IBM Data Analyst

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OUTLINE

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

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EXECUTIVE SUMMARY

- Programming languages and databases trends

- Demographic survey

- Method description
  - Gathering data.
  - Data analysis.
  - Data visualization.

- Presentation of results

- Discussion of findings and implications

- Final conclusions

INTRODUCTION

- Stack Overflow's annual developer survey for 2019.

- Analyzing trends in software development.

- Covers everything from favorite technologies to job preferences.

- Identifying skill requirements for the future

- Trends to predict where software development is headed.
  - 90,000 developers took this survey.
  - Data from developers around the world.

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METHODOLOGY

- Collecting survey data
  - Stack Overflow developer 2019 survey
  - GitHub job postings
  - Programming languages and annual salary

- Data Wrangling/Exploration

- Exploratory Data Analysis/Data cleaning

- Data Visualizations
  - Highlights the relationships between data
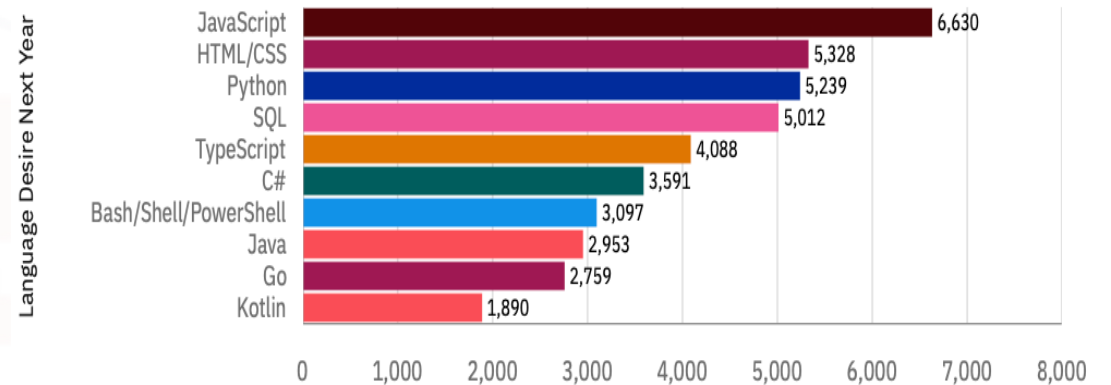
- Dashboard presentation

RESULTS

PROGRAMMING LANGUAGE TRENDS

Current Year
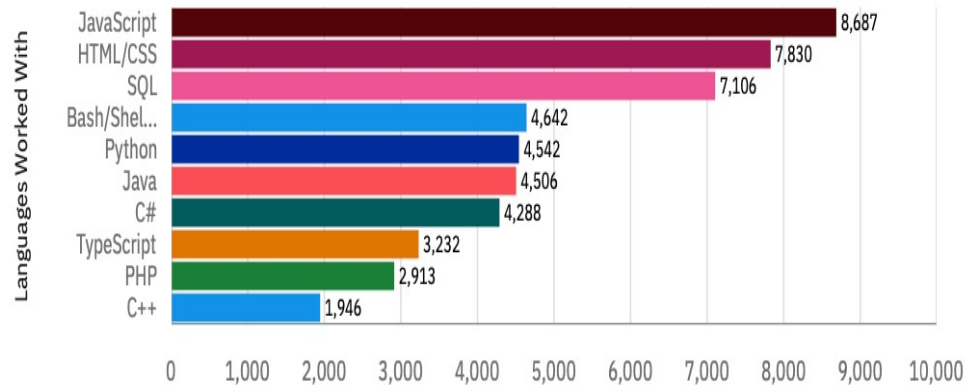
Next Year

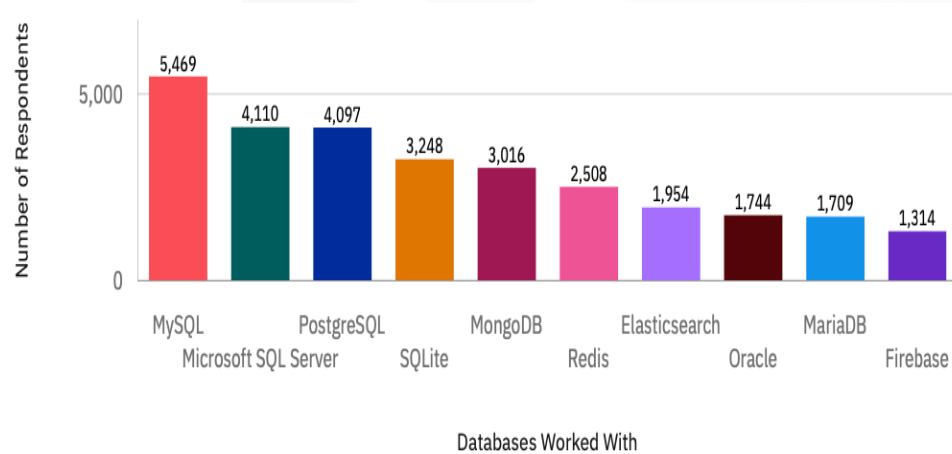# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript and HTML will continue to be the most used programming language.
- Python is becoming more popular.
- C++ becomes a top 10 programming language to learn.

Implications

- Python is on the rise because of AI and machine learning.
- There is a demand for faster more efficient software.
- Cross-Platform development is needed to facilitate data across multiple platforms.
- Web development remains an important are of software development.

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DATABASE TRENDS

Current Year

Next Year
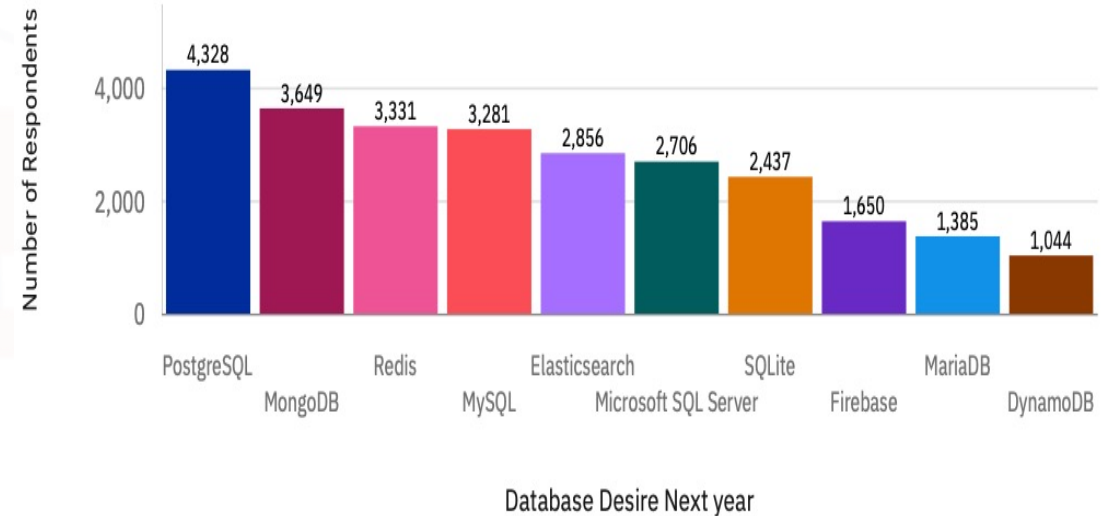
DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Python is the fastest-growing major programming language.

- Firebase is beginning to be phased out by other databases.

- Postgre SQL will become the most used SQL database.

Implications

- Open-sourced databases are still used.

- Cloud-based databases will become more popular.

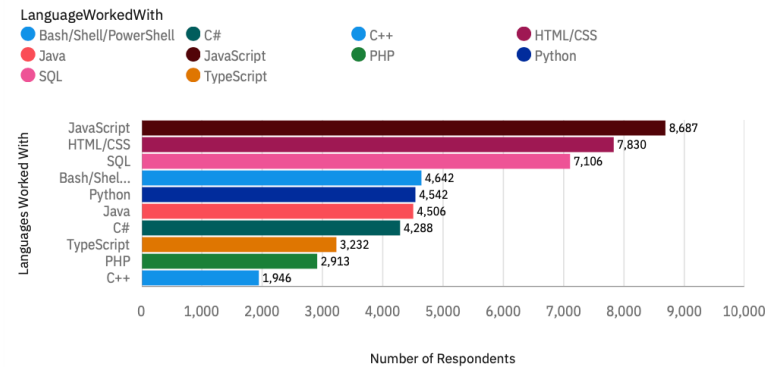- Databases need to scale effortlessly to handle increasing volumes of data.

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DASHBOARD

https://github.com/IsaacStallard00/IBM_Data_Analyst_Capstone_Project

DASHBOARD TAB 1
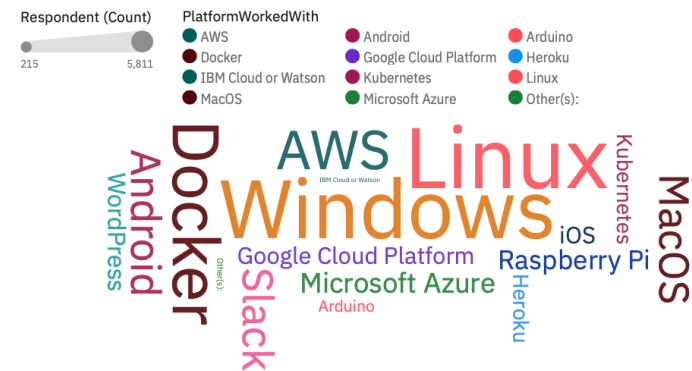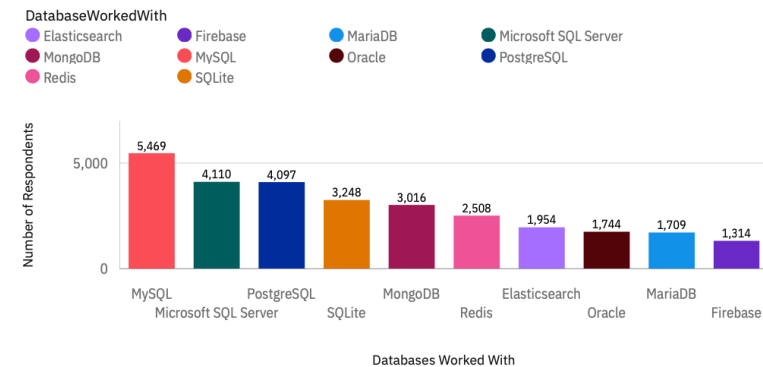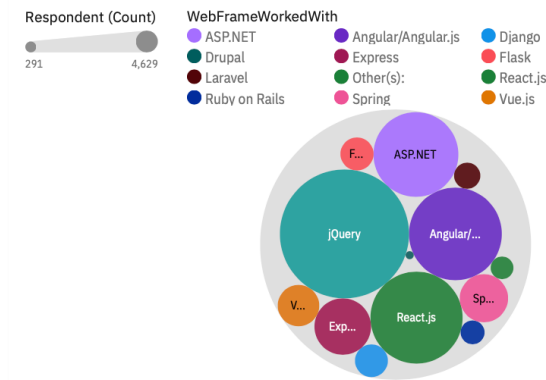
DASHBOARD TAB 2

Future Technology Trend

Respondent by Language Desire Next Year

LanguageDesireNextYear
- Bash/Shell/PowerShell
- C#
- Go
- HTML/CSS
- Java
- JavaScript
- Kotlin
- Python
- SQL
- TypeScript

Language Desire Next Year	Number of Respondents
JavaScript	6,630
HTML/CSS	5,328
Python	5,239
SQL	5,012
TypeScript	4,088
C#	3,591
Bash/Shell/PowerShell	3,097
Java	2,953
Go	2,759
Kotlin	1,890

Respondent by Database Desire Next Year
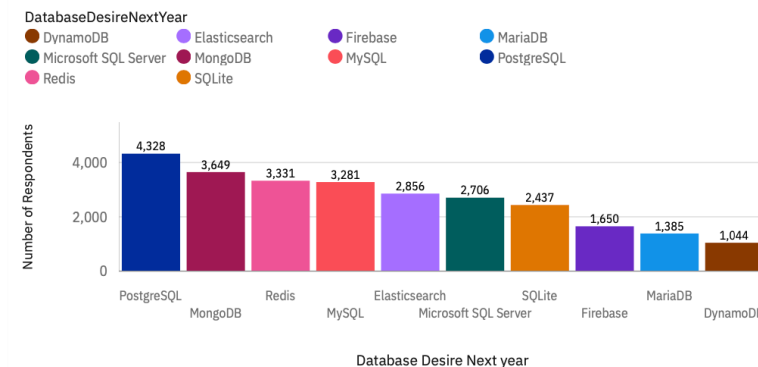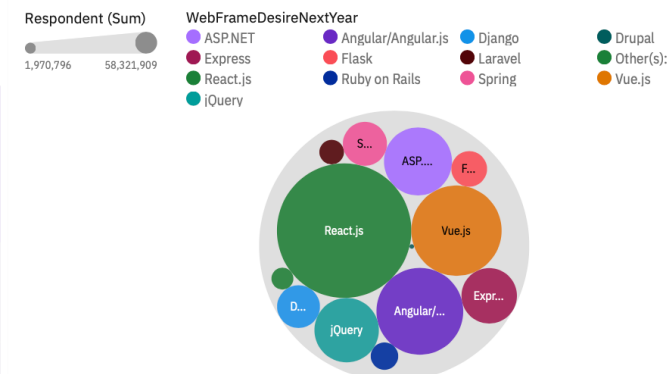
DatabaseDesireNextYear
- DynamoDB
- Elasticsearch
- Firebase
- MariaDB
- Microsoft SQL Server
- MongoDB
- MySQL
- PostgreSQL
- Redis
- SQLite

Database Desire Next year	Number of Respondents
PostgreSQL	4,328
MongoDB	3,649
Redis	3,331
MySQL	3,281
Elasticsearch	2,856
Microsoft SQL Server	2,706
SQLite	2,437
Firebase	1,650
MariaDB	1,385
DynamoDB	1,044

Platform Desire Next Year by Respondent

Respondent (Count) 307 — 5,865
PlatformDesireNe... 307 — 5,865

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

Web Frame Desire Next Year by Respondent

Respondent (Sum) 1,970,796 — 58,321,909

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

DASHBOARD TAB 3
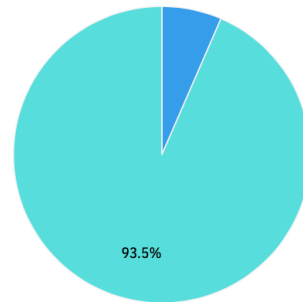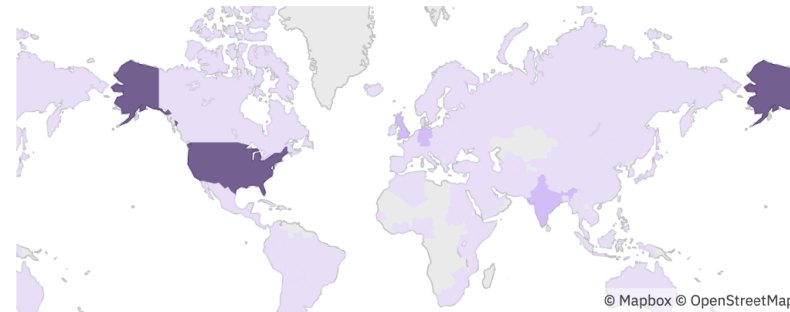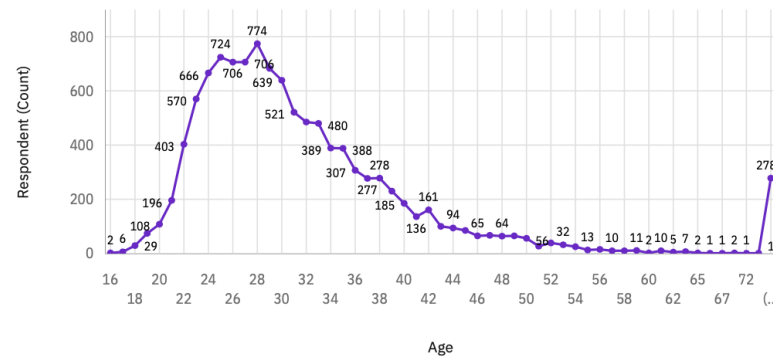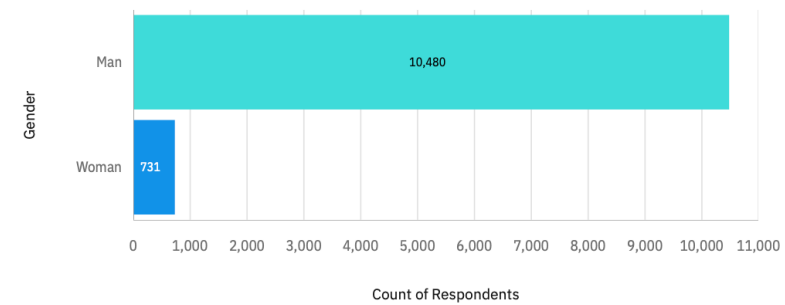
DISCUSSION

- Tech trends now and in the future.

- The importance of training.

- Increasing female participation in the tech field.

- How to decrease the gap in programming languages and databases in developing countries.

- How to eliminate age and education discrimination.

OVERALL FINDINGS & IMPLICATIONS

Findings

- Technology evolves fast and forever.

- Certain platforms are growing in popularity.

- Java, SQL, and Python are the big winners.

Implications

- The shift to cloud service providers in the near future.

- Having the necessary training to provide valuable analysis.

- Companies having a rigid structuring and not adjusting to the rapid changes.
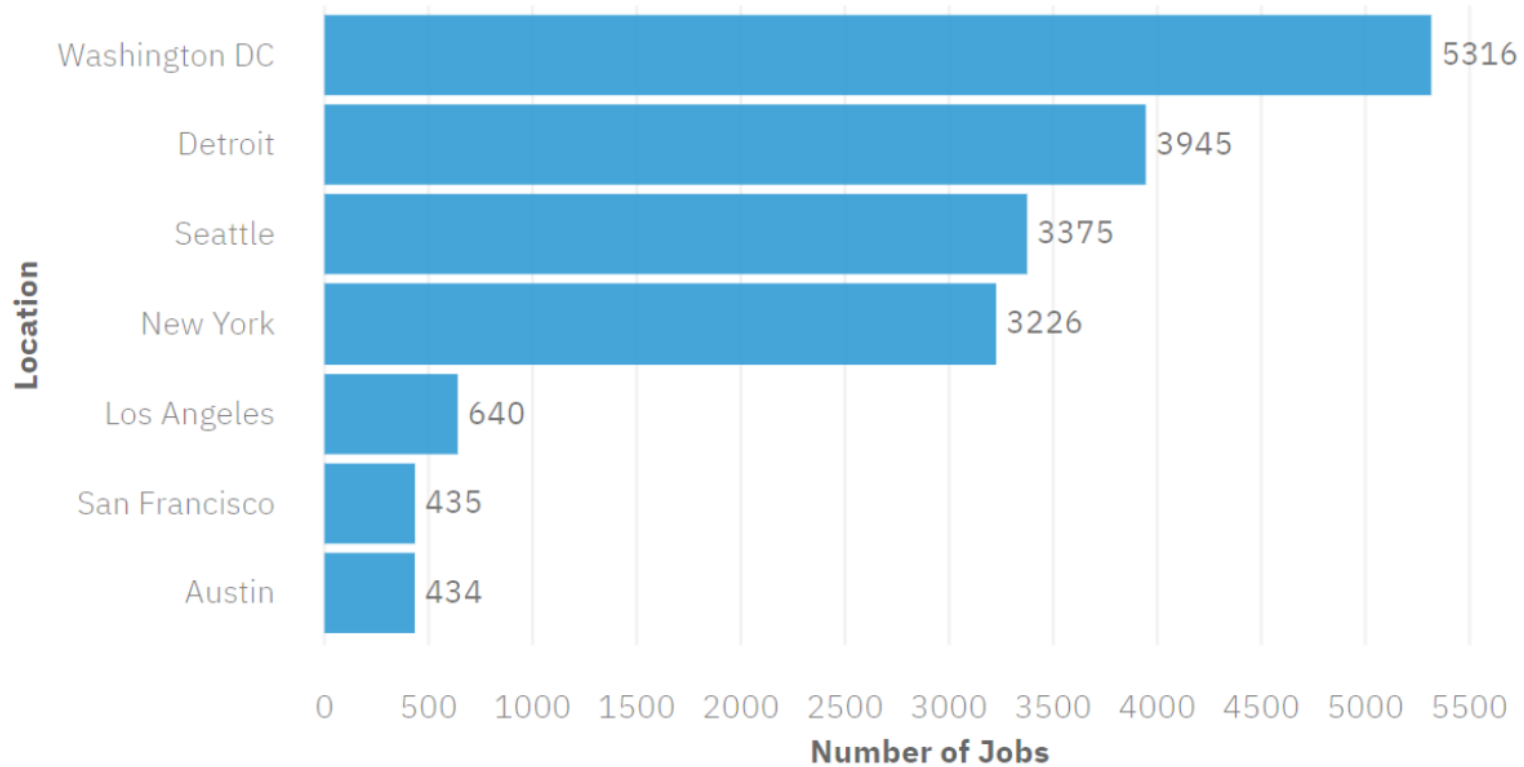
CONCLUSION

- Trends for the current year and the next year.

- Programming languages, databases, and platform overviews.

- Demographics overview.

- Needed actions.

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APPENDIX

JOB POSTINGS

POPULAR LANGUAGES

Annual Average Salary by Programming Language

Language	Salary
Swift	$130,801
Python	$114,383
C++	$113,865
Javascript	$110,981
Java	$101,013
Go	$94,082
R	$92,037
C#	$88,726
SQL	$84,793
PHP	$84,727

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