Developer Survey Analysis

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Contents

Inroduction:

- In the realm of programming and technology, several key trends have emerged in recent years.
- These insights shed light on the evolving landscape of programming languages, web frameworks, and the demographics of professional developers.
- **Stack Overflow** conducts an inclusive survey of individuals engaged in coding globally.
- Covering a wide array of topics from preferred technologies to career aspirations, 2019 marks the 9th consecutive year of survey publication.
- Nearly 90,000 developers participated in the 20- minute survey in 2019 Survey.
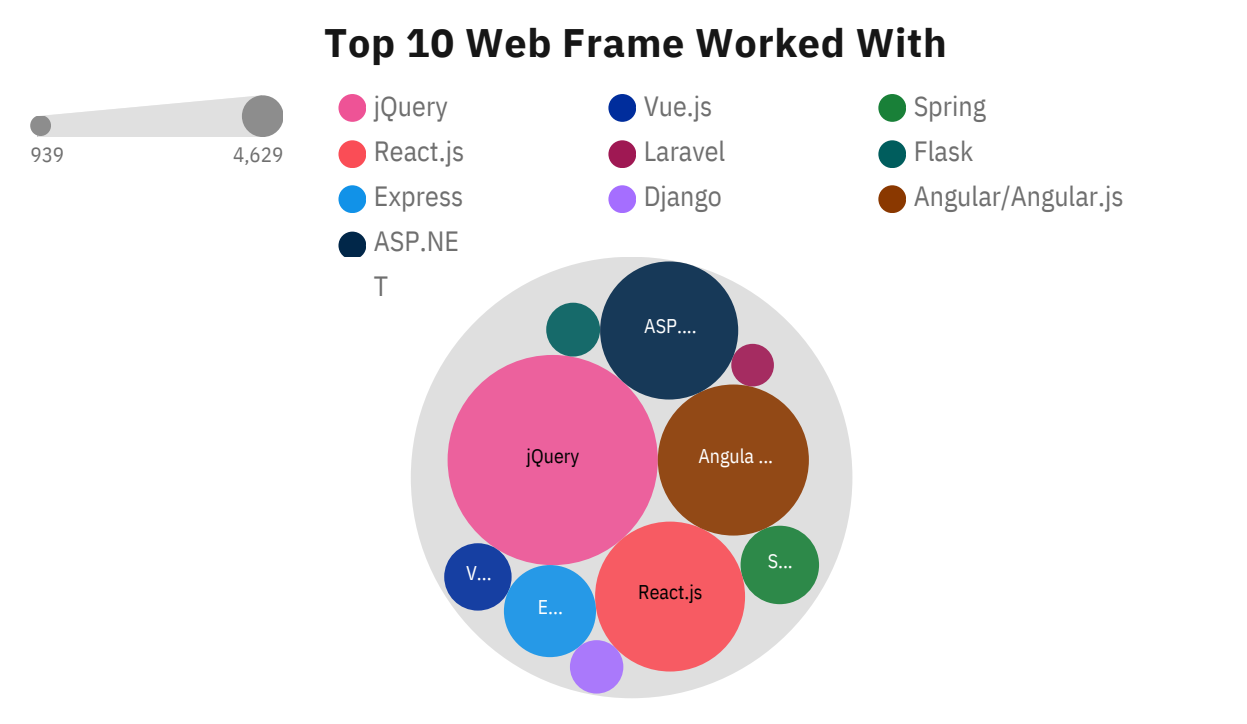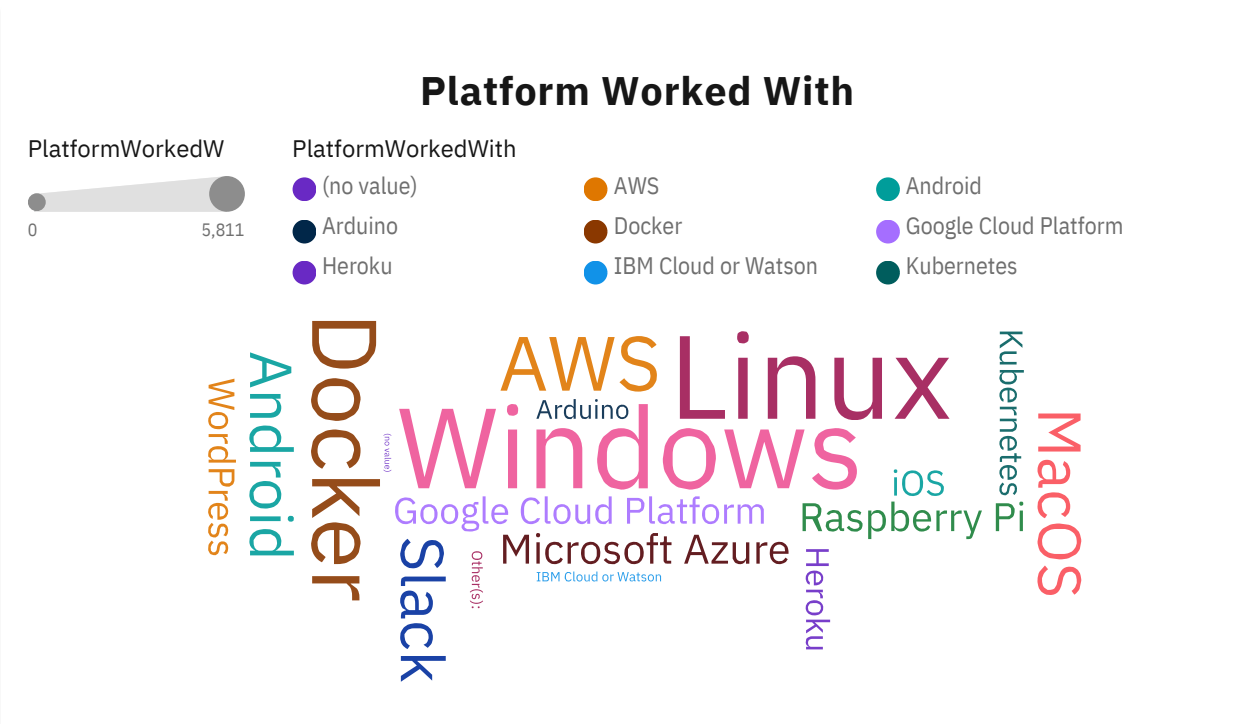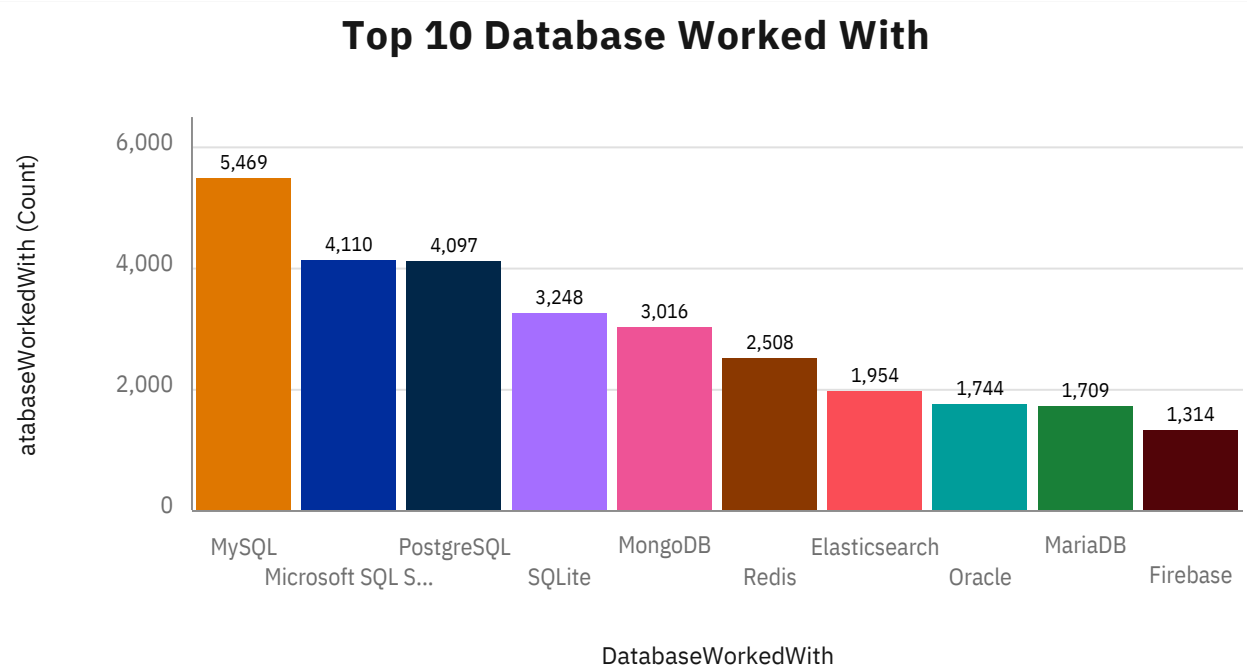- Let's explore some of the notable findings.

Methodology:

1. We asked respondents about their salary. First, we asked what currency each respondent typically used. Then we asked that respondent what their salary was in that currency, and whether that salary was weekly, monthly, or yearly.

2. We converted salaries from user currencies to USD using the exchange rate on 2019-02-01, and also converted to annual salaries assuming 12 working months and 50 working weeks.

3. This question, like most on the survey, was optional. There were 55,945 respondents (62.9% of qualified respondents) who gave us salary data.

4. The top approximately 2% of salaries inside and outside of the US were trimmed and replaced with threshold values. The threshold values for inside and outside the US were different.

Executive Summary

- We conducted this survey with 90,000 developers in 2019.

- According to the survey results, we identified and analyzed the popular languages, databases, platforms and web frameworks used.

- Also, we determined our predictions for next year and visualized them.

- We categorized survey respondents by age, country, gender and education.

- As a result of all these survey results and analyses, we have gained some insights and we are here to share them with you.

Current Technology Usage

Top 10 Language Worked With

LanguageWorked
1,946   8,687

LanguageWorkedWith	
JavaScript	8,687
HTML/CSS	7,830
SQL	7,106
Bash/She...	4,642
Python	4,542
Java	4,506
C#	4,288
TypeScript	3,232
PHP	2,913
C++	1,946

LanguageWorkedWith (Count)

Top 10 Database Worked With

atabaseWorkedWith (Count)

DatabaseWorkedWith	Count
MySQL	5,469
Microsoft SQL S...	4,110
PostgreSQL	4,097
SQLite	3,248
MongoDB	3,016
Redis	2,508
Elasticsearch	1,954
Oracle	1,744
MariaDB	1,709
Firebase	1,314

Platform Worked With

PlatformWorkedW
0   5,811

PlatformWorkedWith
- (no value)
- AWS
- Android
- Arduino
- Docker
- Google Cloud Platform
- Heroku
- IBM Cloud or Watson
- Kubernetes

Top 10 Web Frame Worked With

939   4,629

- jQuery
- Vue.js
- Spring
- React.js
- Laravel
- Flask
- Express
- Django
- Angular/Angular.js
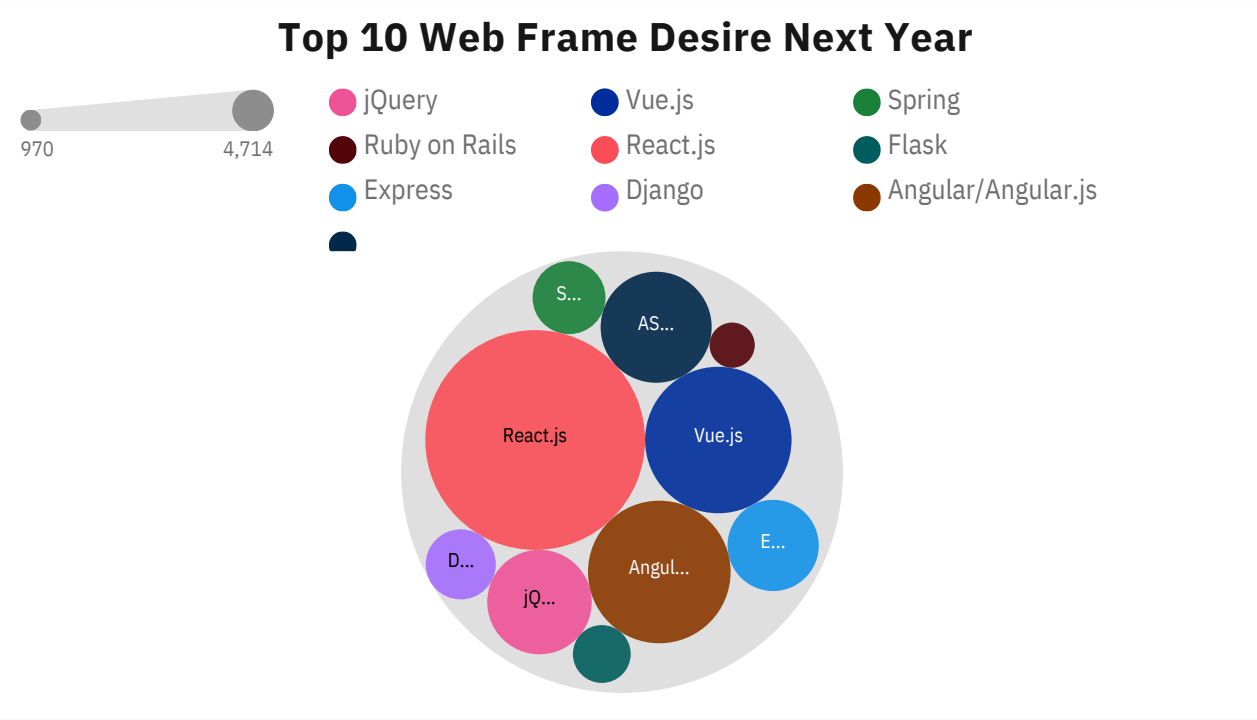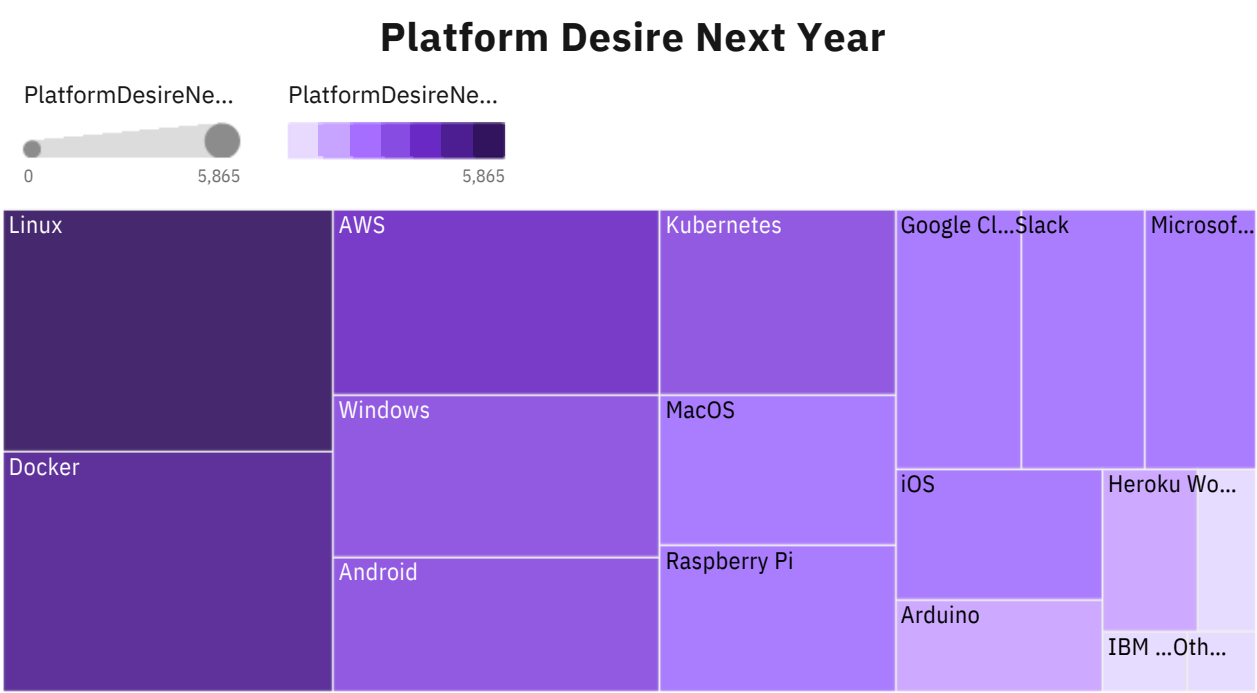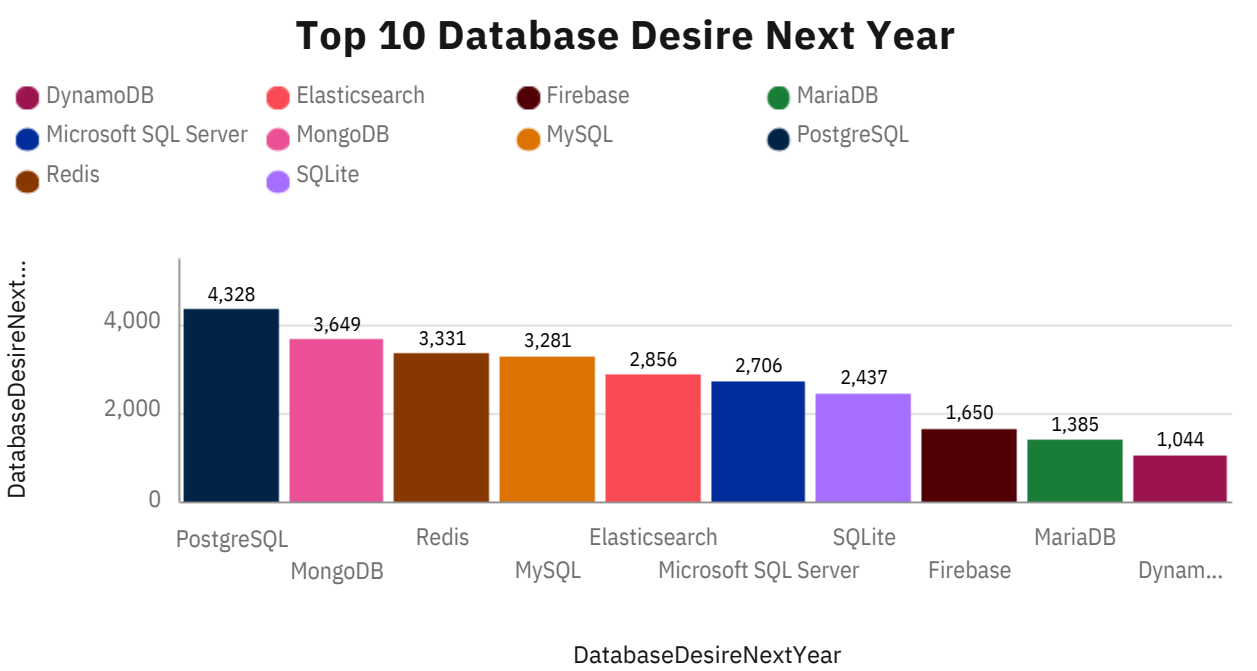- ASP.NET

Programming Language Trends

FINDINGS

- **JavaScript** and **HTML/CSS** emerge as the most used programming languages among all respondents
- **SQL** also maintains a significant presence.
- **Python** just edged out **Java** in overall ranking.

IMPLICATIONS

- Thedominanceof**JavaScript**and**HTML/CSS** underscores their indispensability in modern web development, highlighting the importance of mastering them for developers.
- The high usage of **SQL** emphasizes the critical role of data management and querying in modern software applications, across both web and non-web environments.
- Theriseof**Python**mightalsoreflectits versatility and ease of use, attracting developers across various domains from data science to software development.

Future Technology Trend

Top 10 Language Desire Next Year

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

LanguageDesireNextYear (Count)

Language	Count
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

Top 10 Database Desire Next Year

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

DatabaseDesireNextYear

Database	Count
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
Dynam...	1,044

Platform Desire Next Year

PlatformDesireNe... 0 — 5,865

PlatformDesireNe... 5,865

Top 10 Web Frame Desire Next Year

970 — 4,714

- ● jQuery
- ● Vue.js
- ● Spring
- ● Ruby on Rails
- ● React.js
- ● Flask
- ● Express
- ● Django
- ● Angular/Angular.js
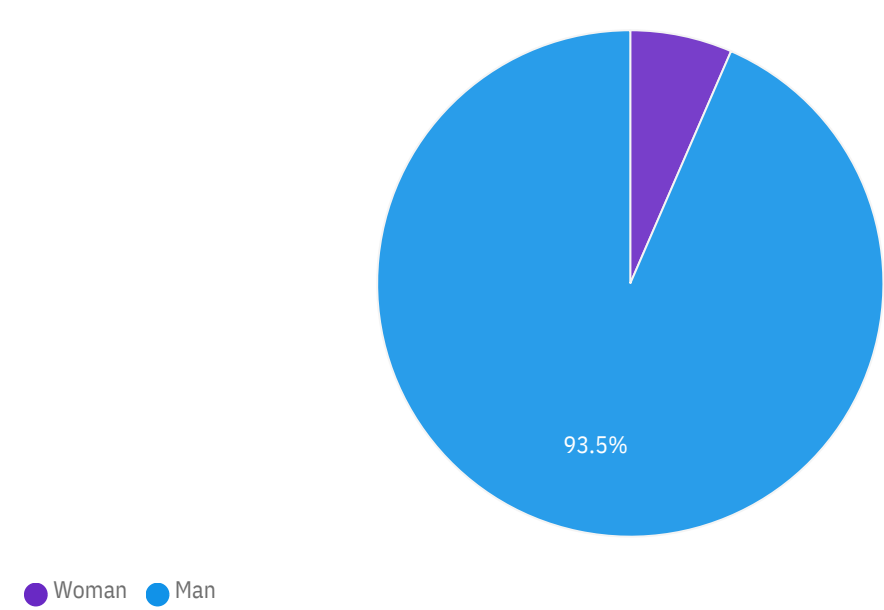
Database Trends

FINDINGS

- **MySQL** leads as the most used DBMS among all respondents.
- **PostgreSQL** and **Microsoft SQL Server** follow closely behind **MySQL**.
- **MongoDB** ranks as the top **NoSQL** database.
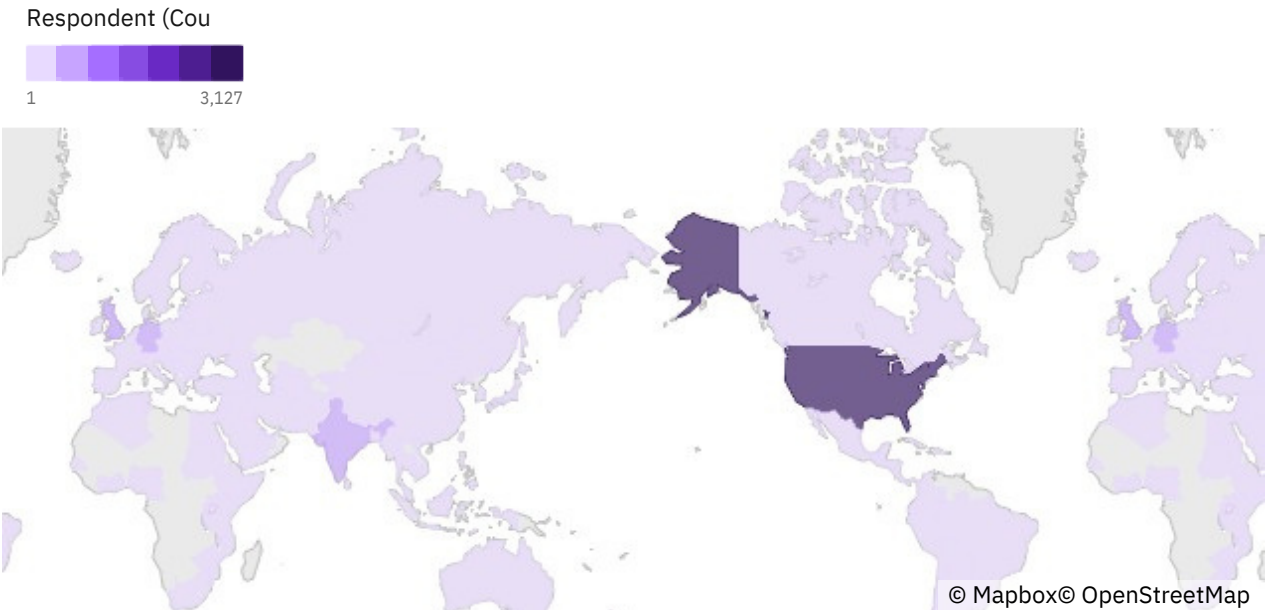
IMPLICATIONS

- The popularity of **MySQL**, **PostgreSQL**, and **Microsoft SQL Server** underscores the importance of relational databases in various applications.
- The high usage of **MongoDB** reflects the growing trend towards **NoSQL** databases, driven by the need for flexible data models and scalability, particularly in modern web and mobile applications.
- The diverse range of database systems utilized by developers indicates the importance of selecting the right tool for the job, considering factors such as data structure, scalability, and performance requirements.
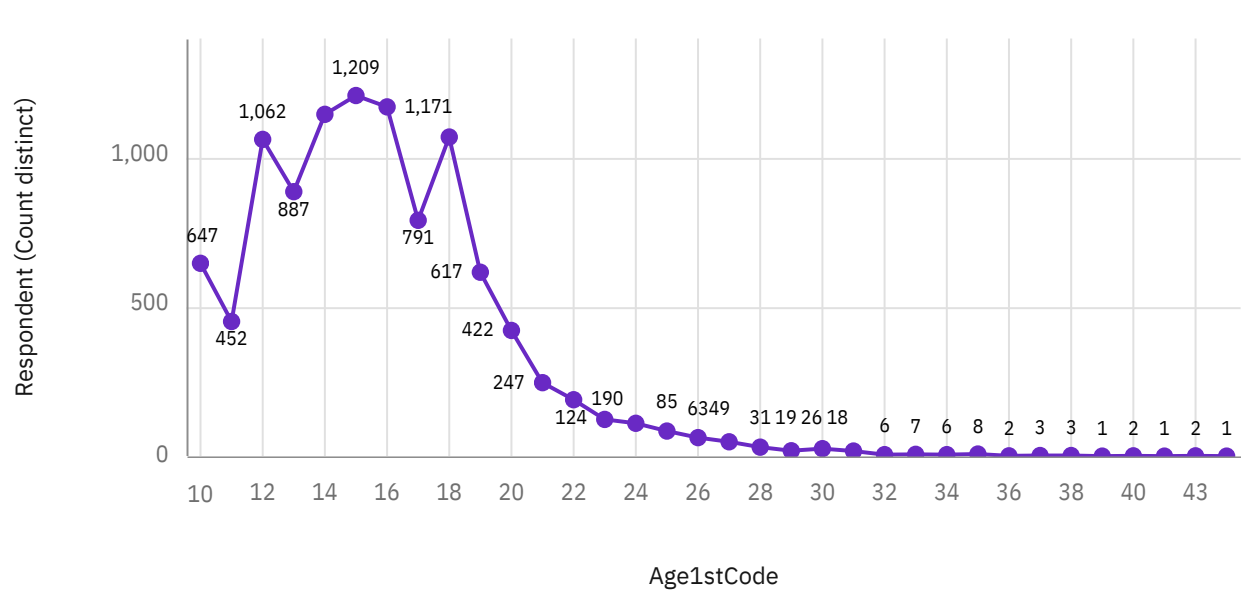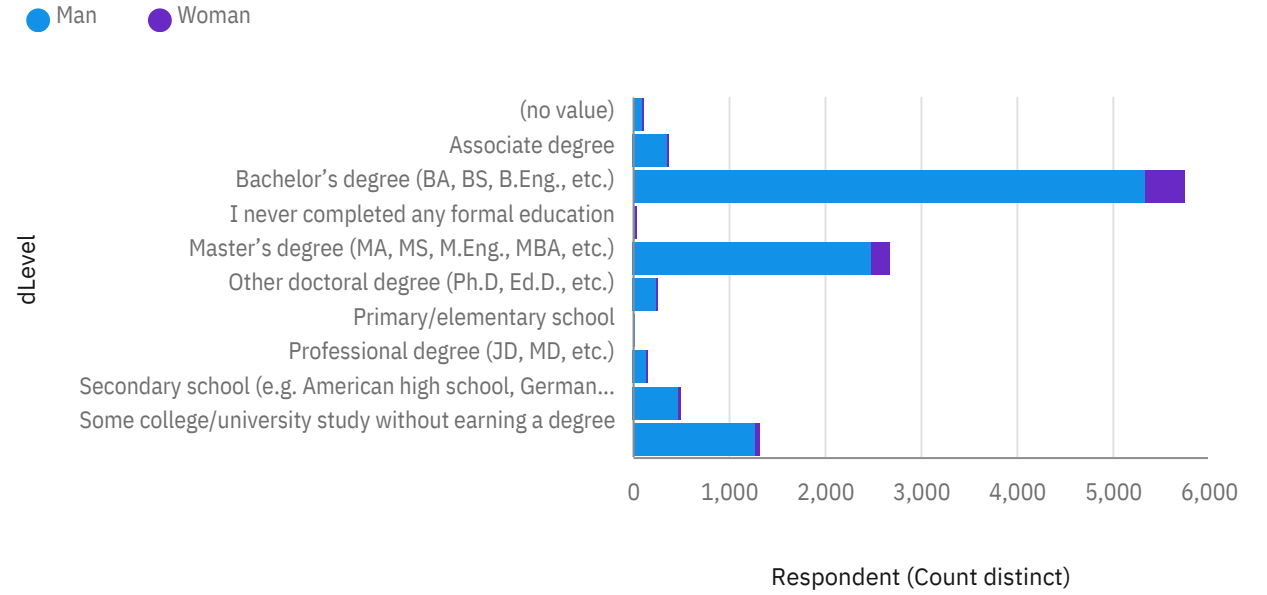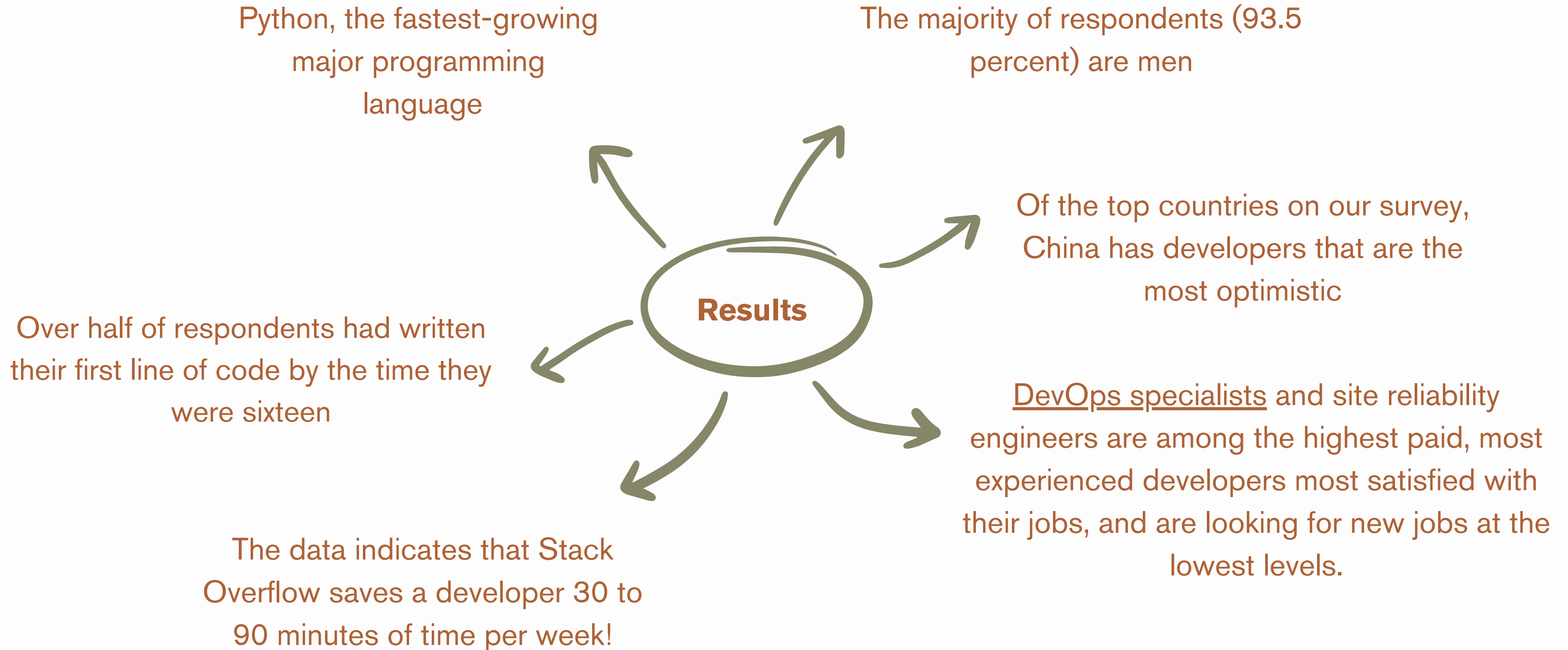
Demographics

Respondent classified by Gender

93.5%

● Woman ● Man

Respondent Count for Countries

Respondent (Cou

1   3,127

© Mapbox© OpenStreetMap

Respondent Count by Age

Value
647
452
1,062
887
1,209
1,171
791
617
422
247
190
124
85
6349
31 19 26 18
6 7 6 8 2 3 3 1 2 1 2 1

Respondent (Count distinct)

Age1stCode

Respondent Count by Gender and Formal Education Level

● Man ● Woman

dLevel	
(no value)	
Associate degree	
Bachelor's degree (BA, BS, B.Eng., etc.)	
I never completed any formal education	
Master's degree (MA, MS, M.Eng., MBA, etc.)	
Other doctoral degree (Ph.D, Ed.D., etc.)	
Primary/elementary school	
Professional degree (JD, MD, etc.)	
Secondary school (e.g. American high school, German...	
Some college/university study without earning a degree	

Respondent (Count distinct)

Results:

Python, the fastest-growing major programming language

The majority of respondents (93.5 percent) are men

Of the top countries on our survey, China has developers that are the most optimistic

Results

Over half of respondents had written their first line of code by the time they were sixteen

DevOps specialists and site reliability engineers are among the highest paid, most experienced developers most satisfied with their jobs, and are looking for new jobs at the lowest levels.

The data indicates that Stack Overflow saves a developer 30 to 90 minutes of time per week!

Discussion

- The dominance of **JavaScript** and **HTML/CSS** and the adoption of **MySQL** as the leading database management system
- Highlights the central role of **web development** in the programming landscape
- Opens up discussions on the significance of **client-side scripting and styling**, trends in web development frameworks, and the evolving nature of **web technologies**

CONCLUDING REMARKS

FINDINGS

- **Technology Trends**: The dominance of **JavaScript** and **HTML/CSS** underscores the importance of staying updated with technology trends in web development.
- **Data Management**: The prevalence of **MySQL**, **PostgreSQL**, and **Microsoft SQL Server** highlights the critical role of effective data management in software development.
- **Diversity of Tools**: The diverse range of programming languages and database systems utilized by developers underscores the importance of understanding the strengths and weaknesses of different tools.

IMPLICATIONS

- **Web Dominance**: The widespread usage of JavaScript and HTML/CSS indicates the dominance of web development in the programming ecosystem, reflecting the growing importance of online platforms and digital experiences.
- **Database Diversity**: The variety of database management systems used highlights the importance of flexibility and adaptability in data storage solutions. Organizations must consider factors such as data structure, scalability, and performance when selecting a database system.
- **Industry Standardization**: The popularity of certain technologies like JavaScript and MySQL suggests a degree of industry standardization, where certain tools become widely adopted due to their proven reliability and effectiveness. This can simplify collaboration and interoperability within the developer community.

CONCLUSION

- The findings underscore the dynamic nature of the programming landscape and the critical role of technology in driving innovation across industries.
- As developers navigate this ever-changing terrain,

  o a keen understanding of diverse programming languages
  o database systems becomes essential to meet the demands of modern applications

o ensure optimal outcomes in software development projects.

Appendix:

https://insights.stackoverflow.com/survey/2019?utm_source=so-owned&utm_medium=blog&utm_campaign=dev-survey-2019&utm_content=launch-blog#methodology