Tech Trends 2025

Part 1

OUTLINE

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EXECUTIVE SUMMARY

1. **Current Technology Usage**:
•**JavaScript, SQL, and HTML/CSS** are the most widely used programming languages globally.
•**PostgreSQL and MySQL** are leading databases, especially in the U.S. and India.
•**Amazon Web Services (AWS)** and **Microsoft Azure** dominate cloud platform usage.
•Web frameworks like **React** and **Node.js** show significant traction.

2. **Demographics**:
•The majority of tech professionals are aged **25–34 years**.
•Most participants hold a **Bachelor's or Master's degree**.
•Respondents are globally distributed, with large concentrations in the **United States, India, and Europe**.

3. **Future Technology Trends**:
•**JavaScript, Python, and TypeScript** remain top choices for future adoption.
•**PostgreSQL** is the most desired database for next year.
•Cloud platforms like **AWS** and **Google Cloud** continue to dominate interest.
•Web frameworks such as **Next.js** and **Svelte** are gaining popularity.

INTRODUCTION

Purpose:
This report analyzes current and emerging technology trends based on Stack Overflow Developer Survey dataset. It aims to uncover what tools, languages, databases, and platforms are in demand today and expected to grow in the near future.

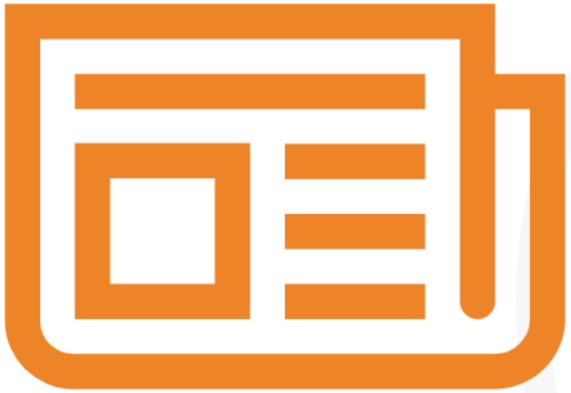
Target Audience:

- Tech leaders and decision-makers
- Hiring managers and recruiters
- Developers and IT professionals
- Educational institutions and training providers

Value of the Report:

- Helps **businesses align their tech stacks** with market trends.
- Supports **strategic hiring and upskilling decisions**.
- Informs developers of **in-demand technologies** to stay competitive.
- Provides a data-backed view of **global developer demographics** and preferences.

METHODOLOGY

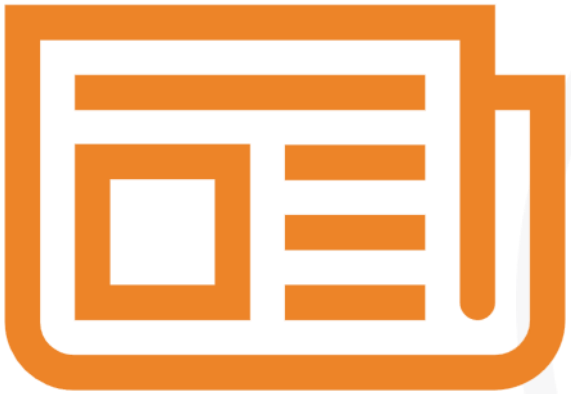


Data Source:
The dataset is available as part of the Stack Overflow Developer Survey under an Open Database License (ODbL). I have used a subset of the complete dataset.

Collecting Data:

1. **Collected Jobs Data Using Job API**
    - Used Requests Module to download the Json file
    - Defined a function that Returns Technology and Job Postings
    - Stored it in a csv file
2. **Collected popular programming languages data using Web Scraping**
    - Used Requests module to download the web page
    - Used BeautifulSoup to scrape the Name of language and Average annual salary

METHODOLOGY



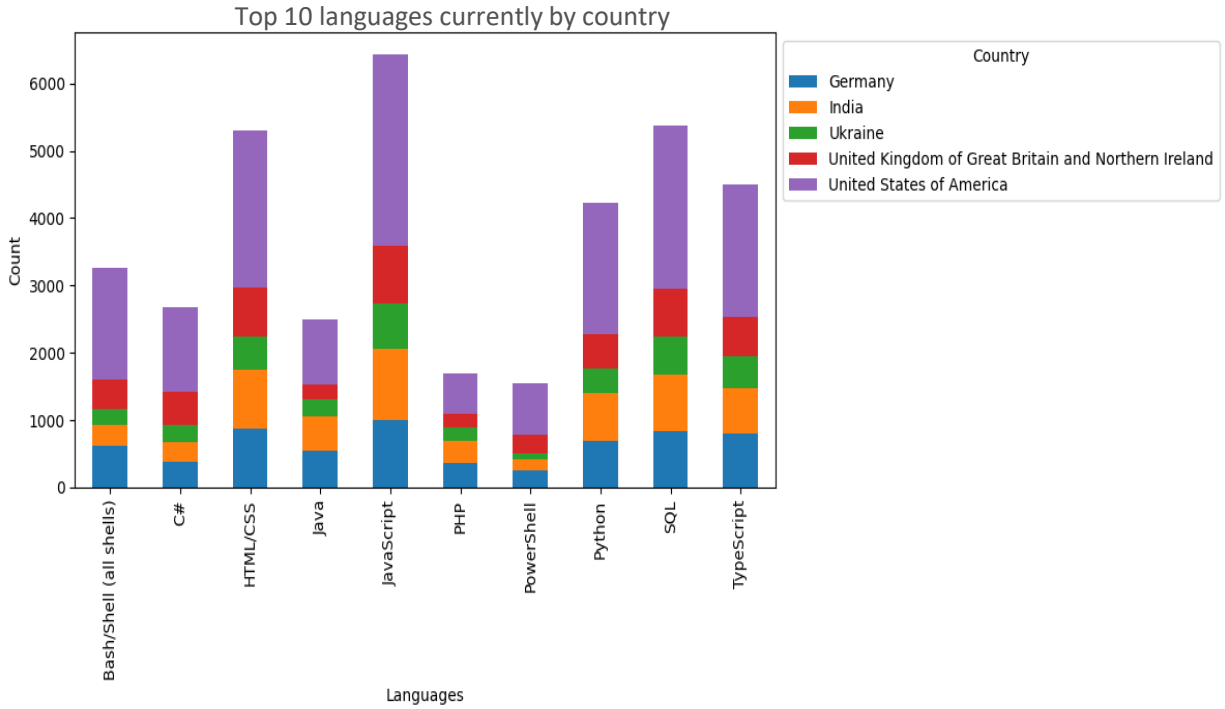
3. **Downloaded survey_data.csv from URL**
    - Utilized read_csv() function of pandas to load the dataset

Key Wrangling Steps:

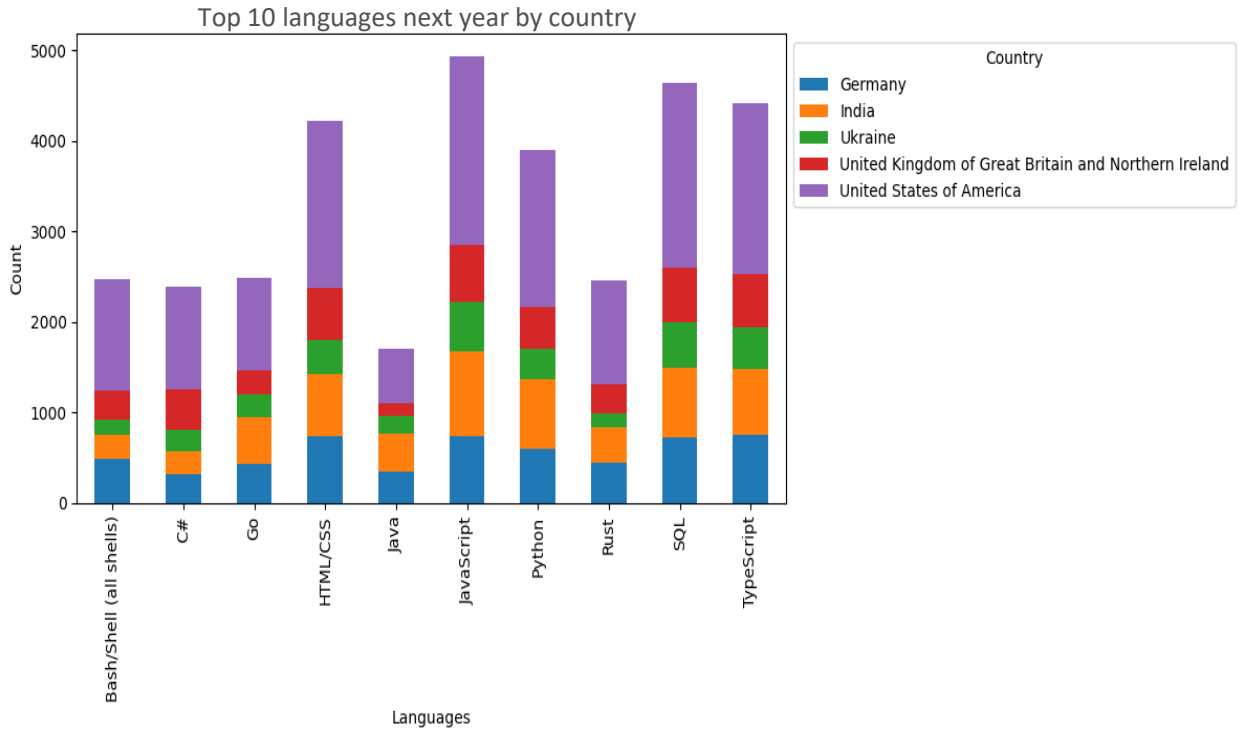
- Duplicate rows were identified and removed
- Missing values were identified and removed or filled with appropriate values
- Identified and removed inconsistent or irrelevant entries in specific columns
- Normalized and transformed columns using Min-Max scaling and Log-Transform

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

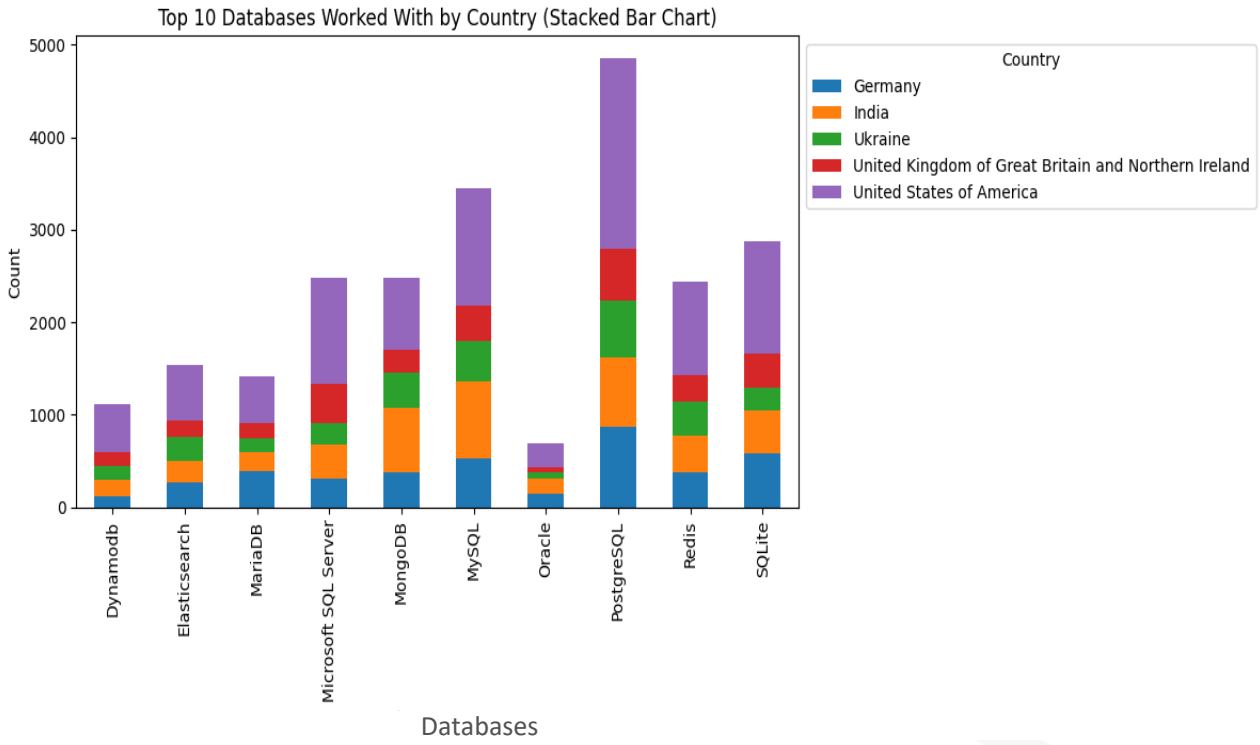
- Javascript, SQL and HTML/CSS are the in demand languages and will remain in demand in coming years
- Usage mostly in USA, Germany and India
- Typescript and Python are also showing great adoption
- PHP and Powershell are used less and not widely desired future use
- Python and GO will gain Popularity

Implications

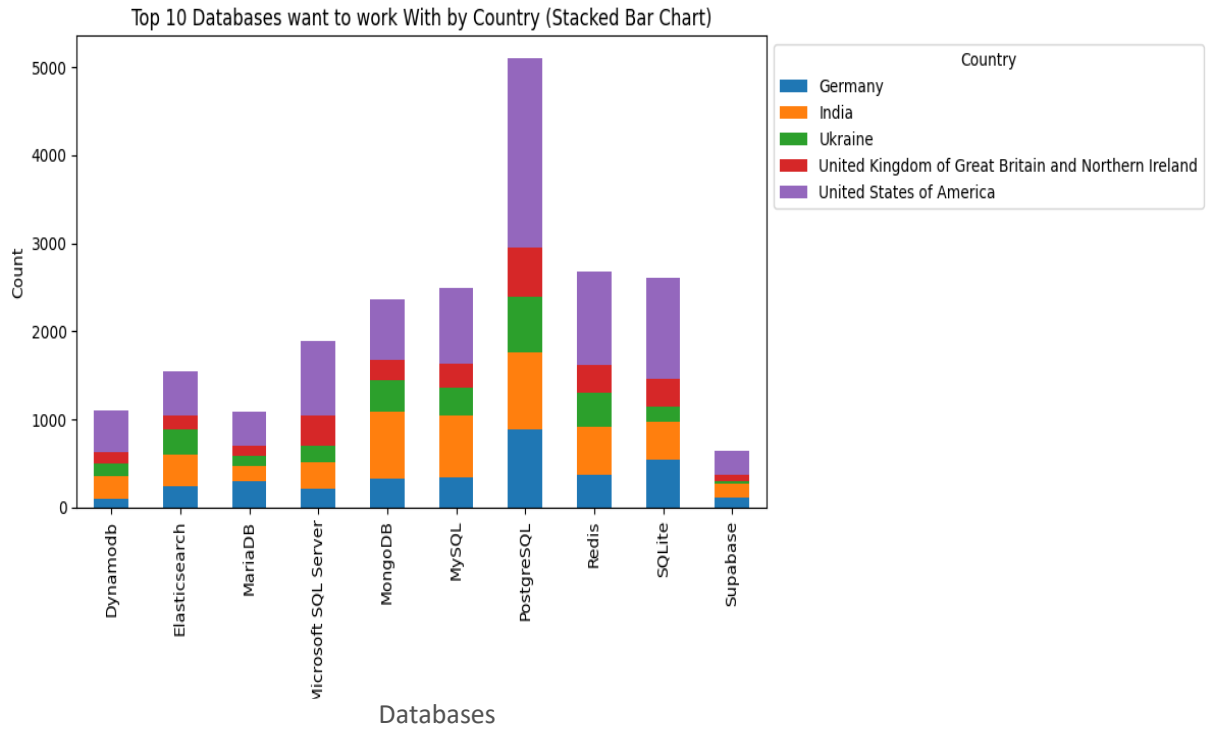
- Companies should look for talented JavaScript, SQL and HTML/CSS
- Learning Javascript and Python provides more jobs
- Curriculum should emphasize JavaScript, Python, and introduce modern tools like TypeScript and Go.

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Top Databases Used: PostgreSQL, MySQL, SQLite, Microsoft SQL Server, and MongoDB are most commonly used.
- Relational Dominance: Relational databases (PostgreSQL, MySQL, SQL Server) dominate current usage across regions.
- Open-Source Popularity: Databases like PostgreSQL and MySQL show strong adoption due to flexibility and community support.
- PostgreSQL Growth: Strong interest in PostgreSQL continues into future preferences, signaling long-term trust and popularity.
- Rising Alternatives: Interest is growing in document-based and NoSQL databases like Redis, MongoDB, and Supabase.
- Cloud-Native Focus: Cloud-compatible databases are becoming more desirable (e.g., DynamoDB, Supabase).

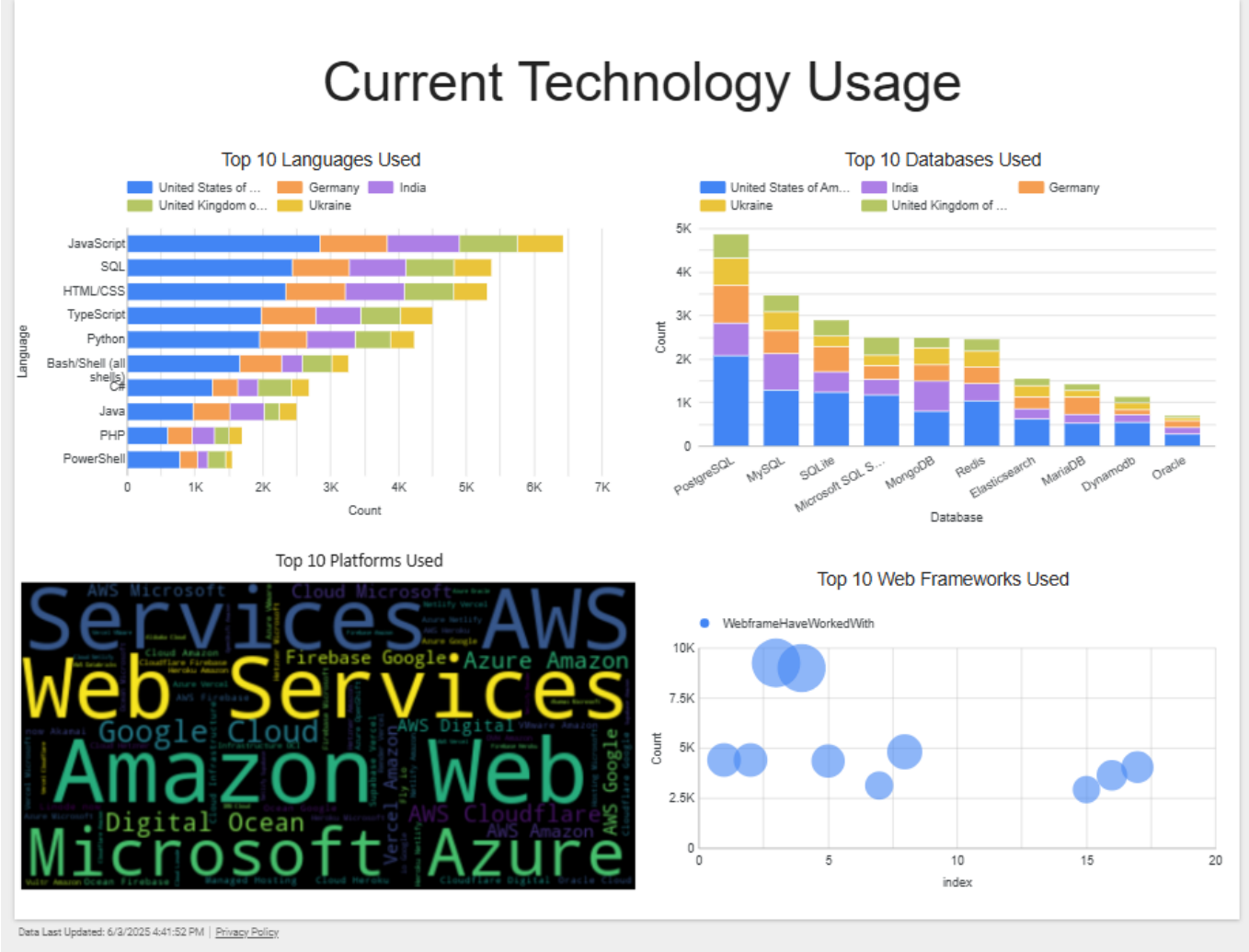
Implications

- Diversify Skills: Developers should gain expertise in both relational (e.g., PostgreSQL, MySQL) and NoSQL (e.g., MongoDB, Redis) databases.
- Cloud Readiness: Learn cloud-based database solutions to stay relevant in modern application development.
- Database Strategy: Invest in scalable, open-source databases like PostgreSQL and cloud-native solutions for long-term flexibility.
- Recruitment: Seek talent experienced in both traditional SQL systems and modern NoSQL/cloud-based platforms.For Educators/Trainers:
- Balanced Training: Provide education on both SQL (for foundational knowledge) and NoSQL (for modern application needs).
- Cloud Integration: Include training on database deployment and management in cloud environments.

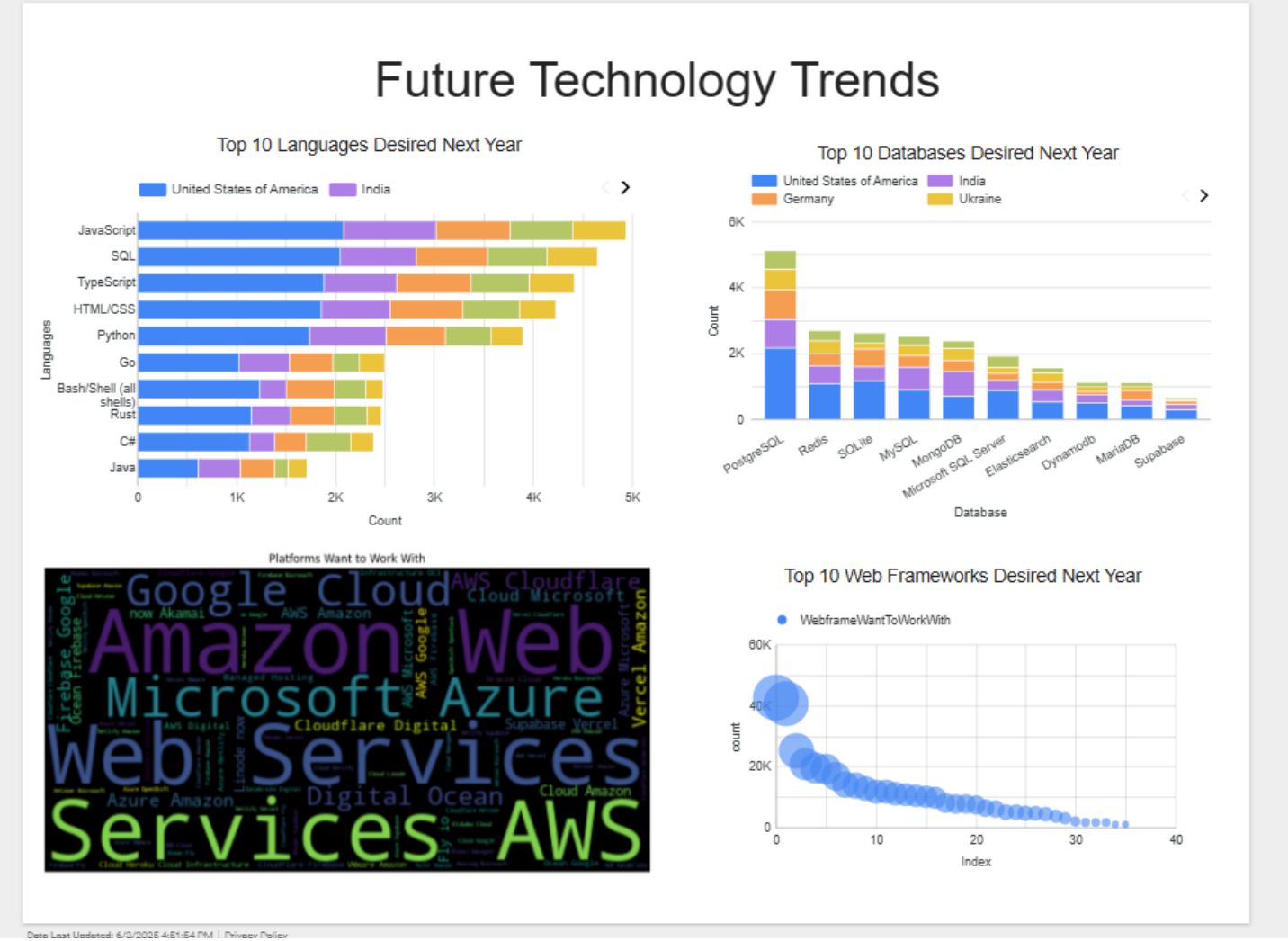
DASHBOARD

A Dashboard is presented in the following slides

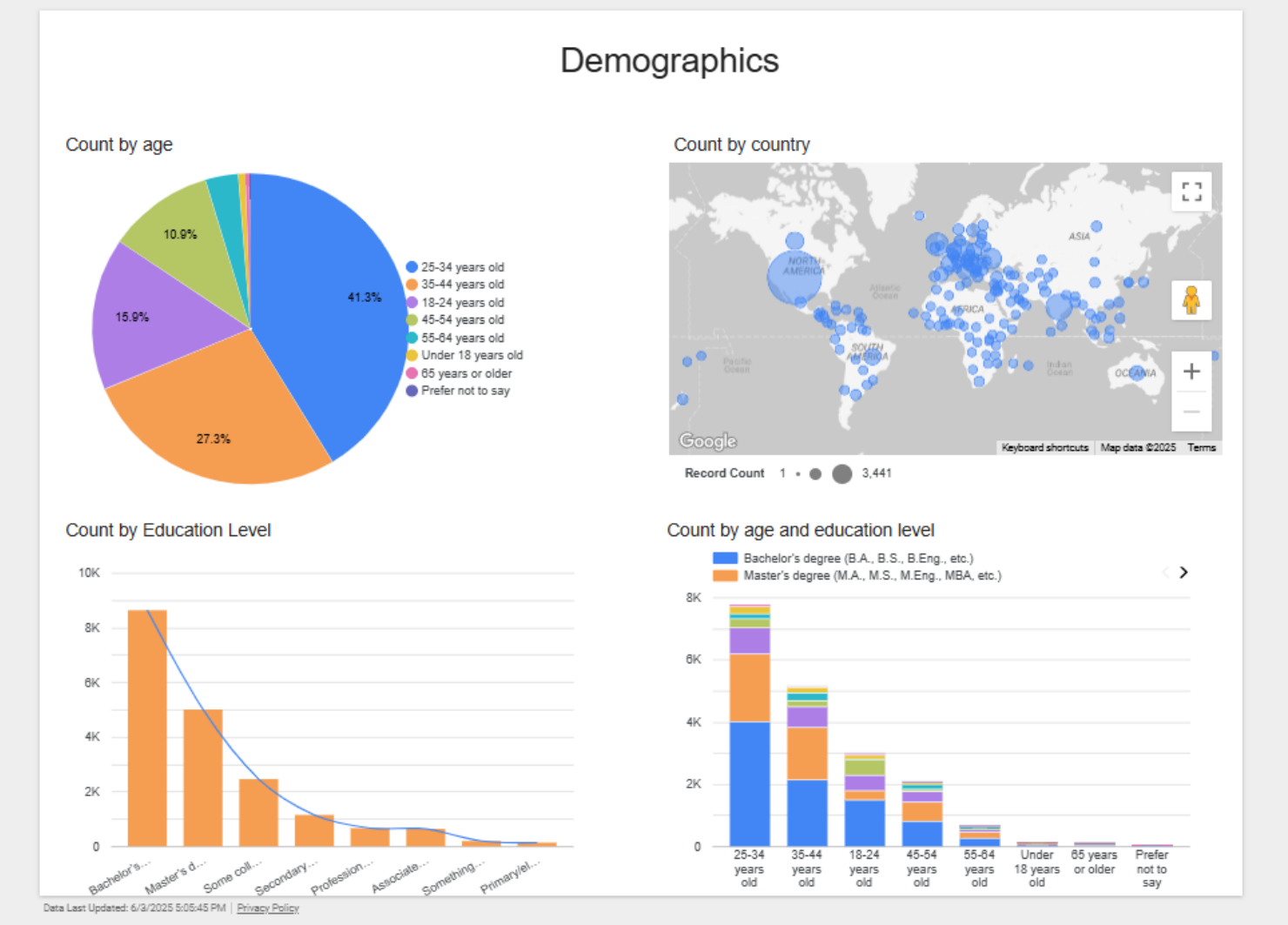
DASHBOARD TAB 1



DASHBOARD TAB 2



DASHBOARD TAB 3



DISCUSSION

- The dashboard reveals that **JavaScript, SQL, HTML/CSS, and Python** are the most commonly used programming languages across countries, with consistent usage patterns globally.
- **PostgreSQL and MySQL** are the top databases in use, highlighting the dominance of relational databases, while interest in NoSQL and cloud-native databases like **MongoDB** and **Supabase** is growing.
- **AWS and Azure** lead the cloud platform market, with strong developer preference both now and in the future.
- Looking ahead, developers express a clear desire to work with **Python, TypeScript, Go, and Rust**, suggesting a shift toward modern, efficient, and scalable technologies.
- **PostgreSQL** continues to be the most desired database, indicating trust in its performance and reliability.
- The charts also show an increased interest in frameworks like **React**, **Next.js**, and **Svelte**, and a rising trend toward cloud-native development tools.
- These insights point to a future where versatility across full-stack technologies, cloud platforms, and emerging languages will be essential for staying competitive

OVERALL FINDINGS & IMPLICATIONS

Findings

- Javascript, SQL and Python are the highly in demand languages currently and will remain in demand in future
- Typescript, Rust and Go will gain popularity in future
- PostgreSQL and MySQL are top databases with NoSQL and Cloud-Native databases like MongoDB gaining popularity
- React, Next.js, and Svelte are the most popular frameworks
- AWS and Azure lead the cloud platform market, with strong developer preference both now and in the future

Implications

- Developers should prioritize learning in-demand tools (e.g., JavaScript, Python, PostgreSQL) while exploring emerging ones (e.g., Rust, Go).
- Employers should align hiring and training efforts with technologies that show both high usage and future interest.
- Educators and bootcamps need to focus on top technologies while gradually introducing newer, high-growth tools.
- Tech teams should build systems around scalable, cloud-native platforms and flexible database solutions to stay future-ready.

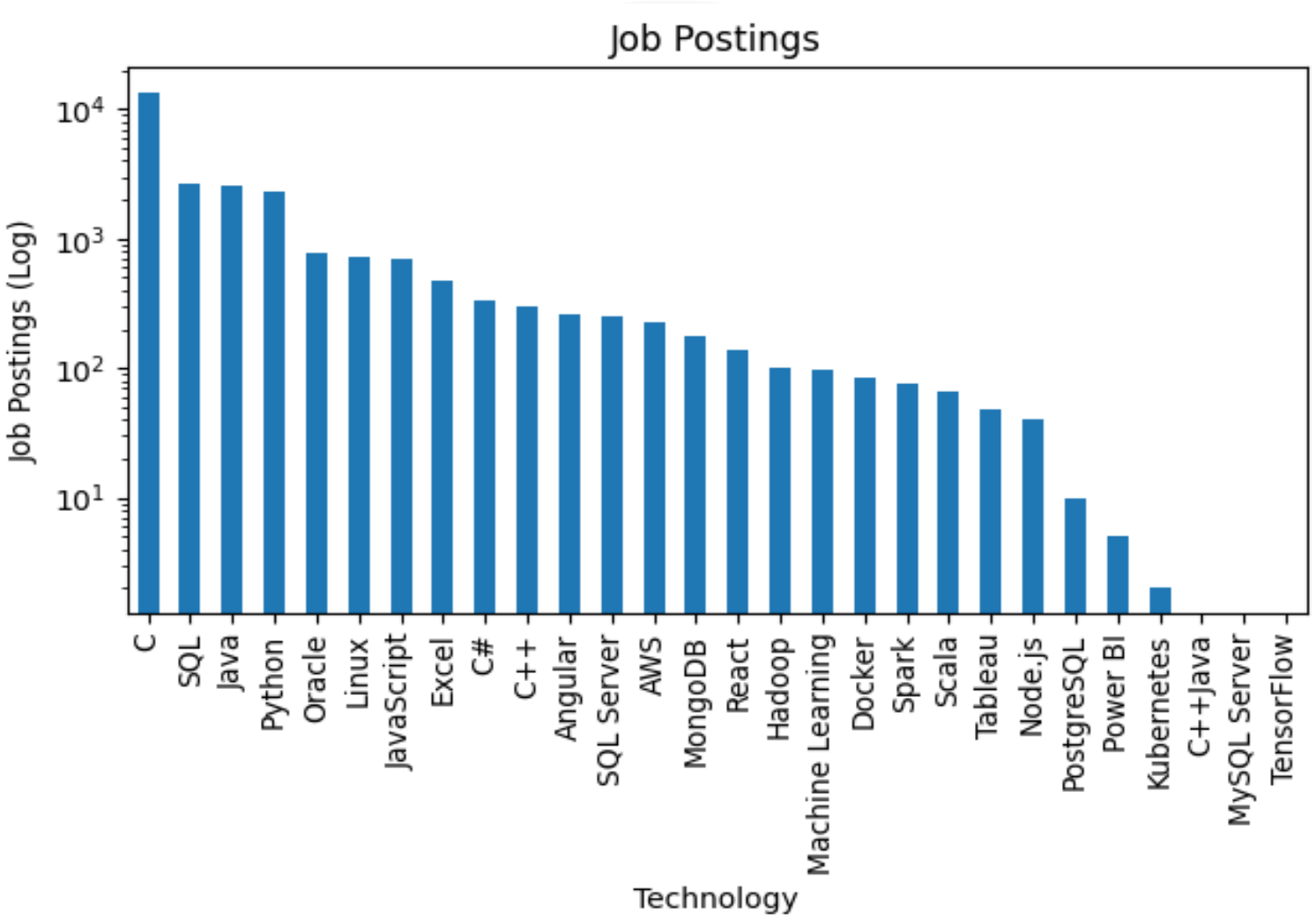
CONCLUSION

- JavaScript, Python, and PostgreSQL remain the most widely used and preferred technologies, making them critical for both learning and project development.
- Future trends point toward modern, efficient, and scalable tools like TypeScript, Go, Rust, and cloud-native platforms, indicating a shift in developer priorities.
- Full-stack and cloud development skills are in high demand, highlighting the importance of cross-functional technical expertise.
- Continuous learning and adaptability are essential, as the tech landscape evolves rapidly with new tools and frameworks gaining popularity each year.

APPENDIX

- Delphi is mainly used by senior developers, likely in legacy systems
- Suggests they're used in mature enterprise environments (e.g., finance, telecom, or back-office tools).
- Legacy languages (e.g., Delphi, VBA) may need experienced professionals to maintain systems—these experts may retire soon. Plan migrations or mentorship programs. Modernize infrastructure if reliance is high on aging languages

JOB POSTINGS



POPULAR LANGUAGES