Developer Technology Trends 2025

Key Insights from the Latest Industry Survey

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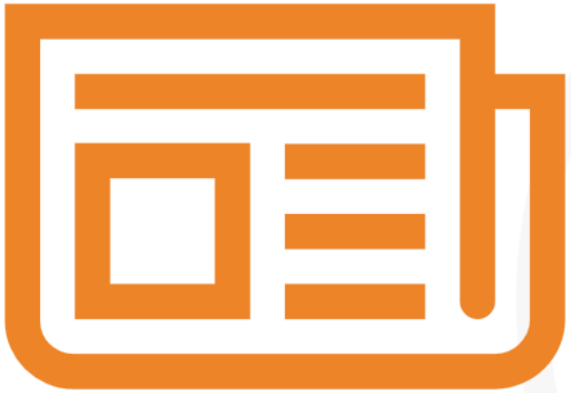
EXECUTIVE SUMMARY

- Survey Overview – Number of Respondents, demographics and regions covered. This comes from a StackOverflow Survey done in 2024.
- Top trending technical tools– Most used and fastest growing tools within industry
  - Most used and fastest growing languages
  - Most used and fastest growing Platforms
  - Most used and fastest growing Databases
- Developer preferences – Preferred (desired) tools, frameworks and databases
- Career and Salary Trends – Most in demand roles, salary insights and job satisfaction levels
- Demographics Insights – Respondent’s Countries, Age distribution, Education Level variation.

INTRODUCTION

- **Survey Overview** – Understanding the scope and purpose of the Stack Overflow Survey
- **Participant Demographics** – Exploring the diversity in age, experience and educational background
- **Popular Technologies –** A look into the most widely used programming languages and frameworks
- **Work & Career Trends –** Analyzing job roles, salaries and work preferences.
- **Challenges and Opportunities –** Identifying gaps in skill demand, leaning trends and industry shift.

METHODOLOGY

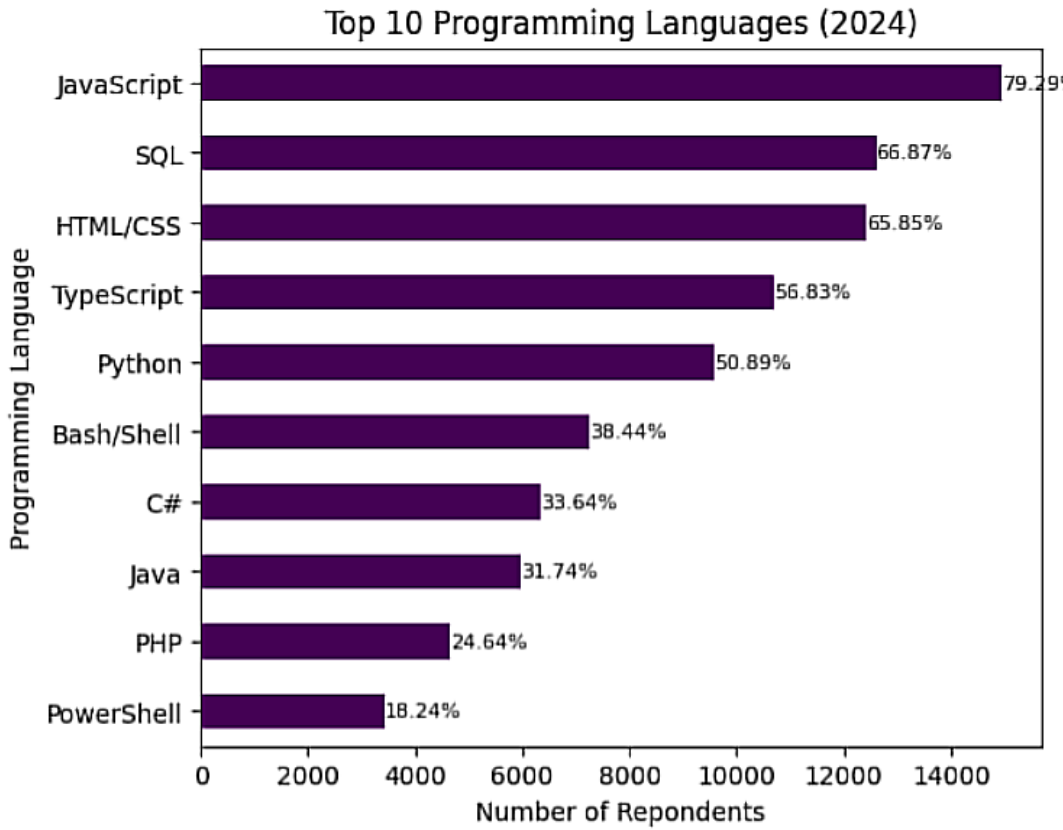


- **Data Collection:** Extracted insights from the latest Stack Overflow Survey (Stack Overflow Annual Developer Survey 2024)
- **Data Cleaning –** Removed Duplicates and irrelevant data points.
- **Trend Identification and Analysis –** Measured the popularity of programming languages, databases and platforms based on survey responses.
- **Visualization –**
  - Created Charts and graphs to present key findings.
  - Created Interactive Dashboard in Google Looker.

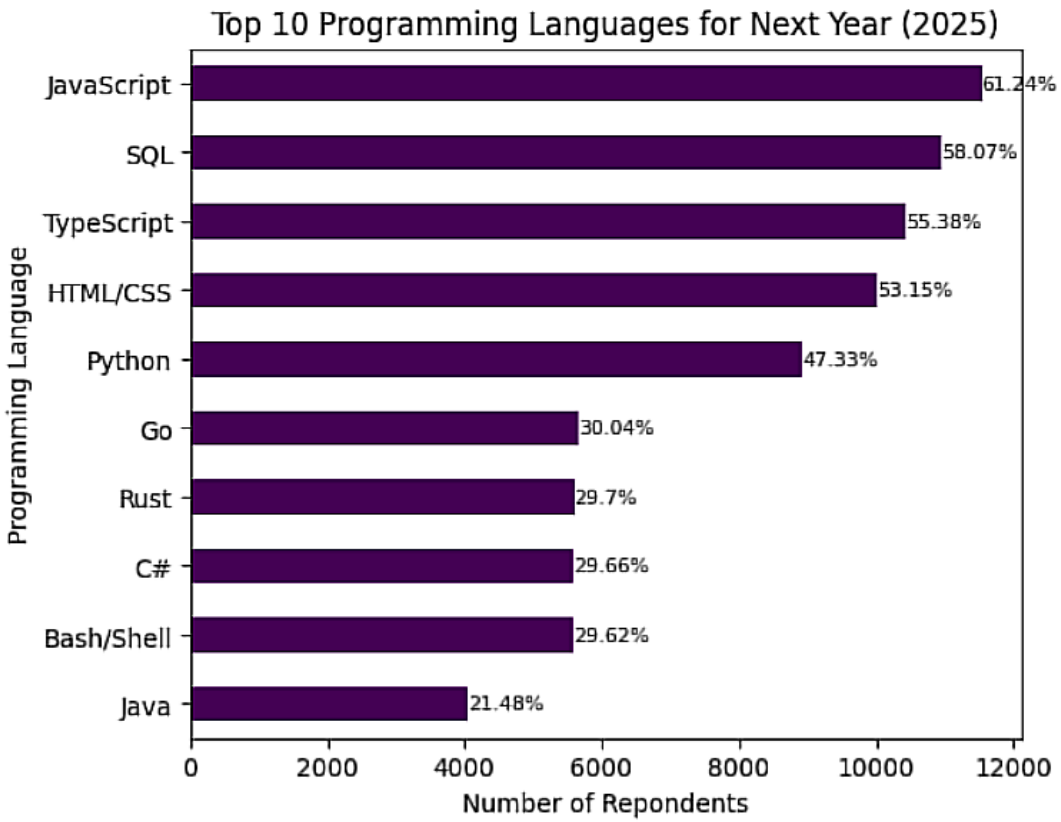
RESULTS

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

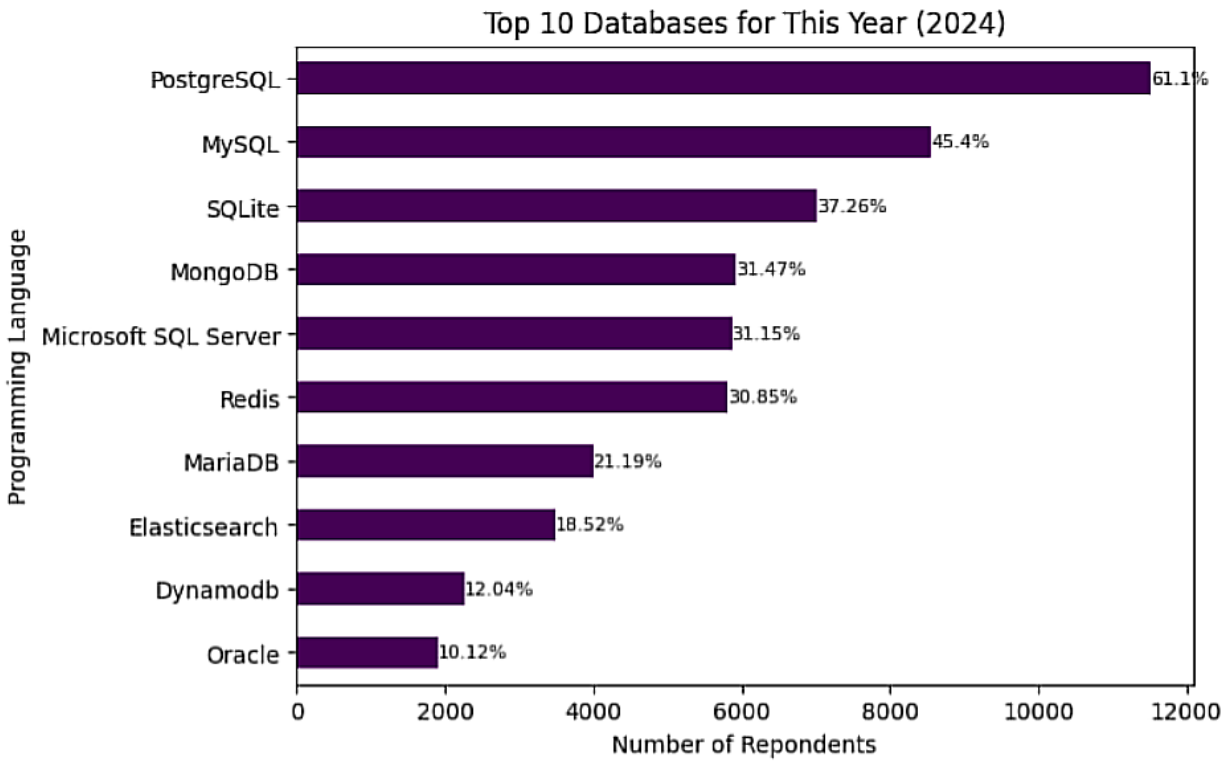
- **JavaScript Remains Dominant –** JavaScript remains dominant in both 2024 and 2025, however, the popularity dropped by almost 18.05%.
- **Python's Stability** – Python's popularity remains stable but decreases slightly, however, it is still amongst the top languages.
- **SQL and HTML/CSS -** SQL and HTML/CSS maintain top positions in both years showing their relevance.
- **Go and Rust Growth –** Go and Rust are projected to rise in popularity indicating growing interest in these languages.
- **C# and Java Stability –** C# and Java maintain their position relatively well, although Java sees a more noticeable decrease.
- **PHP and PowerShell Decline –** PHP and PowerShell show the most substantial decreases in popularity.

Implications

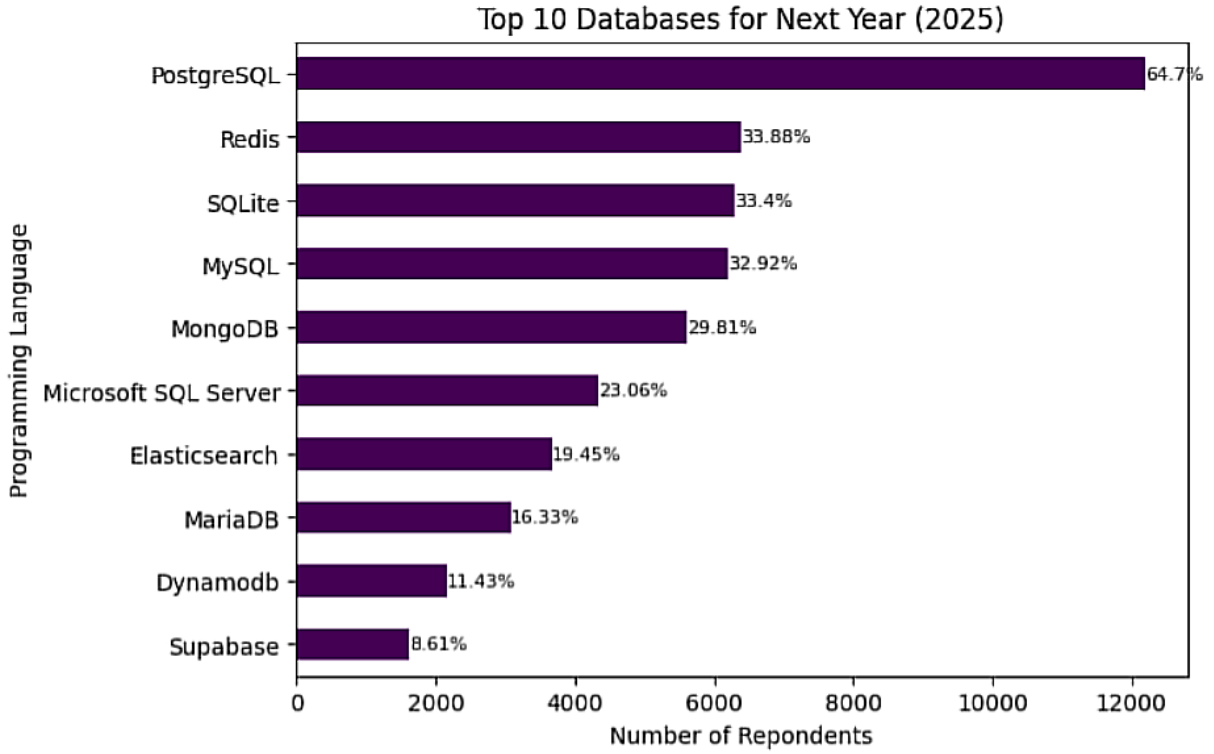
- **Front-End Stability –** The continuous popularity of JavaScript and the rise of TypeScript suggest a strong focus on front-end web development.
- **Data Science and AI** – Python's stability suggests an expansion in data science, machine learning, and AI fields.
- **Modern Web Development Trends:** The growth of TypeScript, Go and Rust indicates a shift towards more modern, efficient and type-safe languages.
- **Legacy Systems Still Relevant:** The continued presence of Java and C# suggests that legacy systems and enterprise development remain significant.
- **Versatility Matters –** Languages like Python and Javascript which are versatile remain popular.

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- **PostgreSQL Remains Dominates –** PostgreSQL is the most popular database in both years.
- **Redis Sees Significant Growth:** Redis shows a significant increase in popularity, moving up to second position for the next year.
- **SQLite Remain Steady:** SQLite maintains its position as popular choice, showing relatively stable percentages
- **MongoDB Gradual Decline:** MongoDB sees a gradual decrease in its percentage, though it remains a widely used database.
- **Microsoft SQL Server decline:** Microsoft SQL Server experiences a more significant drop in popularity for the next year.
- **Newcomer: Supabase –** A new database language has gained popularity to reach the Top 10 showing a growing interest in Supabase.

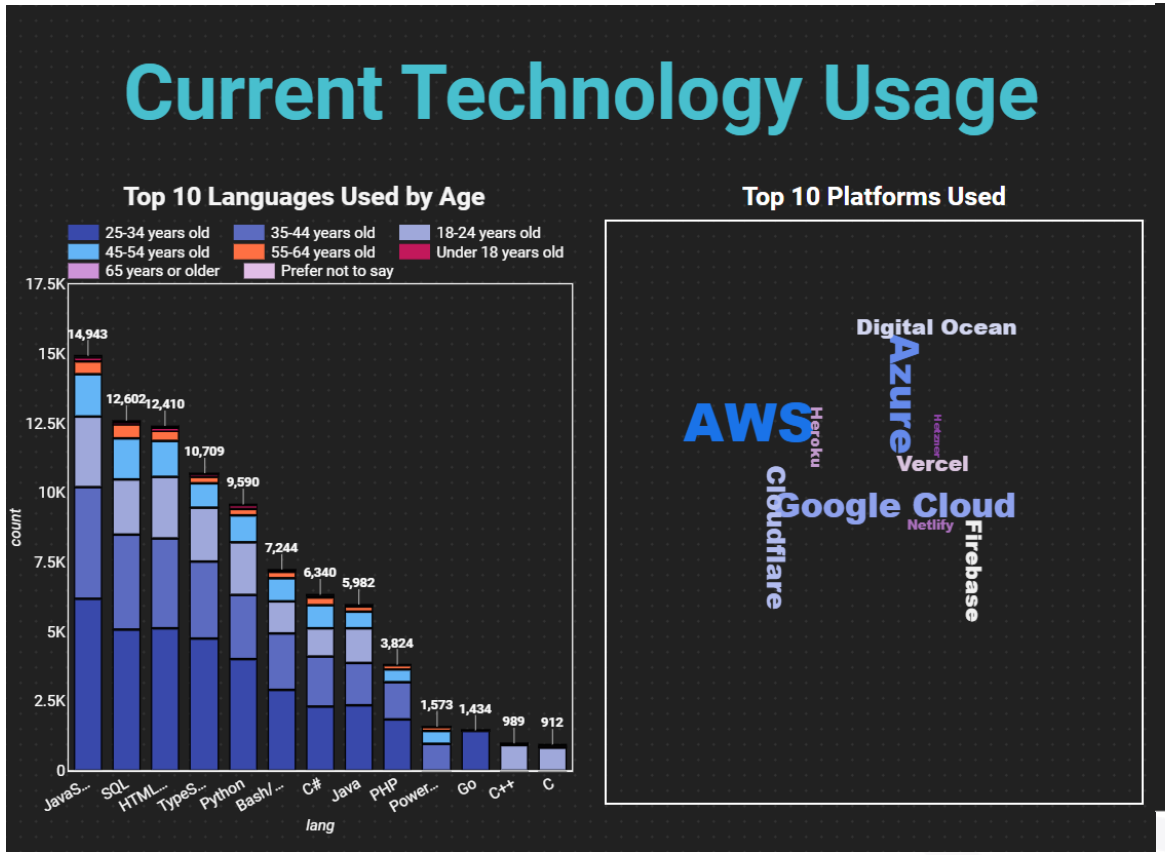
Implications

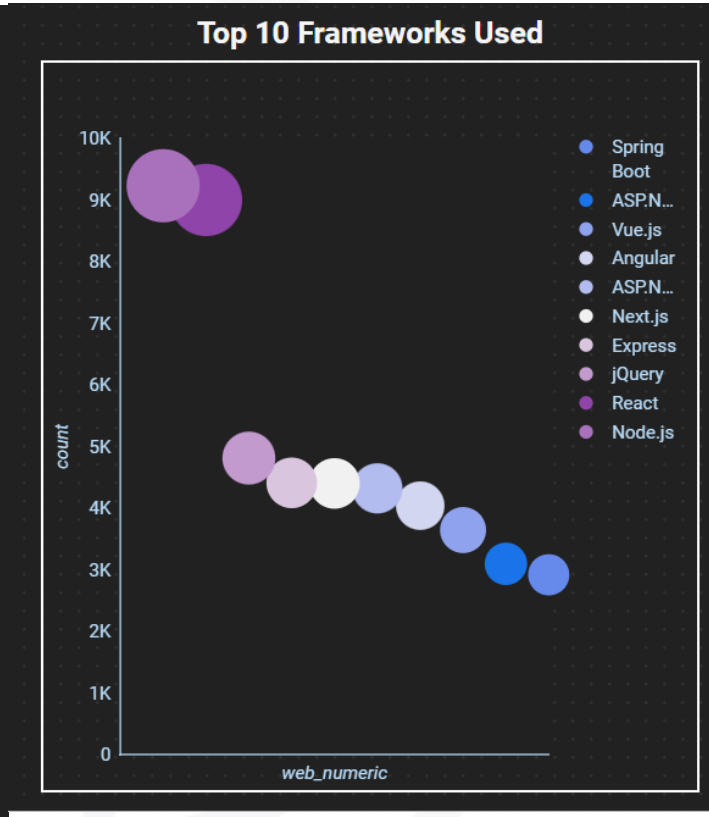
- **PostgreSQL's Popularity**: PostgreSQL's dominance suggests its strong features, open-source nature, and versatility are highly valued in the industry.
- **Relational Database shifting preferences:** The changes in popularity between MySQL and PostgreSQL suggest a shift in preferences within the relational database space.
- **Cloud Native and Modern Data Solutions:** The growth of Redis and the emergence of Supabase indicate a trend towards cloud-native, modern data solutions that offer scalability and ease of use.
- **Database Diversity:** A variety of databases highlights the need for developers to understand different data storage solutions.
- **Search and Analytics Demand:** Elasticsearch's presence highlights the demand for search and analytics capabilities in modern applications.

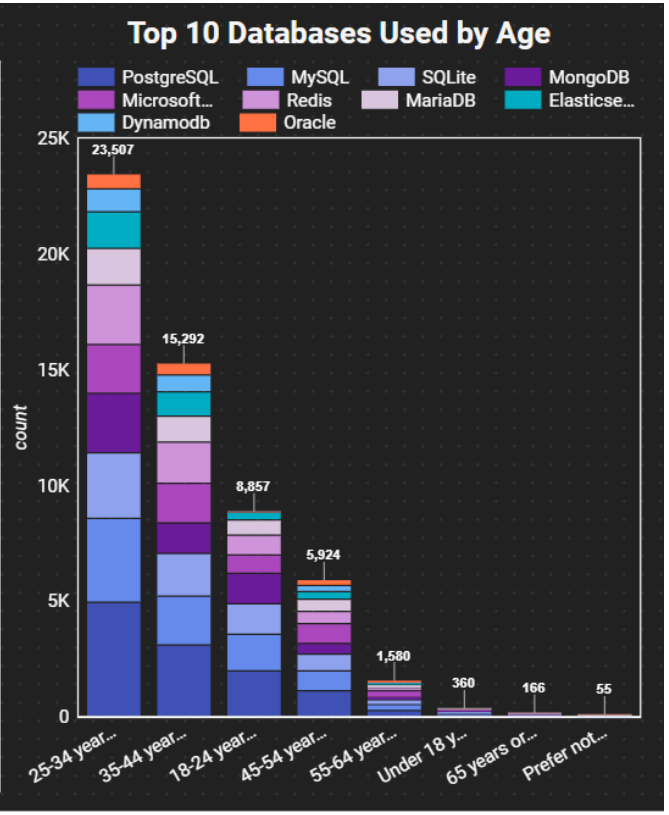
DASHBOARD

https://github.com/RhuthK/Projects/blob/main/IN_PROGRESS/Job_Survey_Project/Survey_Dashboard.pdf

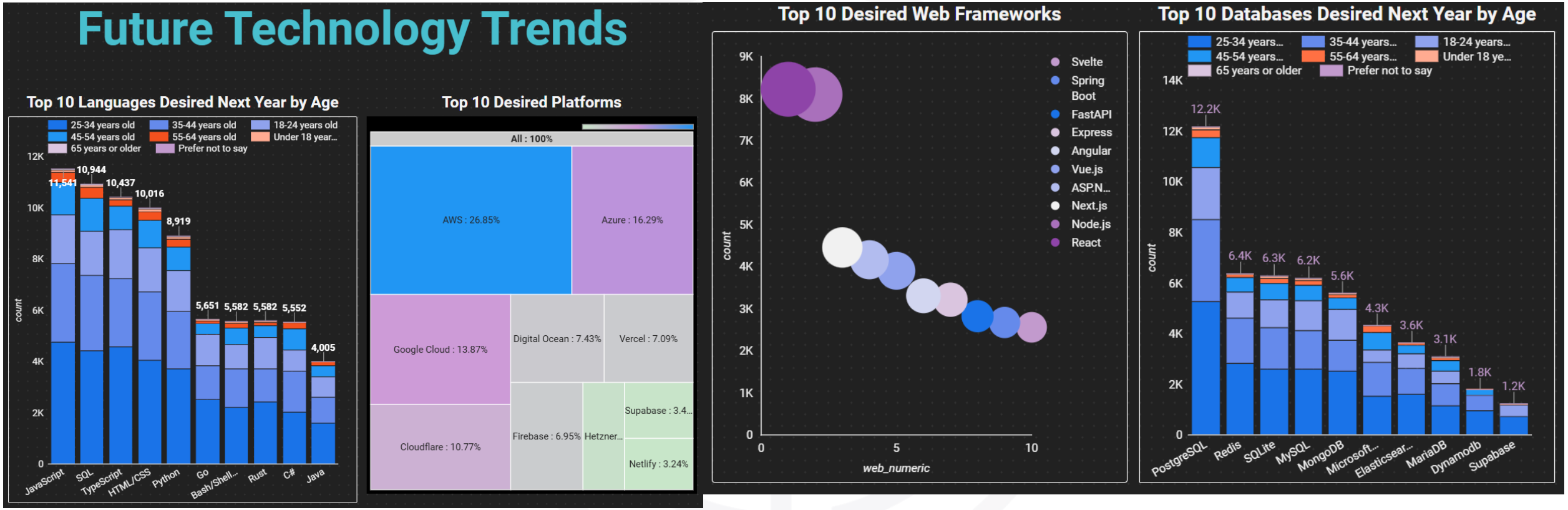
DASHBOARD TAB 1







DASHBOARD TAB 2



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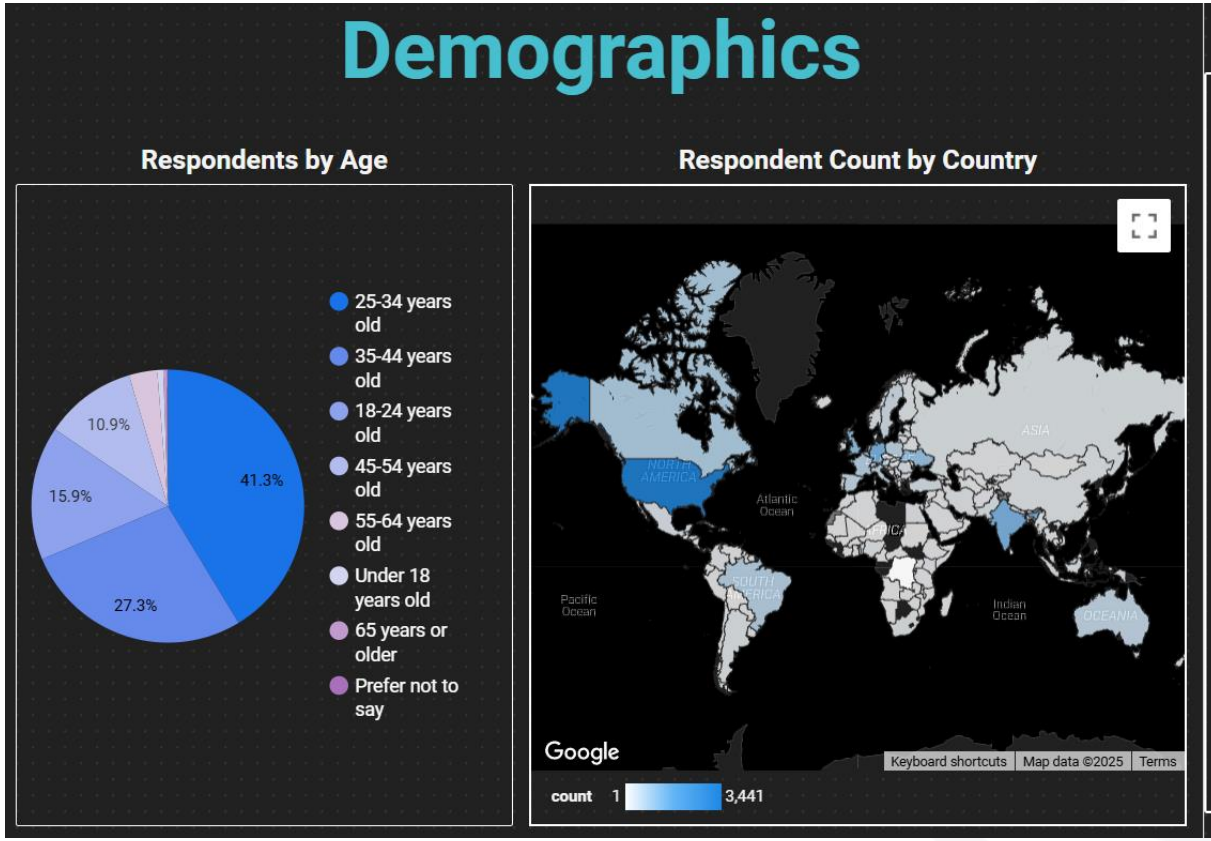
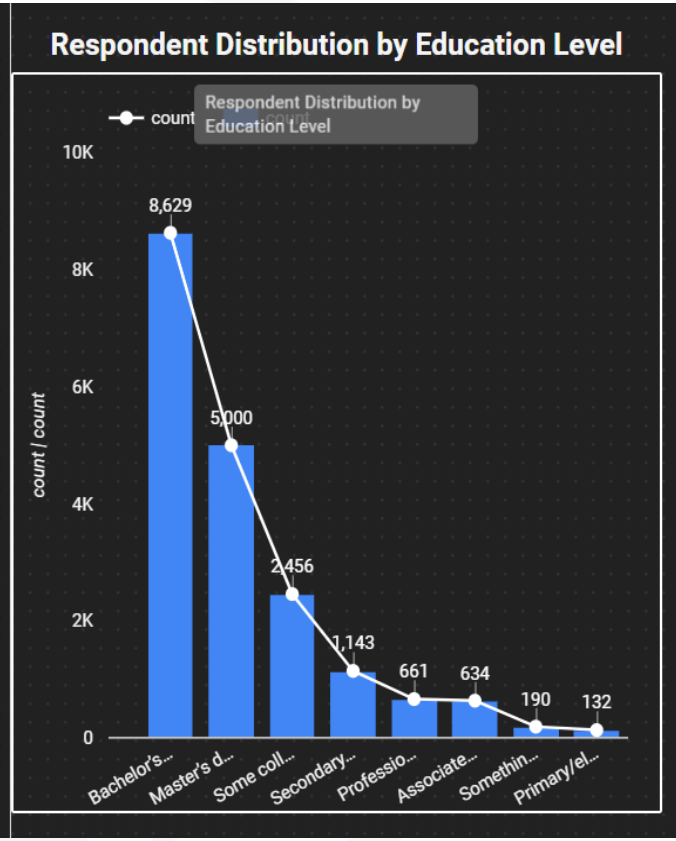
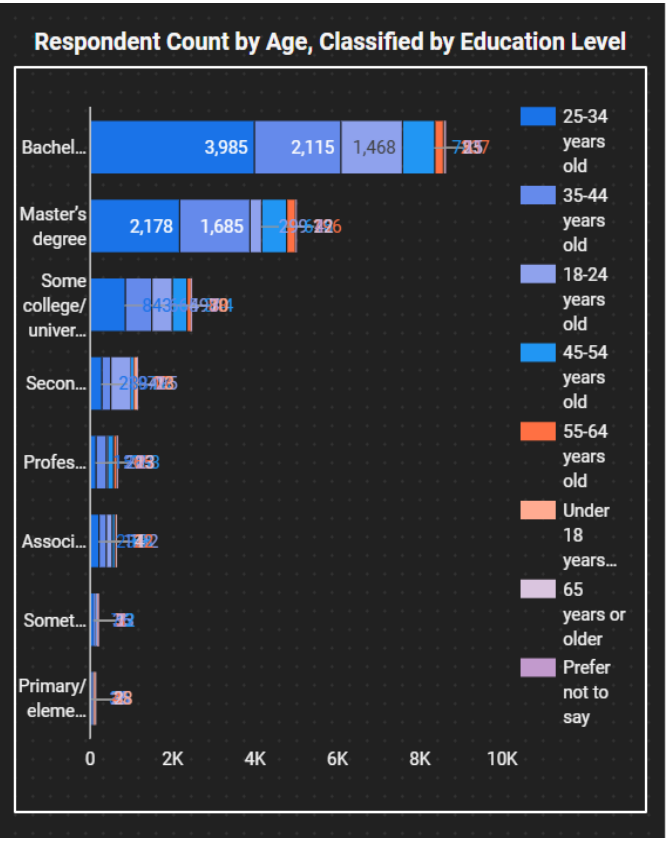






DISCUSSION

Programming Languages:

- JavaScript is the most popular language indicating its continued dominance in web development. It high usage shows its crucial role in both front-end and back-end development.
- AWS is the most used platform, highlighting its leadership in cloud computing.
- TypeScript is projected to increase in popularity, signaling a growing emphasis on type safety in JavaScript development. The anticipated rise suggests developers are seeking efficiency and low runtime errors.

Databases Trends:

- PostgreSQL is the most used database and shows substantial growth.
- Redis shows a significant increase in popularity and its projected to be the second most popular database next year.
- Traditional relational databases like MySQL and SQLite continue to be widely used.

Developer Demographics:

- **Age Distribution:** The 25-34 age group represents the largest portion of respondents (41.3%) followed by 35-44 age group (27.3%)
- **Education Levels:** Bachelor's degrees are the most common education level among respondents followed by Master's degree.
- **Age and Education;** There is a breakdown of respondent counts by age, classified by education level showing the distribution of education attainment with each group.

OVERALL FINDINGS & IMPLICATIONS

Findings

- **Current Technology Usage**

1) **Javascript** is the most used programming language across various age groups
2) **PostgreSQL** is the most used database.
3) **AWS** is the most used platform.
4) **React** is the most used web framework

- **Future Technology Trends**

1) **TypeScript** is projected to increase in popularity.
2) **Redis** is projected to increase in database popularity.

- **Demographics Insights**

1) **The 25-34 year old age group** has the highest respondent count.
2) **Bachelors degree** are the most common education level.

Implications

- **Web Development Focus:** The dominance of JavaScript and React highlights the continued importance of web development skills.
- **Data Management Skills:** The popularity of PostgreSQL emphasices the need for strong database management skills.
- **Cloud Expertise:** The widespread use of AWS underscores the importance of cloud computing expertise.
- **Young Professionals:** The high representation of the 25-34 age group reflects the current demographics of the tech workforce.
- **Education and Skill Development:** While formal education is common, continuous learning in trending technologies is crucial for career advancement

CONCLUSION

- **Dominance of Established Technologies:** JavaScript remains the most widely used programming language, reinforcing its importance in the industry. PostgreSQL is the leading database choice.
- **Shift Towards Emerging Tools;** Strong growth in interest in TypeScript and Redis indicates a clear trend towards type-safe JavaScript development and in-memory data solutions for performance optimization.
- **Frameworks and Database Preferences:** React continues to be the most popular web framework. AWS maintains its position as the top platform, highlighting the importance of cloud computing skills.
- **Demographics Insights:** The majority of respondents are aged 25-34 and hold at least a bachelor's degree, suggesting that both age and formal education play significant roles in the tech industry landscape.

APPENDIX (Additional chart)

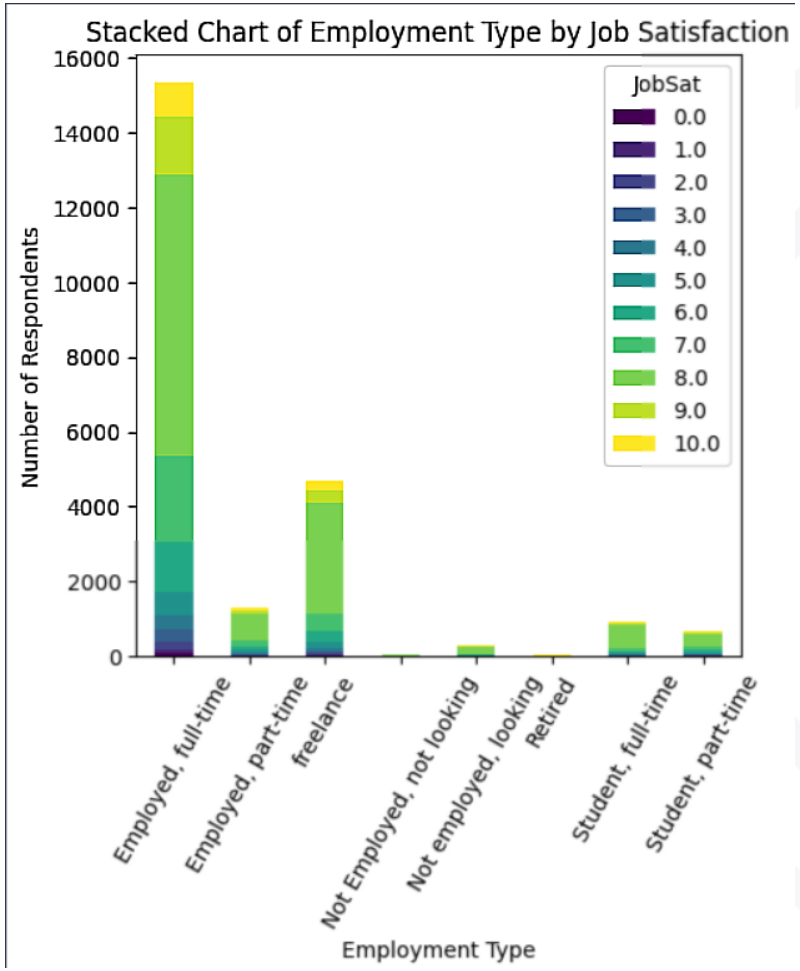
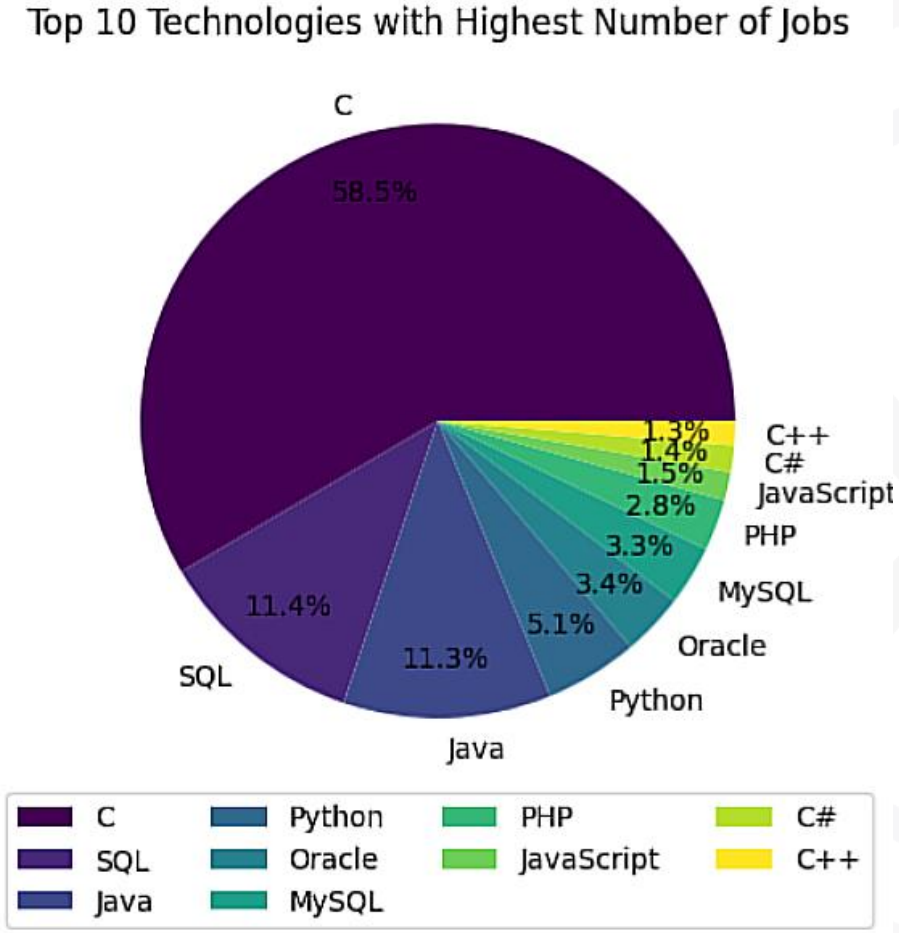


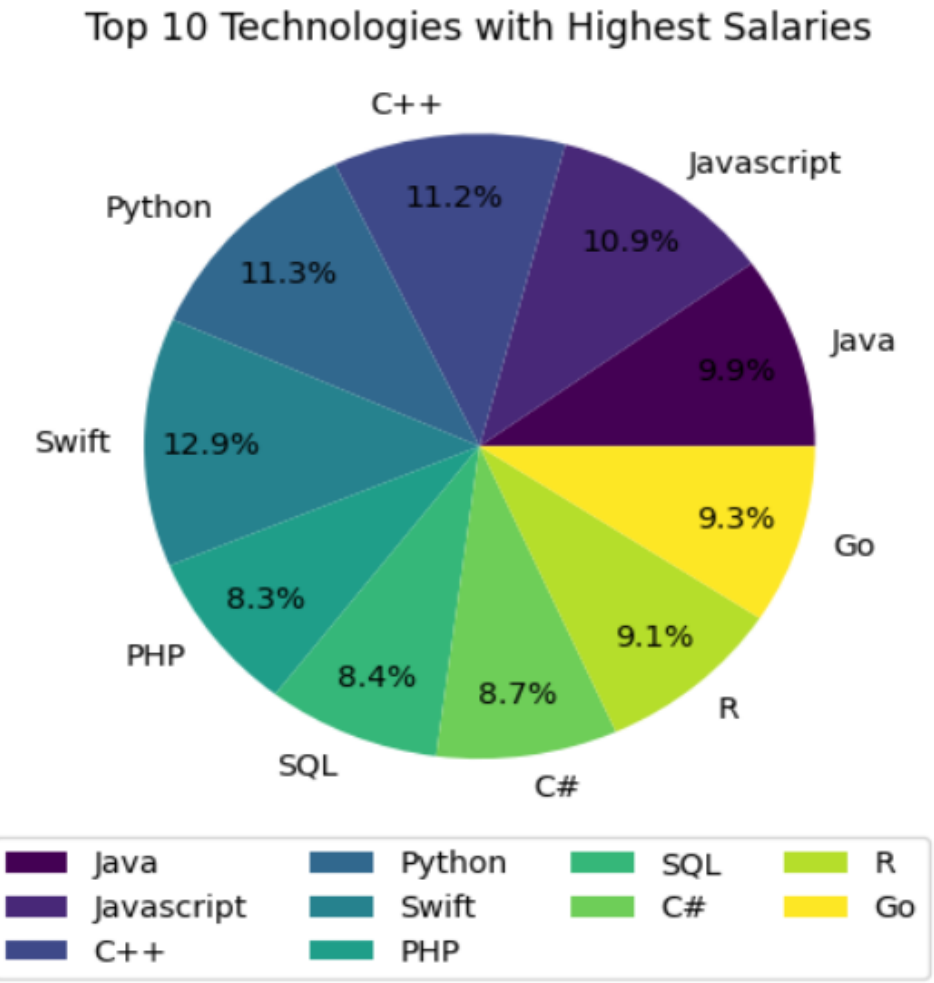
Chart shows the Level of Job Satisfication (on scale of 1 to 10) and also the employment status of respondents. It can be seen that most respondents in this survey were Full Time employees and rated their job satisfaction to be 7 on average.

JOB POSTINGS



- The number of jobs in C dominates (58.5%) which is contradictory to the popularity amongst the top 10 programming languages.
- SQL (11.4%) and Java (11.3%) are strong aligning with industry demand.
- Number of jobs in Python (5.1%) and JavaScript(1.5%) are low, despite their high popularity in years 2025 and 2024 respectively.

POPULAR LANGUAGES



- **Swift has the highest salary (12.9%) but was not amongst the top technologies which is contradictory to the findings.**
- **C leads in job demand (58.5%) but is absent from the highest salaries chart.**

Contradiction: high demand does not mean high pay

- **SQL is among the top in popularity and job demand (11.4%) but only has an 8.4% salary share.**

Insights: SQL jobs are in demand but not highly paid.

- **Python is stable in both charts (Around 11% in both job demand and Salaries).**

Insights: A balanced language with both demand and strong compensation hence its popularity.

- **C++ has low job demand (Approx 1.3%) but ranks high in salaries (11.2%)**

Contradiction: Specialized roes might driver higher wages despite lower demand.