IBM DATA ANALYST CAPSTONE PROJECT

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OUTLINE

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EXECUTIVE SUMMARY

- The most popular technologies are web-based one such as JavaScript, HTML.

- Among all web-based frame works, the hottest areas area React.js and jQuery.

- Windows and Linux still dominate all developing platforms.

- For mobile platform, Android wins by no contest.

- Although MySQL is still the most used database, MongoDB and PostgreSQL show increasing trend of applying in the future.

INTRODUCTION

- The technology market changes quickly every year.

- It is important to catch-up with the latest technology in each field.

- The comparison between current & next year technology trend will provide great inside into the market.

- The study consist of 4 main parts:
  - Top language using
  - Top database using
  - Top platform using
  - Top web frame using

METHODOLOGY

- The technology trend is studied by comparing current and future technology usage.

- The data was from the 'Stack Overflow Developer Survey 2019'.

- Different type of charts, such as bar, line, pie, tree-map ... will be used to visualize the result.

- The IBM dashboard is used to analyses data and create visualization.
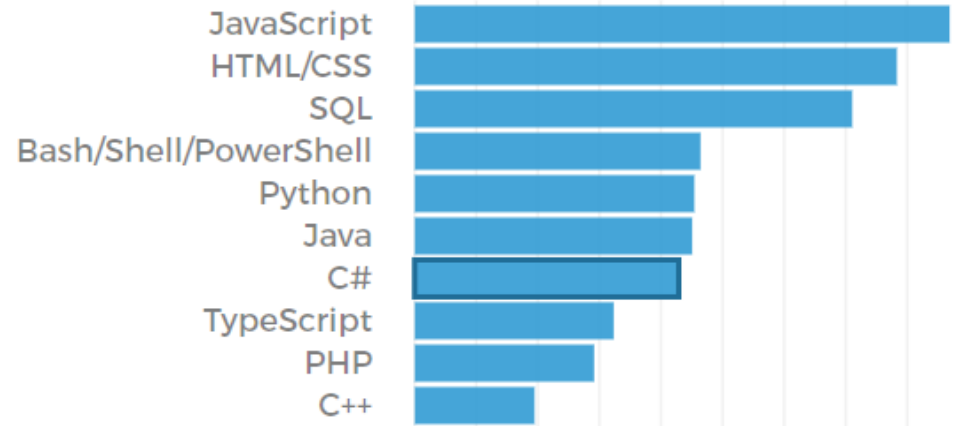
RESULTS

The results consists of 4 main parts:
- Programming language trend
- Database trend
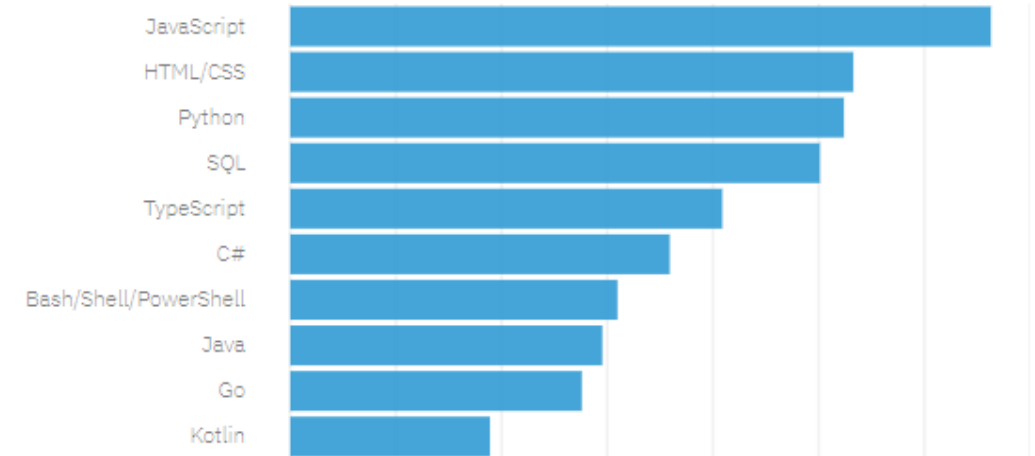- Platform trend
- Web frame trend

PROGRAMMING LANGUAGE TRENDS

Current Year

Top 10 Languages worked with:

Language	
JavaScript	
HTML/CSS	
SQL	
Bash/Shell/PowerShell	
Python	
Java	
C#	
TypeScript	
PHP	
C++	

Next Year

Top 10 Language desired next year

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

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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript & HTML/CSS are top programming languages for both current and future trend.

- Python moves from 5th position to 3rd position in top 10.

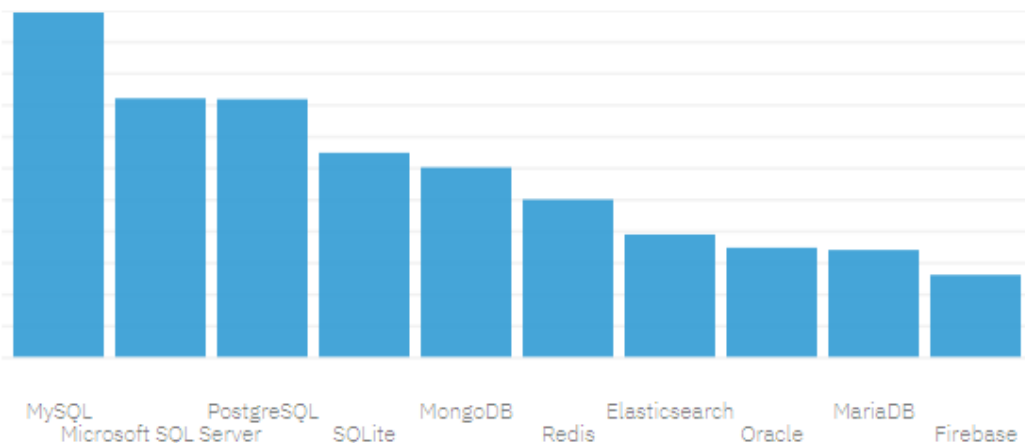- C++ and PHP area disappearing from top 10.

Implications

- Web programming languages still stay dominance in near future.

- Python & data science is becoming more and more important.

- Legacy language such as C++, PHP ... are gradually falling out of interest.
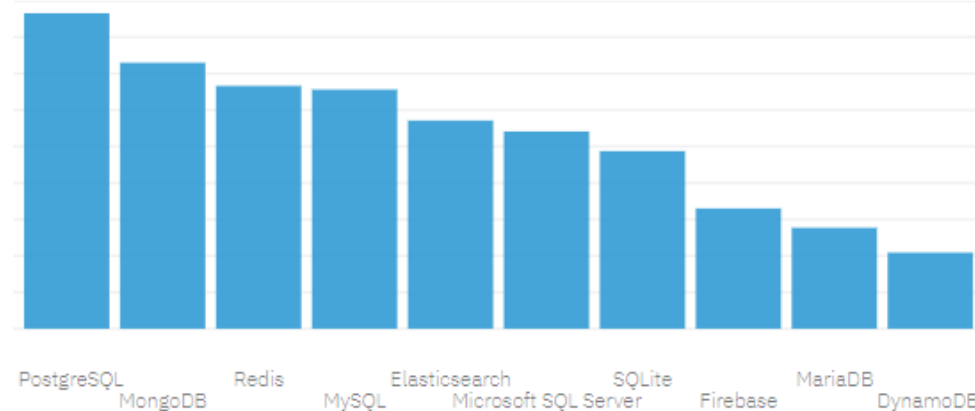
DATABASE TRENDS

Current Year

Next Year

Top 10 Databases worked with:

MySQL
Microsoft SQL Server
PostgreSQL
SQLite
MongoDB
Redis
Elasticsearch
Oracle
MariaDB
Firebase

Top 10 Database desired next year:

PostgreSQL
MongoDB
Redis
MySQL
Elasticsearch
Microsoft SQL Server
SQLite
Firebase
MariaDB
DynamoDB

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MongoDB & Redis quickly moves up to No.2 and No.3

- PostgreSQL moves from No.3 to No.1

- MS SQL server drops from No.2 to No.5

- Oracle disappear from top

Implications

- Open source database becomes more and more popular compared with commercial one.

- Non-relational database see increasingly usage in the future.

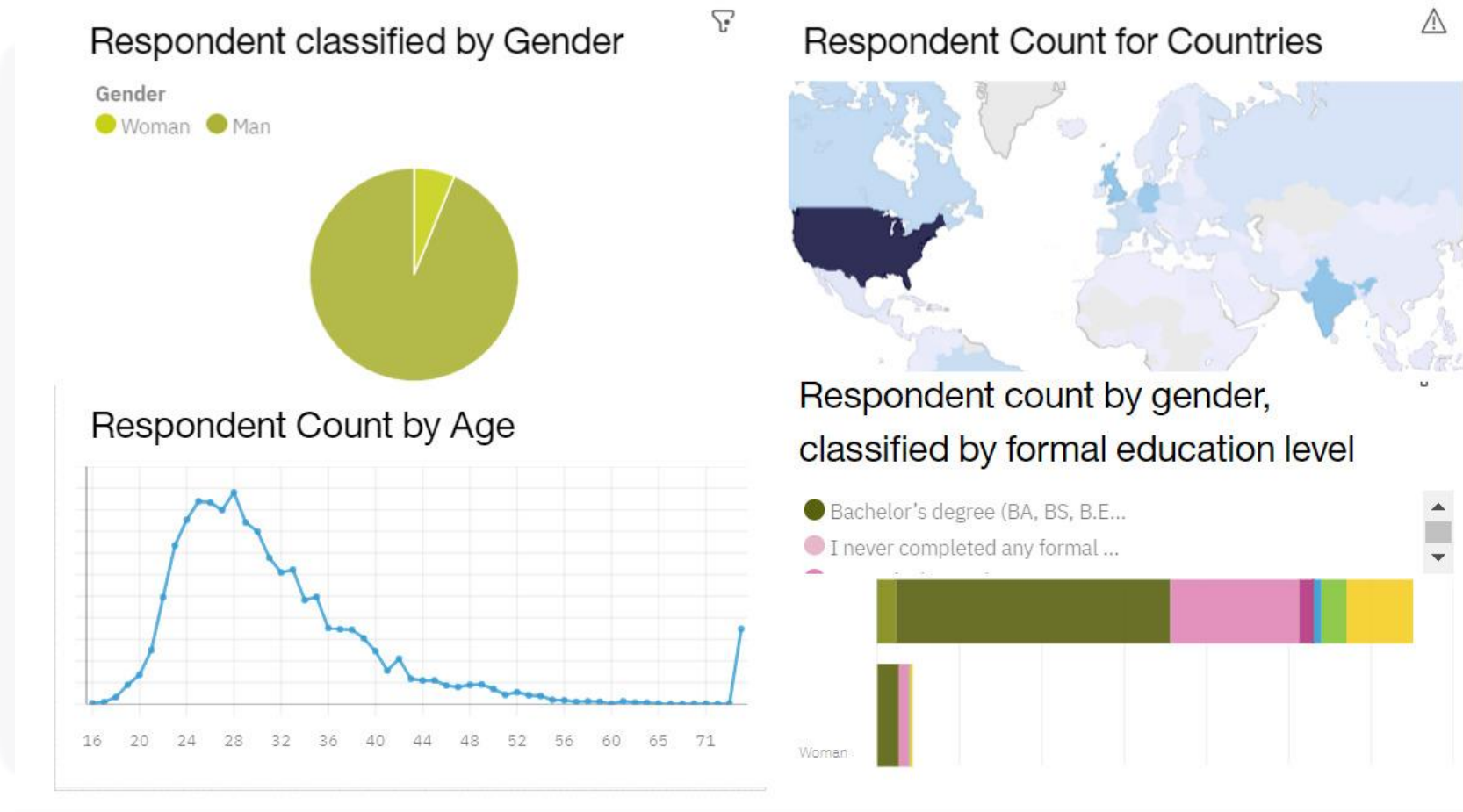- Relational database still takes a leading position in the near future.

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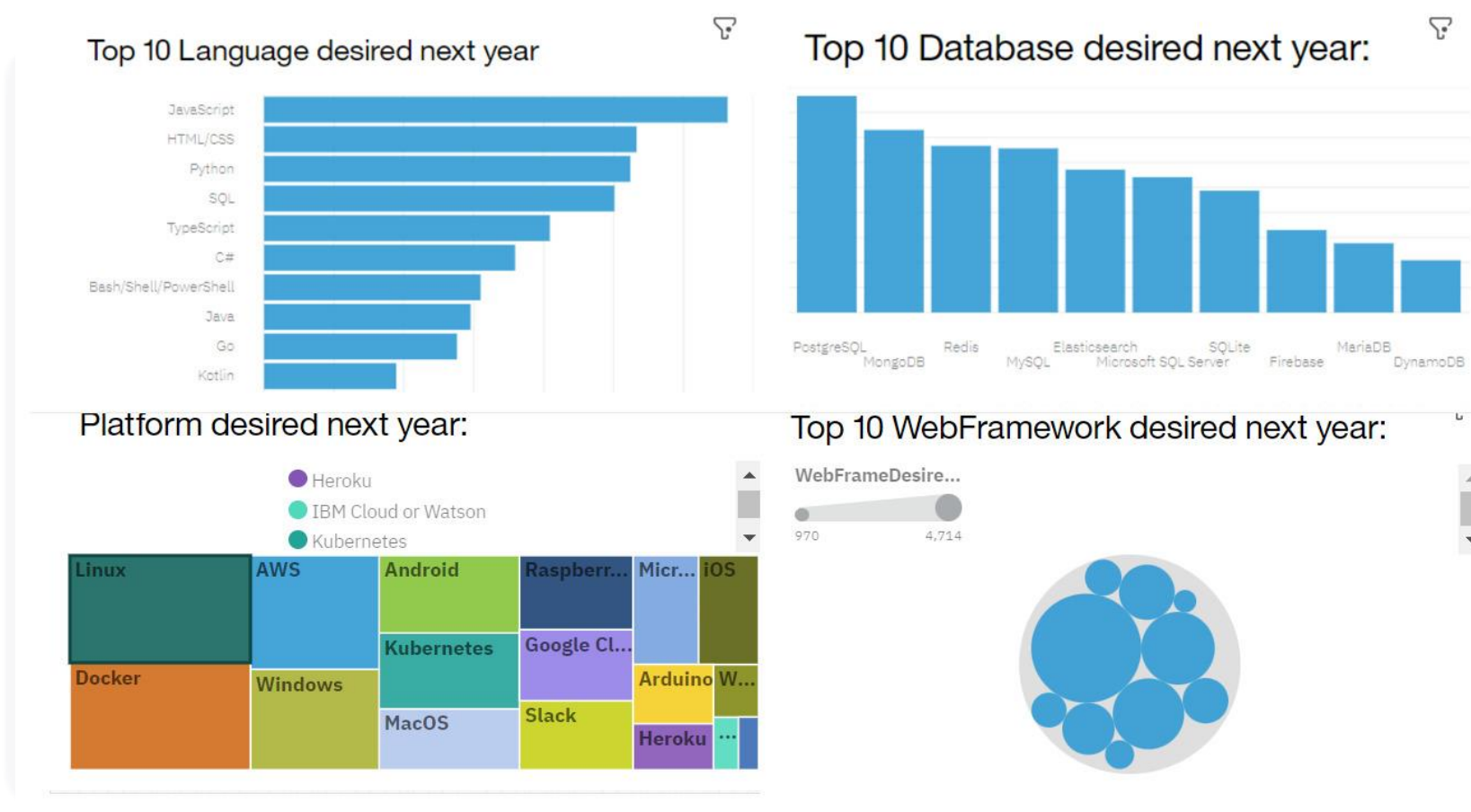
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DASHBOARD

<https://jp-tok.dataplatform.cloud.ibm.com/dashboards/03517bed-d45d-41ad-bc9e-21ae8de223db/view/4267a73806b70dd54abcc0e4079e280e7e637059b5bbd25181d37b4907317897a9384696c82d4a5dda195732f0ed130fc0>
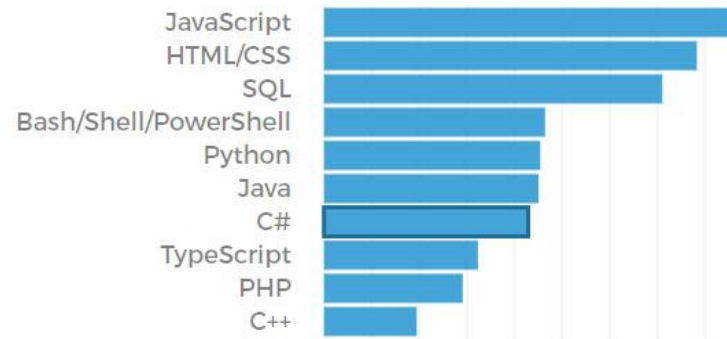
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DASHBOARD TAB 1

DASHBOARD TAB 2

DASHBOARD TAB 3

Top 10 Languages worked with:

JavaScript
HTML/CSS
SQL
Bash/Shell/PowerShell
Python
Java
C#
TypeScript
PHP
C++

Top 10 Databases worked with:

MySQL
Microsoft SQL Server
PostgreSQL
SQLite
MongoDB
Redis
Elasticsearch
Oracle
MariaDB
Firebase

Platform worked with:

iOS
Arduino
Linux
Heroku
AWS
Android
Windows
Docker
MacOS
Kubernetes
Google Cloud Platform
Microsoft Azure
Raspberry Pi
WordPress
Slack
(Others)
IBM Cloud or Watson

Top 10 Web-framework worked with:

WebFrameWorke...

0   4,629

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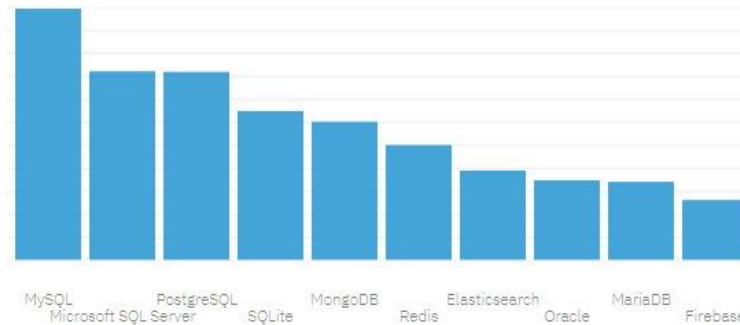
DISCUSSION

- New technology constantly emerges leading to changes in demand.

- The IT industry needs to diversify in order to eliminate gender gap.

OVERALL FINDINGS & IMPLICATIONS

Findings

- Trends and demands fluctuate based on new technologies.
- JavaScript and Python are the most popular programming languages.
- PostgreSQL is the most popular database.

Implications

- IT professionals and companies have to learn and adapt to new demands.
- Gender gap will affect job hiring trend.
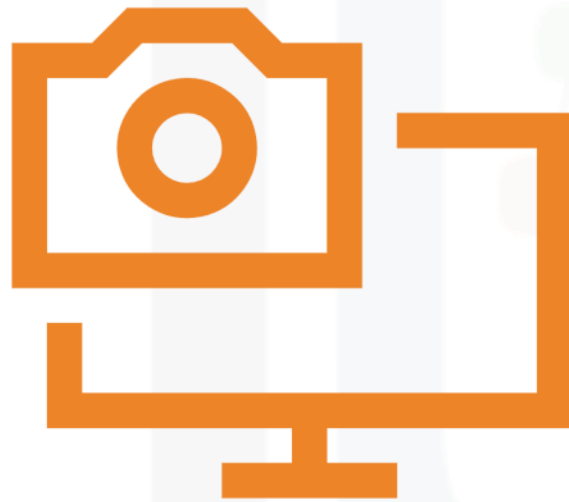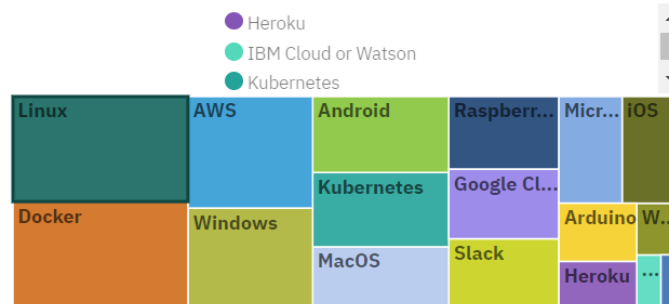- Having skills that are high in demand leads to more job opportunities.

CONCLUSION

- To stay relevant in the technology field, it's important to learn web-based language & non-relational database.

- Among web framework, React.js is the best to learn for your future.

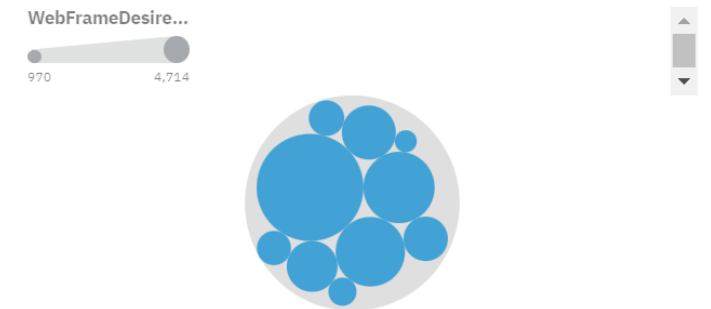- Cloud-based service is the right direction for IT investment.
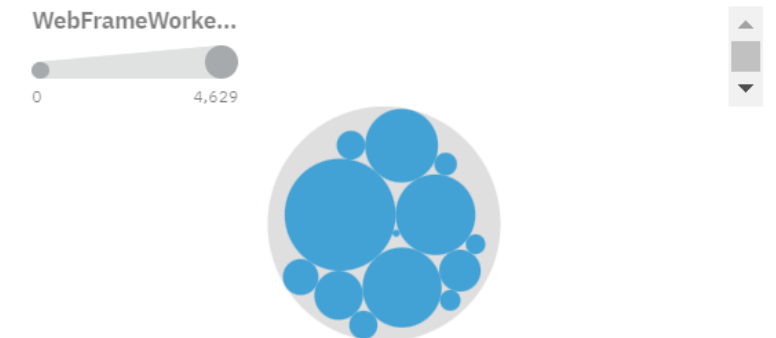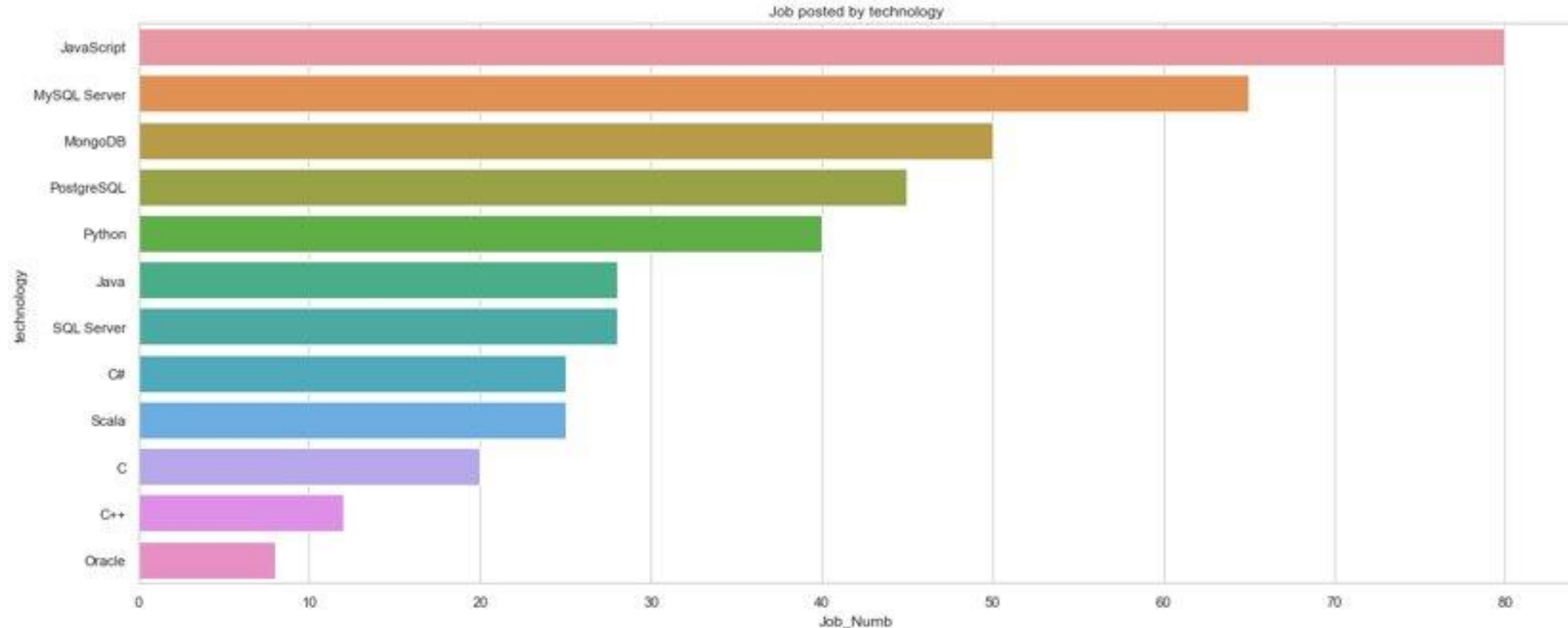
APPENDIX

Platform desired next year:

- Heroku
- IBM Cloud or Watson
- Kubernetes

Top 10 WebFramework desired next year:

WebFrameDesire...

970   4,714

Platform worked with:

Top 10 Web-framework worked with:

WebFrameWorke...

0   4,629

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JOB POSTINGS

Job posted by technology

POPULAR LANGUAGES

Average Annual Salary by Language