Stack Overflow Developer survey 2019 Analysis

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OUTLINE

- Executive Summary

- Introduction

- Methodology

- Results
  - Visualization – Charts
  - Dashboard

- Discussion
  - Findings & Implications

- Conclusion

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EXECUTIVE SUMMARY

- The survey background and how the data is collected.

- The goal of the survey is to find out what is the:
  - Most desirable language and Databases
  - Most desirable webframe Platforms

- Methodology description.
  - Data gathering.
  - Data analysis.
  - Data visualizations.

- Results presentation supported by charts

- Discussion of overall findings and implications regarding

- Final conclusions of the research.

INTRODUCTION

- Stack Overflow's annual Developer Survey is one of the largest and most comprehensive surveys of software developers around the world. It gathers insights into programming languages, tools, technologies, job preferences, salary trends, etc.

- The purpose of this research is to use this survey data to describe and predict how people are using programming languages, platfromw, database and framworks now and in the future.

METHODOLOGY

- Data Source: Stake Overflow Developer Survey 2019
- Data collecting
  - API
  - Web Scraping
  - Dedecated liberary
- Data cleaning and wrangling with Python.
- Exploratory data analysis
  - Analyzing distribution
  - Handling outliers
  - Determine correlations
- Data visulation
  - Using Python languange.
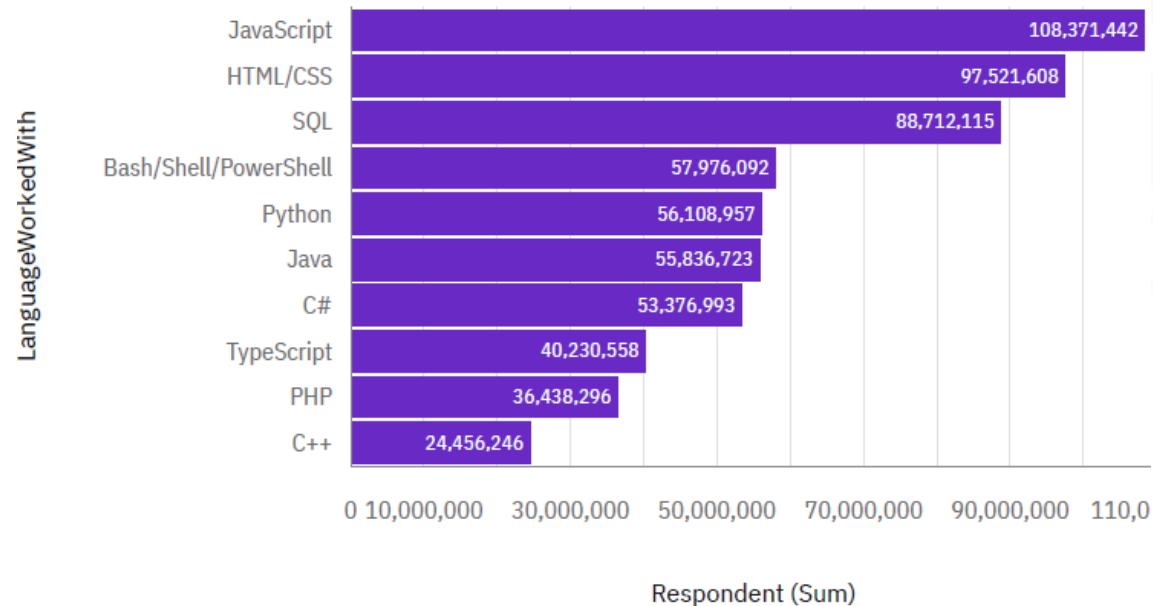 - Using IBM Cognos
- Final Report

RESULTS

Through the analysis of survey data, we have arrived at clear conclusions regarding several technological trends and current situations in the IT industry. Please follow me to the next slides.
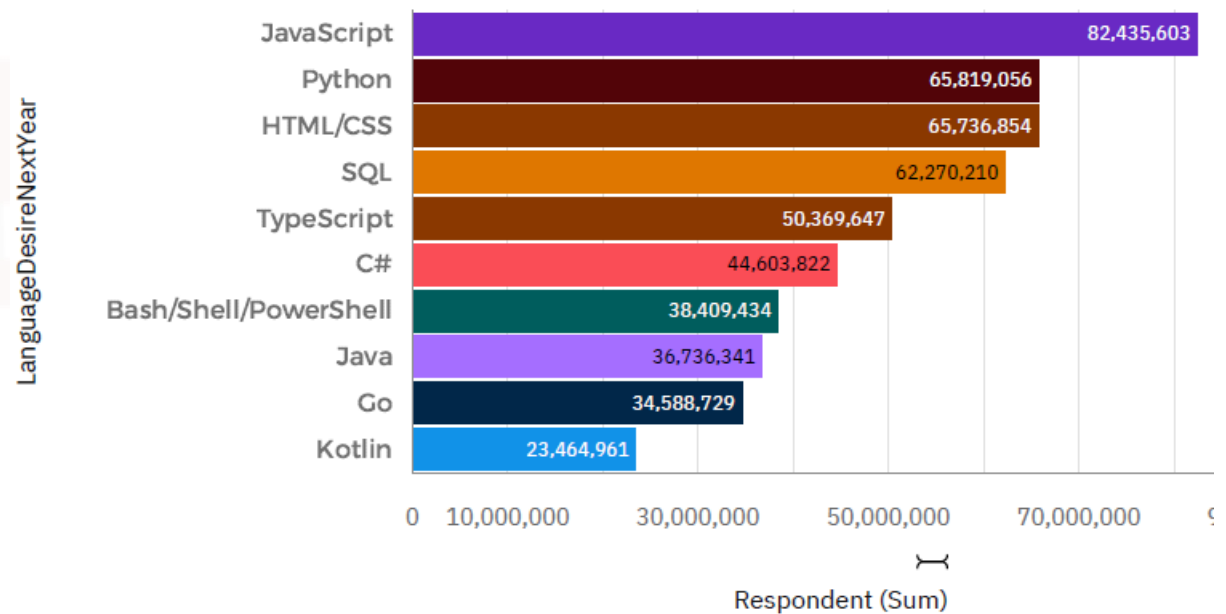
PROGRAMMING LANGUAGE TRENDS

Current Year

Top 10 LanguageWorkedWith

LanguageWorkedWith	Respondent (Sum)
JavaScript	108,371,442
HTML/CSS	97,521,608
SQL	88,712,115
Bash/Shell/PowerShell	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

Next Year

Top 10 LanguageDesireNextYear

LanguageDesireNextYear	Respondent (Sum)
JavaScript	82,435,603
Python	65,819,056
HTML/CSS	65,736,854
SQL	62,270,210
TypeScript	50,369,647
C#	44,603,822
Bash/Shell/PowerShell	38,409,434
Java	36,736,341
Go	34,588,729
Kotlin	23,464,961

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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript is the most popular programming language in 2019.

- HTML/CSS, SQL are second and third in demand language on the job market.

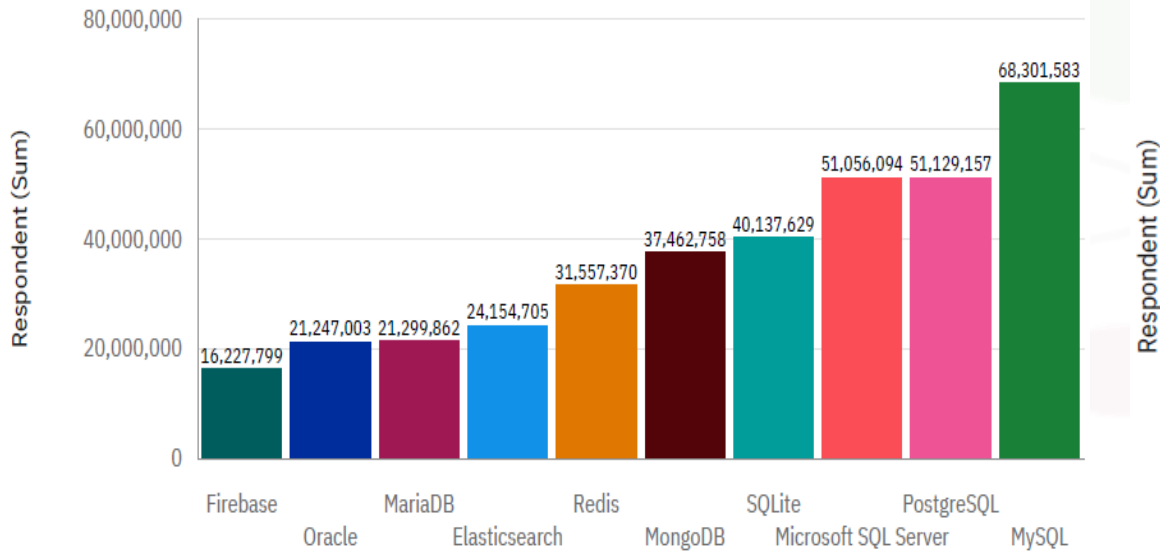- Python, TypeScript might jump up to the front next year.

Implications

- Web development and data handling languagea wil keep in high demand in the future.

- C++ might fall out of the TOP 10 language next year.

- C# will almost keep the same in the next year.

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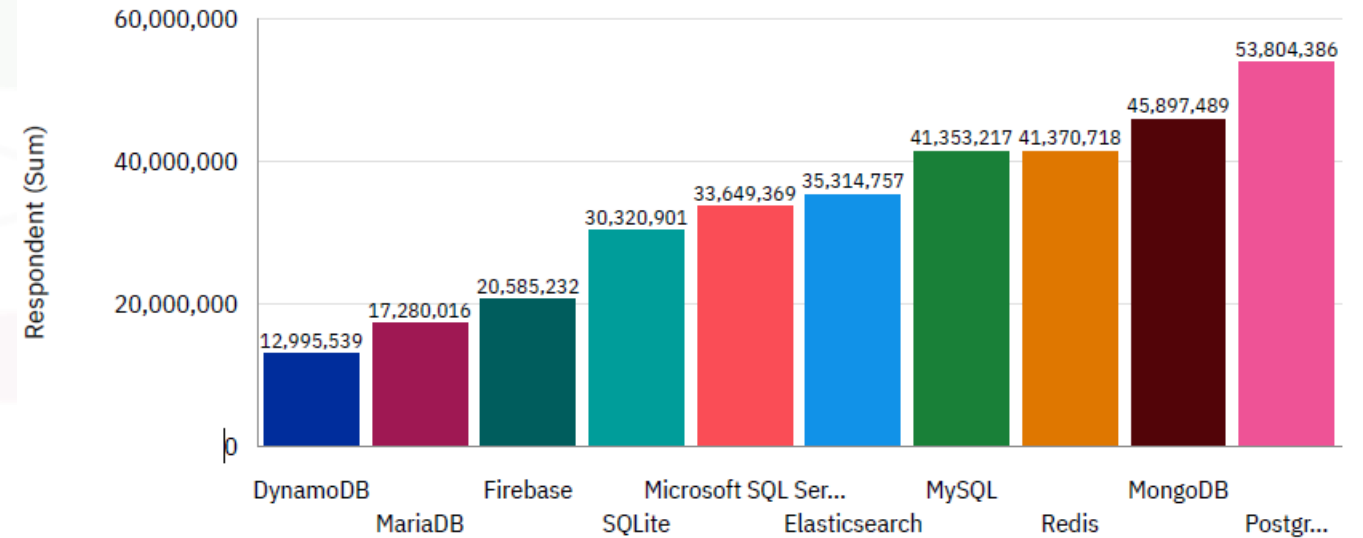
DATABASE TRENDS

Current Year

Top 10 DatabaseWorkedWith

Next Year

Top 10 DatabaseDesireNextYear

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL and PostgreSQL are the #1 and #2 Database in the market

- MS SQL and Sqlite are the less in demand.

- MongoDB as a non SQL database become more interesting to people

Implications

- PostgreSQL might become the most popular DMMS next year

- MongDB may surpass MS SQL and MySQL to become the second-ranked DBMS. Means people are more interested in non SQL DBMS
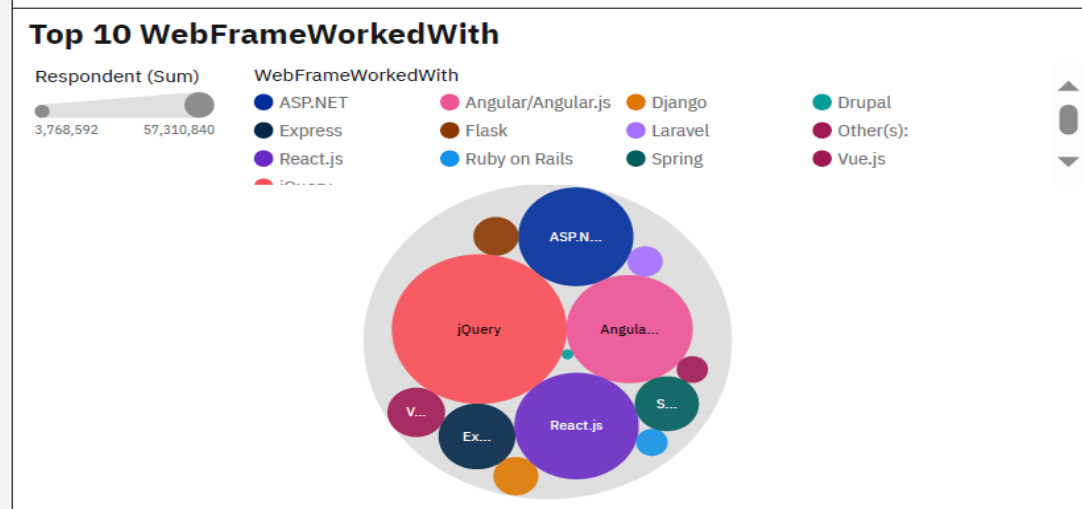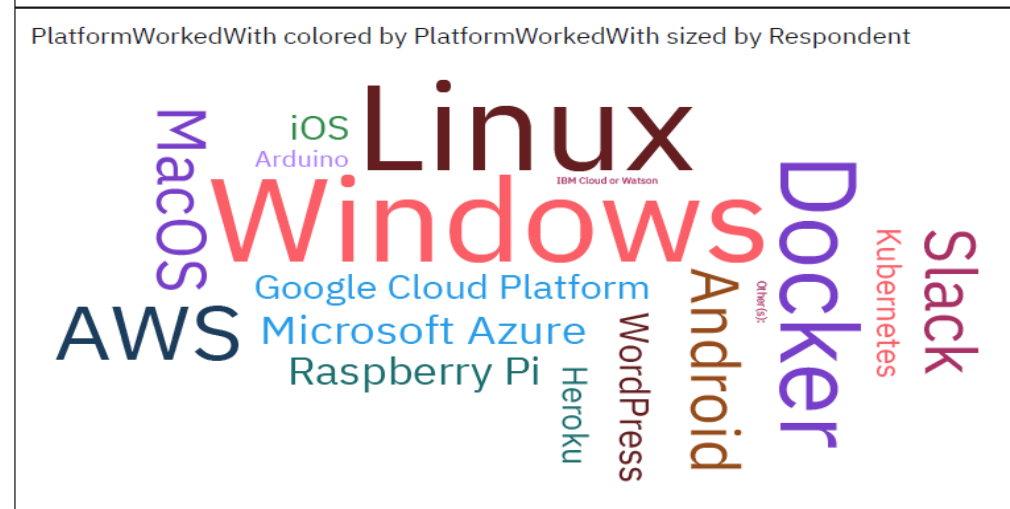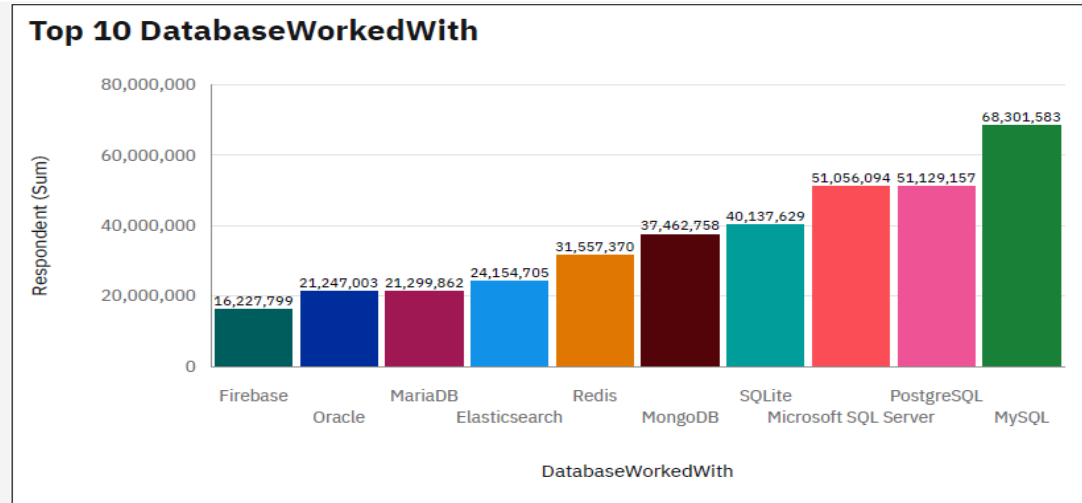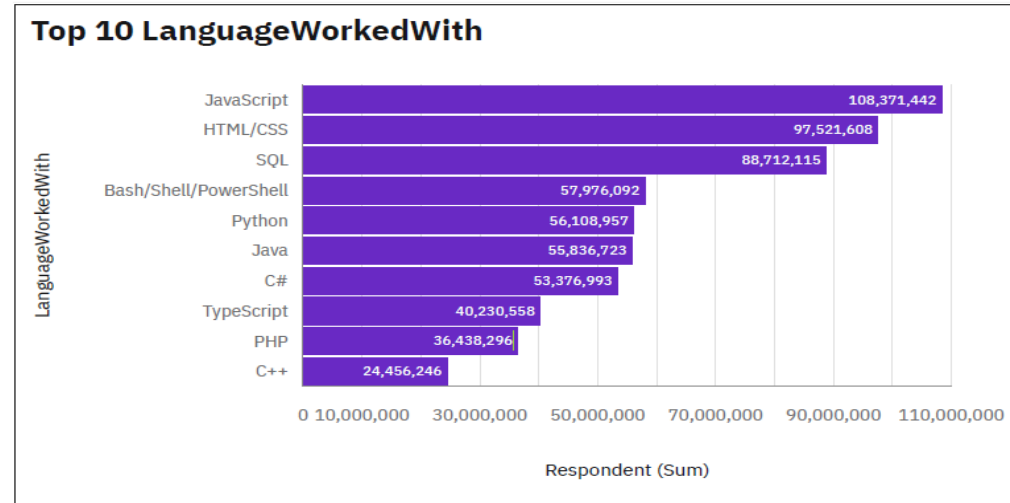
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DASHBOARD

https://github.com/wahudong/IBM-Data-Analyst/blob/main/IBM%20Capstone%20Project%20Dashboard.pdf
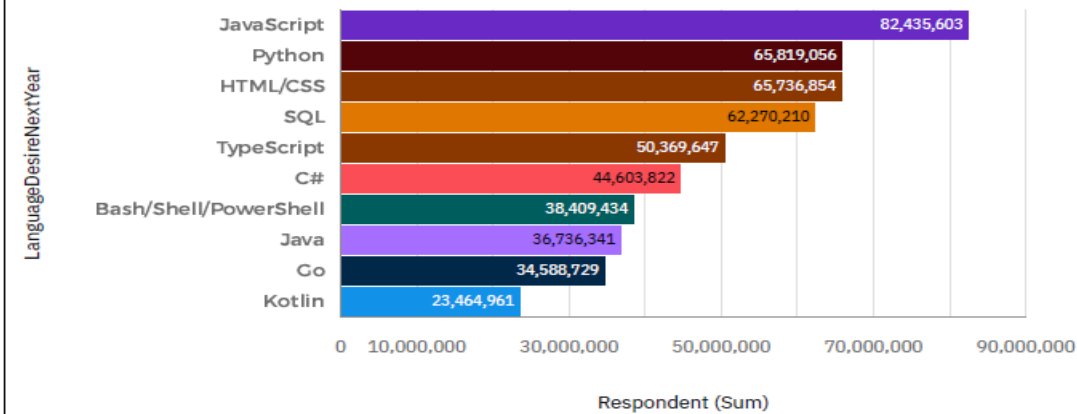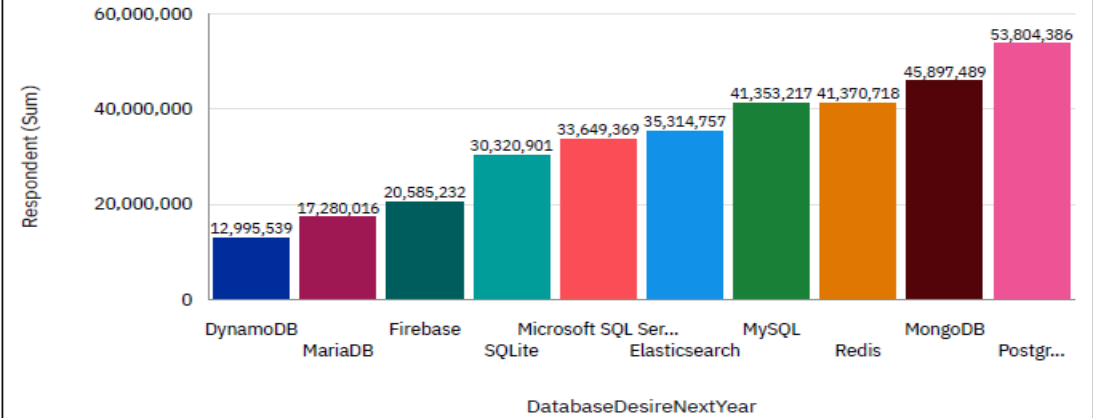
DASHBOARD TAB 1

Current Technology Usage

Top 10 LanguageWorkedWith

LanguageWorkedWith	Respondent (Sum)
JavaScript	108,371,442
HTML/CSS	97,521,608
SQL	88,712,115
Bash/Shell/PowerShell	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

Top 10 DatabaseWorkedWith

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

PlatformWorkedWith colored by PlatformWorkedWith sized by Respondent

Top 10 WebFrameWorkedWith

Respondent (Sum)

3,768,592 — 57,310,840

WebFrameWorkedWith

- ASP.NET
- Angular/Angular.js
- Django
- Drupal
- Express
- Flask
- Laravel
- Other(s):
- React.js
- Ruby on Rails
- Spring
- Vue.js

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DASHBOARD TAB 2

Future Technology Trend

Top 10 LanguageDesireNextYear

LanguageDesireNextYear	Respondent (Sum)
JavaScript	82,435,603
Python	65,819,056
HTML/CSS	65,736,854
SQL	62,270,210
TypeScript	50,369,647
C#	44,603,822
Bash/Shell/PowerShell	38,409,434
Java	36,736,341
Go	34,588,729
Kotlin	23,464,961

Top 10 DatabaseDesireNextYear

Database	Respondent (Sum)
DynamoDB	12,995,539
MariaDB	17,280,016
Firebase	20,585,232
SQLite	30,320,901
Microsoft SQL Ser...	33,649,369
Elasticsearch	35,314,757
MySQL	41,353,217
Redis	41,370,718
MongoDB	45,897,489
Postgr...	53,804,386

PlatformDesireNextYear

Linux, Docker, AWS, Windows, Android, Kubernetes, Slack, Microsoft Azure, MacOS, iOS, Arduino, Raspberry Pi, Google Clo..., Heroku, WordP..., I..., Other(s):
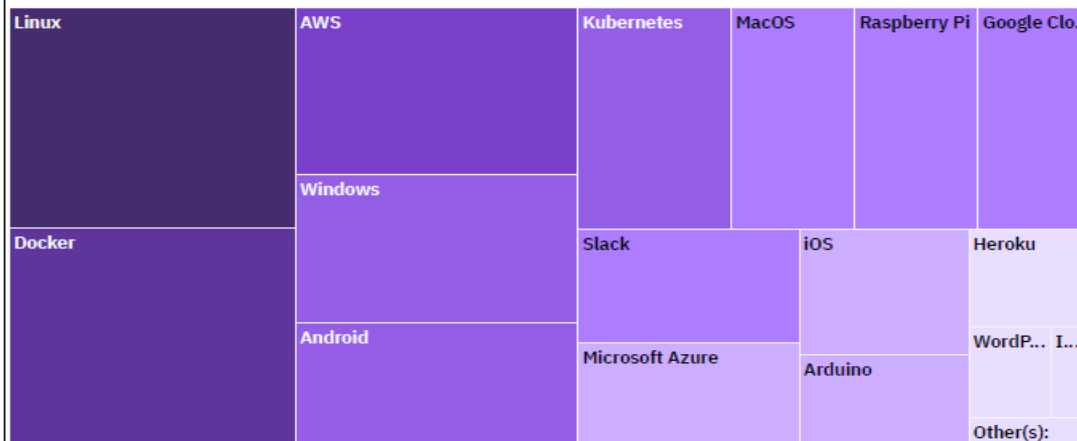
Top 10 WebFrameDesireNextYear
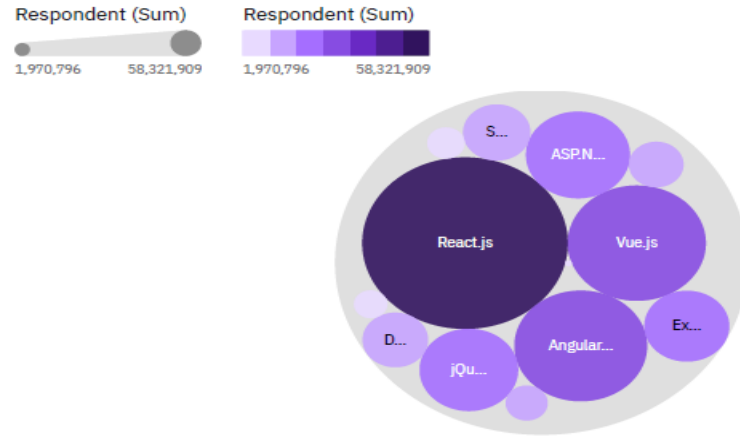
Respondent (Sum) 1,970,796 – 58,321,909

S...., ASP.N..., React.js, Vue.js, D..., jQu..., Angular..., Ex...

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DASHBOARD TAB 3
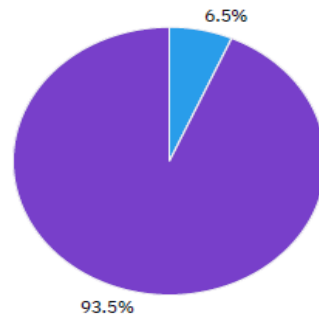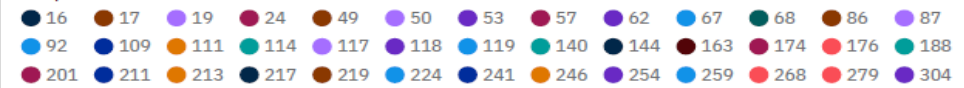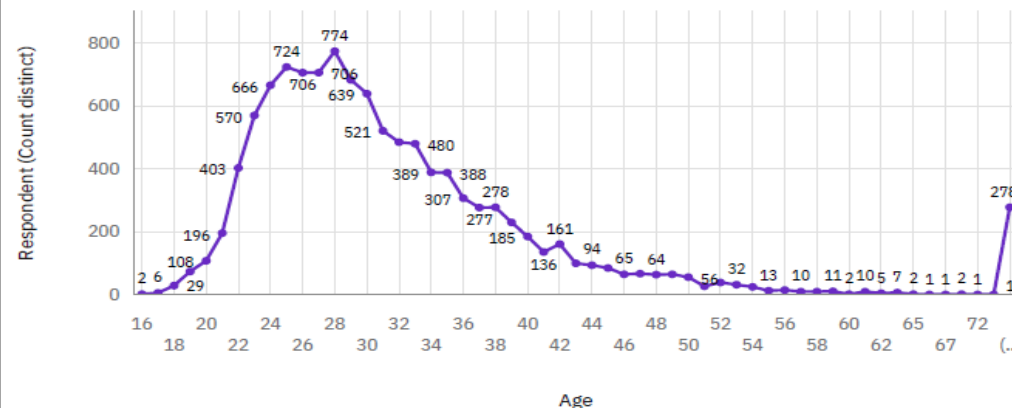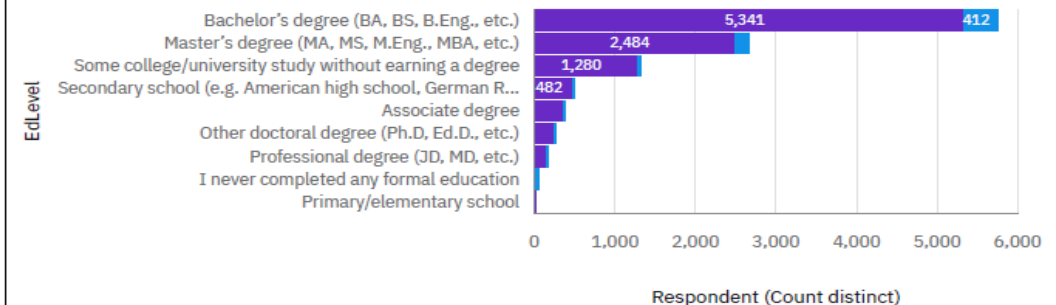
DISCUSSION

- Technologies evolve rapidly.
- Keeping our knowledge updated is crucial to avoid being left behind
- Open source product become more popular in recent years.

OVERALL FINDINGS & IMPLICATIONS

Findings

- Javascript and Python will become most popular language.

- PostgreSQL and MongoDB will stay in the highest demand.

- React will gos up to the #1 web framework position. Vue, Angular will be the less demand.

- In software development industry, 93.5% people are male while 6.5% people are female

Implications

- Get ready for the Non-SQL database.

- Software developers in undeveloped country.

- Help female more easy to get into software development industry

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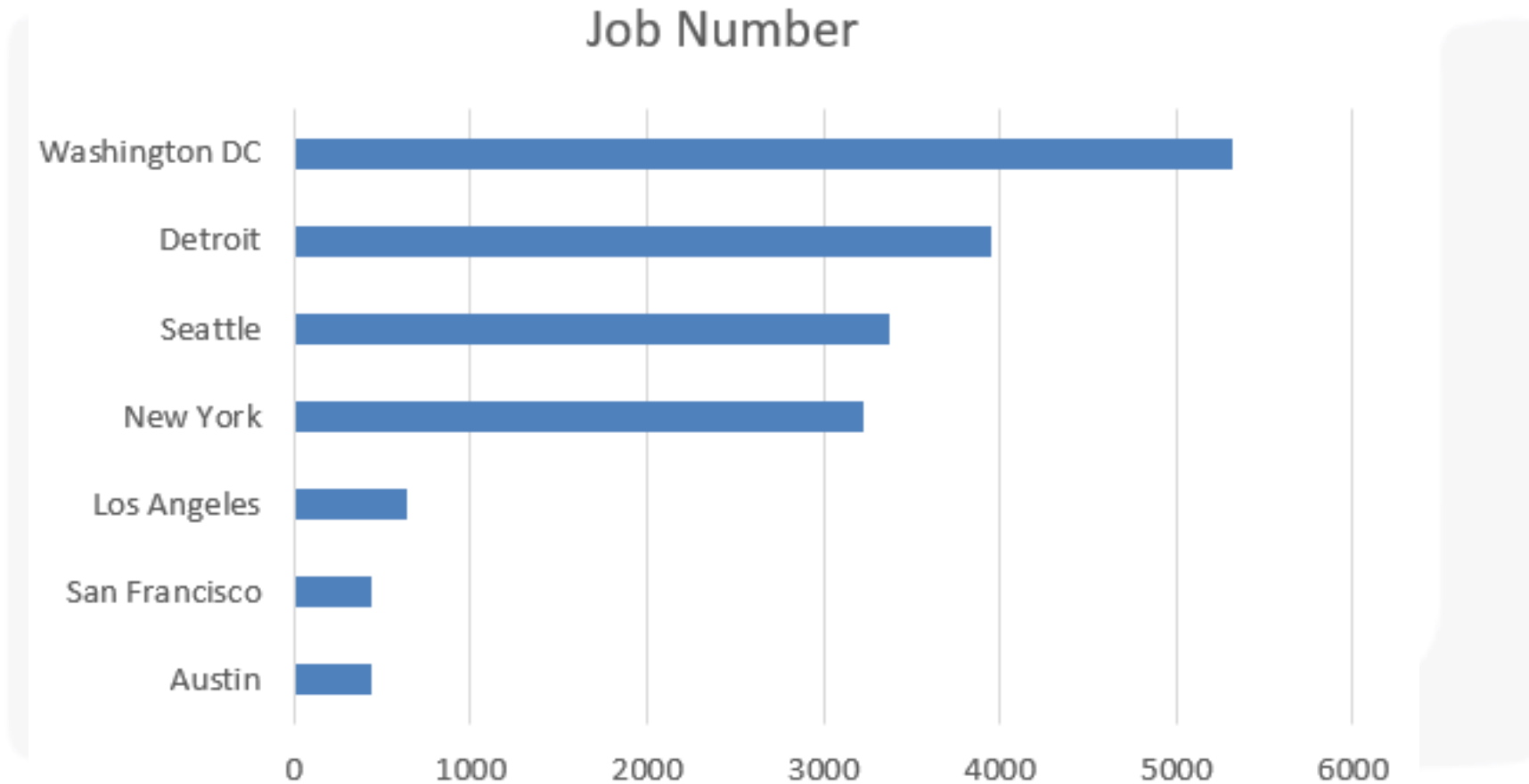
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CONCLUSION

- The trends in IT industry is keep changing over time.

- People need to keep learning new technologies to avoid being left behind.

- More and more people are interested in non-SQL database.

- Open source cross platform language will be more popular.

APPENDIX

JOB POSTINGS

POPULAR LANGUAGES

Average Annual Salary