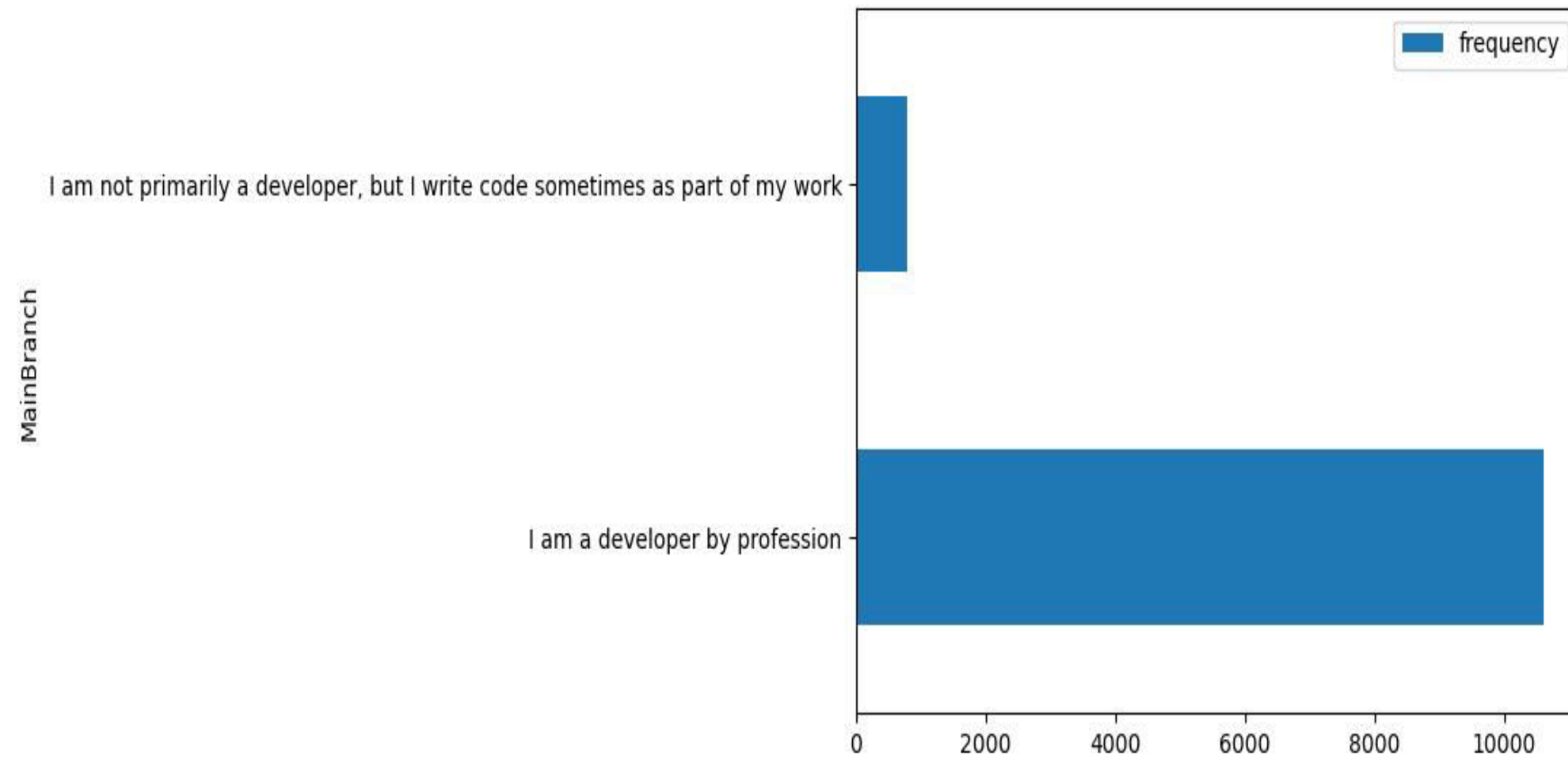
- More than 90% of young male especially with bachelor degree are leading the world to new coding era.
- Only developed countries are progressing towards development
- Linux will be ruling the platform for developers. Change in shift from windows to Linux is visible.
- JavaScript has gained huge programmers in both language and web frame fields.



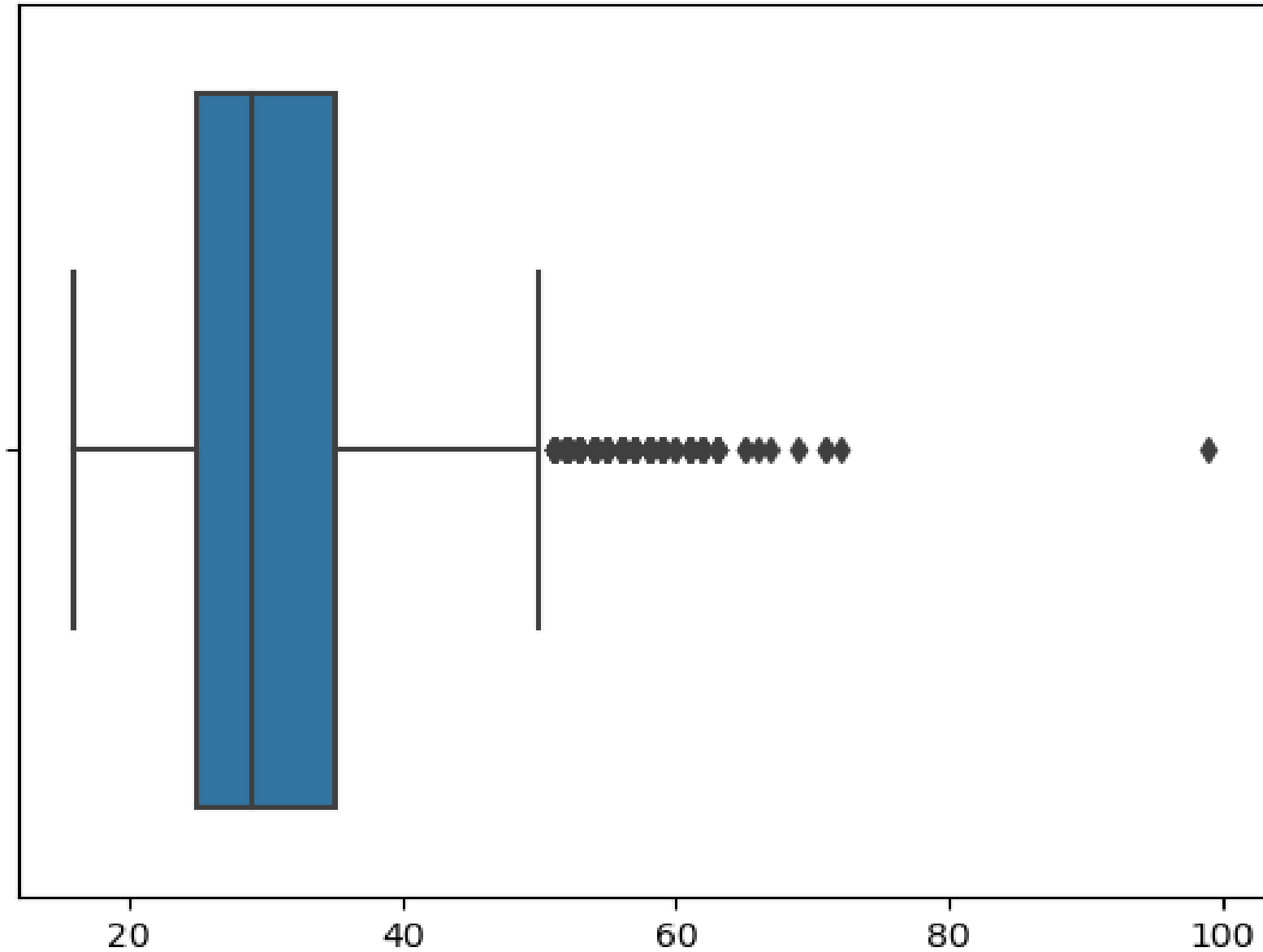
CONCLUSION

- Developed countries with its young male population of Bachelor Degree are setting up a wide platform for coding.
- US and India are going to become a huge coding hub with lots of innovation and development
- A good popularity of trends of languages , platform and web frames are obtained.
- Developing countries are in transition phase towards developer era.

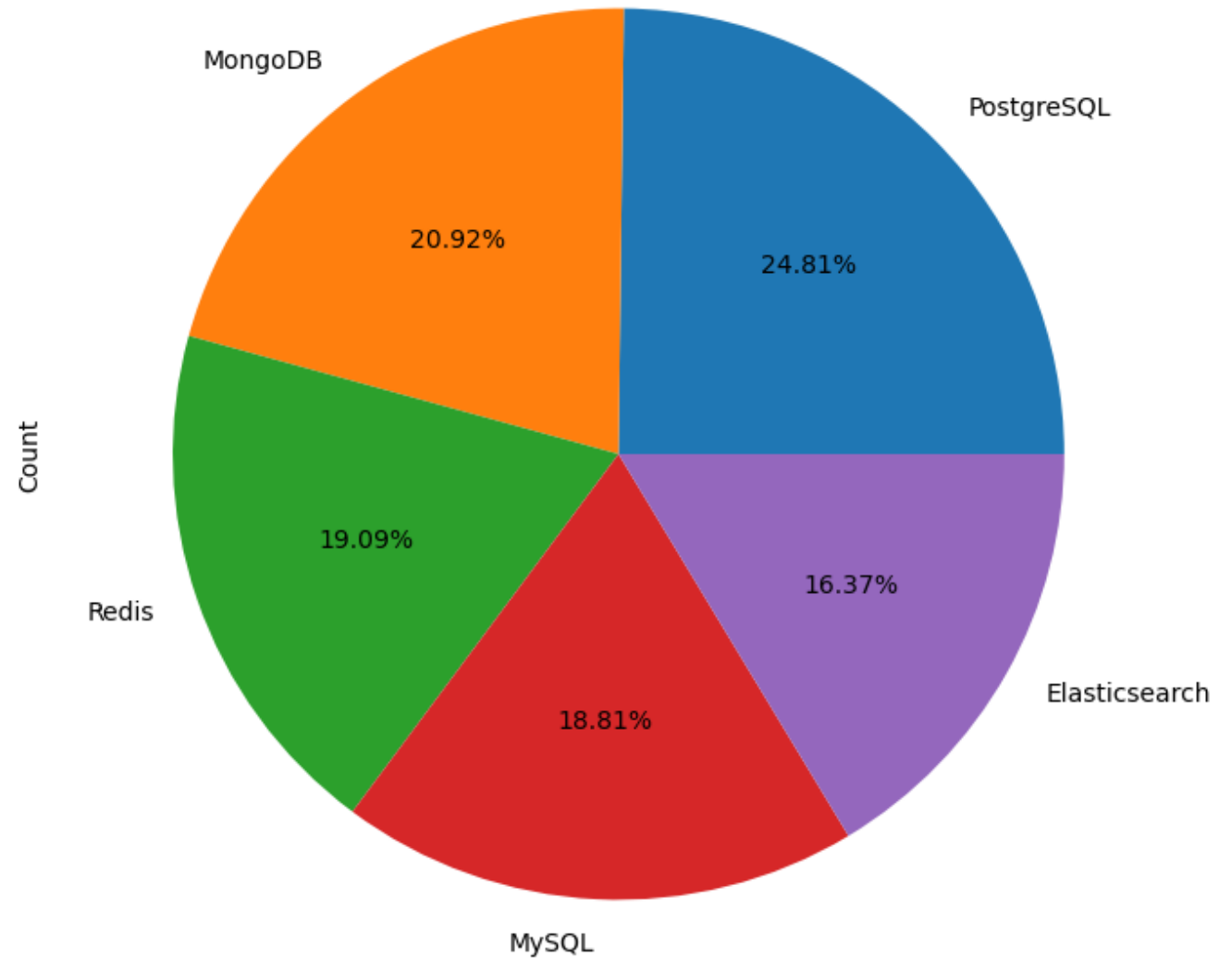
APPENDIX



Boxplot of Age

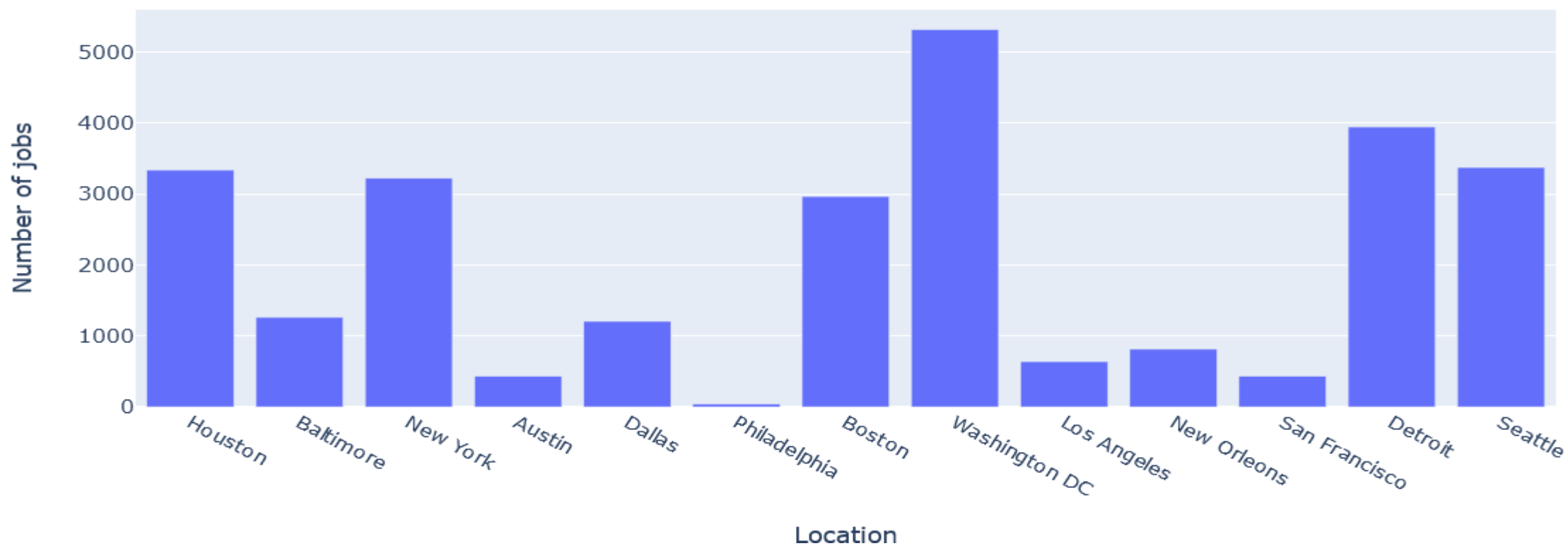


Pie chart of
the top 5
databases that
respondents
wish to learn
next year



JOB POSTINGS

job postings



POPULAR LANGUAGES

