

# “EXPLORING STACK OVERFLOW DEVELOPER SURVEY DATA WITH COGNOS ANALYTICS: INSIGHTS AND VISUALIZATIONS”

This simple Cognos Analytics project consists of several parts:

**Introduction:** Provides an overview of the project's objectives and scope.

**Findings:** Provides the observations drawn from analyzing the data.

**Key Insights:** Reveals the most significant pieces of information derived from the findings.

## INTRODUCTION:

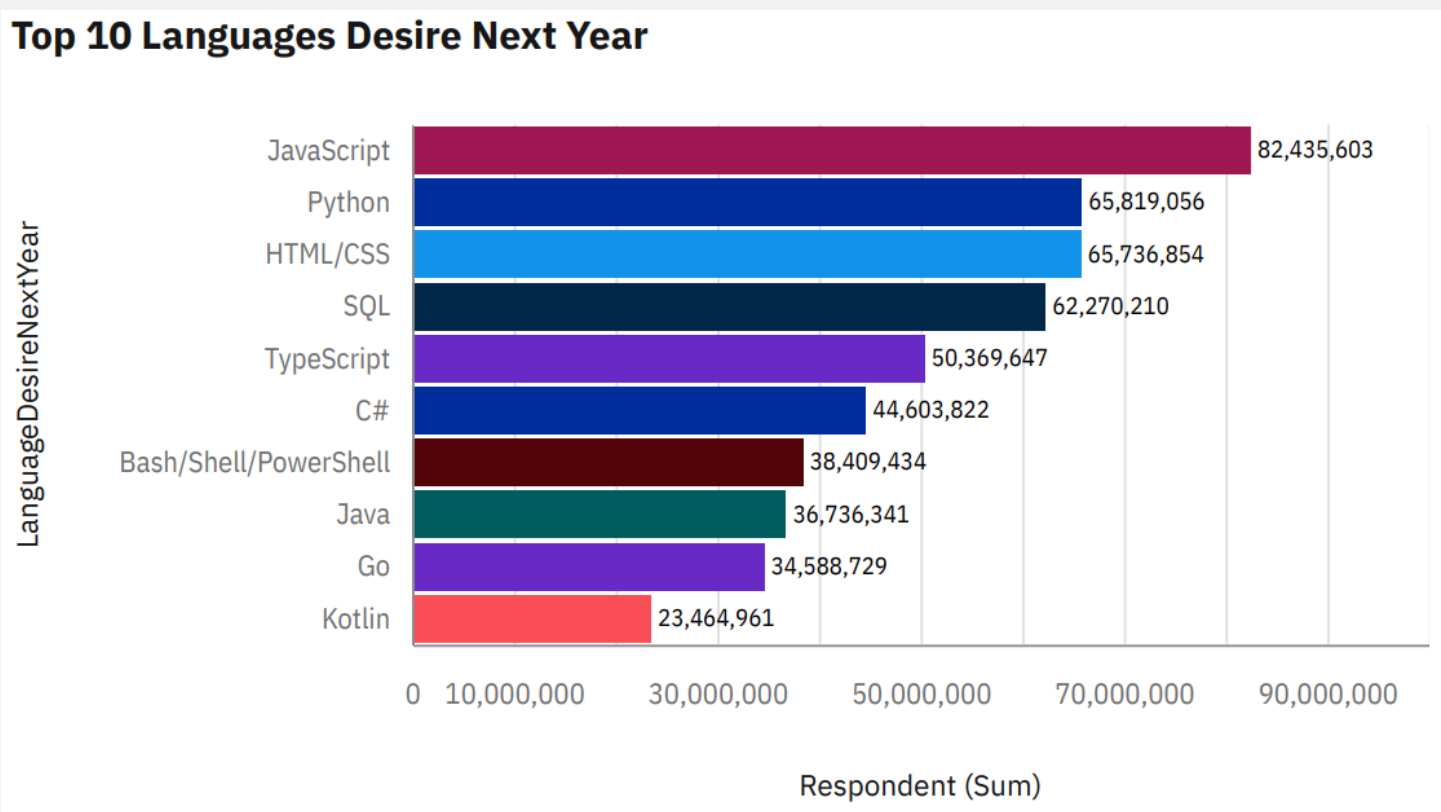
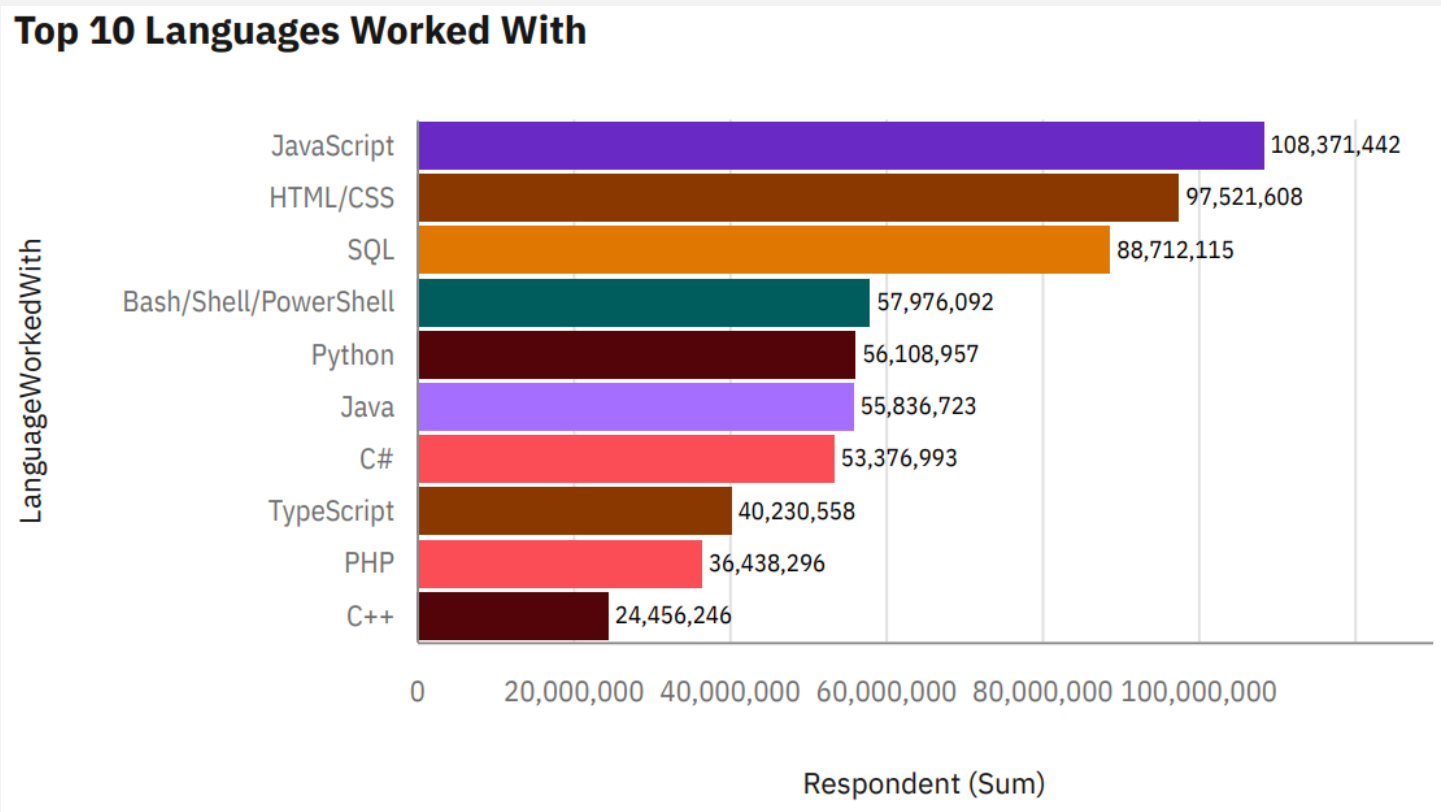
This project seeks to explore developers' current and future preferences regarding programming languages, databases, platforms, and web frameworks. Additionally, it aims to gain insights into their demographics for a better understanding. The 2019 survey collected insights from developers around the world, forming the basis for this project. The data was sourced from the Stack Overflow website, a popular platform where developers collaborate, seek help, and share knowledge. In this project, I leverage IBM's Cognos Analytics as the data visualization tool due to its powerful capabilities for exploring, analyzing, and presenting data, allowing us to uncover meaningful patterns and trends within the developer community.

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Respondent				
A	B	C	D	E
1 Respondent	MainBranch	Hobbyist	OpenSourcer	OpenSource
2 4	I am a developer by profession	No	Never	The quality of OSS and closed source software is about
3 9	I am a developer by profession	Yes	Once a month or more often	The quality of OSS and closed source software is about
4 13	I am a developer by profession	Yes	Less than once a month but more than once per year	OSS is, on average, of HIGHER quality than proprietary
5 16	I am a developer by profession	Yes	Never	The quality of OSS and closed source software is about
6 17	I am a developer by profession	Yes	Less than once a month but more than once per year	The quality of OSS and closed source software is about
7 19	I am a developer by profession	Yes	Never	The quality of OSS and closed source software is about
8 20	I am not primarily a developer, but I write code sometimes as part of my work	No	Never	OSS is, on average, of HIGHER quality than proprietary
9 22	I am a developer by profession	Yes	Less than once per year	OSS is, on average, of HIGHER quality than proprietary
10 23	I am a developer by profession	Yes	Less than once per year	The quality of OSS and closed source software is about
11 24	I am a developer by profession	Yes	Never	OSS is, on average, of HIGHER quality than proprietary
12 25	I am a developer by profession	No	Never	OSS is, on average, of HIGHER quality than proprietary

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E25								
A	B	C	D	E	F	G	H	I
1 Respondent	LanguageWorkedWith	LanguageDesireNextYear	DatabaseWorkedWith	DatabaseDesireNextYear	PlatformWorkedWith	PlatformDesireNextYear	WebFrameWorkedWith	WebFrameDesireNext
2								
3 4	C	C	MySQL	MySQL	Linux	Linux		
4 4	C++	C#	SQLite	SQLite	Windows	Windows		
5 4	C#	JavaScript						
6 4	Python	SQL						
7 4	SQL							
8 9	Bash/Shell/PowerShell	Bash/Shell/PowerShell	DynamoDB	PostgreSQL	AWS	AWS	Express	Express
9 9	C#	C	PostgreSQL	Redis	Docker	Docker	Ruby on Rails	Ruby on Rails
10 9	HTML/CSS	HTML/CSS	SQLite	SQLite	Heroku	Heroku	Other(s):	Other(s):
11 9	JavaScript	JavaScript			Linux	Linux		
12 9	Python	Ruby			MacOS	MacOS		
13 9	Ruby	Rust			Slack	Slack		

**Findings:** JavaScript continues to maintain its position as one of the most popular programming languages among developers. Additionally, we can observe a growing interest in Python and TypeScript.

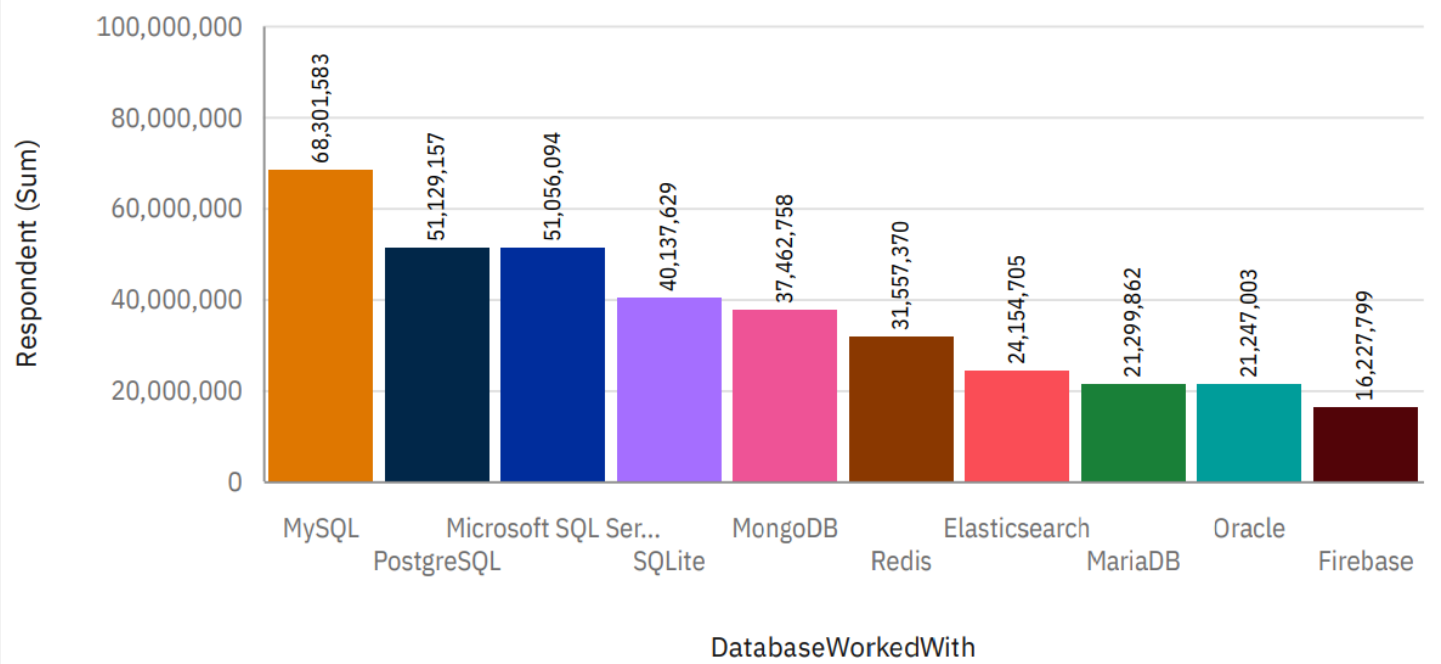
**Key Insights:** Python, known for its readability and versatility, has become a go-to language for data science, web development, and automation. TypeScript, a statically typed superset of JavaScript, offers enhanced type safety and scalability for large-scale applications.



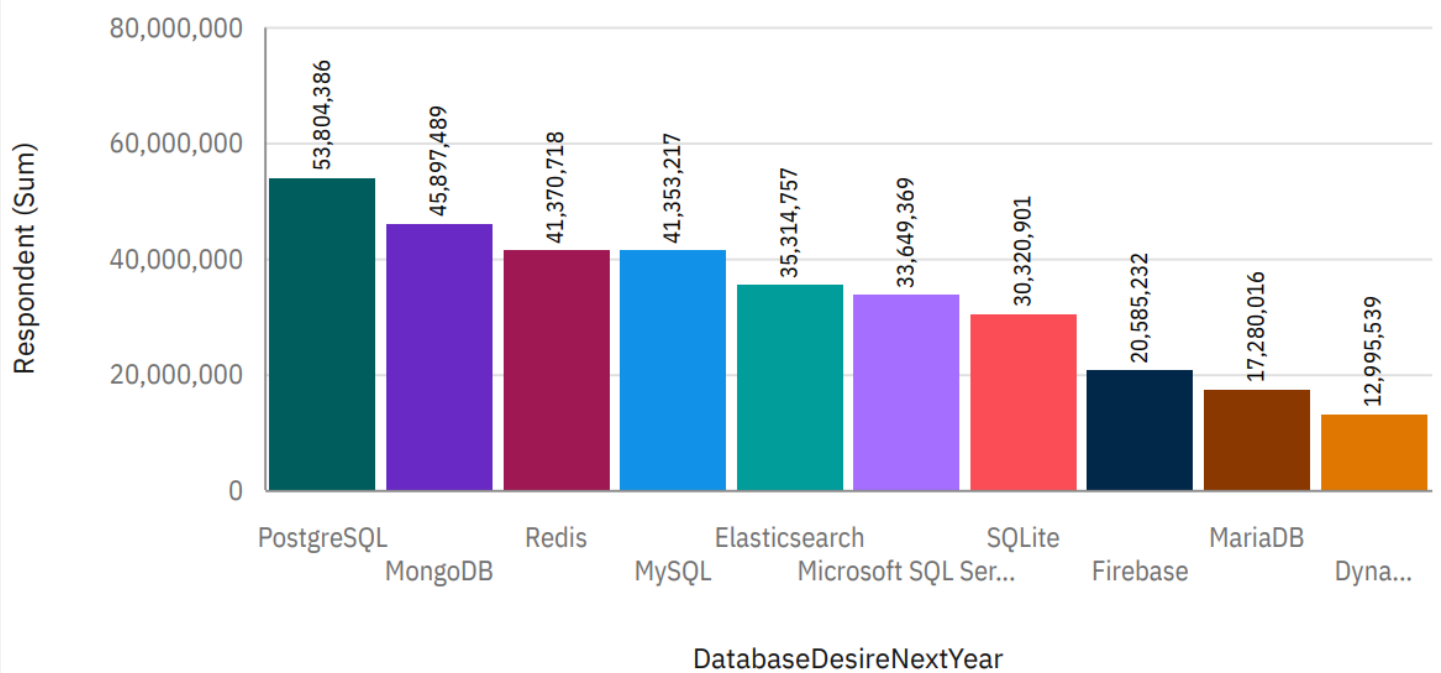
**Findings:** While MySQL continues to hold a strong position in the programming world, there is a growing interest in PostgreSQL. Developers are increasingly favoring PostgreSQL as their preferred database.

**Key Insights:** In the ever-evolving landscape of job opportunities and technological advancements, PostgreSQL might stand out due to its advanced features, and flexibility.

### Top 10 Databases Worked With



### Top 10 Databases Desire Next Year



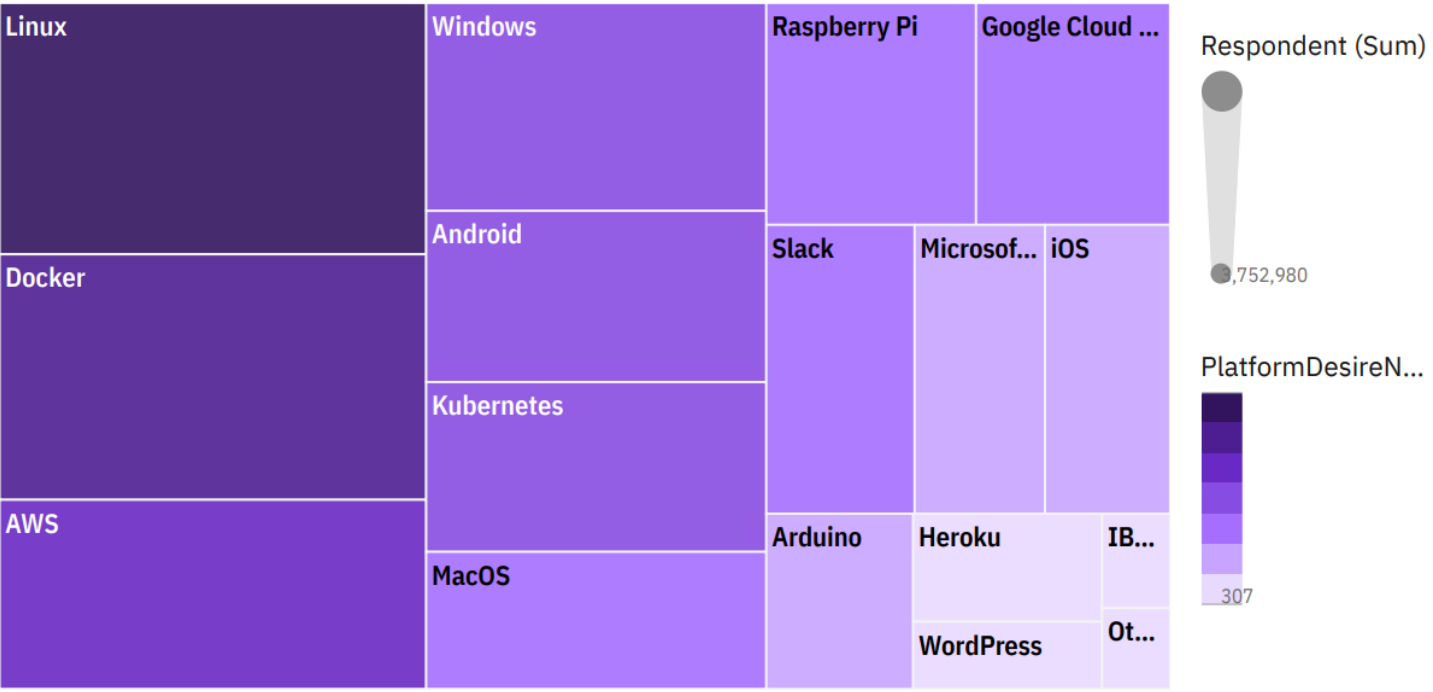
**Findings:** Currently, developers predominantly use the Windows platform, followed closely by Linux. However, when considering their preferences for the upcoming year, a significant number express interest in Linux and Docker.

**Key Insights:** The shift toward Linux and Docker as preferred platforms reflects the dynamic nature of software development. Developers recognize the benefits of containerization for scalability, reproducibility, and efficient deployment. As the landscape evolves, embracing these technologies ensures agility and adaptability.

Platforms Worked With



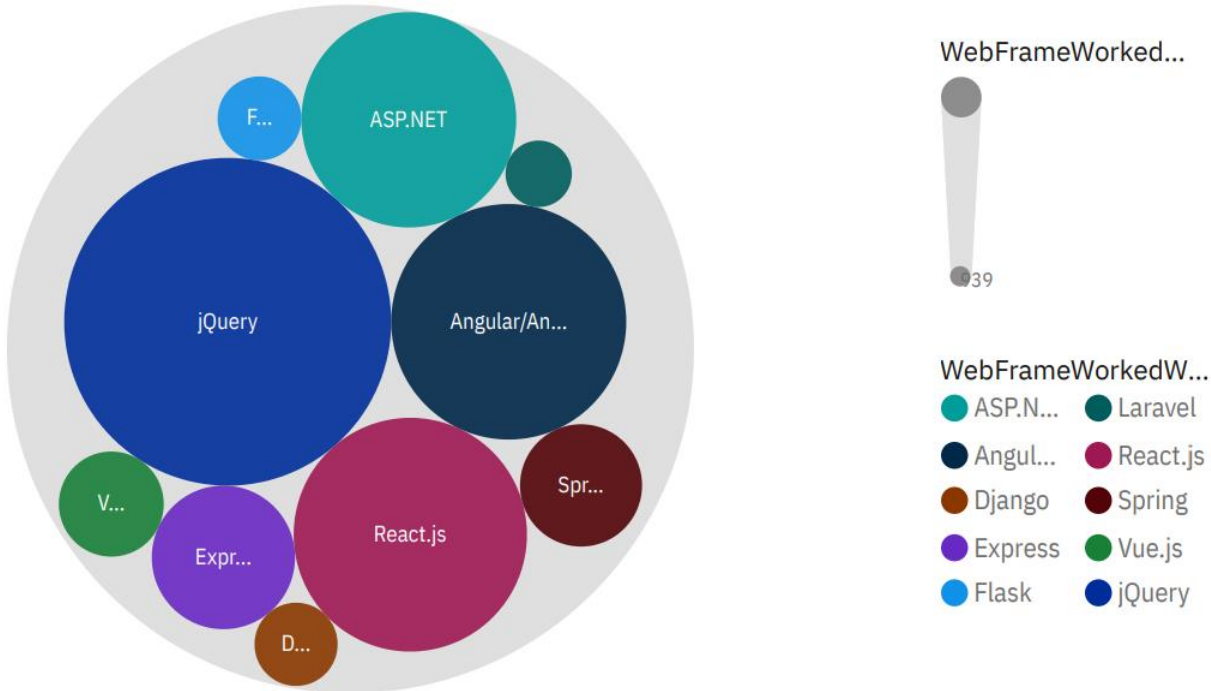
Platforms Desire Next Year



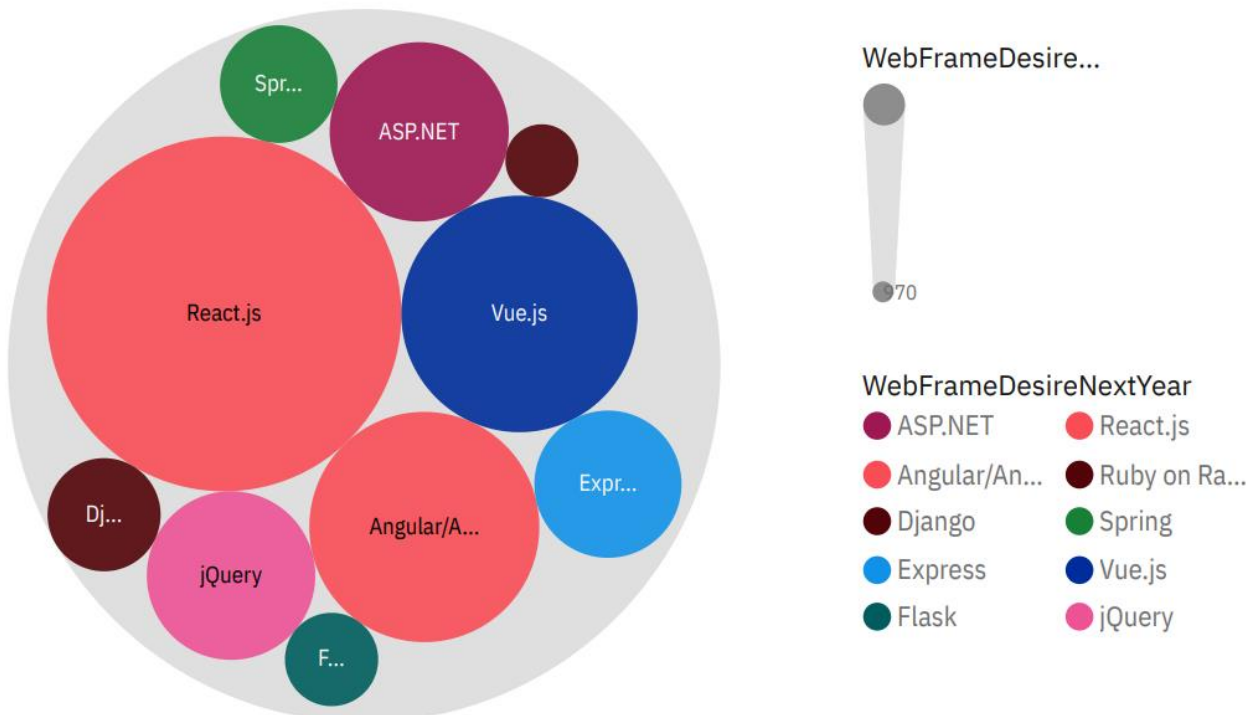
**Findings:** Currently, jQuery holds the top spot as the most widely used web framework among developers. However, when considering their preferences for the upcoming year, a majority of developers have expressed interest in React.js.

**Key Insights:** React.js has surged in popularity due to its component-based architecture, efficient rendering, and robust ecosystem. Developers might choose it for scalability and seamless user experiences.

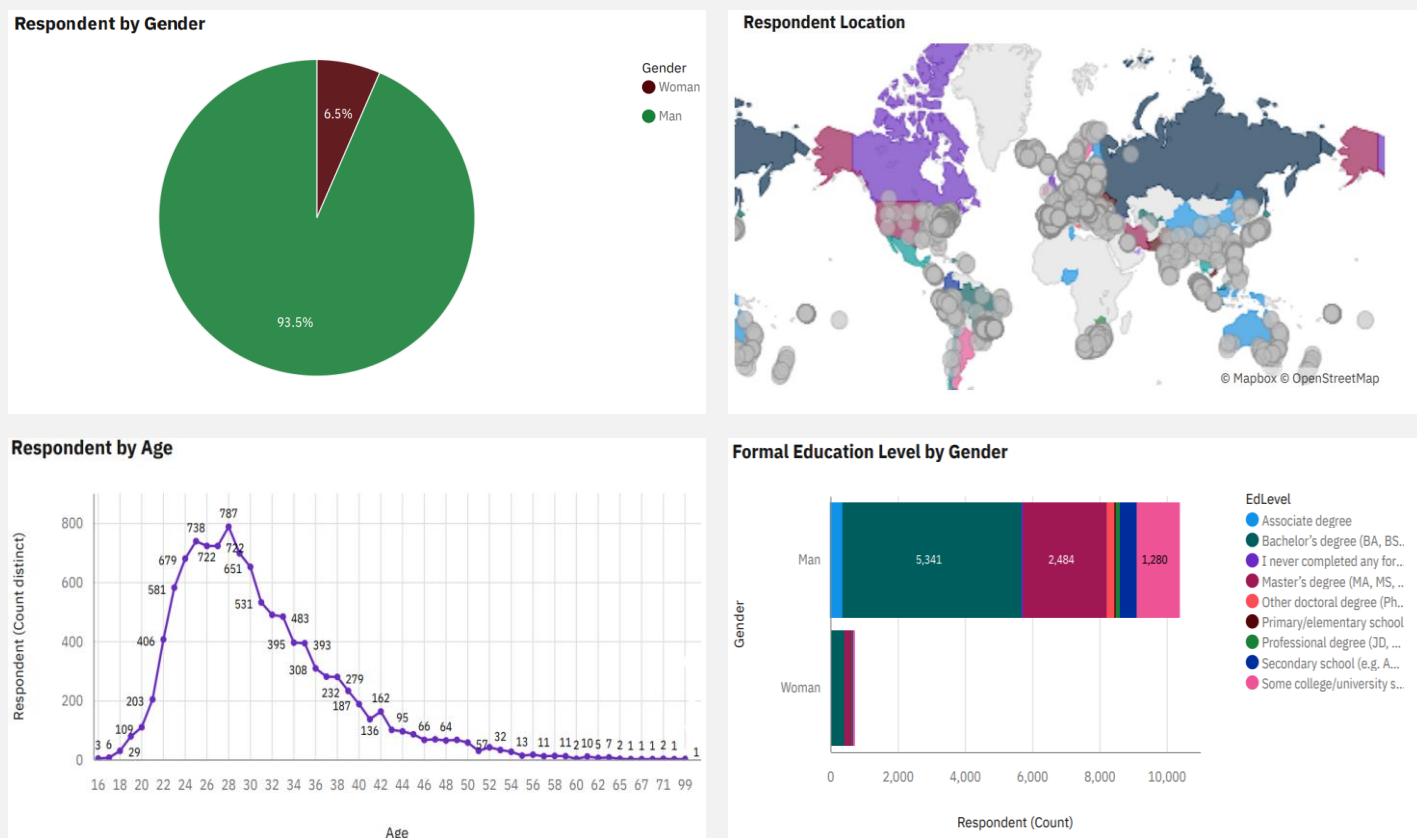
### Top 10 WebFrame Worked With



### Top 10 WebFrame Desire Next Year



**Findings:** Approximately 93.5% of developers identify as male and majority of developers reside in developed countries. Additionally, most fall within the age range of 24 to 30, and a significant proportion have completed bachelor's degrees.



## Key Insights:

### 1. Gender Distribution:

- Approximately 93.5% of developers identify as male. This gender disparity highlights an ongoing challenge in the tech industry, emphasizing the need for greater diversity and inclusion.

### 2. Geographic Distribution:

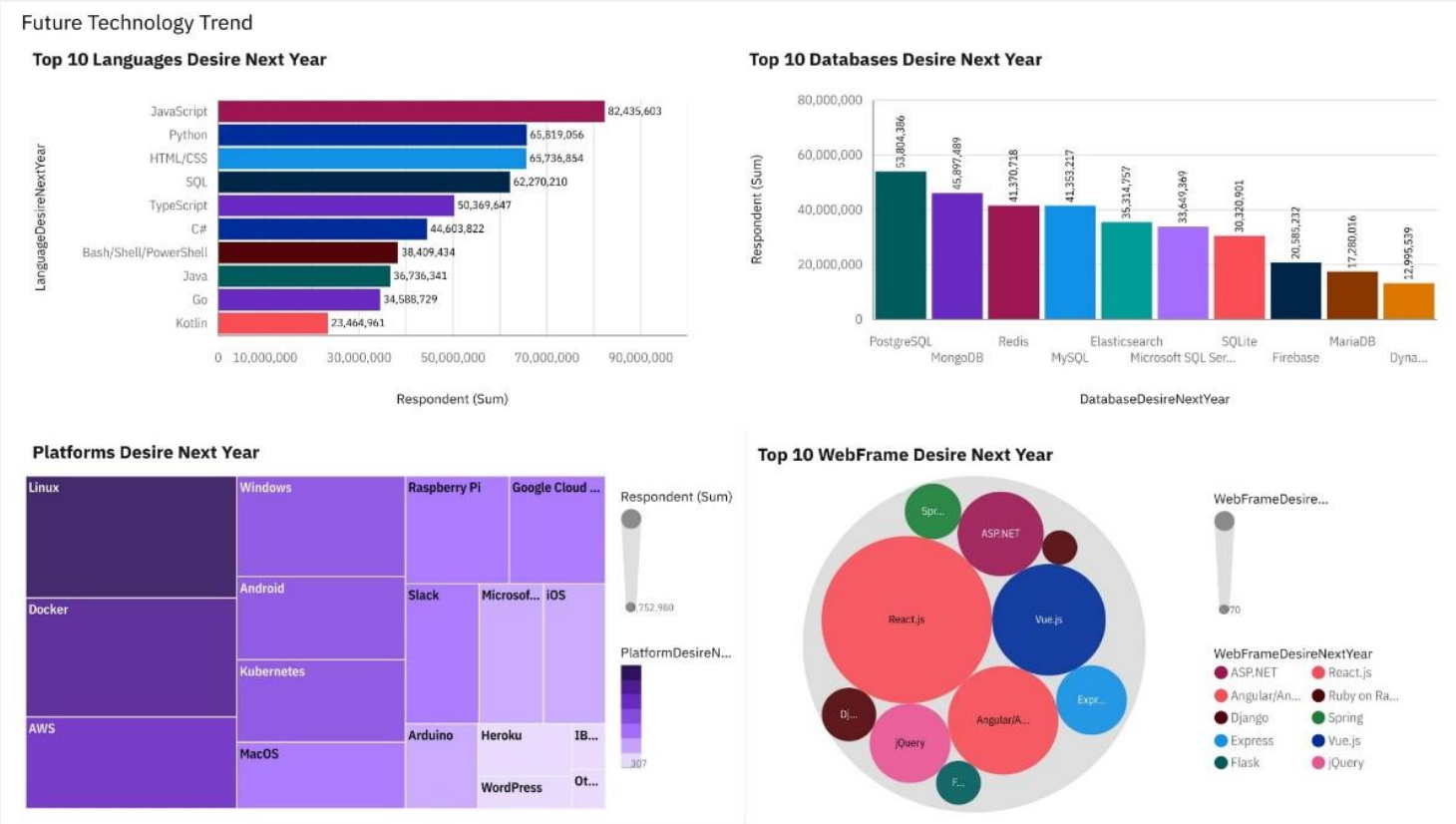
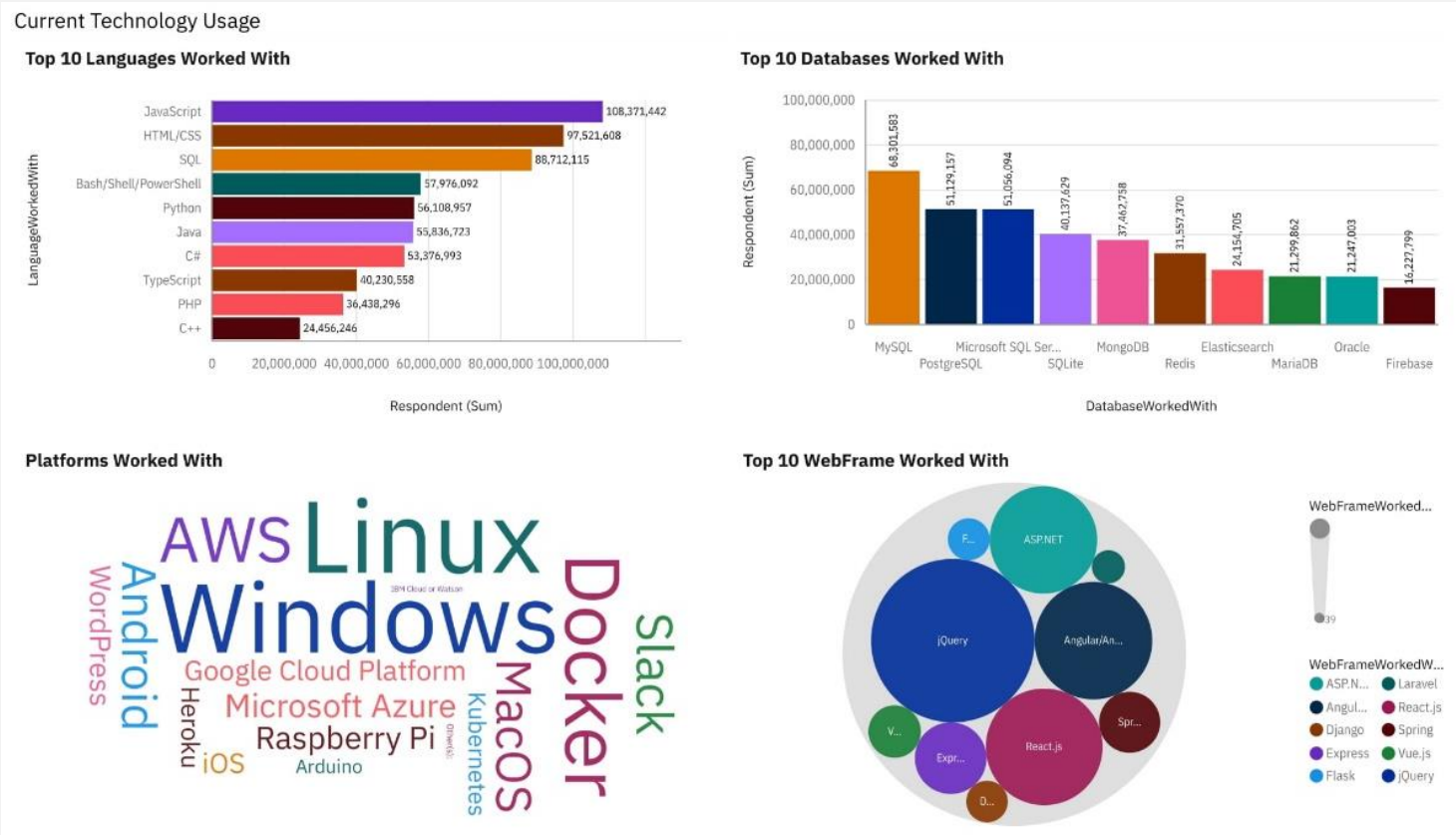
- The majority of developers reside in developed countries. These regions typically have robust tech ecosystems, access to resources, and thriving job markets.
- Developed countries often offer better infrastructure, educational institutions, and career opportunities for developers.

### 3. Age and Education:

- Most developers fall within the age range of 24 to 30. This aligns with the early to mid-career stage, where professionals gain experience and specialize in specific domains.
- The prevalence of bachelor's degrees underscores the importance of formal education in the field. However, developers with Master's Degree also contribute significantly.

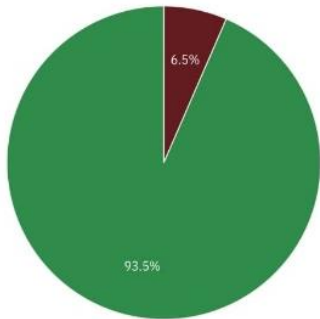


DASHBOARDS

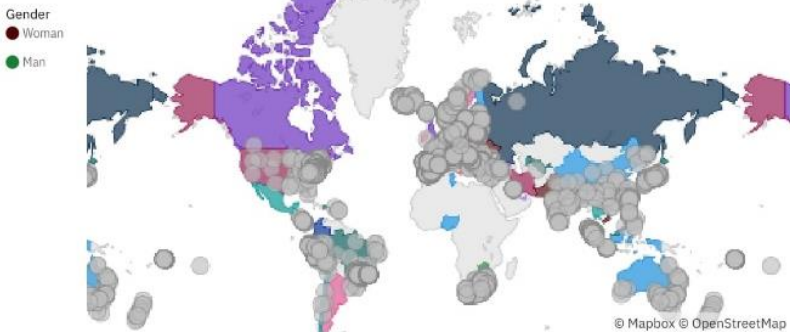


Demographics

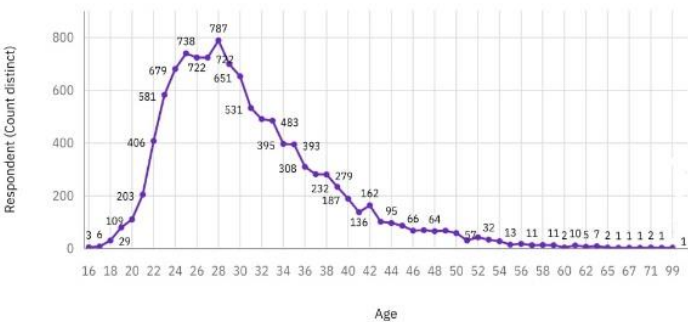
Respondent by Gender



Respondent Location



Respondent by Age



Formal Education Level by Gender

