The 2019 Stack Overflow Developer Survey Overview

2022/7/7

Pei Wen Lin

Outline

Introduction

About The Dataset

Stack Overflow, a popular website for developers, conducted an online survey of software professionals across the world.

The survey data was open sourced by Stack Overflow. The actual data set has around 90,000 responses.

The dataset comes from the following source: https://stackoverflow.blog/2019/04/09/the-2019-stack-overflow-developer-survey-results-are-in/

Note: This randomised subset contains around 1/10th of the original data set. Any conclusions may not reflect the real world scenario.

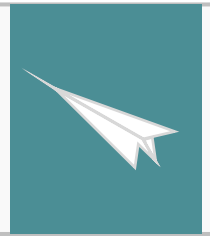
Introduction

Purpose

- Analyzing demographics of the respondents and current technology usages.
- Realize the top programming languages, database environments, platforms and web frameworks to work in over the past years.
- Find out technology trends for future.

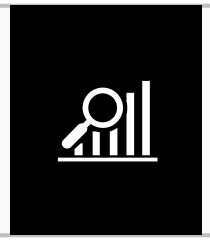
Methodology

Collecting Data
Use the survey data by Stack Overflow.



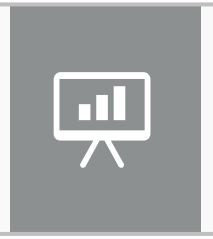
Analyzing Data
Find the distribution and correlation of data.

Exploring Data
By using python.



Data Visualization
By using SQL, python and IBM Cognos dashboard.

Data Cleaning
By using python.



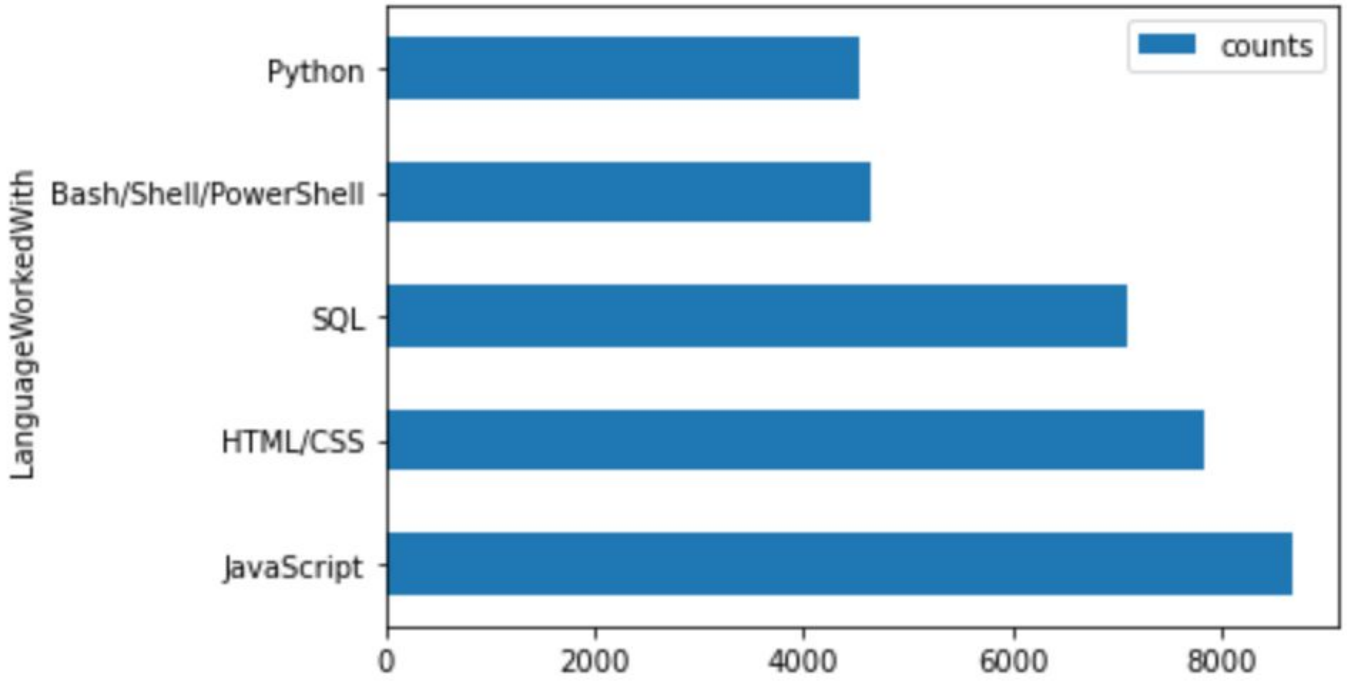
Presentation
By using PPT.

Results

Programming Languages Trends
Current Year

Question:
Which of the following programming, scripting, and markup languages have you done extensive development work in over the past year, and which do you want to work in over the next year? (If you both worked with the language and want to continue to do so, please check both boxes in that row.)

	LanguageWorkedWith	counts
0	JavaScript	8687
1	HTML/CSS	7830
2	SQL	7106
3	Bash/Shell/PowerShell	4642
4	Python	4542

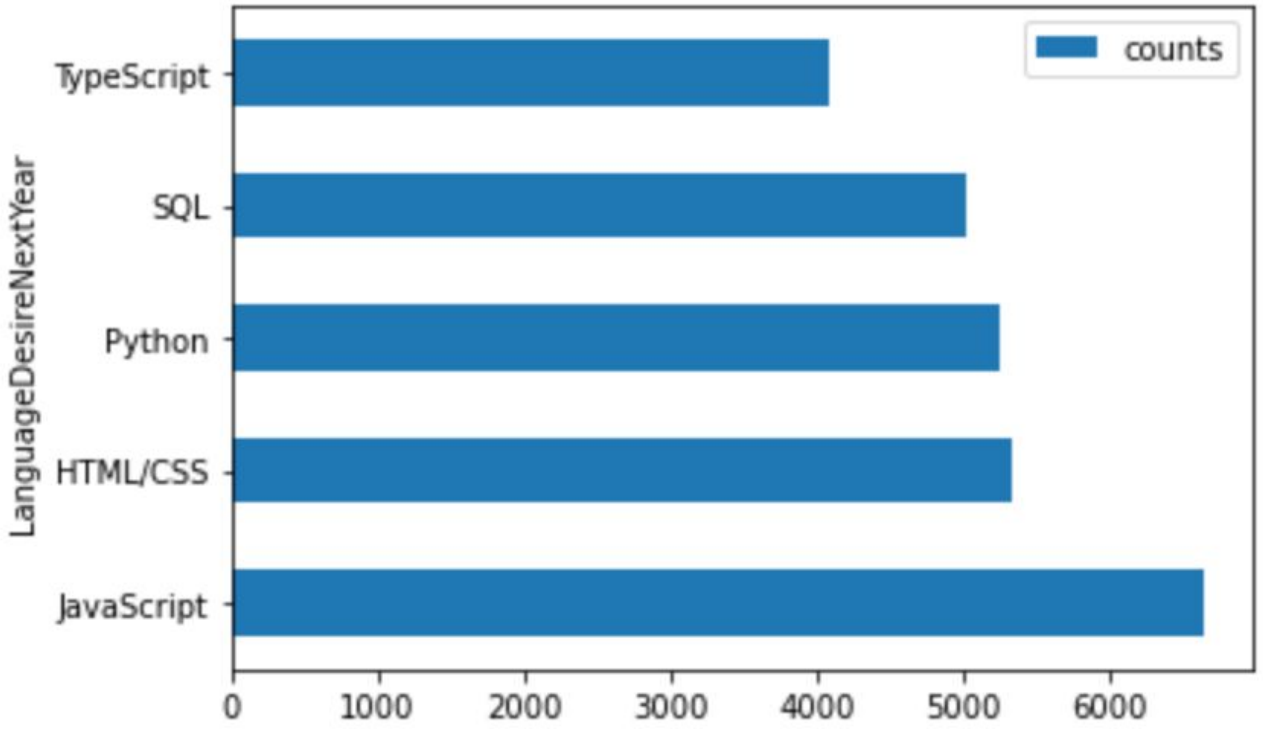


Results

Programming Languages Trends
Prediction for Next Year

Question:
Which of the following programming, scripting, and markup languages have you done extensive development work in over the past year, and which do you want to work in over the next year? (If you both worked with the language and want to continue to do so, please check both boxes in that row.)

	LanguageDesireNextYear	counts
0	JavaScript	6630
1	HTML/CSS	5328
2	Python	5239
3	SQL	5012
4	TypeScript	4088



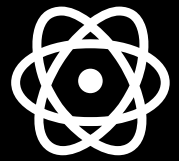
Discussion

Findings

Top 3 current programming languages:
JavaScript
HTML/CSS
SQL

Top 3 programming languages for next year:
JavaScript
HTML/CSS
Python

Implications



Instead of SQL, Python will be popular in the future.

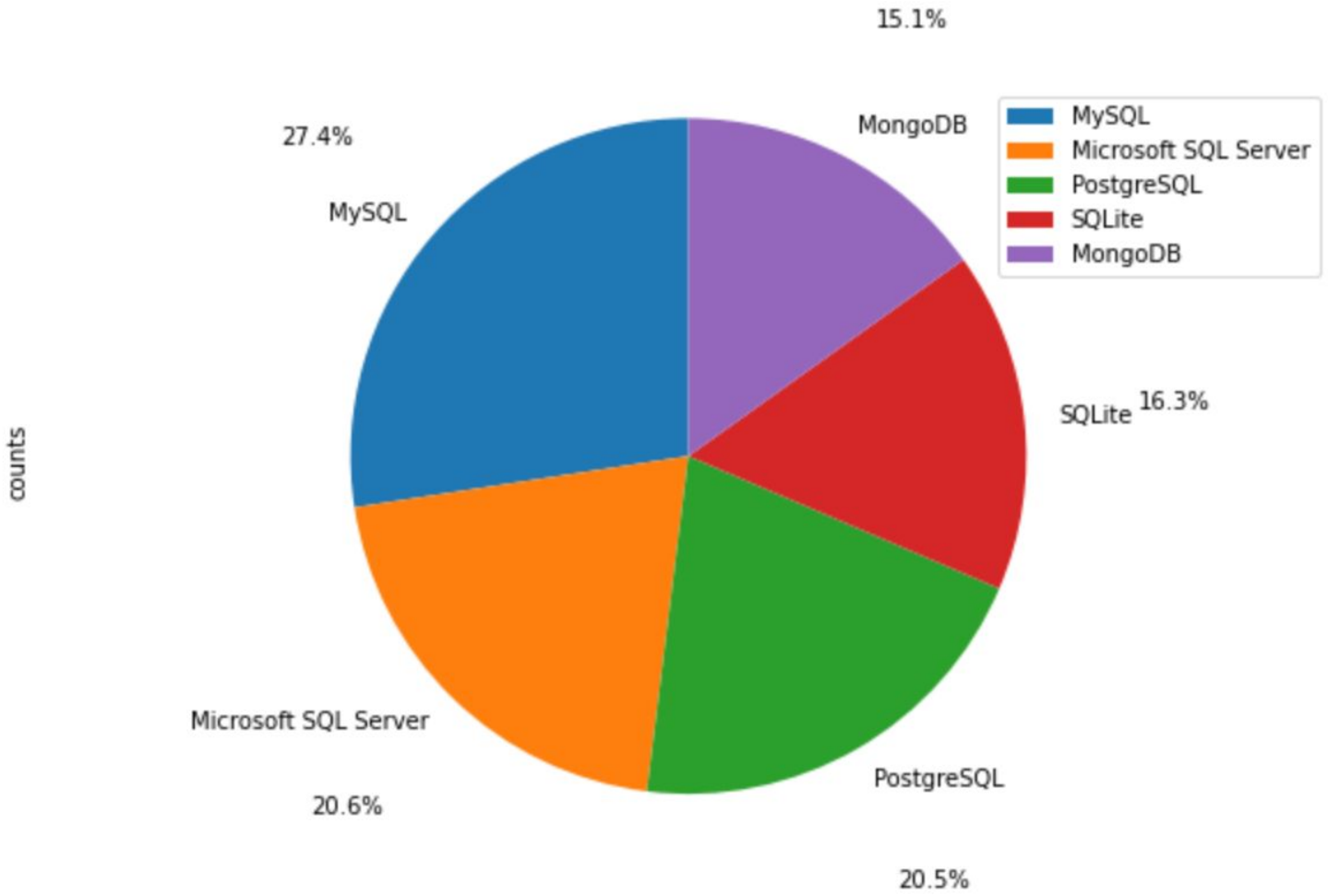
1. Python is easy and flexible to learn and use.
2. Big data, machine learning and cloud computing use Python language.

Results

Database Trends
Current Year

Question:
Which of the following database environments have you done extensive development work in over the past year, and which do you want to work in over the next year?
(If you both worked with the database and want to continue to do so, please check both boxes in that row.)

	DatabaseWorkedWith	counts
0	MySQL	5469
1	Microsoft SQL Server	4110
2	PostgreSQL	4097
3	SQLite	3248
4	MongoDB	3016

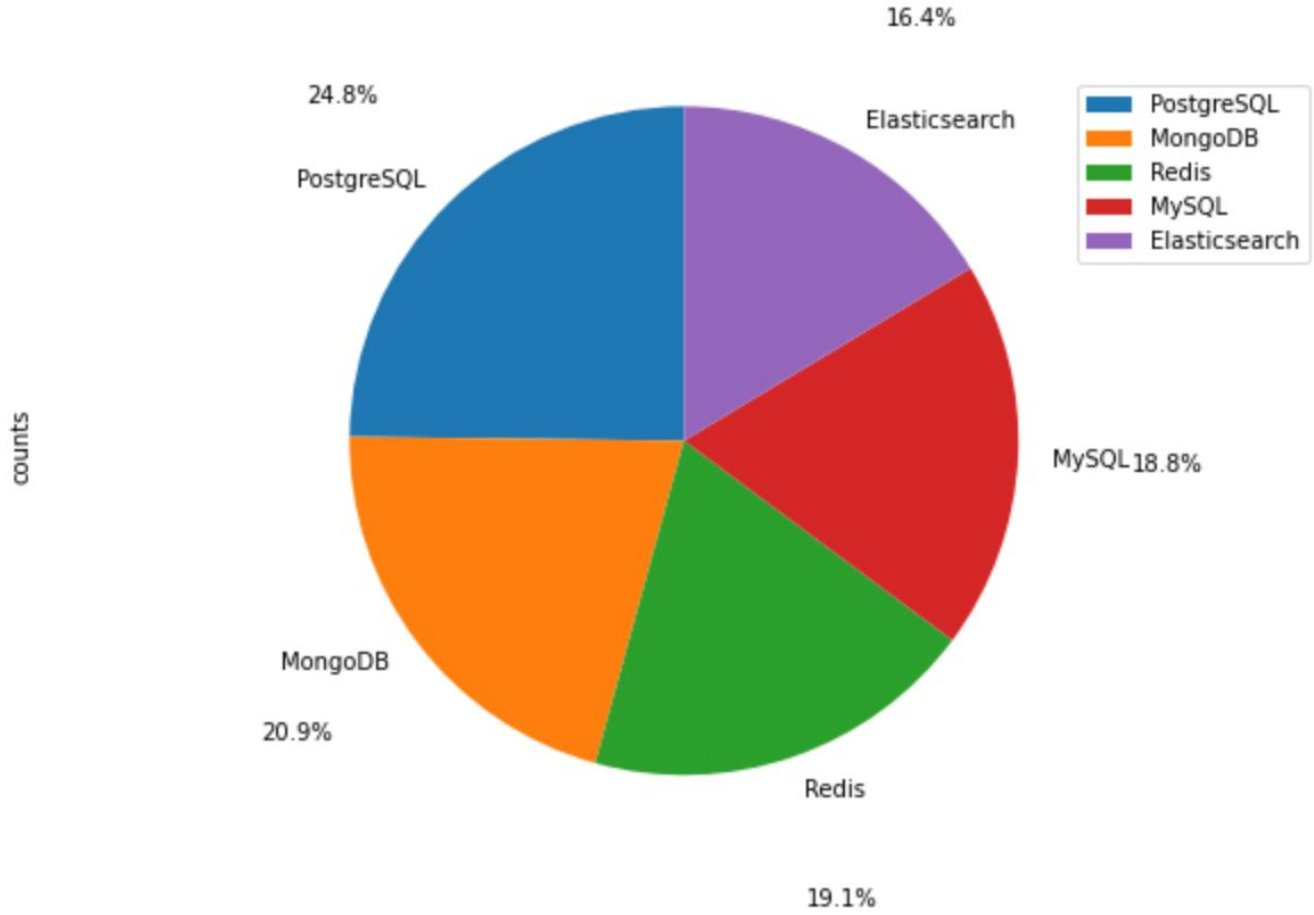


Results

Database Trends
Prediction for Next Year

Question:
Which of the following database environments have you done extensive development work in over the past year, and which do you want to work in over the next year?
(If you both worked with the database and want to continue to do so, please check both boxes in that row.)

	DatabaseDesireNextYear	counts
0	PostgreSQL	4328
1	MongoDB	3649
2	Redis	3331
3	MySQL	3281
4	Elasticsearch	2856



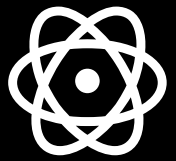
Discussion

Findings

Top 3 current database:
MySQL
Microsoft SQL Server
PostgreSQL

Top 3 database for next year:
PostgreSQL
MongoDB
Redis

Implications



Why Top 3 database change?

PostgreSQL is completely onpen source and support all kinds of programming language for stored procedures.

NoSQL databases handle large volumes of data at high speed, and they can store unstructured or semi-structured data.

Results

Dashboard

Click the link below to view the IBM Cognos Dashboard

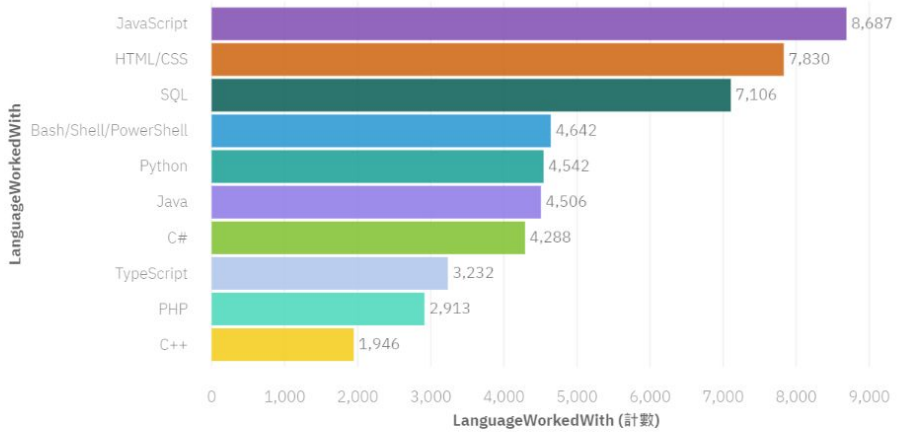
Dashboard Link

Results

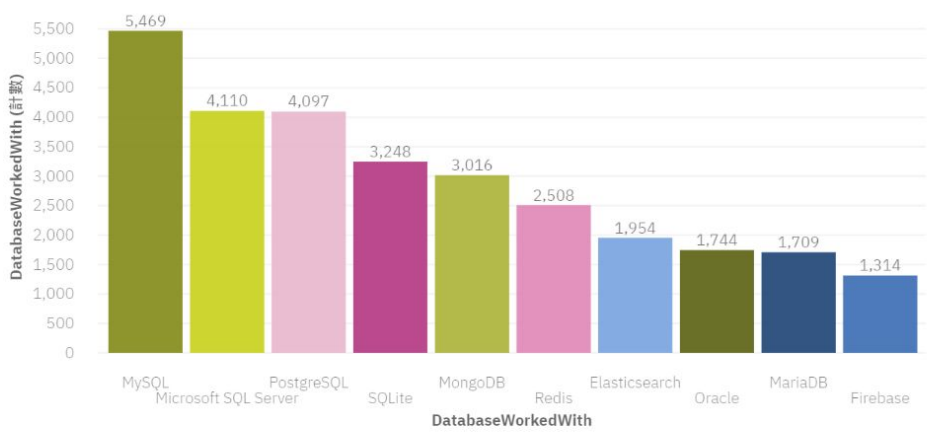
Dashboard Tab 1

Current Technology Usage | Future Technology Trend | Demographics

Top 10 Language Worked With

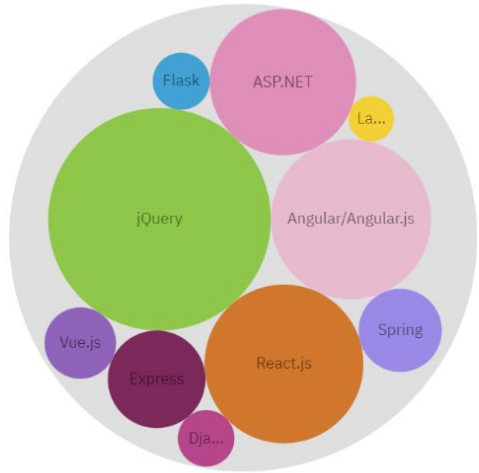


Top 10 Database Worked With



Platform Worked With

Top 10 Web Frame Worked With

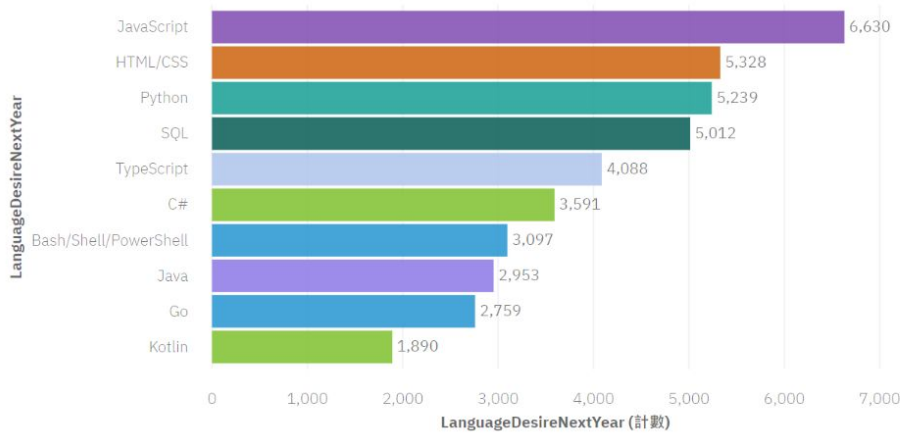


Results

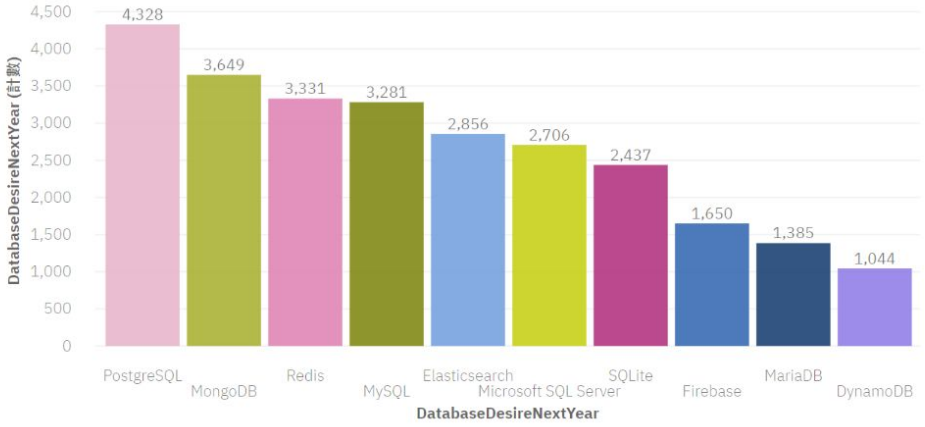
Dashboard Tab 2

Current Technology Usage | Future Technology Trend | Demographics

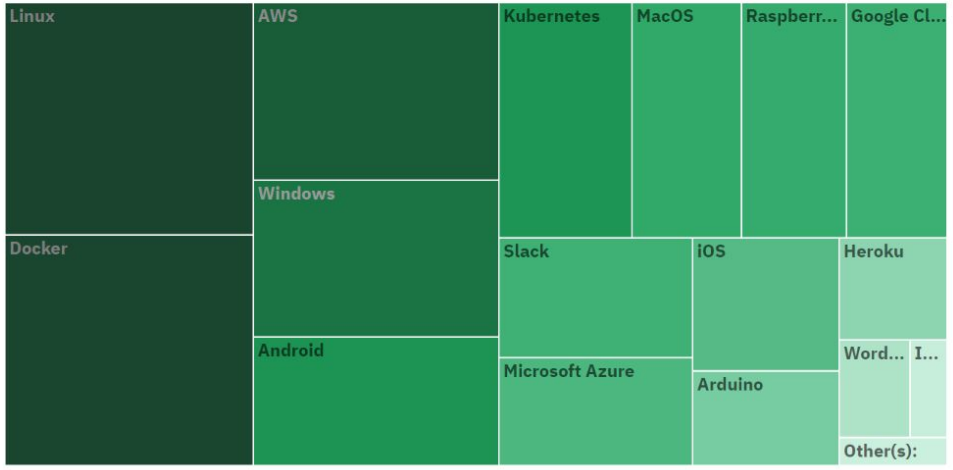
Top 10 Language Desire Next Year



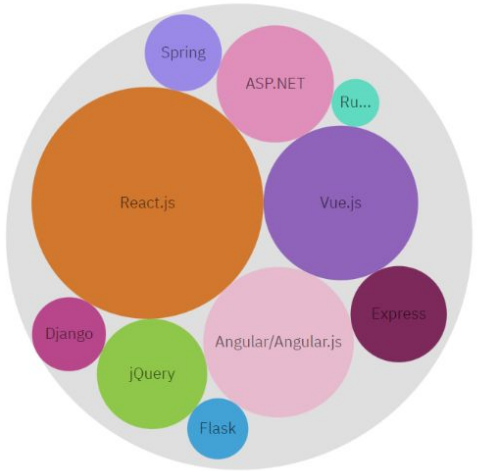
Top 10 Database Desire Next Year



Platform Desire Next Year



Top 10 WebFrame Desire Next Year

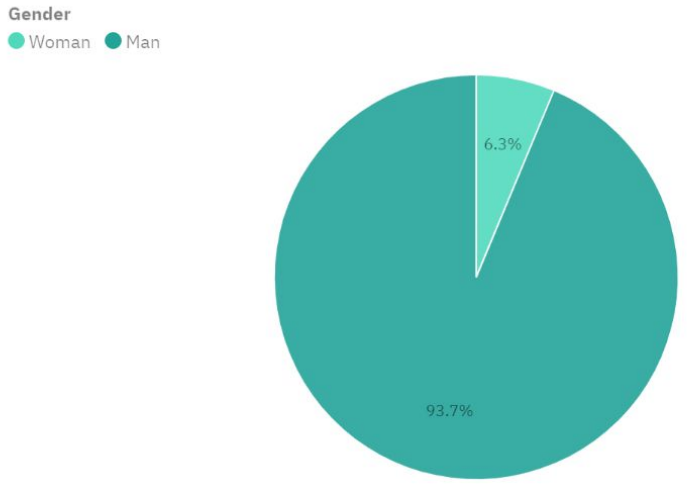


Results

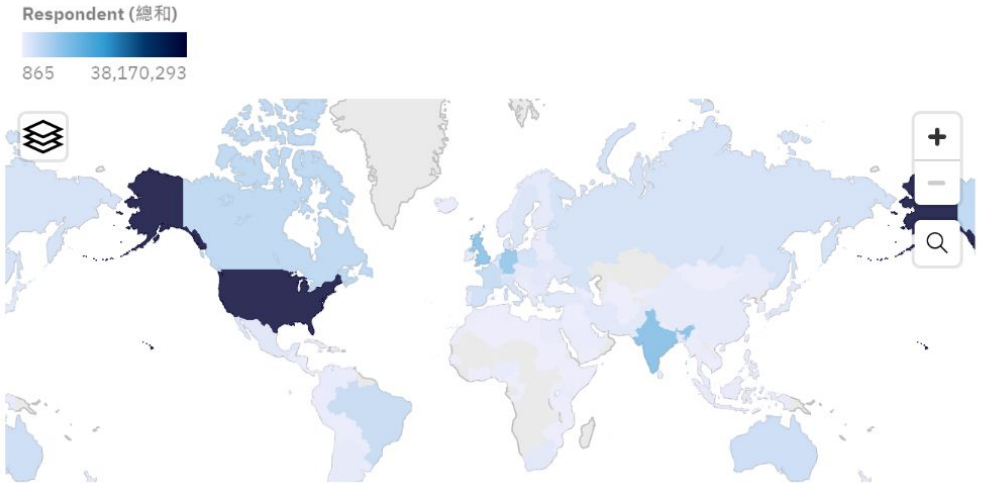
Dashboard Tab 3

Current Technology Usage | Future Technology Trend | Demographics

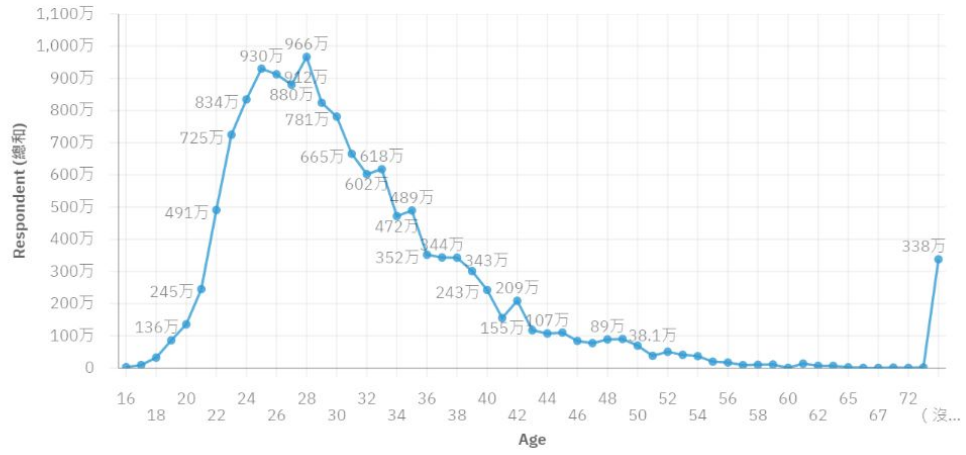
Gender



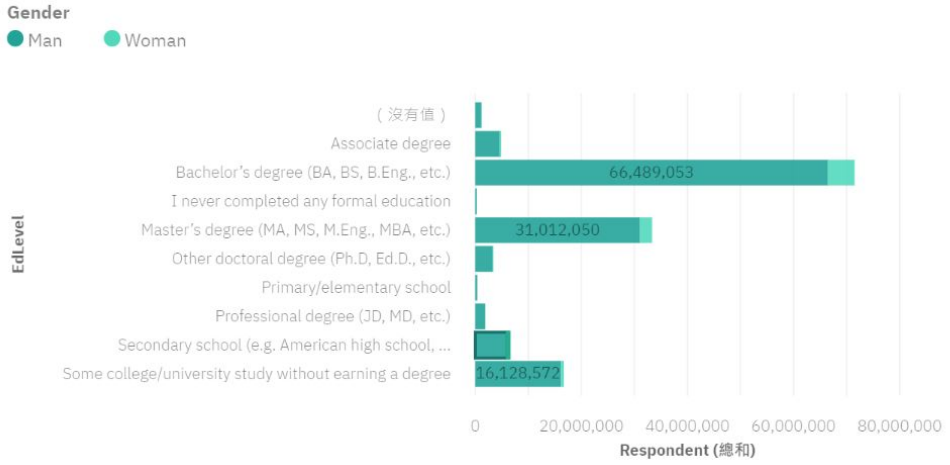
Countries



Age



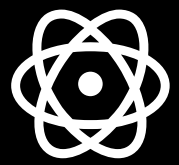
Formal Education Level & Gender



Overall

Findings

- Platform such as Docker and AWS are growing in the future.
- React.js and Vue.js become popular because they make it simple and easy to manage.
- 93.7% of the respondents are male.
- Most respondents' age are between 23-33.
- Most respondents are from United States.



Implications

- Technology industry changes fast every year.
- It's important for Companies and employees learn how to be flexible and adjust to the rapid changes.

Conclusion

1. Big data, machine learning and cloud computing influence the technology trends.
2. Hire new employees with skills that can fill the technical gaps.
3. Plan training program/lessons for those already employed to develop their skills and knowledge.

Thank you for your attention!