Stack Overflow Developer Survey

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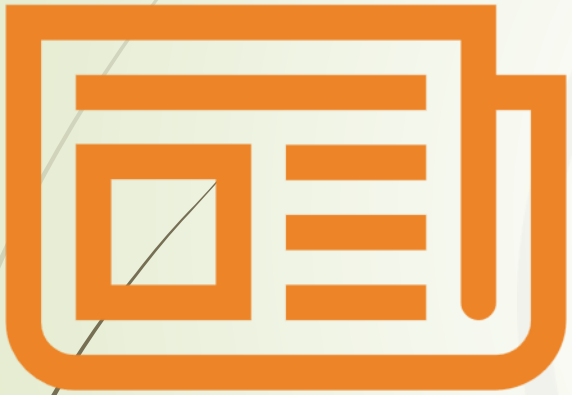
EXECUTIVE SUMMARY

- **Dominance of JavaScript & SQL**
  - Most used and most desired languages among developers.
  - Core to both front-end and back-end development stacks.
- **Rising Popularity of Modern Languages**
  - Strong interest in TypeScript, Python, Rust, and Go
  - Indicates a shift toward modern, scalable, and efficient technologies.
- **PostgreSQL Leads in Database Preference**
  - Highest current and future interest among databases.
  - Developers value open-source, powerful, and flexible relational DBs.
- **Cloud & Platform Trends**
  - AWS, Azure, and Google Cloud dominate both current usage and future interest.
  - Serverless and backend-as-a-service platforms like Supabase are emerging.
- **Demographics Reflect Young, Educated Workforce**
  - Majority are aged 25–34 with bachelor's or master's degrees.
  - Indicates strong entry-level and early-career developer engagement.

INTRODUCTION

- This report presents findings from a global developer survey focused on **current and future technology trends**.
- It highlights the most commonly **used** and **desired** programming languages, databases, platforms, and frameworks.
- The survey captures insights from a wide range of respondents across different **age groups**, **education levels**, and **geographies**.
- The goal is to help organizations, educators, and developers understand:
  - What technologies are most relevant today.
  - What skills are growing in demand
  - How to align learning, hiring, and investment strategies with upcoming trends.

METHODOLOGY



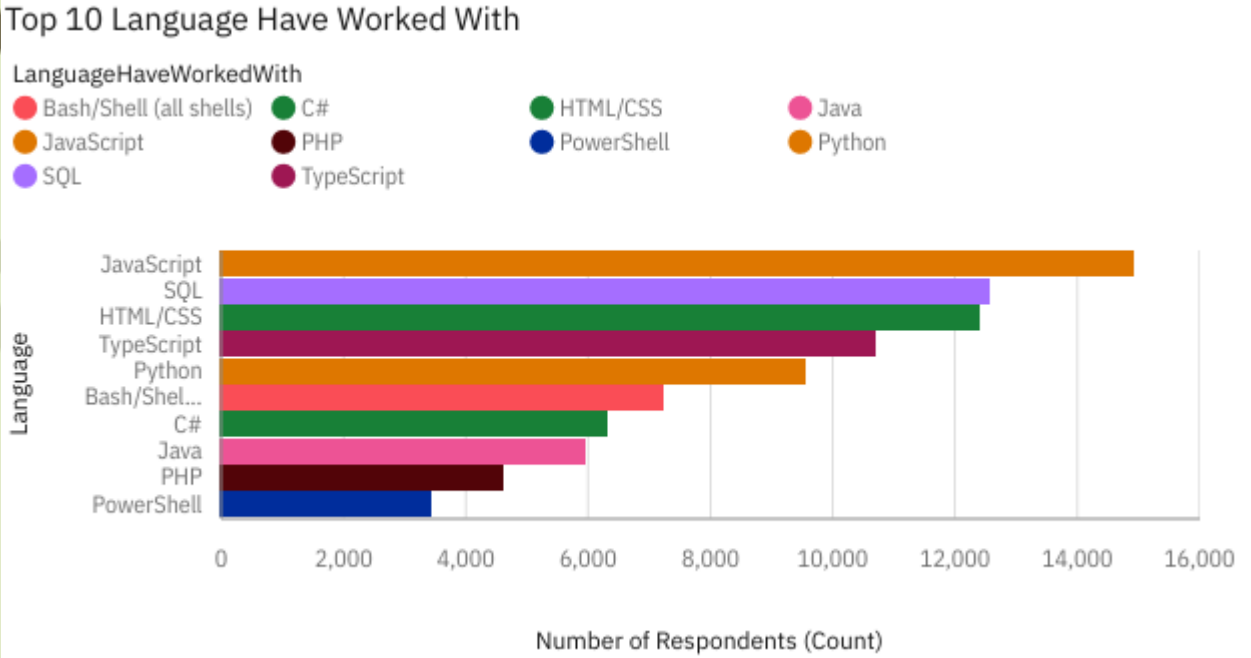
- **Survey Distribution**
  - The data was collected through an online survey shared globally via developer communities, tech platforms, and partner organizations.
  - Filter important details on the survey like Age, Edlevel, Languages, Databases and etc.
- **Focus Area**
  - Analyzed important aspects like language, database, platforms, web frames
- **Demographics**
  - Considered age, gender, country and educational level.
- **Data Collection Tools**
  - Conducted using IBM Cognos Analytics Dashboard
  - Data processed and visualized through structured filters and top N value analysis
- **Analysis**
  - Used descriptive statics to check the correlations between experience, education and technology choices

RESULTS

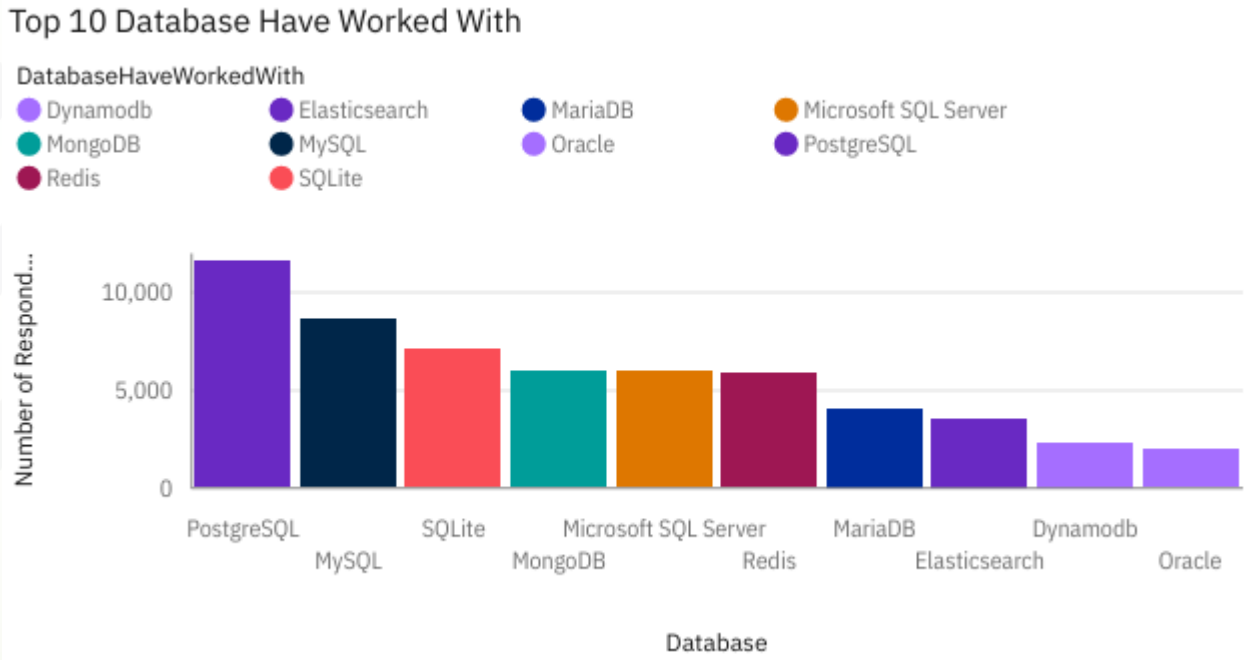
- **JavaScript and SQL** are the most commonly used programming languages, while TypeScript and Python are the most desired.
- **PostgreSQL** is the most used and preferred database, with Redis also gaining interest
- **AWS, Azure, and Google Cloud** dominate platform usage, but AWS and Vercel are most preferred for future work.
- **Node.js and React** are the top frameworks in use, with React and Next.js being the most desired.
- Most **respondents** are aged 25–34 and hold a bachelor's or master's degree.

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

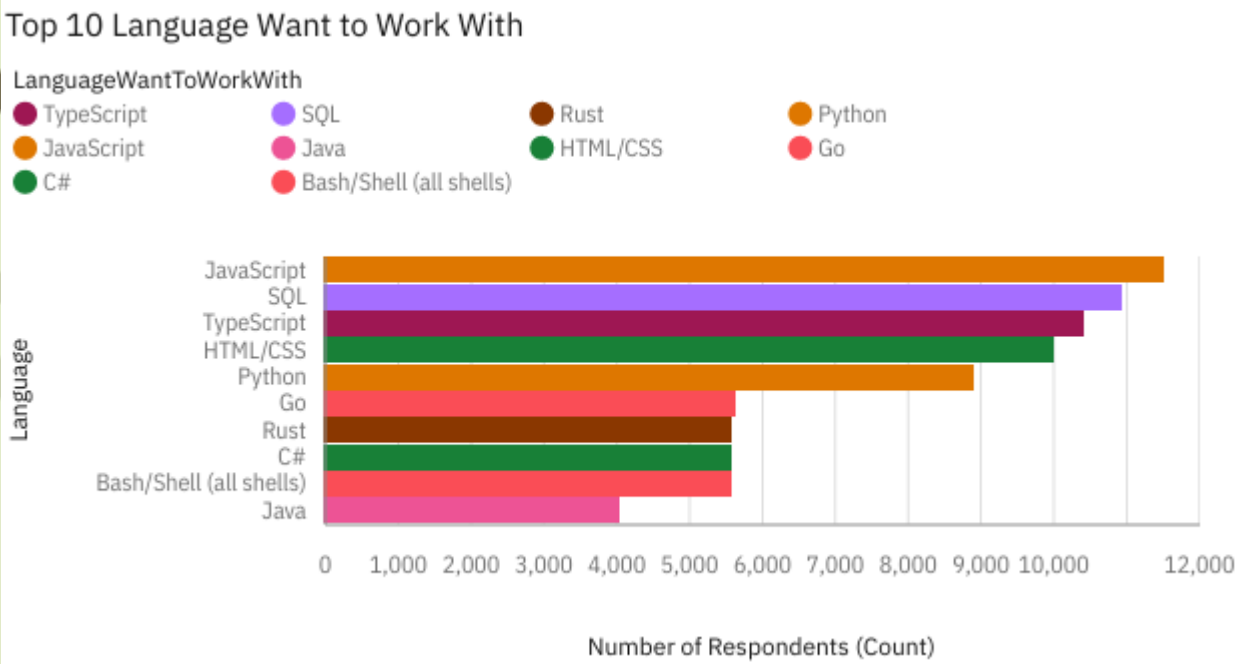
- **JavaScript** has the highest number of respondents, indicating it remains dominant in web and full-stack development. **SQL**, **HTML/CSS**, and **TypeScript** are also widely used, closely following JavaScript.
- **PostgreSQL** leads the chart, showing a strong preference for modern relational databases.**TypeScript** ranks higher than some traditional languages (e.g., Java, PHP)
- A mix of relational (PostgreSQL, MySQL, SQLite, Microsoft SQL Server, Oracle) and NoSQL (MongoDB, Redis, DynamoDB, Elasticsearch) databases are represented.

Implications

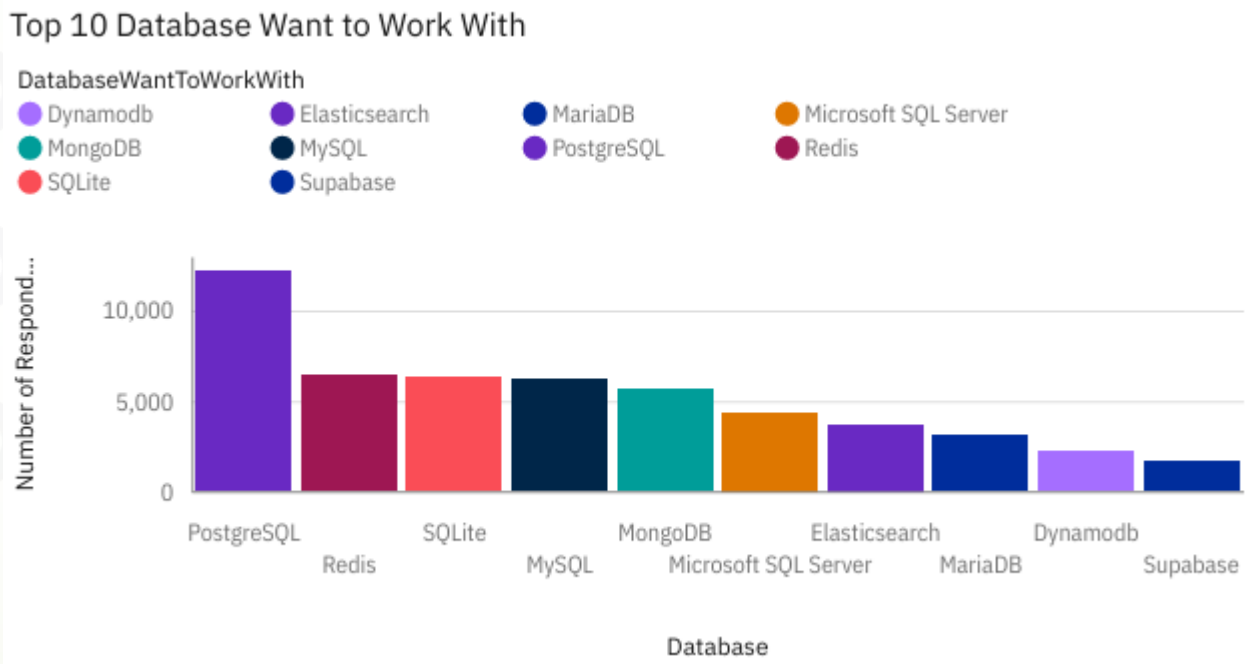
- **Learning JavaScript and SQL remains a strong foundational skill**, while gaining **TypeScript proficiency** is becoming increasingly important for modern development.Implication 2
- With the growing use of **NoSQL databases**, cloud-native and flexible data architectures are becoming essential.
- Understanding at least one **relational** (e.g., PostgreSQL, MySQL) and one **NoSQL** database (e.g., MongoDB or Redis) is beneficial for future job readiness.

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- **JavaScript**, **SQL**, **TypeScript**, and **HTML/CSS** are the top choices. These languages are associated with web development and full-stack roles.
- **PostgreSQL** is the most preferred database by a wide margin. **Redis**, **SQLite**, **MySQL**, and **MongoDB** also have strong interest—representing both in-memory and traditional databases.
- **Supabase** appears in the top 10 despite being relatively new, indicating interest in modern, backend-as-a-service platforms.

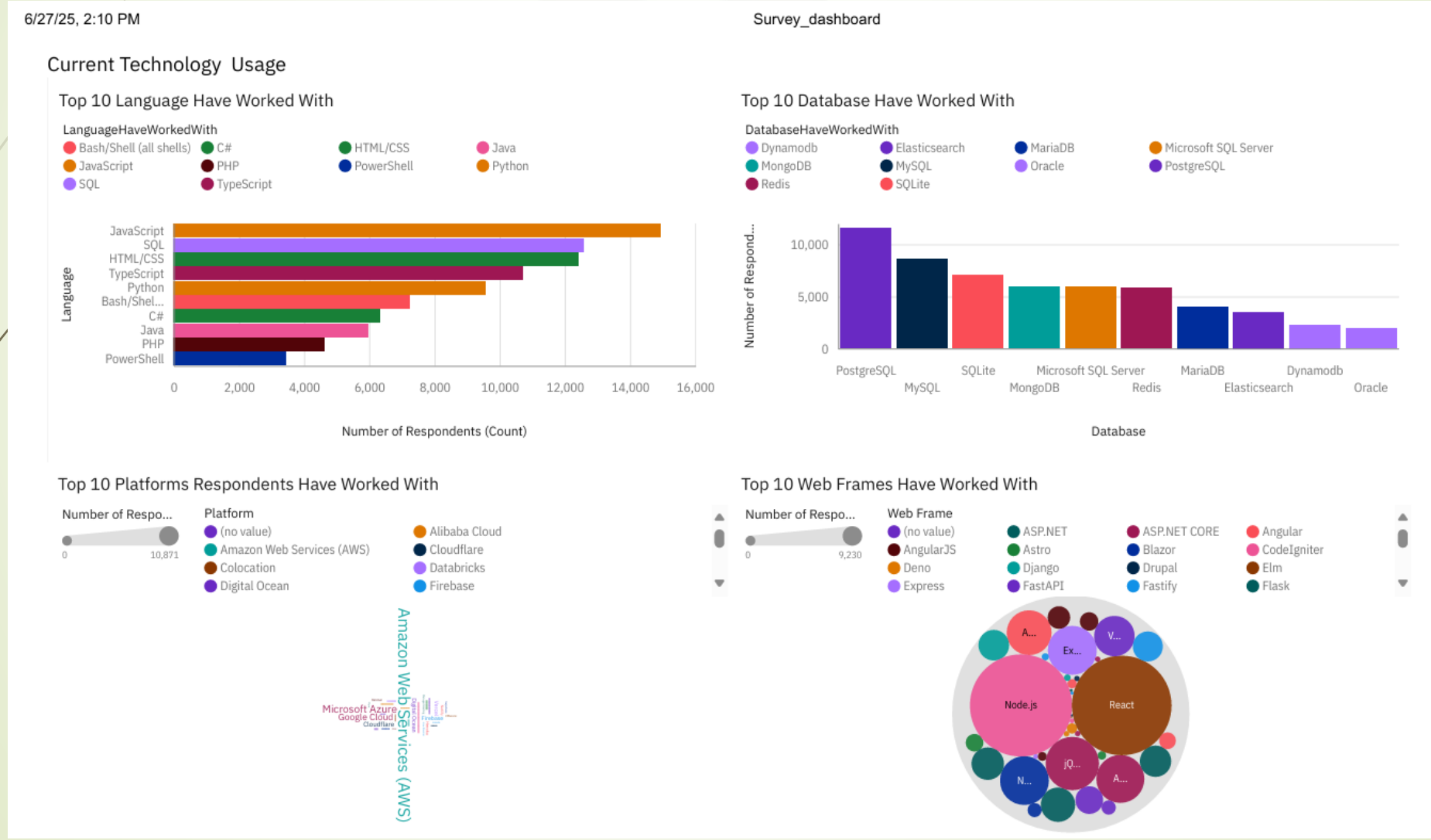
Implications

- **Web and backend development** remain dominant career paths, as indicated by the interest in **JavaScript, TypeScript, and SQL**.Implication 2
- **PostgreSQL** should be a priority learning target—it is both widely used and highly desired.
- Proficiency in **both relational (PostgreSQL, MySQL)** and **non-relational (Redis, MongoDB)** systems is now expected in many roles.

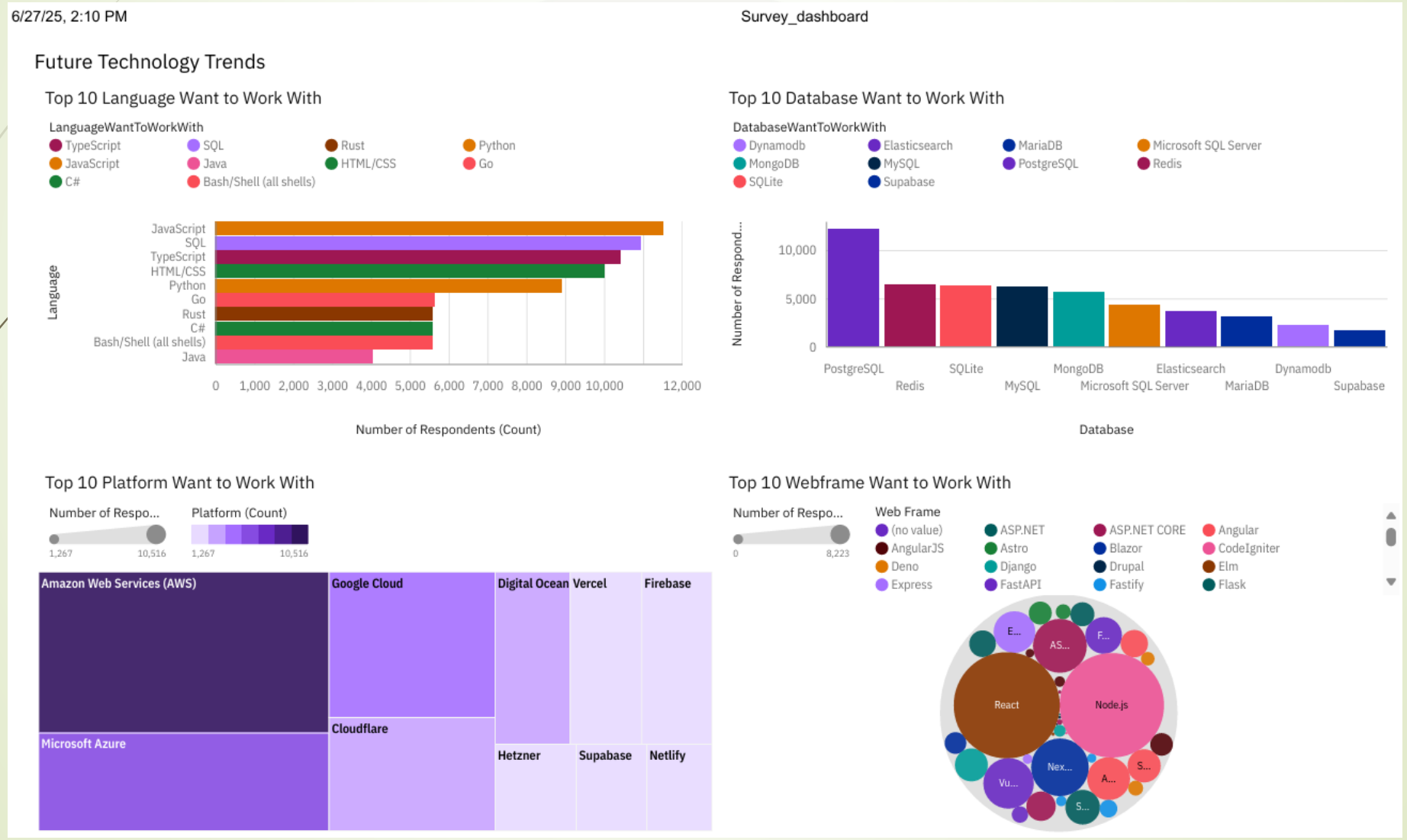
DASHBOARD

<https://github.com/allenMP-DA/allenMP/blob/main/Building%20a%20dashboard%20with%20IBM%20Cognos%20Analytics.pdf>

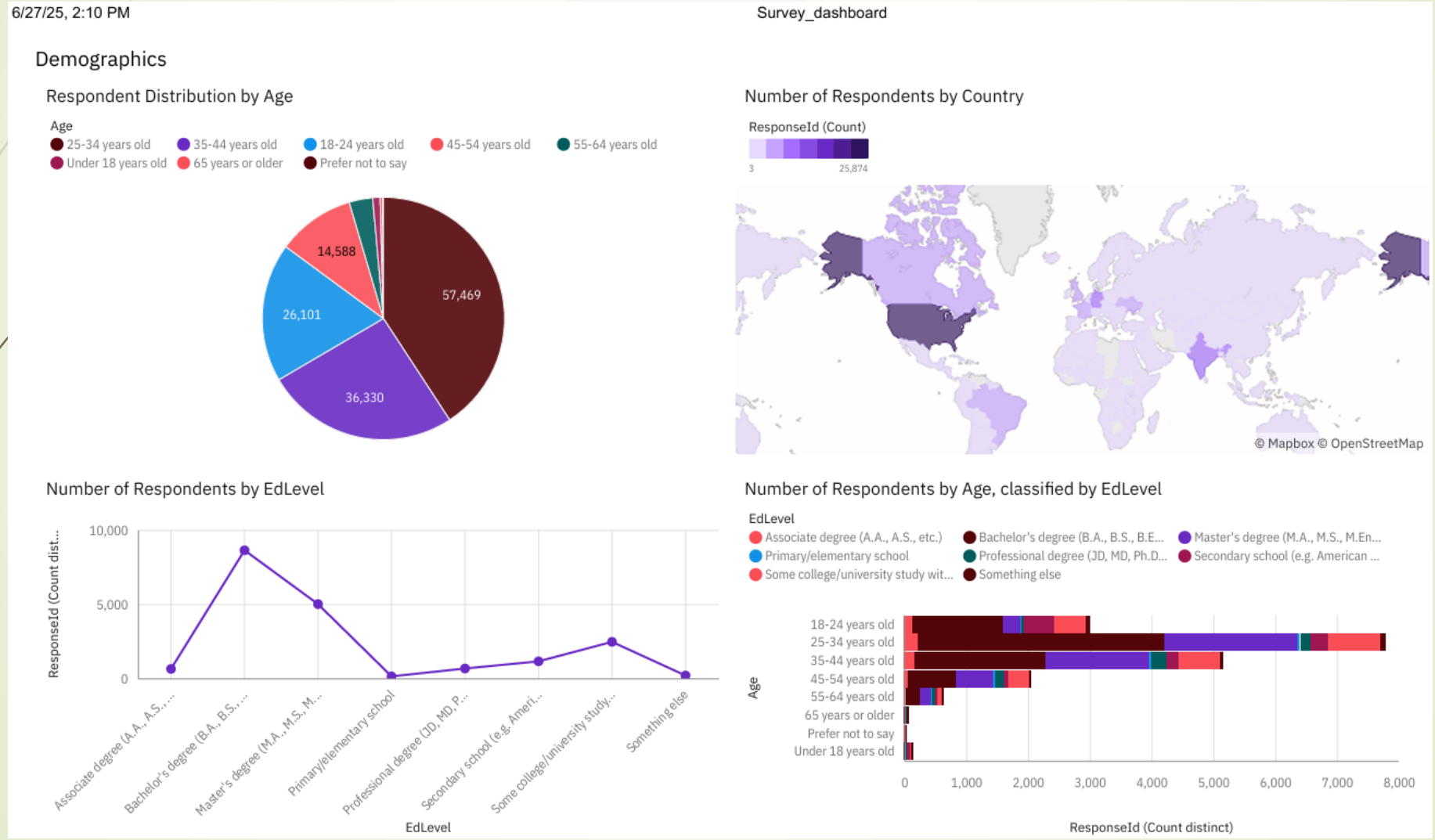
DASHBOARD TAB 1



DASHBOARD TAB 2



DASHBOARD TAB 3



DISCUSSION

- **Technologies: JavaScript** and **SQL** continue to dominate due to their foundational role in web and backend development, while **TypeScript** and **Python** are rising in popularity thanks to their scalability and versatility.
- **Database**: **PostgreSQL** stands out as both the most used and most desired, reflecting its reputation as a powerful and open-source relational database.
- **Platforms: AWS**, **Azure**, and **Google Cloud** confirms the importance of cloud infrastructure in modern development workflows.
- **Framework:** reflect modernization: while **Node.js** and **React** are widely used, future interest shifts toward **Next.js**, **FastAPI**, and **Flask**, emphasizing full-stack solutions and API-focused development.
- **Demographically:** The developer community is young and well-educated, with the majority **aged 25–34** and holding a bachelor's or **master's degree**.

OVERALL FINDINGS & IMPLICATIONS

Findings

- **JavaScript, SQL, and Python** are the most widely used and desired languages, with rising interest in **TypeScript**, **Go**, and **Rust**.
- **PostgreSQL** dominates both current use and future interest in databases, followed by **Redis** and **SQLite**.
- **Cloud platforms** like **AWS**, **Azure**, and **Google Cloud** lead in usage, while modern developer platforms like **Vercel**, **Supabase**, and **Cloudflare** are gaining popularity.
- **React**, **Node.js**, and **Express** are the most used frameworks, but **Next.js**, **FastAPI**, and **Flask** are highly sought after.
- The majority of respondents are aged **25–34** and hold **bachelor's or master's degrees**, indicating a skilled and early-career developer base.

Implications

- **Educational institutions** should focus on modern, in-demand languages (e.g., TypeScript, Rust), cloud skills, and full-stack development frameworks.Implication 2
- **Employers** should align hiring and training with trends like PostgreSQL, serverless platforms (e.g., Supabase), and modern JS/React-based stacks.
- **Tool and platform creators** should invest in performance, scalability, and developer experience to meet the evolving preferences.

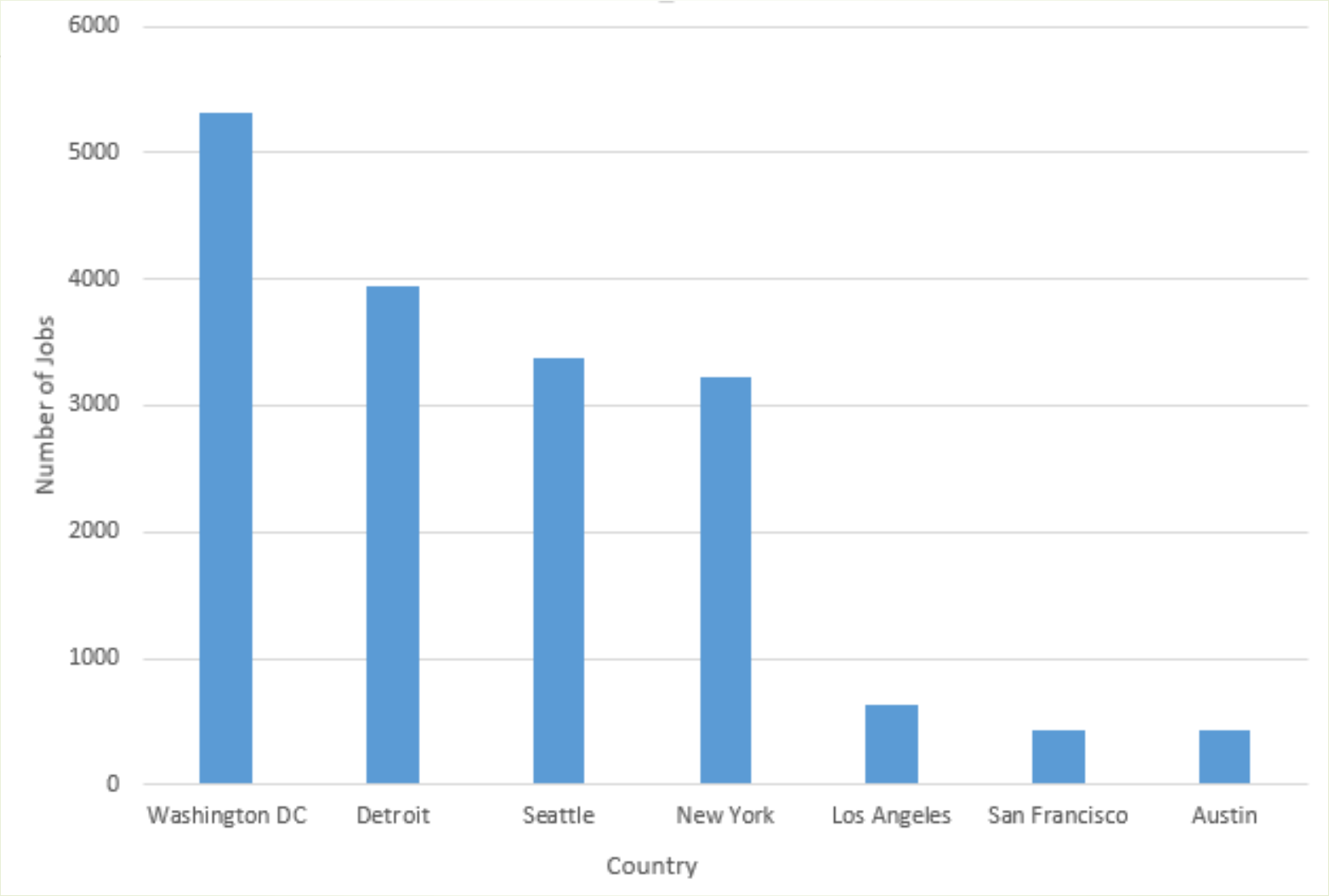
CONCLUSION

- The survey results reveal a dynamic and forward-looking developer ecosystem, with strong foundations in widely adopted technologies like **JavaScript**, **SQL**, and **React**, alongside growing enthusiasm for modern tools such as **TypeScript**, **Rust**, **PostgreSQL**, and **Supabase**.
- The clear shift toward **cloud-native platforms**, **developer-friendly frameworks**, and **high-performance databases** reflects an industry moving rapidly toward flexibility, scalability, and efficiency.
- With a predominantly young and well-educated respondent base, the findings underscore the need for continued investment in modern skill development, infrastructure, and tooling.
- Aligning education, hiring, and development strategies with these evolving trends will be key to staying competitive in the fast-paced tech landscape.

APPENDIX


Number of Respondents by Country
Country (Count)
32
49
Greenland
Svalbard
Iceland
Sweden
Finland
Norway
Russia
Canada
Denmark
United Kingdom
Belarus
Poland
Germany
Ukraine
France
Romania
Kazakhstan
Mongolia
North Atlantic Ocean
Italy
Spain
Greece
Türkiye
Uzbekistan
Turkmenistan
United States
China
Japan
Tunisia
Morocco
Iraq
Iran
Afghanistan
Pakistan
Nepal
Algeria
Libya
Egypt
Saudi Arabia
Bangladesh
Mexico
Cuba
India
Oman
Laos
Mauritania
Mali
Niger
Chad
Yemen
Senegal
Sudan
Cambodia
Philippines
Nigeria
Ethiopia
Sri Lanka
Venezuela
Cameroon
Maldives
Colombia
Malaysia
Democratic Republic of the Congo
Kenya
Ecuador
Indonesia
Tanzania
Papua New Guinea
Peru
Brazil
Angola
Zambia
Mozambique
Bolivia
Namibia
Indian Ocean
Paraguay
South Africa
Australia
Chile
South Atlantic

JOB POSTINGS



POPULAR LANGUAGES