Report on Programming Languages

Anthony Villalvazo

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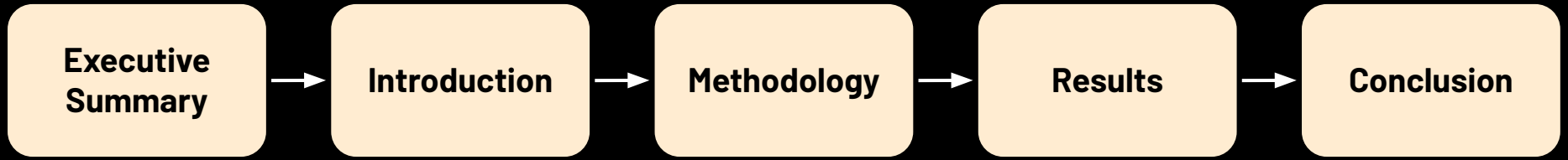
Outline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Executive Summary

- To keep up with the evolution of technology, we have to stay updated on the future of databases and technology
- We will be looking over various sources that will present us the trends of programming languages, jobs, demographics, and databases, all of which pertains to IT and Computer Science
- This presentation will include charts and dashboards from various sources including:
  - Microsoft Excel
  - Matplotlib (Python)
  - Jupyter Notebooks

Introduction

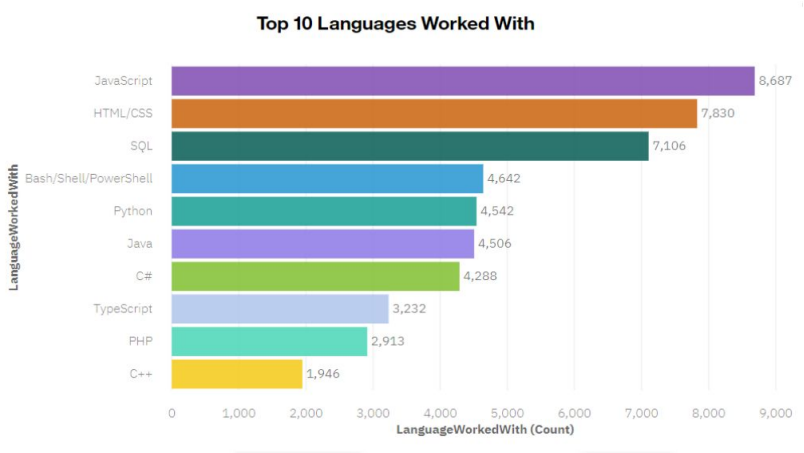
- Technology continues to evolve at a rapid pace, reshaping how we work, communicate, and solve problems. In the fields of Computer Science and Information Technology (IT), staying updated on current and emerging trends is crucial for professionals and organizations alike.
- This presentation explores the evolving landscape of technology, focusing on trends in:
  - Programming languages
  - Job market insights
  - Developer and user demographics
  - Database technologies
- By the end of this presentation, you'll gain a deeper understanding of:
  - Which technologies are rising in popularity
  - What skills are in demand
  - How the IT landscape is transforming

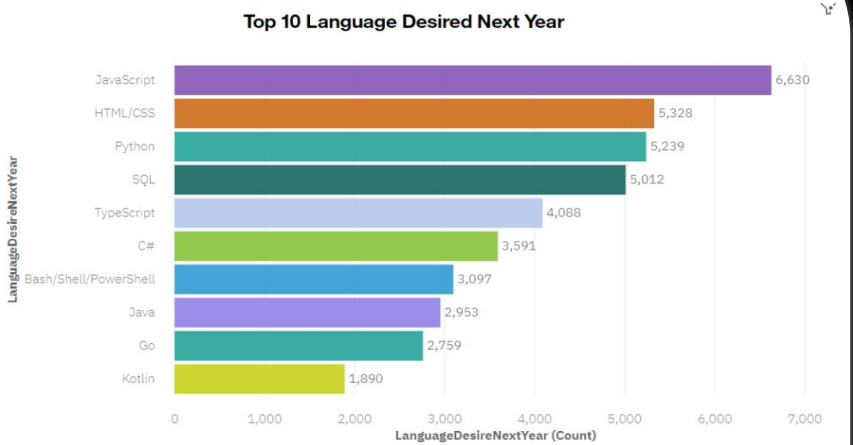
Methodology

- Our data sources include public datasets from job postings, training platforms, and industry surveys
- Data was collected using a variety of techniques including CSV file imports, APIs, web scraping, and database queries
- The collected data was then cleaned and prepared using Pandas, removing irrelevant or redundant information to make it suitable for analysis
- Later in this presentation, you will see visualizations that were generated from this data, along with insights and their relevance to our case study

Results

Programming Language Trends





Findings & Implications

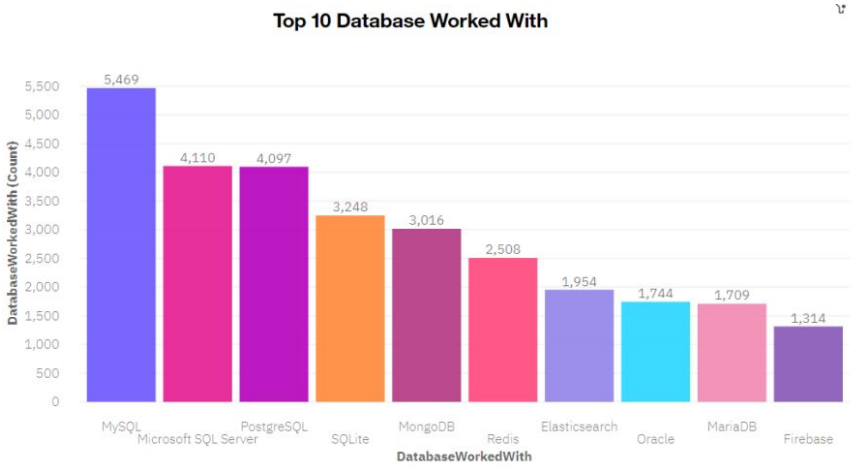
Findings:

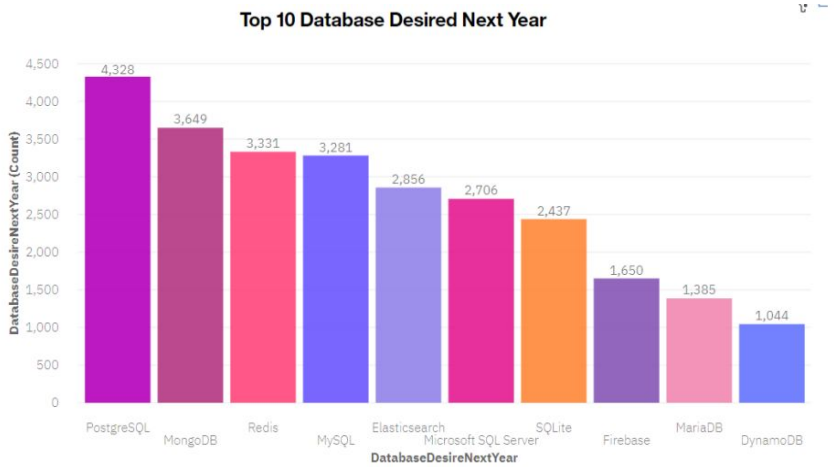
- javaScript & HTML/CSS are still the most desired language
- TypeScript rose in popularity from 8th rank to 5th
- New languages like GO and Kotlin appeared in the next year graph, replacing PHP and C++

Implications:

- Javascript & HTML/CSS are still the backbone of web development
- TypeScript is rising because of its similarity to JavaScript and its ease of use
- New technology is benign created every year, this means newer and better languages are being developed

Programming Language Trends





Findings & Implications

Findings:

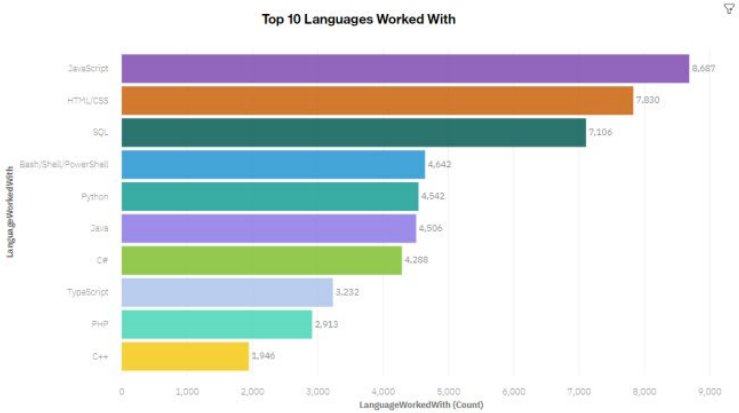
- MySQL was replaced as most desired language in the next year by PostgreSQL
- MariaDB and Firebase are still the least desired database in the next year
- Oracle was completely replaced by DynamoDb in the next year

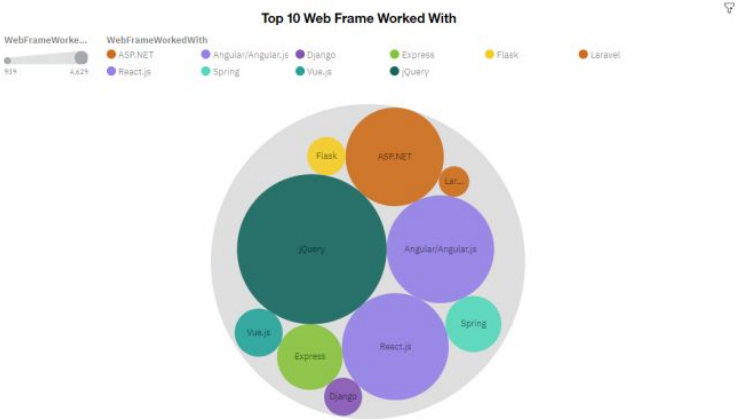
Implications:

- More people are liking the ease of use and additional features that PostgreSQL brings
- Users are still not thrilled with MariaDB and Firebase DB since they are not fully developed yet
- Oracle stopped focusing on user satisfaction, which is why DynamoDB rose to the top 10

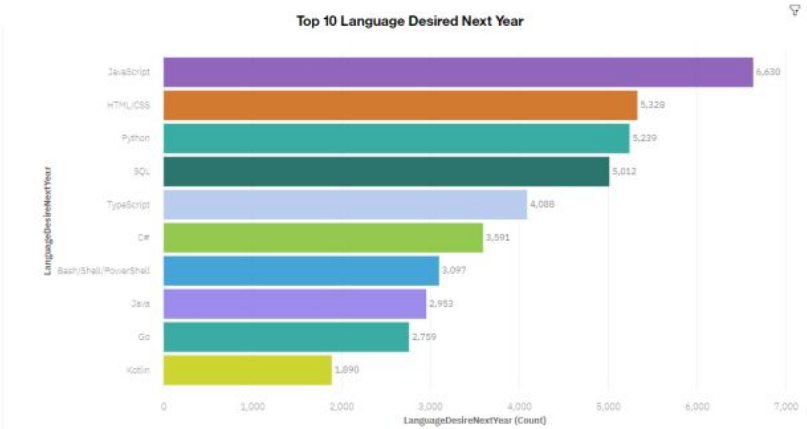
Dashboard

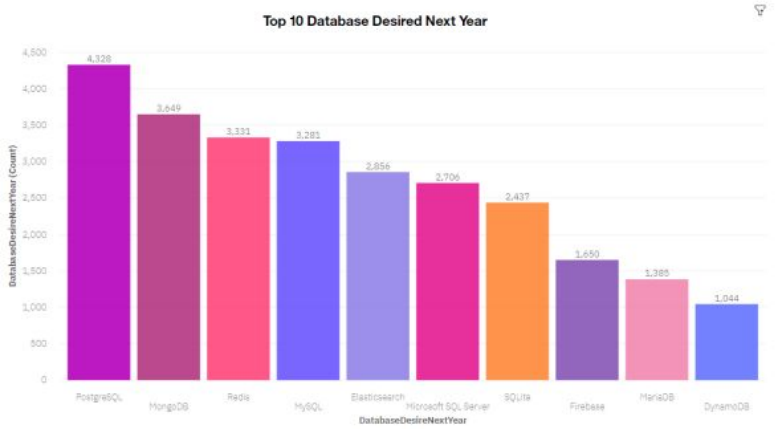
Current Technology Usage

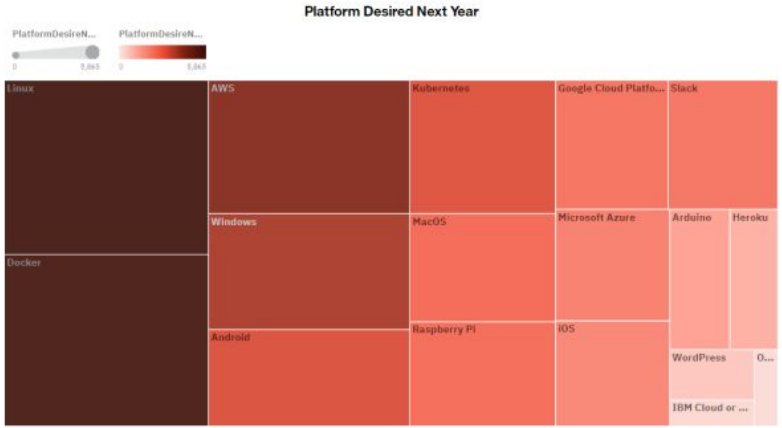


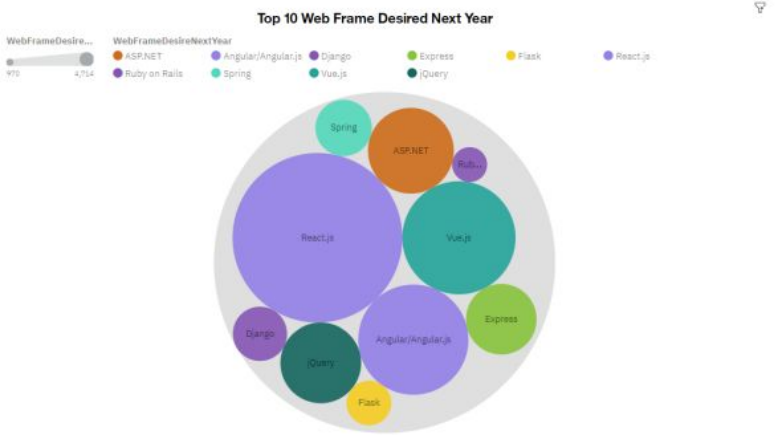


Future Technology Usage

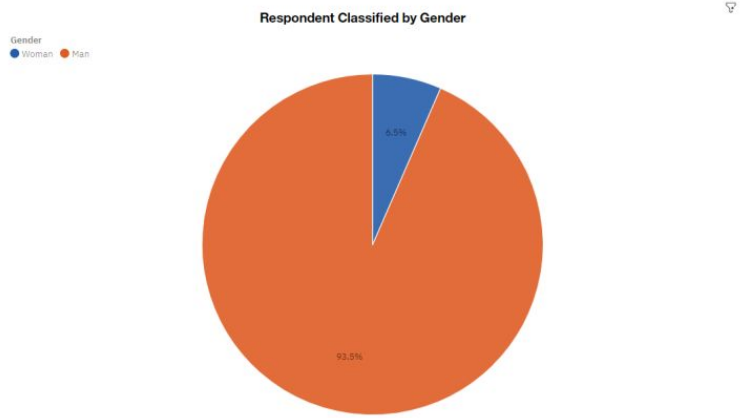


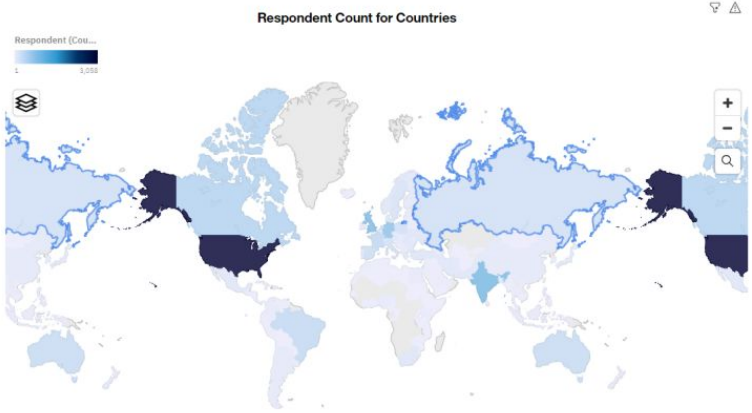


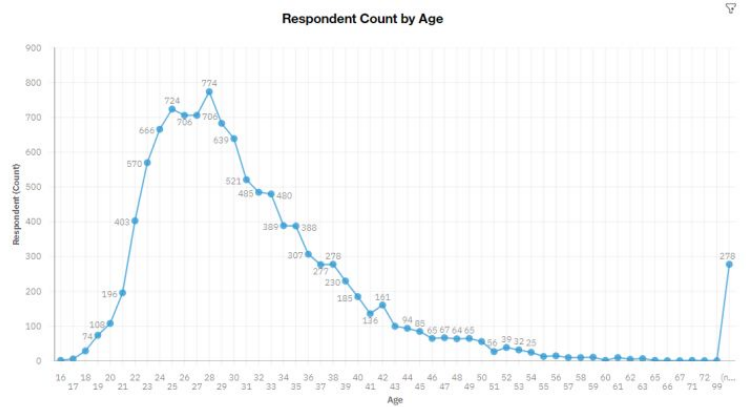


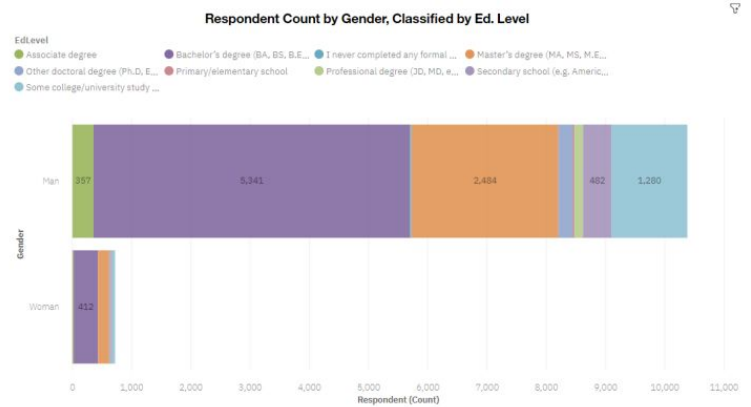


Demographics









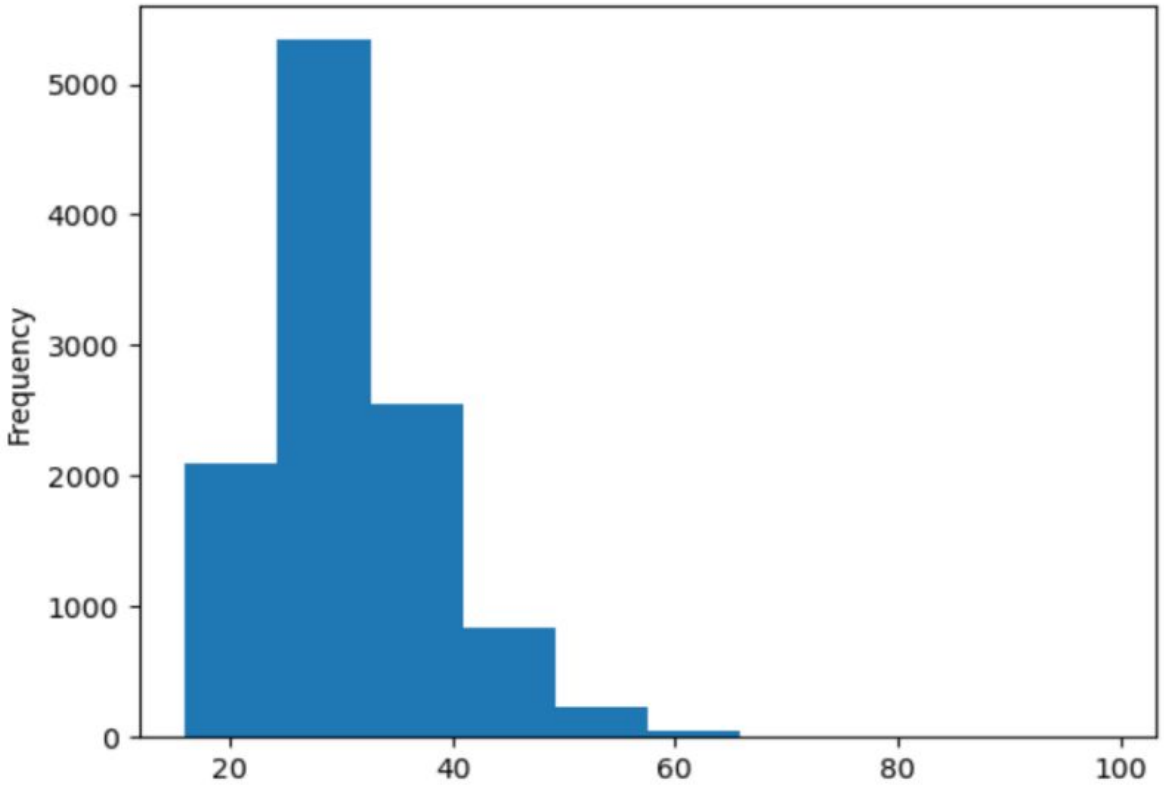
Conclusion

Conclusion

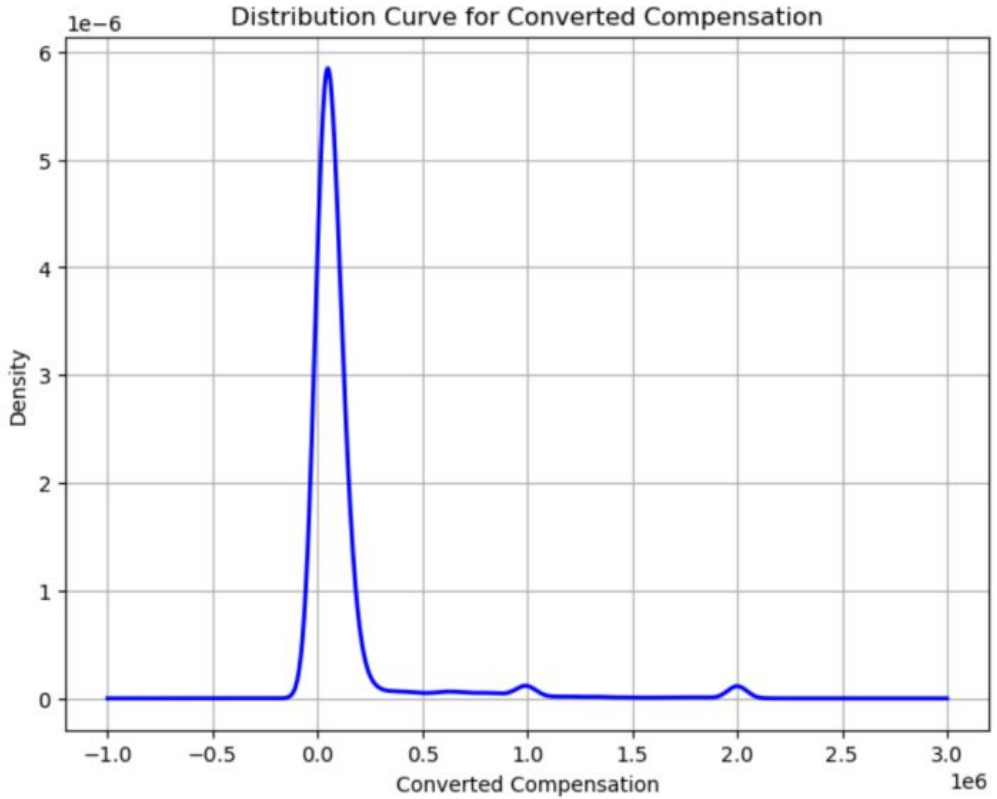
- JavaScript and HTML/CSS are expected to remain in the top 10 most-used technologies for years to come, as they are fundamental to nearly every web-based application
- Database preferences will continue to fluctuate among developers due to the rapid pace of technological advancements and emerging tools
- The survey data we used consisted primarily of female respondents, with the majority residing in the United States
- Most of the respondents were within the 20–40 age range, reflecting a young and active demographic in the tech industry

Appendix

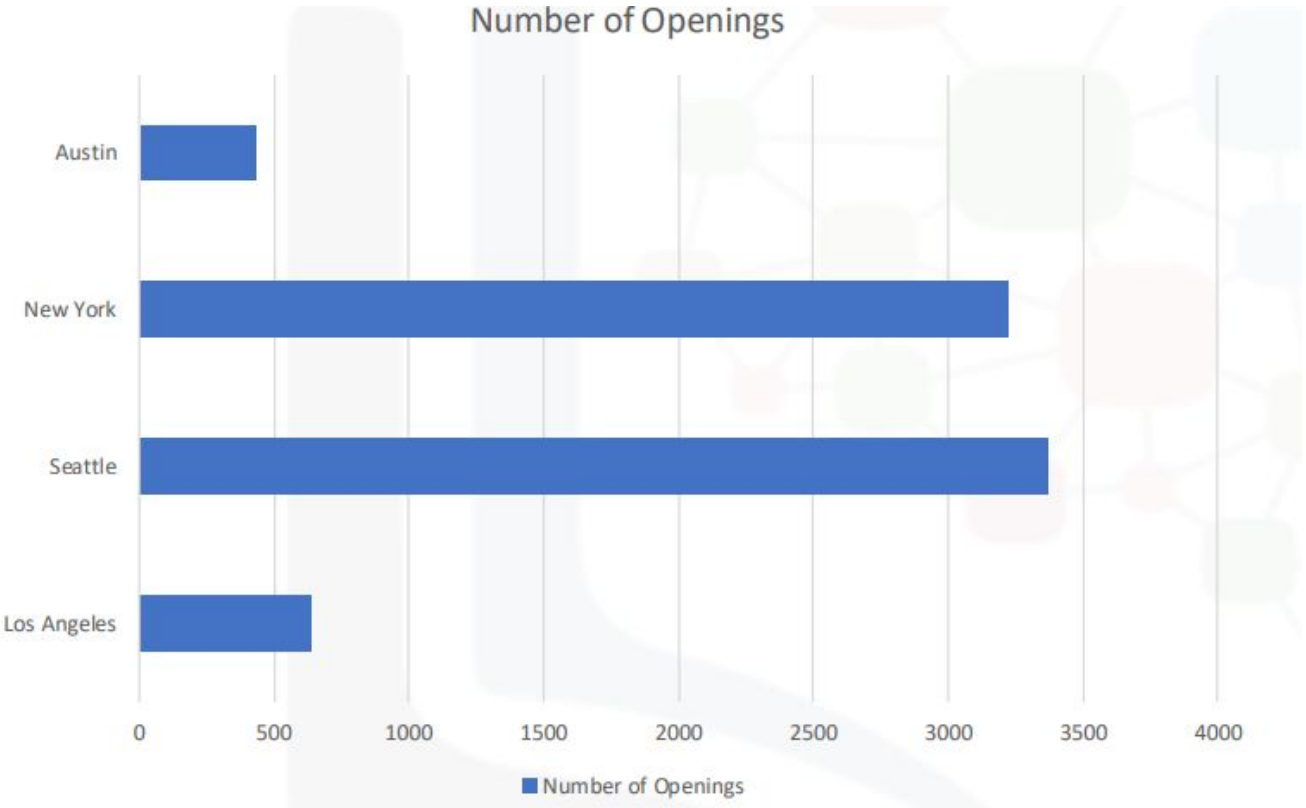
Distribution of Age from Survey



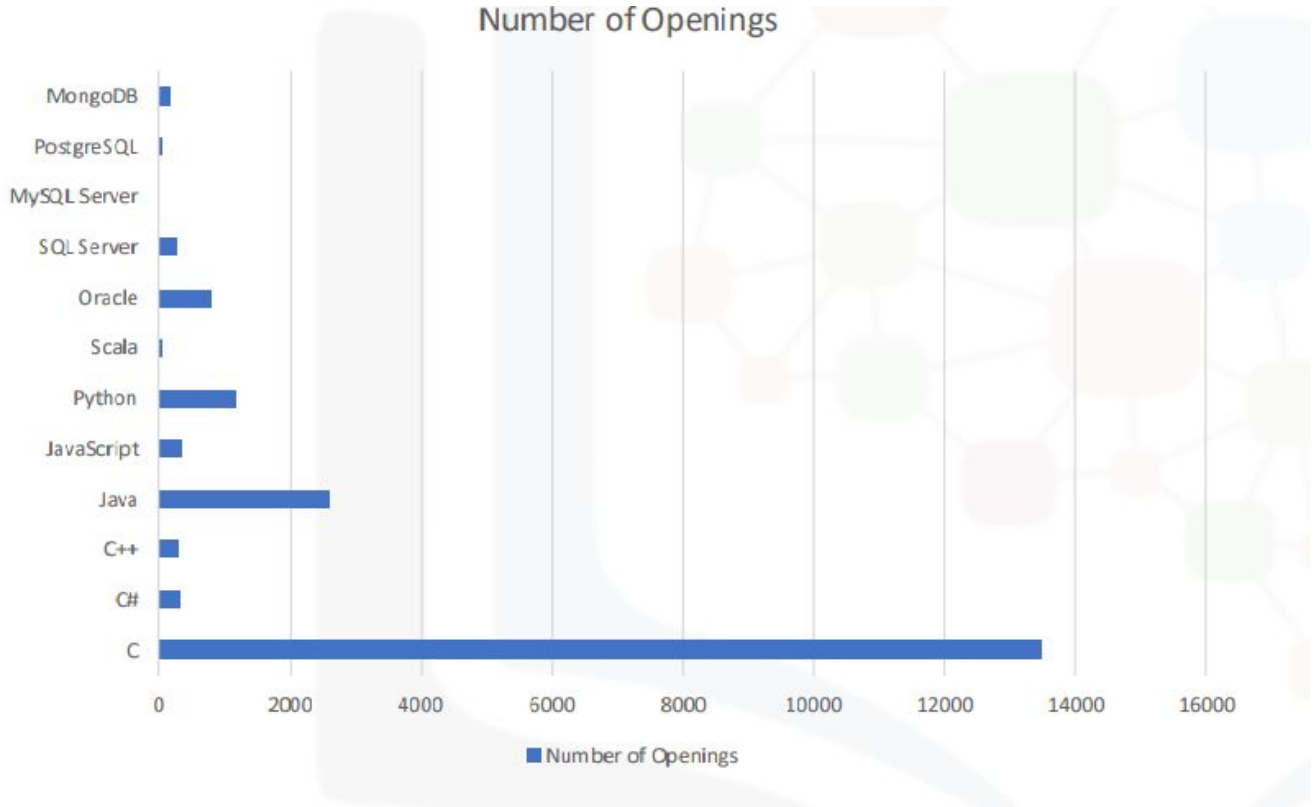
Converted Compensation Curve



Number of Job openings in Popular Cities



Number of Job openings per Technology



THANK YOU