



STACK OVERFLOW DEVELOPER SURVEY-2019

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OUTLINE



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

EXECUTIVE SUMMARY



- Objective of data contextualization and analysis.
- Approach and Methods overview:
 - Data Collection
 - Analyzing Data
 - Data Visualization
- Presenting Results with Graphical representation and trends.
- Analyzing key Findings and their impact
- Drawing conclusions and insights from the research findings.

INTRODUCTION



- Stack overflow developer survey is about analyzing technology trend in software and web development among various developers.
- Identifying the top programming languages, databases, platform and web frame which are in high demand.
- Trends to predict future skill requirements
- Recognizing the most popular IDE'S
 - Characterizing developers across the globe
 - Developers from different fields

METHODOLOGY



- Collecting and Exploring the survey data
 - API's
 - Web scraping
- Data Wrangling
- Exploratory Data Analysis
 - Data Distribution
 - Handling Outliers
 - Normalizing Data
 - Checking correlations
- Data Visualizations
 - Python Matplotlib, & Seaborn
- Dashboards – IBM cognos

RESULTS

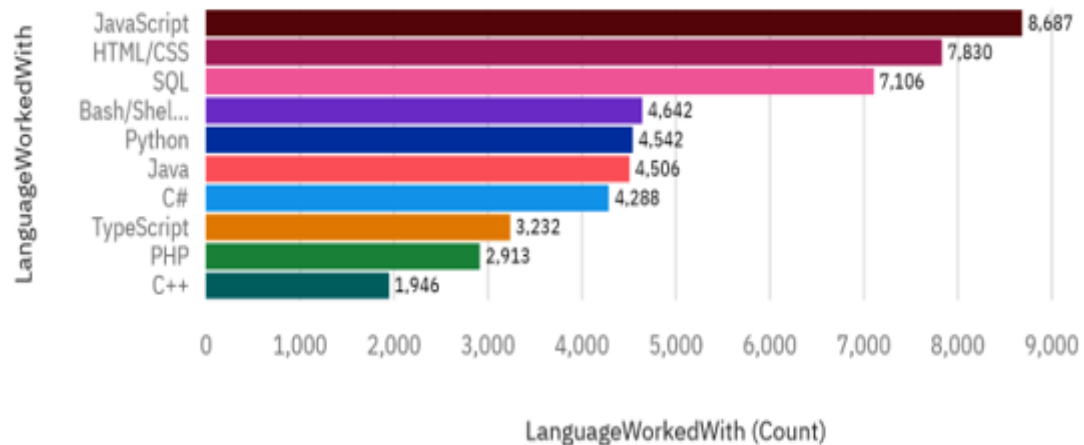
	Technology	Los Angeles	New York	San Francisco	Washington DC	Seattle	Austin	Detroit
0	C	296	1622	214	2664	1668	224	1973
1	C#	5	41	3	68	49	5	60
2	C++	3	43	3	55	41	4	32
3	Java	43	326	38	516	354	32	353
4	JavaScript	7	51	7	61	52	5	41
5	Python	24	143	17	258	133	15	170
6	Scala	0	8	0	3	4	1	5
7	Oracle	17	95	19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

PROGRAMMING LANGUAGE TRENDS

Current Year

Top 10 Languages Worked with

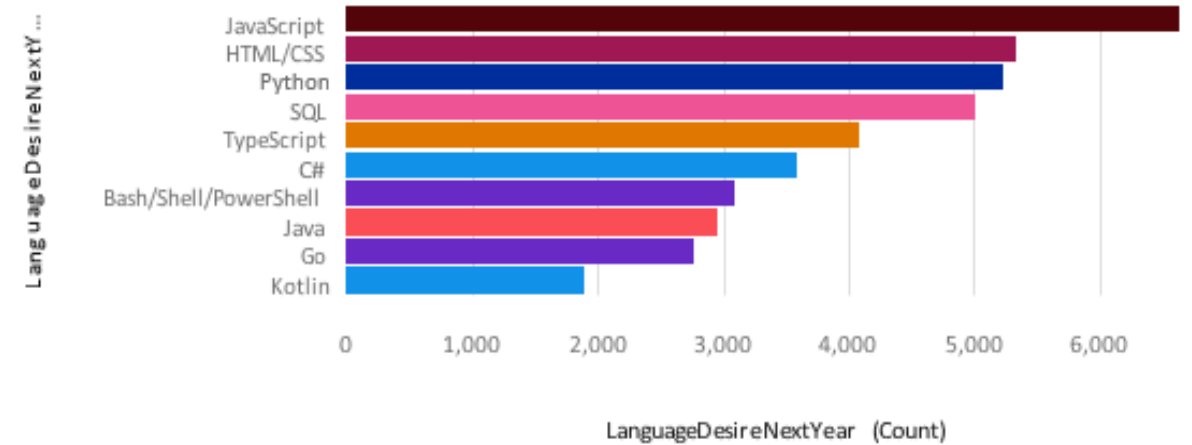
LanguageWorkedWith



Next Year

Top 10 Languages Desired next year

LanguageDesireNextYear



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Top 3 seems to be JavaScript, HTML/CSS and SQL
- Python and Typescript seems to be gaining popularity
- PowerShell backed out

Implications

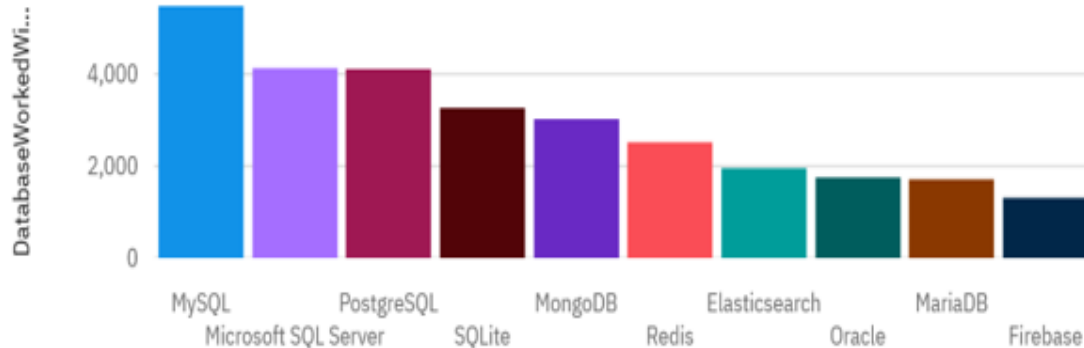
- Most companies need and require SQL
- With AI getting popular, python may be best choice.
- JavaScript and TypeScript are essential to developers.

DATABASE TRENDS

Current Year

Top 10 Databases worked with

DatabaseWorkedWith

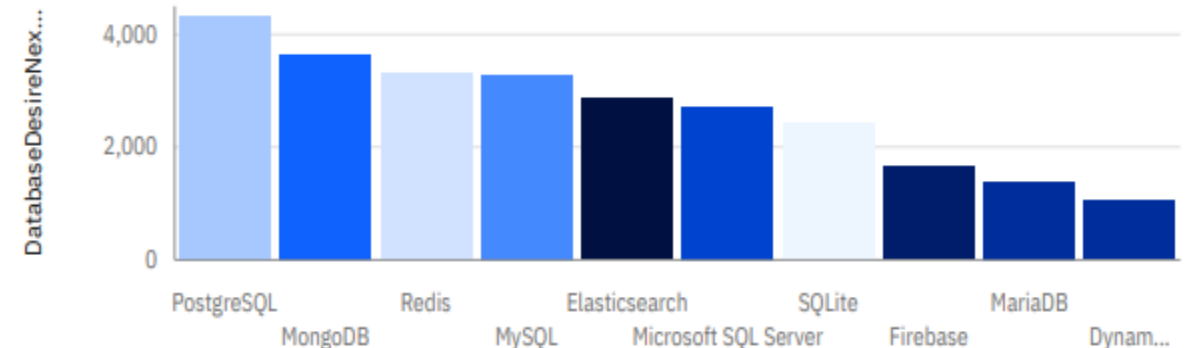
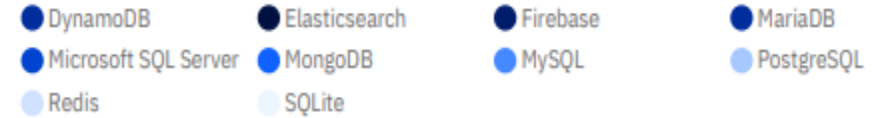


DatabaseWorkedWith

Next Year

Top 10 Database Desire Next Year

DatabaseDesireNextYear



DatabaseDesireNextYear

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL being most popular database.
- Microsoft SQL server loosing ground.
- PostgreSQL and MongoDB getting popularity.

Implications

- Many Companies may still use SQL.
- Redis gaining ground due to its abstract data types.
- PostgreSQL may be extensively used in future for its robustness.

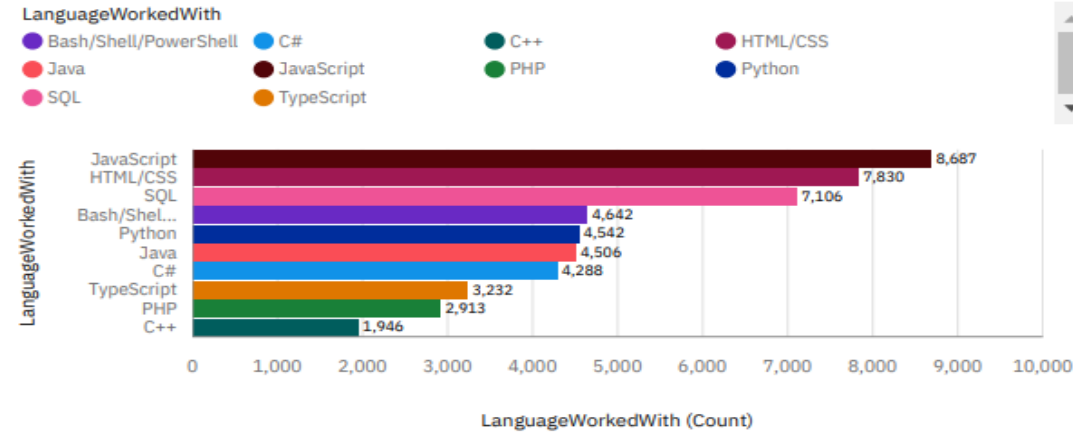
DASHBOARD



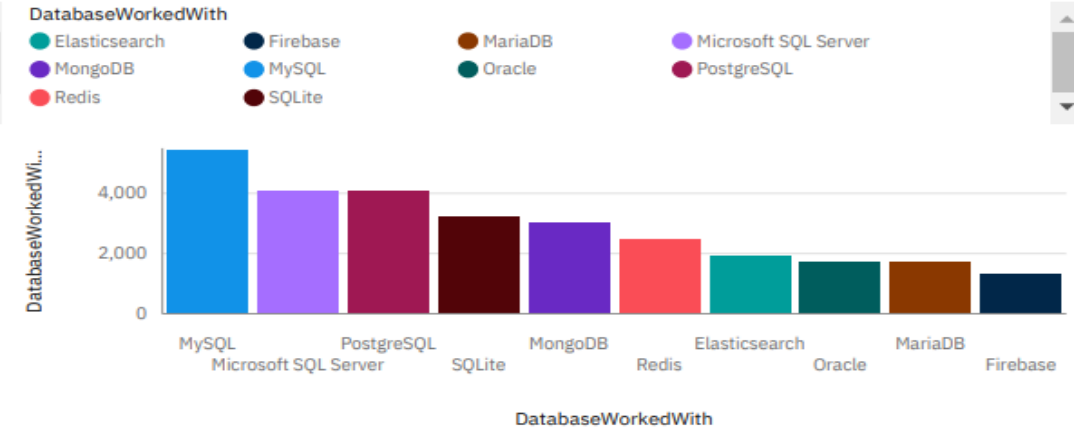
<https://github.com/GoingDataPath1/Cognos/blob/main/Capstone%20Project-%20cognos%20Visualizations.pdf>

Current Technology Usage

Top 10 Languages Worked with



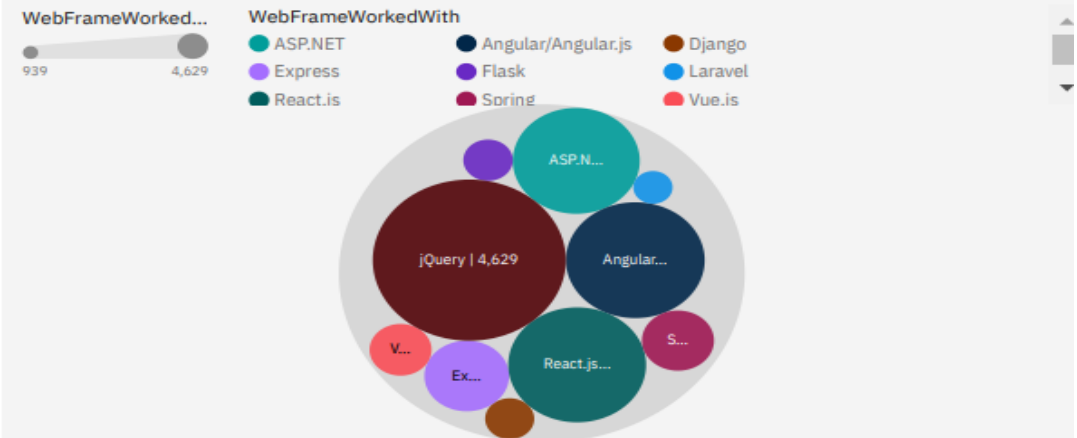
Top 10 Databases worked with



Platform worked with

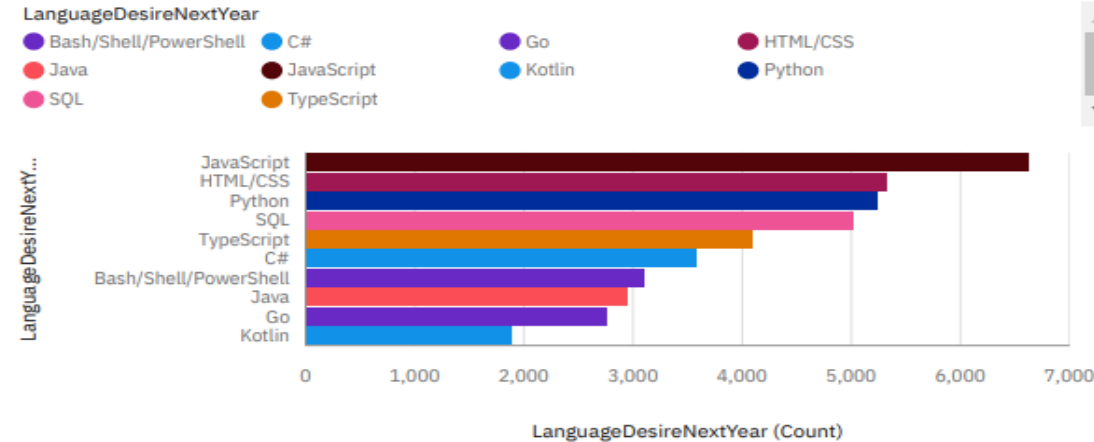


Top 10 WbFrame worked with

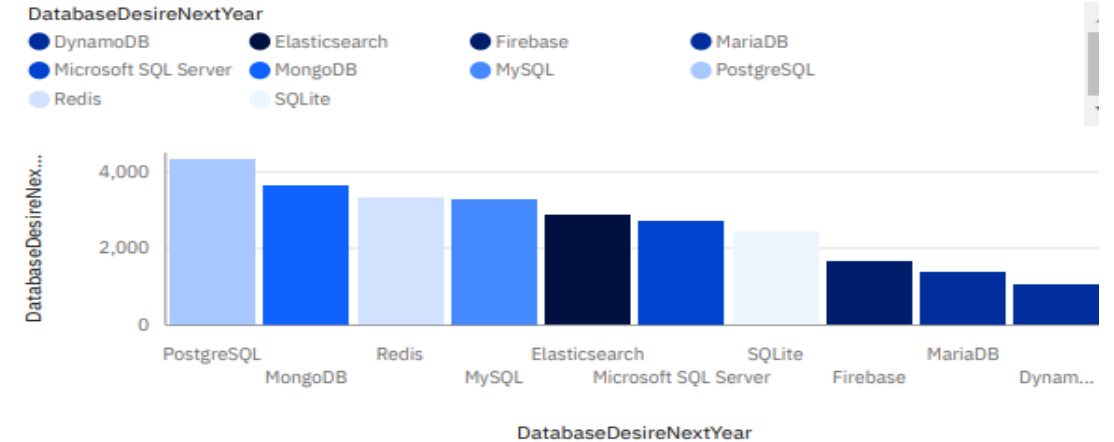


Future Technology Trend

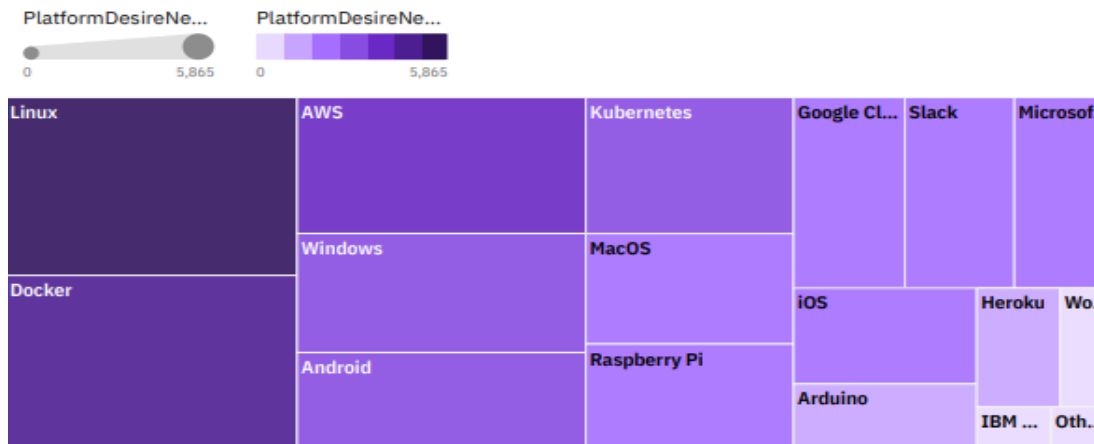
Top 10 Languages Desired next year



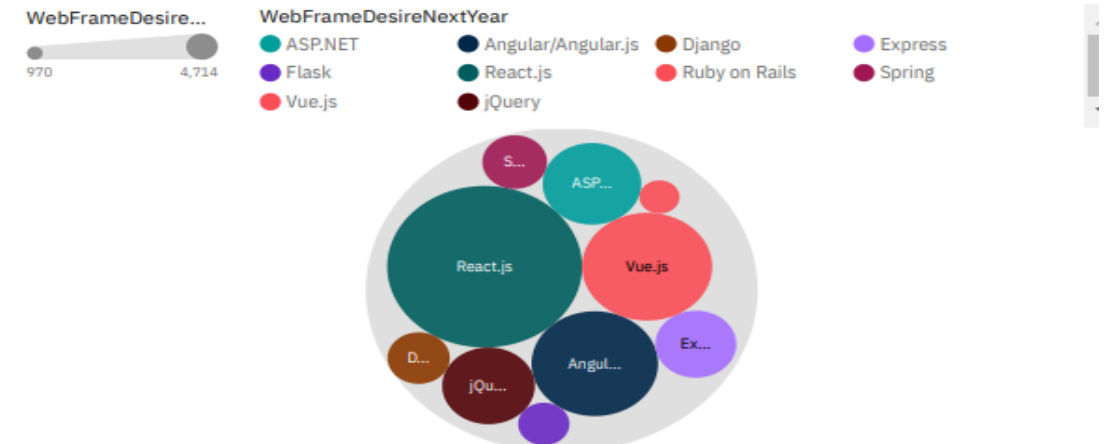
Top 10 Database Desire Next Year



Platform Desire Next Year



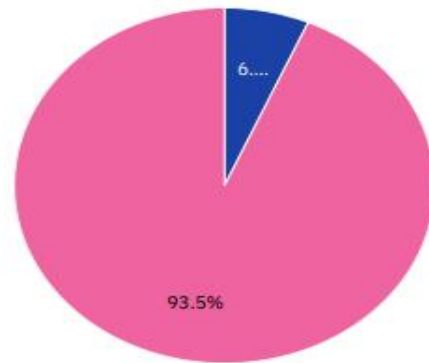
Top 10 WebFrame Desire Next Year



Demographics

Respondent classified by Gender

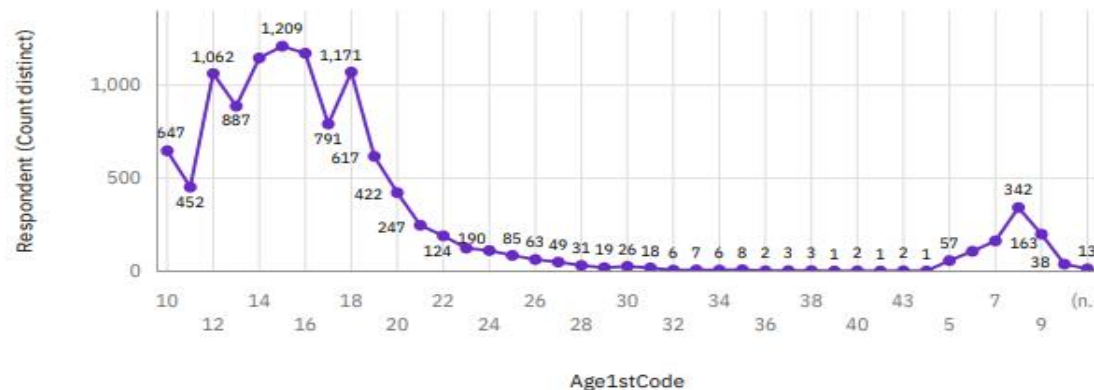
Gender
● Woman ● Man



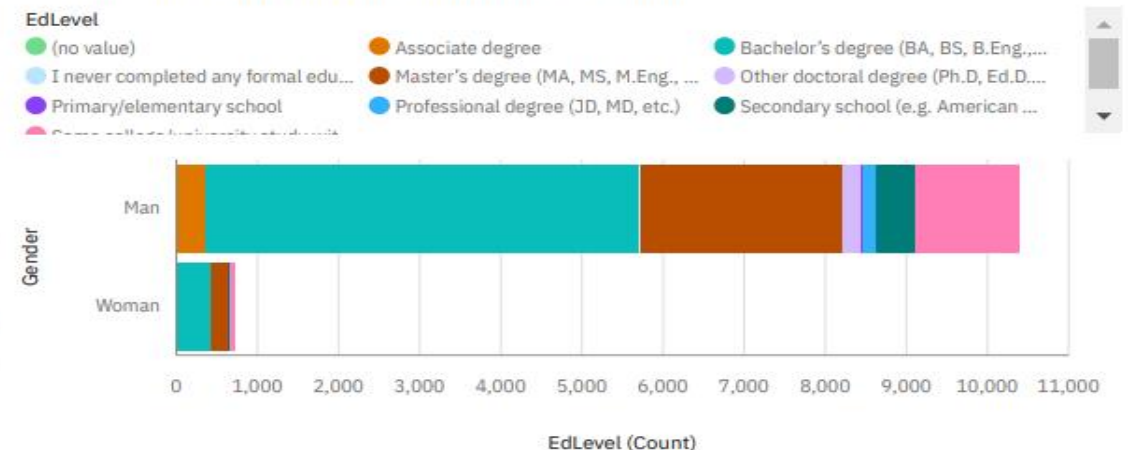
Respondent count for countries



Respondent Count by Age



Respondent Count by Gender and formal education level



DISCUSSION



- We can discuss about the emerging technologies now and in future.
- Also, technology gaps in various developing countries.
- Discussion can also include how to reskill employees on emerging trends.
- Discussing how to eliminate gender and age discrimination.

OVERALL FINDINGS & IMPLICATIONS

Findings

- Fast emerging technologies every year.
- USA stands top technology country.
- Most popular platforms are AWS and Docker.
- 90% young male developers.

Implications

- Programmers should adapt to latest technologies.
- Improved technologies should spread in lagged countries as well.
- No gender and age discrimination should be allowed.
- Every developer should be encouraged.

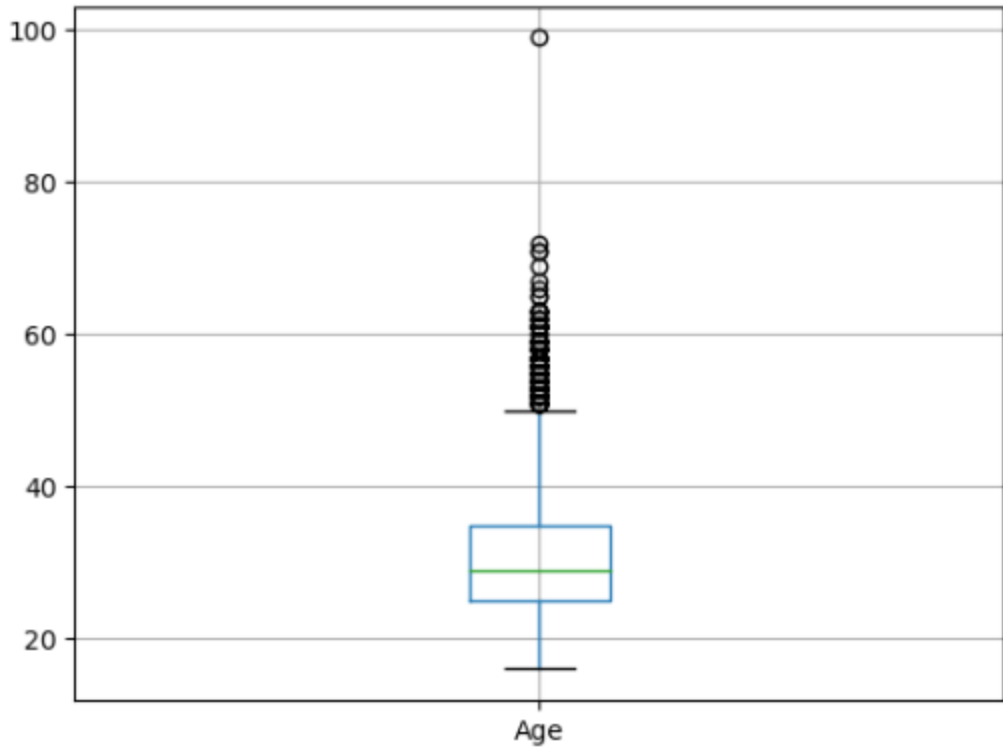
CONCLUSION



- A better understanding of the emerging technology trends should be appreciated.
- Countries in development should adapt and appreciate these emerging technologies.
- AI is being incorporated in today's world, so it's better to include machine learning as well.
- Every developer irrespective of age and gender are valuable assets to a organization.

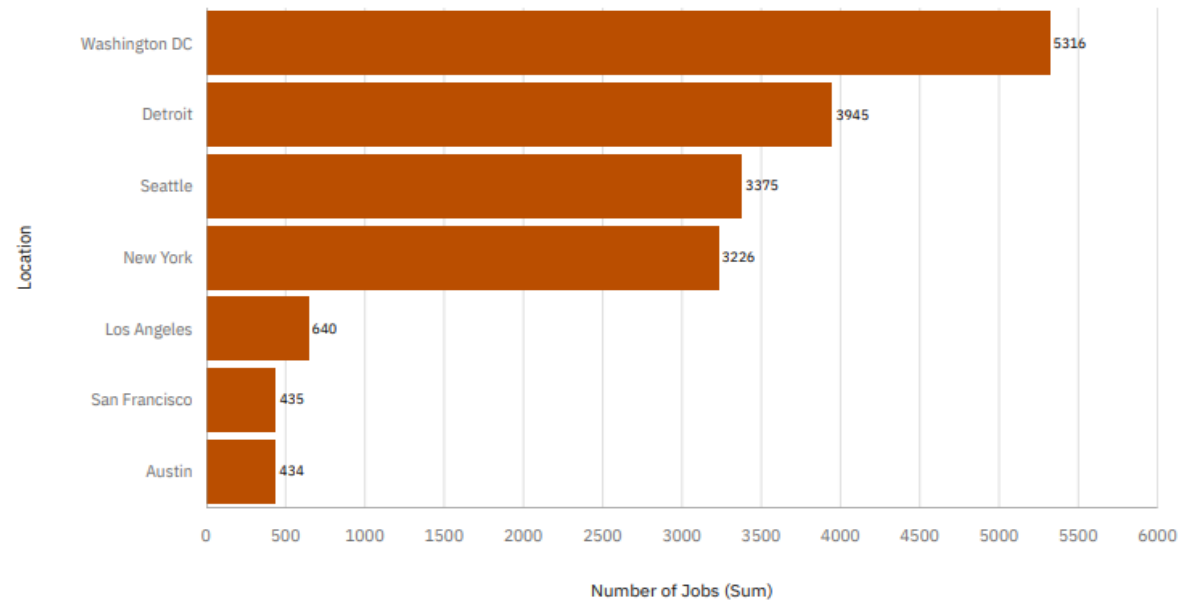
APPENDIX

- Age distribution plot



JOB POSTINGS

Number of Jobs by Location



POPULAR LANGUAGES

