STACK OVERFLOW DEVELOPER SURVEY 2019 REPORT

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OUTLINE

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

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EXECUTIVE SUMMARY

- This report is a summary of the analysis of the 2019 Stack Overflow Developers Survey.

- This report shows the trend in :
  - Current Technology Usage
  - Future Technology Trend
  - Demographics

among developers around the world.

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INTRODUCTION

- Stack Overflow is a question and answer site for professional and enthusiast programmers.

- Annually, they carry out a survey to gain insight about developers around the world.

- As part of the IBM Data Analyst Capstone Project, this report gives insight on a modified survey result of the Stack Overflow Developers Survey carried out in 2019.

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METHODOLOGY

- Collect and organize Report Data using Web Scraping

- Data Wrangling

- Perform Exploratory Data Analysis
  - Analyze Data Distribution
  - Handle Outliers
  - Explore Correlations

- Data Visualizations
  - Explore data further by creating visualizations to gain important insight
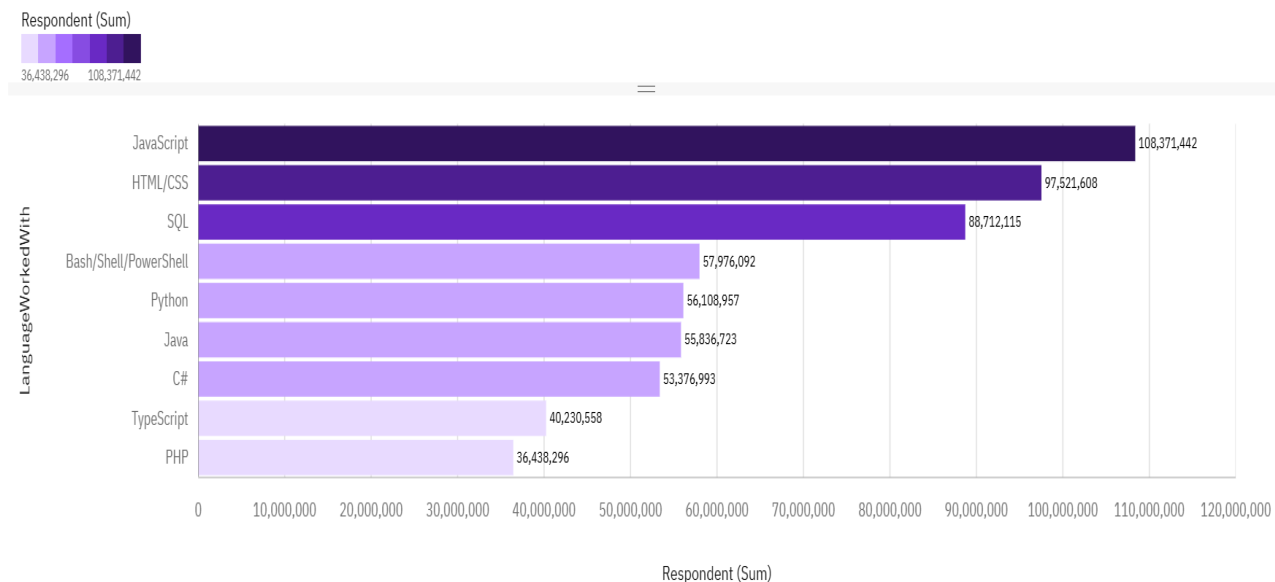 - Create a Dashboard of the most important visualizations
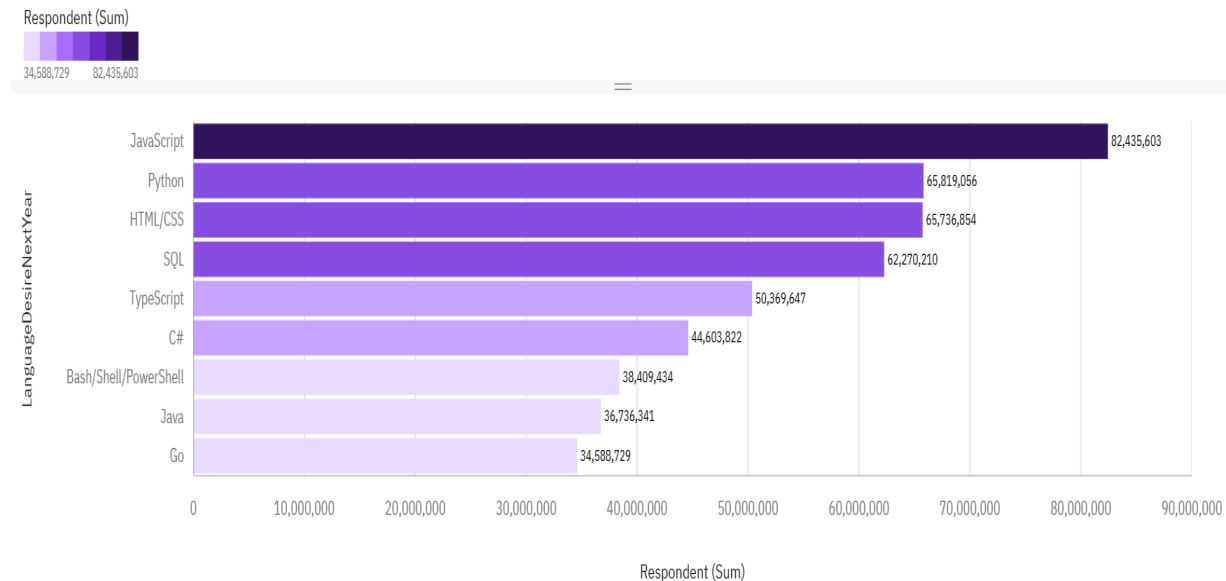
RESULTS

PROGRAMMING LANGUAGE TRENDS

Current Year(2019)

Next Year(2020)

PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript leads as the top language worked with in 2019 and also the most preferred in the near future.

- Python and TypeScript seem to be the fastest growing programming languages of choice in the next year.

- PHP and Java are gradually falling out of interest

Implications

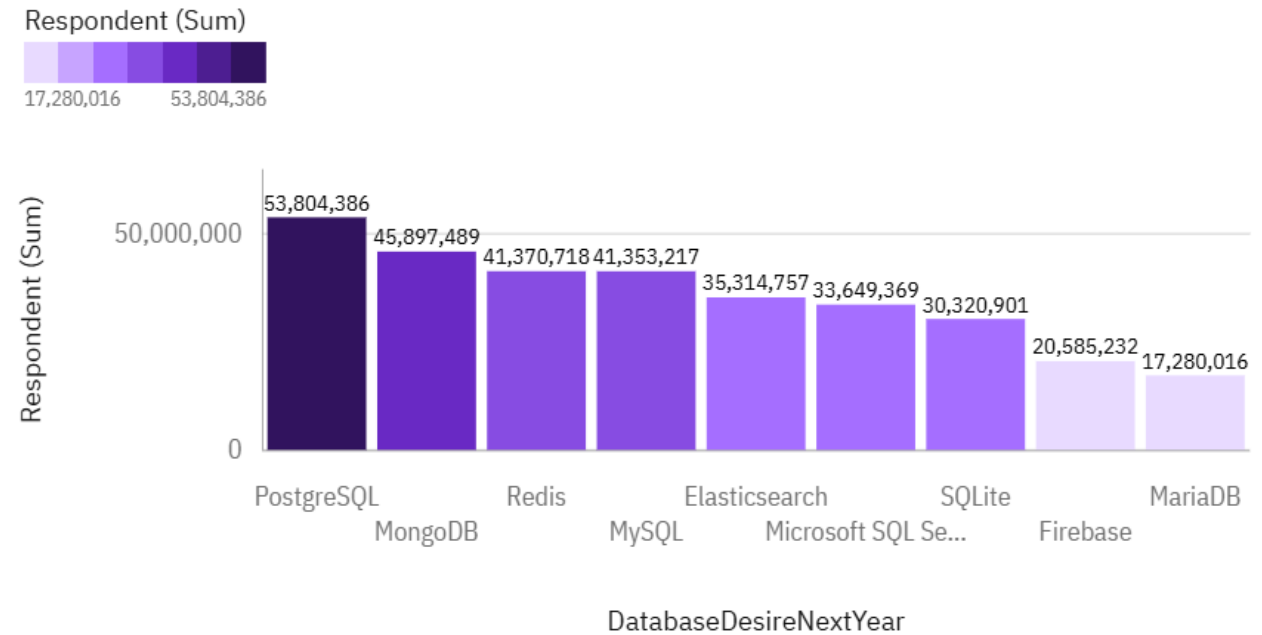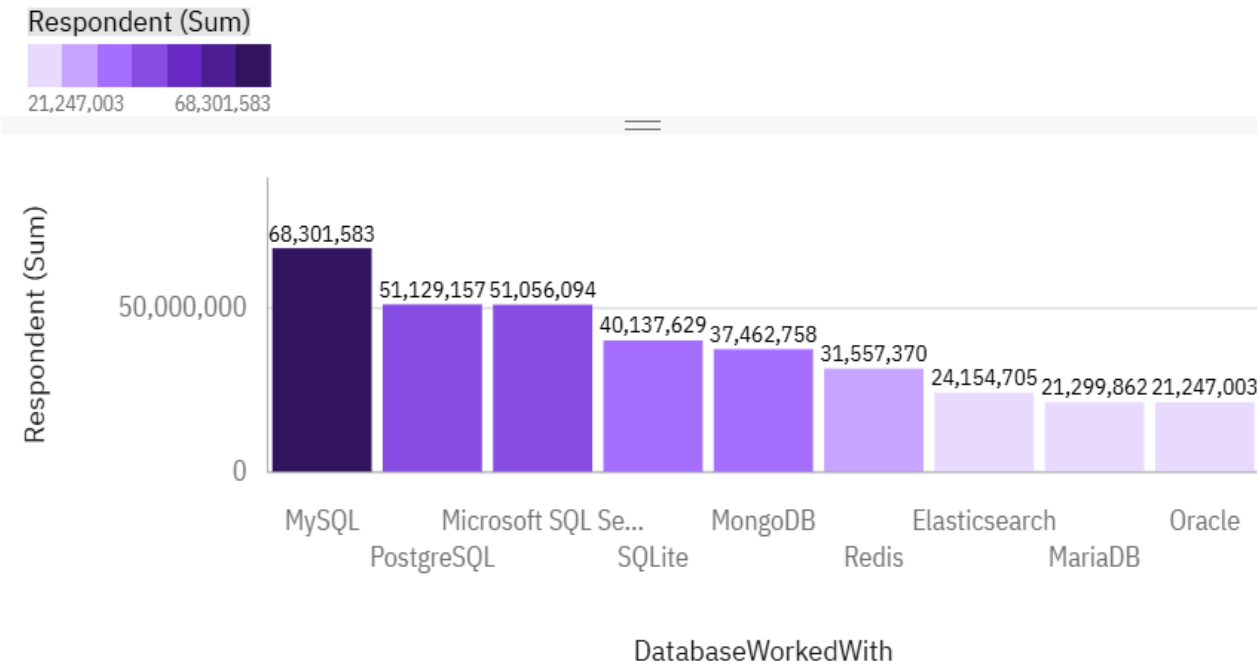- There might be a possible developer language migration from JavaScript to Python

DATABASE TRENDS

Current Year (2019)

Next Year (2020)

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL was the most preferred database this year.

- PostgreSQL closely followed by MongoDB seem to be the fastest growing databases of choice in the next year.

- Firebase and MariaDB are gradually becoming databases of interest to developers.

Implications

- Relational databases seem to still be the leading databases of choice in the future.

- Open-source databases are becoming more popular.

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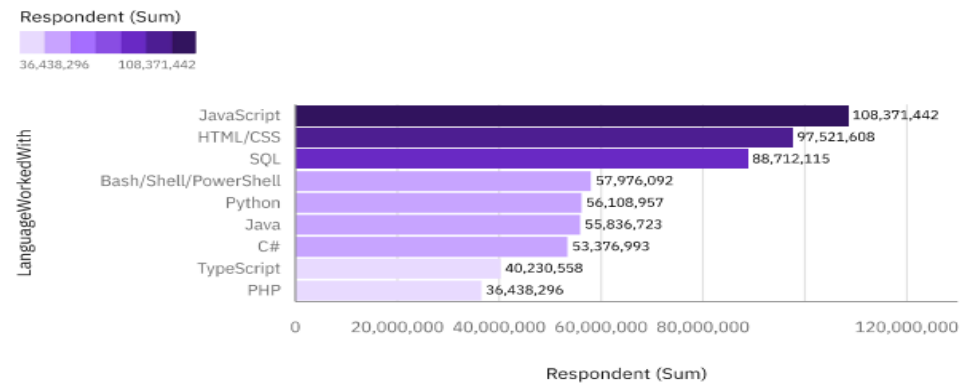
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DASHBOARD

IBM Cognos Dashboard GitHub Link

DASHBOARD TAB 1
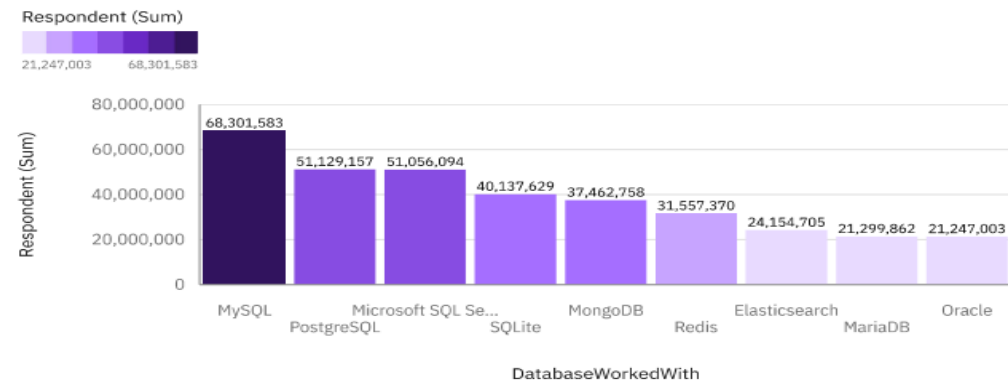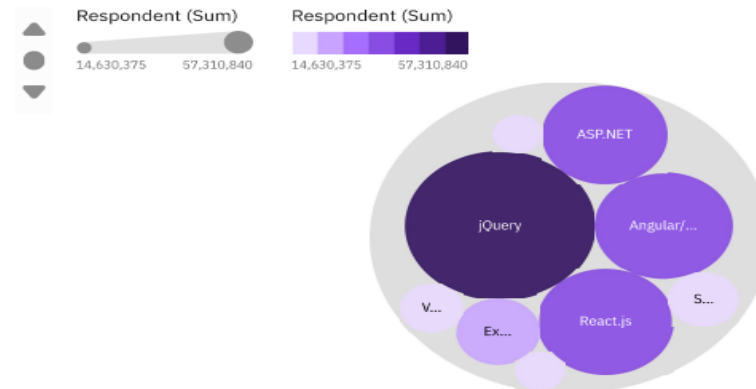
DASHBOARD TAB 2

Future Technology Trend

Top 10 Languages Desired Next Year

Respondent (Sum)
34,588,729 — 82,435,603

Language	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
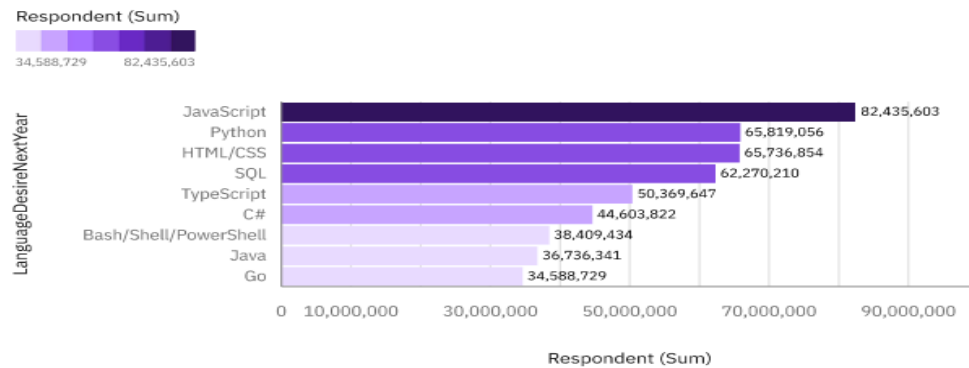
Top 10 Databases Desired Next Year

Respondent (Sum)
17,280,016 — 53,804,386

Database	Respondent (Sum)
PostgreSQL	53,804,386
MongoDB	45,897,489
Redis	41,370,718
MySQL	41,353,217
Elasticsearch	35,314,757
Microsoft SQL Server	33,649,369
SQLite	30,320,901
Firebase	20,585,232
MariaDB	17,280,016
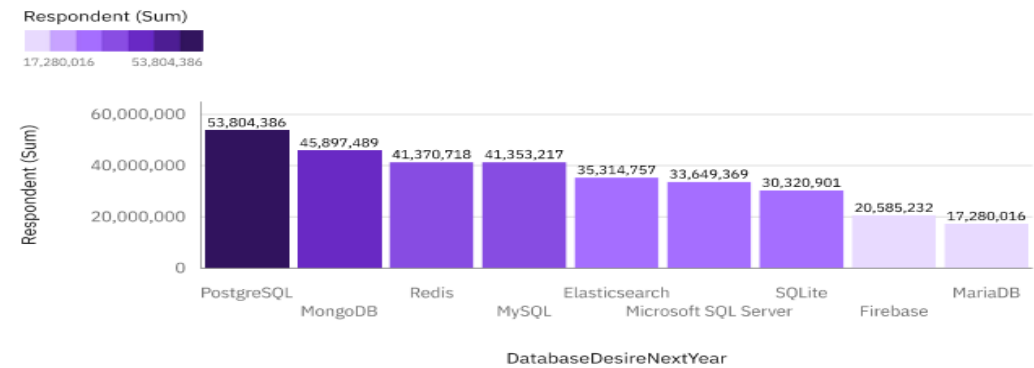
Platforms Desired Next Year

Respondent (Sum) 3,752,980 — 73,486,491
PlatformDesireNe... 307 — 5,865

Linux, Docker, AWS, Windows, Android, Kubernetes, MacOS, Raspberry Pi, Google Cl..., Slack, iOS, Arduino, Microsof..., Heroku, Wo..., IBM ..., Oth...

Top 10 Web Frames Desired Next Year
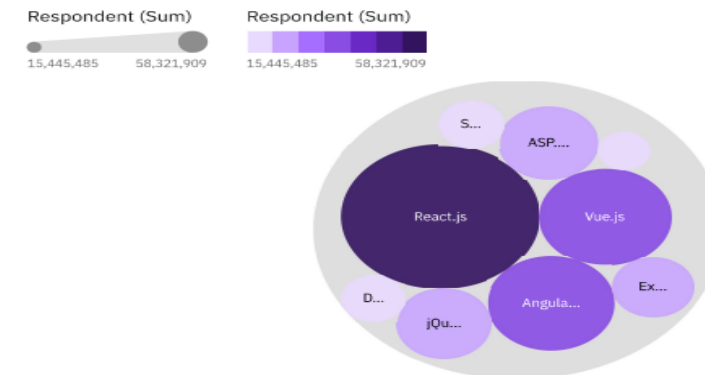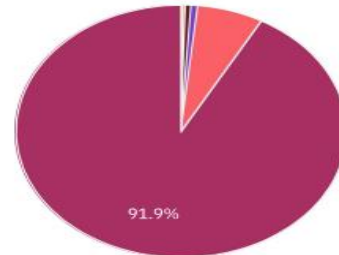
Respondent (Sum) 15,445,485 — 58,321,909
Respondent (Sum) 15,445,485 — 58,321,909

React.js, Vue.js, ASP...., S..., Angula..., Ex..., jQu..., D...

DASHBOARD TAB 3
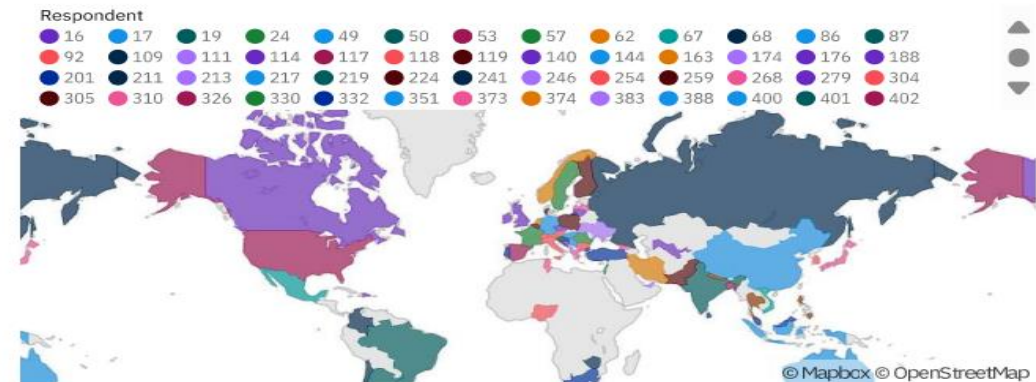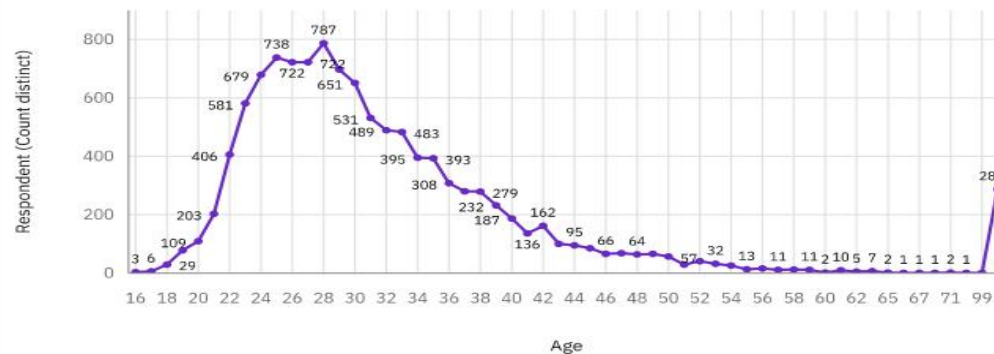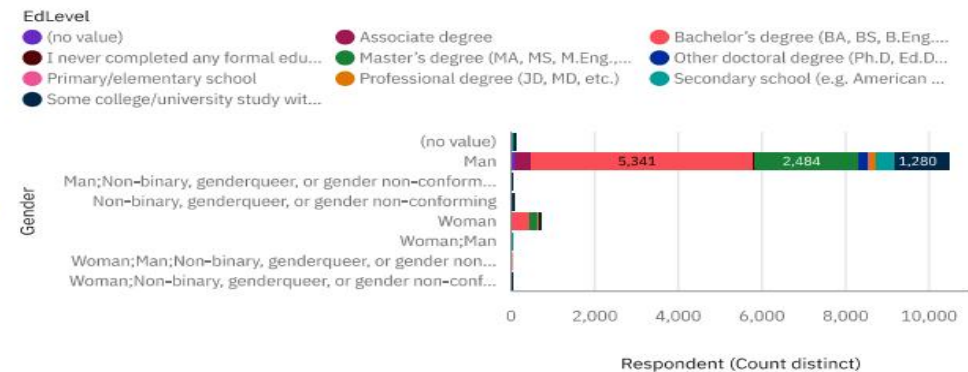
DISCUSSION

OVERALL FINDINGS & IMPLICATIONS

Findings

- JavaScript is the most popular programming language among developers.

- Over 90% of developers that took the survey are male and most of the participants are between the ages of 24 and 32.

- Majority of the participants have at least a Bachelor's Degree or higher.

Implications

- Other genders are not well represented in the analysis as they make up a very small percent(<10%)

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CONCLUSION

- The programming languages and databases that were mostly used this year(2019) may not all be relevant in the next year. To stay relevant as a developer, changes in skill requirements are needed:
  - o Programming languages like JavaScript, Python, HTML/CSS, SQL, TypeScript should be learned, and
  - o Developers should learn how to use databases like PostgreSQL, MongoDB, Redis, MySQL, Elasticsearch
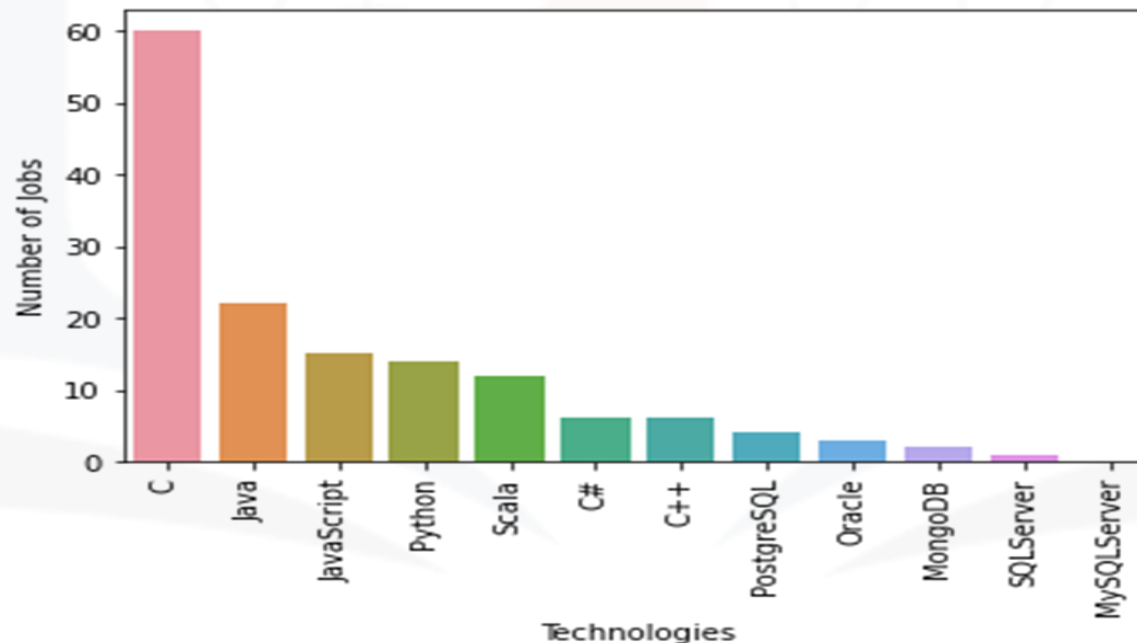 - o Developers should also learn to use React.js and Vue.js web frames.

APPENDIX

Top 5 Databases that developers will be interested in next year
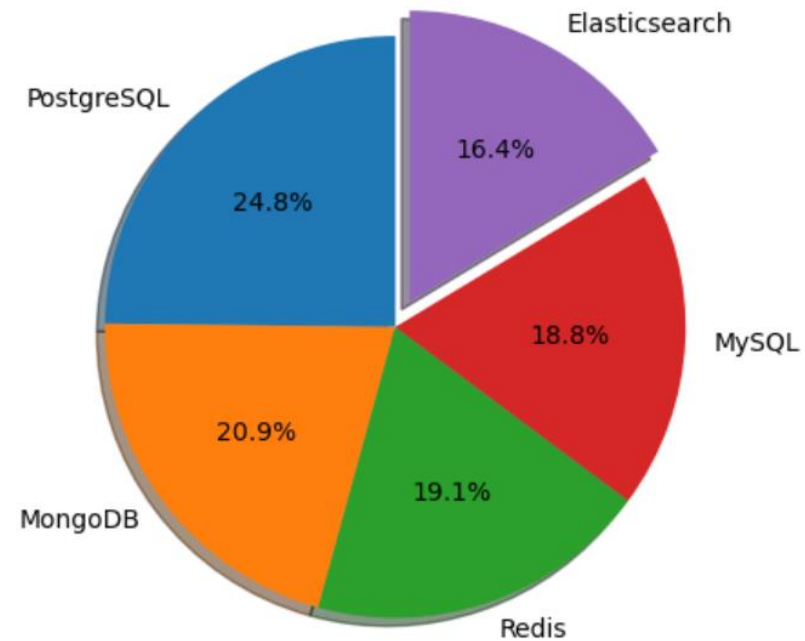
JOB POSTINGS

In Module 1 you have collected the job posting data using Job API in a file named "job-postings.xlsx". Present that data using a bar chart here. Order the bar chart in the descending order of the number of job postings.

POPULAR LANGUAGES

In Module 1 you have collected the job postings data using web scraping in a file named "popular-languages.csv". Present that data using a bar chart here. Order the bar chart in the descending order of salary.