Capstone Project

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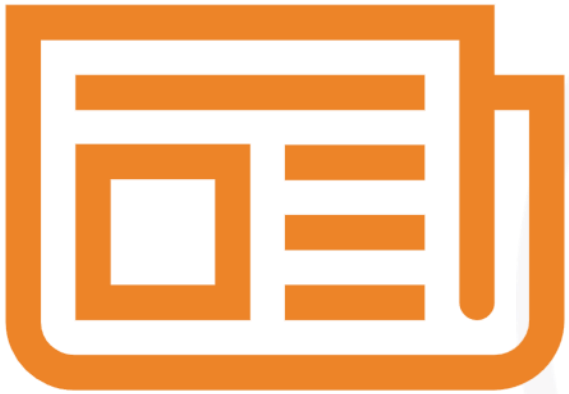
EXECUTIVE SUMMARY

- This project analyzed global developer preferences using Stack Overflow data and Google Looker Studio dashboards. The goal was to identify current usage patterns and future trends across languages, databases, platforms, and frameworks.
- **Key Highlights:**
- **Python** is the most desired language, while **JavaScript** leads in usage.
- **PostgreSQL** dominates both current and future database preference.
- **AWS**, **React**, and **Node.js** remain top technology choices.
- The majority of developers are aged **25–34**, degree-educated, and globally distributed.

INTRODUCTION

- The purpose of this report is to determine technologies:
  - Currently used
  - Projected to be used
- The target audience of this report includes:
  - Decision-Makers
  - Recruiters & HR Professionals
  - Analysts
- The values of this report:
  - Strategic Insight- Helps make informed decisions
  - Talent Acquisition Strategy- Where and how to find new talent
  - Market Forecasting- Identifying emerging trends

METHODOLOGY

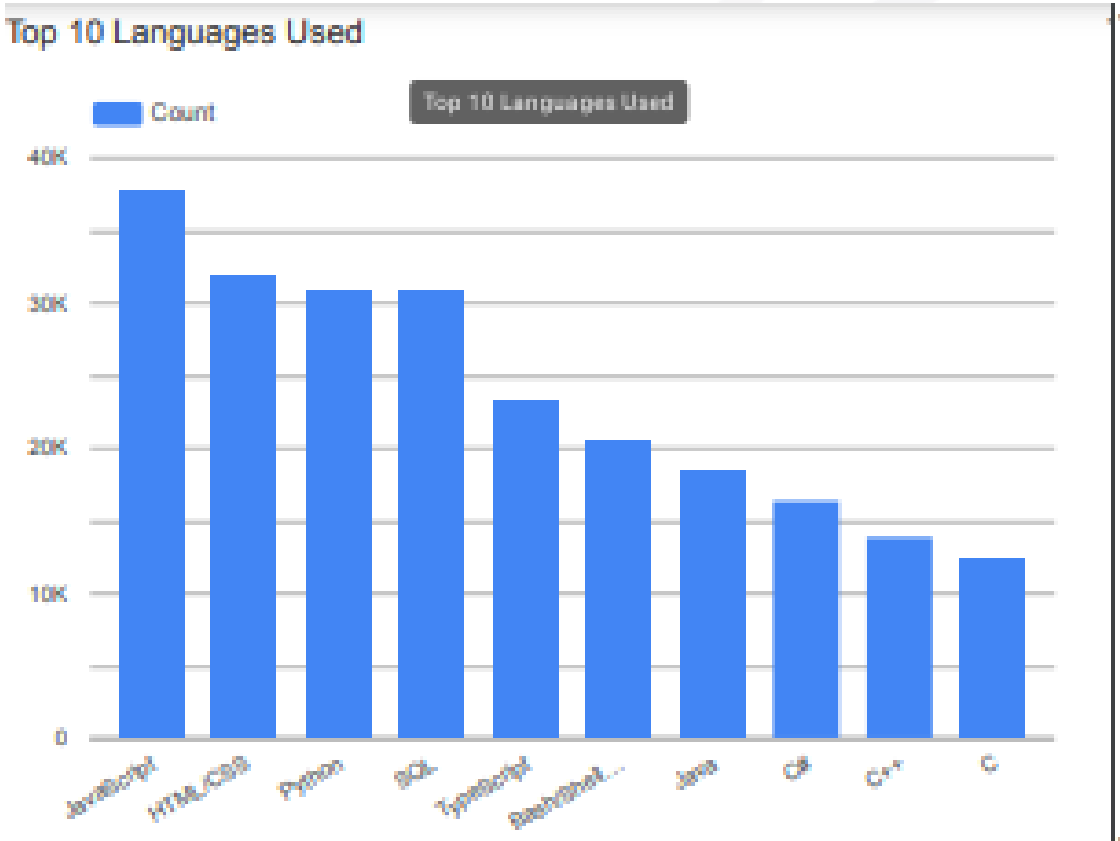


- **Data Source**
  - **Survey**: Stack Overflow Developer Survey
  - **Publisher**: Stack Overflow / Stack Exchange Inc.
  - **Type**: Public, self-reported survey data
  - **Sample Size**: ~70,000+ global developers
  - **Scope**: Technologies, tools, demographics, job preferences, education, etc.
- **Data Collection**
  - **Method**: Online survey via Stack Overflow platforms
  - **Respondents**: Diverse in age, experience, and education
  - **Sampling**: Voluntary, self-selected (non-random)
- **Data Processing**
  - **Tool**: Python (Pandas)
  - **Steps**:
    - Cleaned incomplete/inconsistent responses
    - Filtered key columns (tech, age, country, education)
    - Split multi-choice fields (e.g., languages)
    - Standardized values (e.g., country names)
    - Aggregated by demographic groups for trend analysis

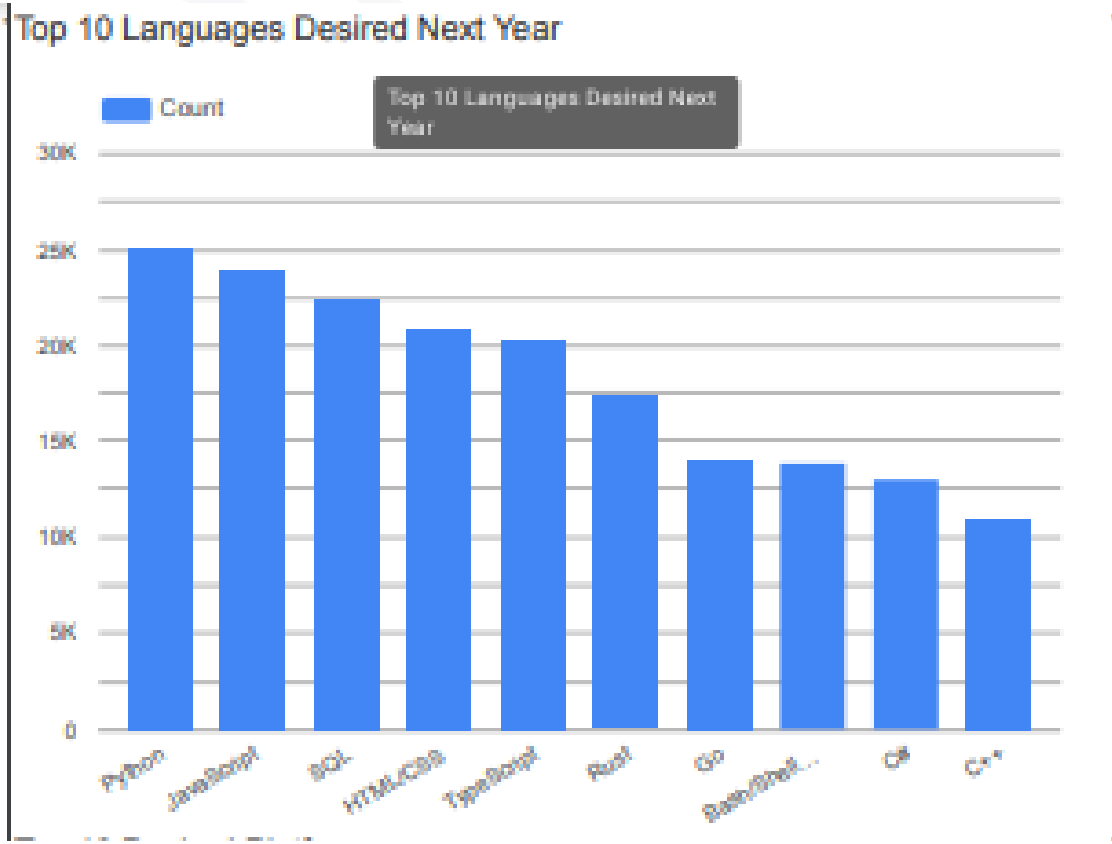
RESULTS

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

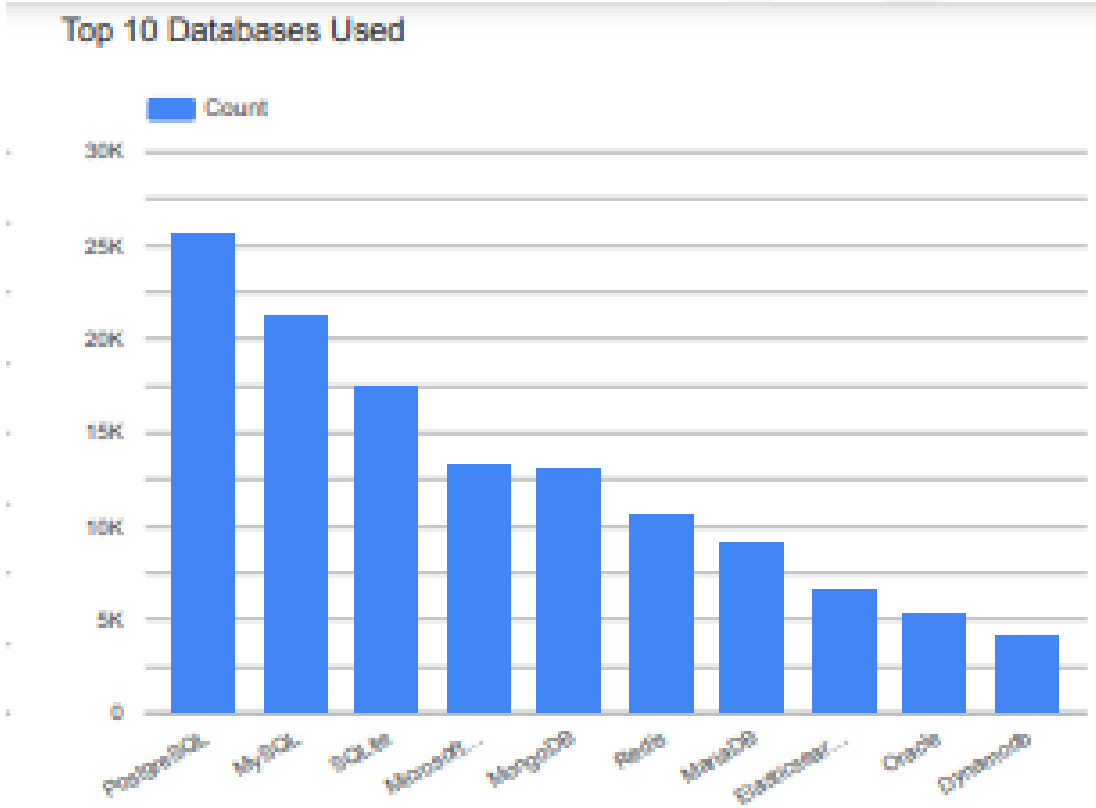
- JavaScript, Python, and SQL are most used today.
- Python is the most desired for future work.
- Rising interest in Rust and Go indicates a shift toward newer, efficient languages.

Implications

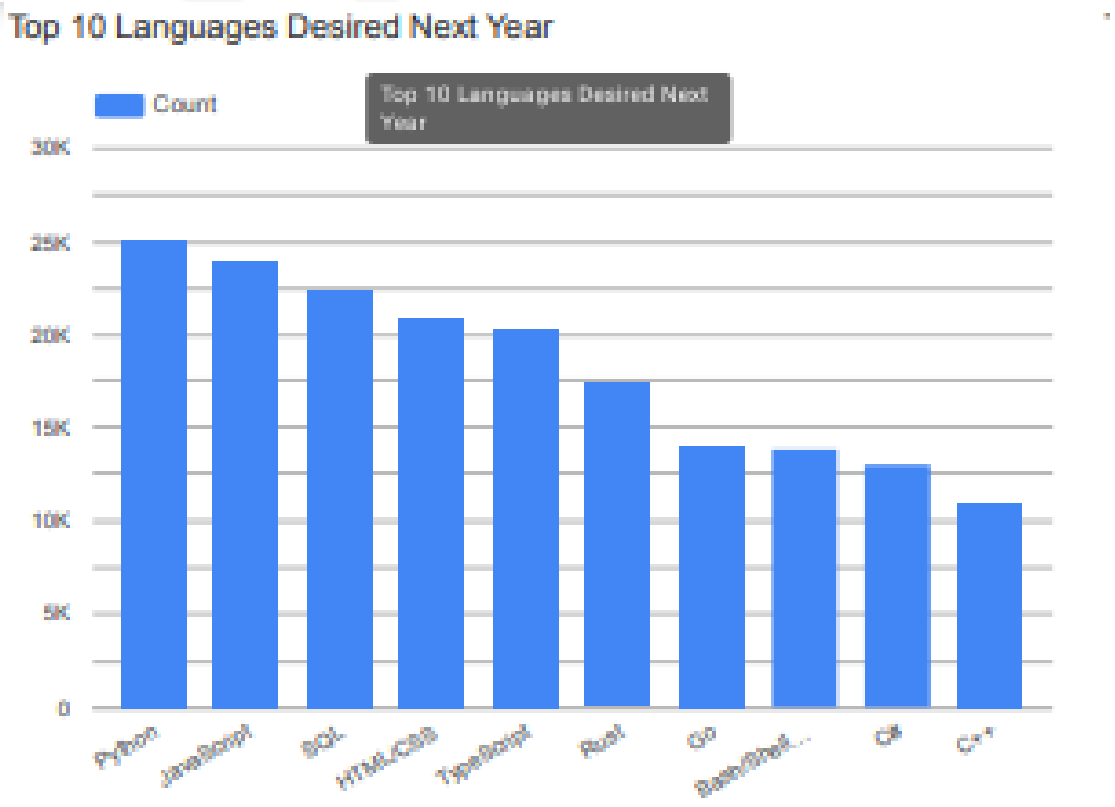
- Upskilling in Python is critical.
- Employers should monitor emerging languages like Rust.
- Educational programs should evolve to include modern languages.

DATABASE TRENDS

Current Year



Next Year



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DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- PostgreSQL tops both current and future usage.
- Traditional databases like MySQL and SQL Server show a decline.
- Newer databases (e.g., Supabase) are gaining traction.

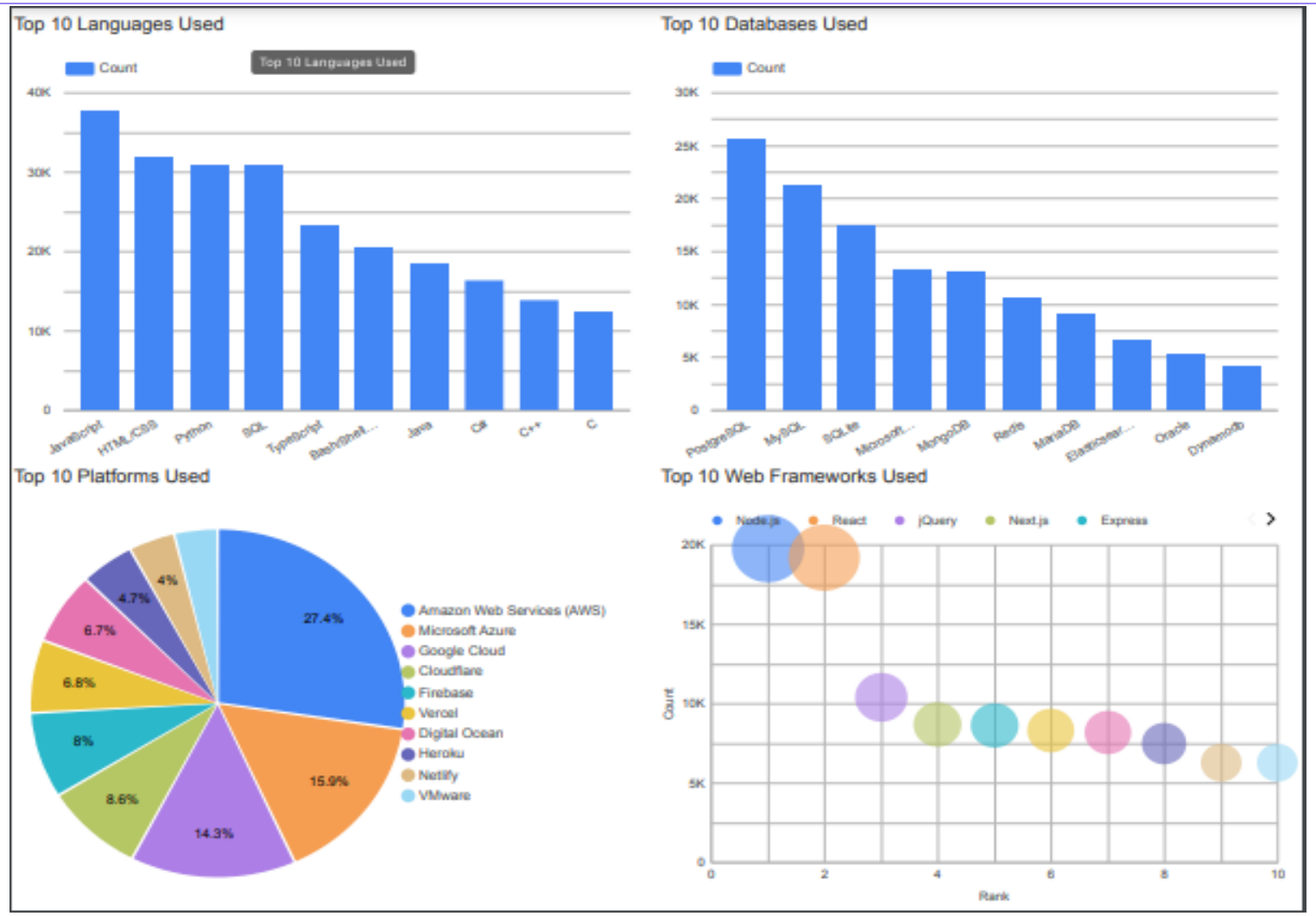
Implications

- PostgreSQL skills are increasingly valuable.
- Legacy database reliance may hinder modernization.
- Consider piloting modern databases for future-proofing.

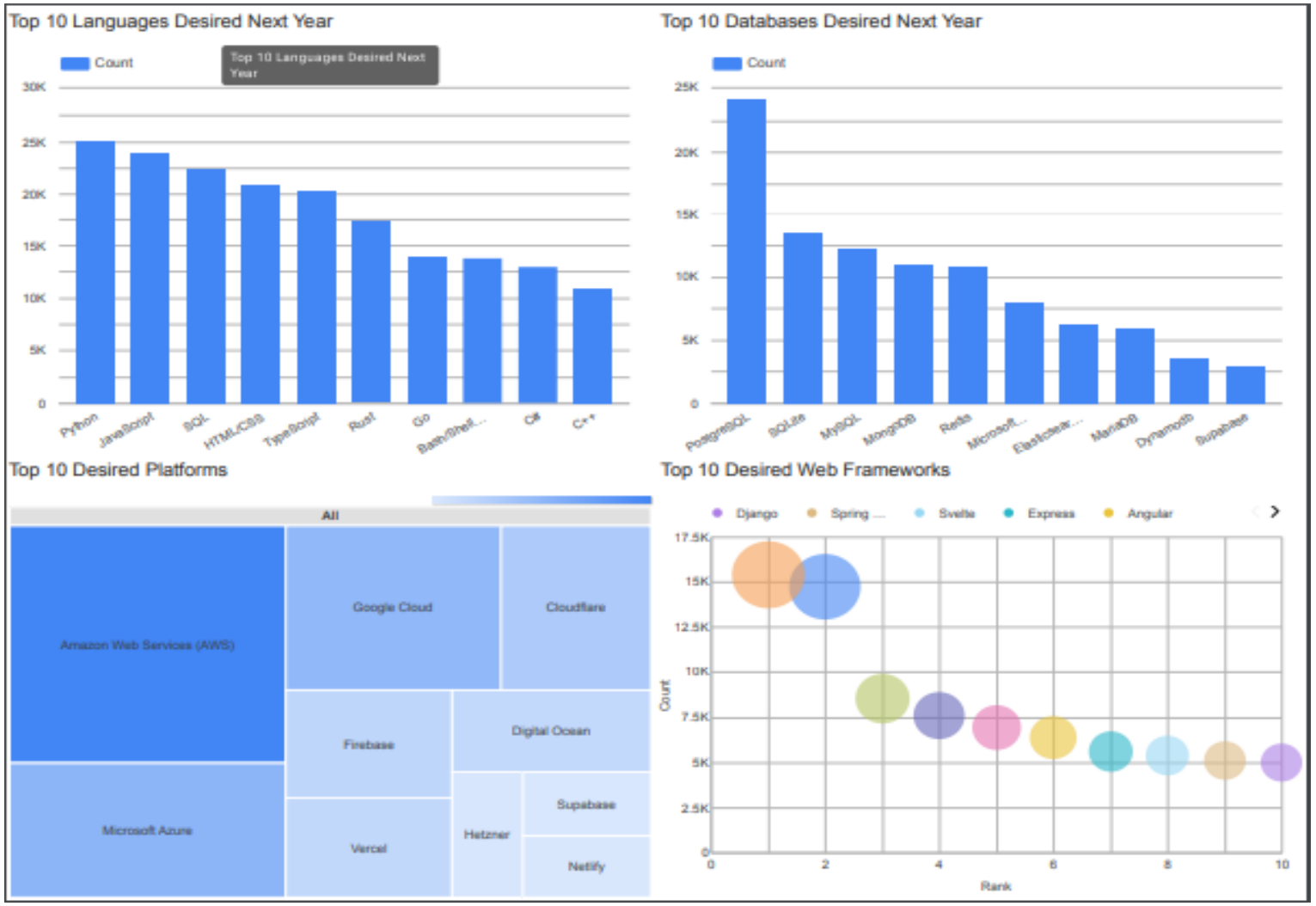
DASHBOARD

https://github.com/MohammedIshaqKhanReal/looker-dashboard-project

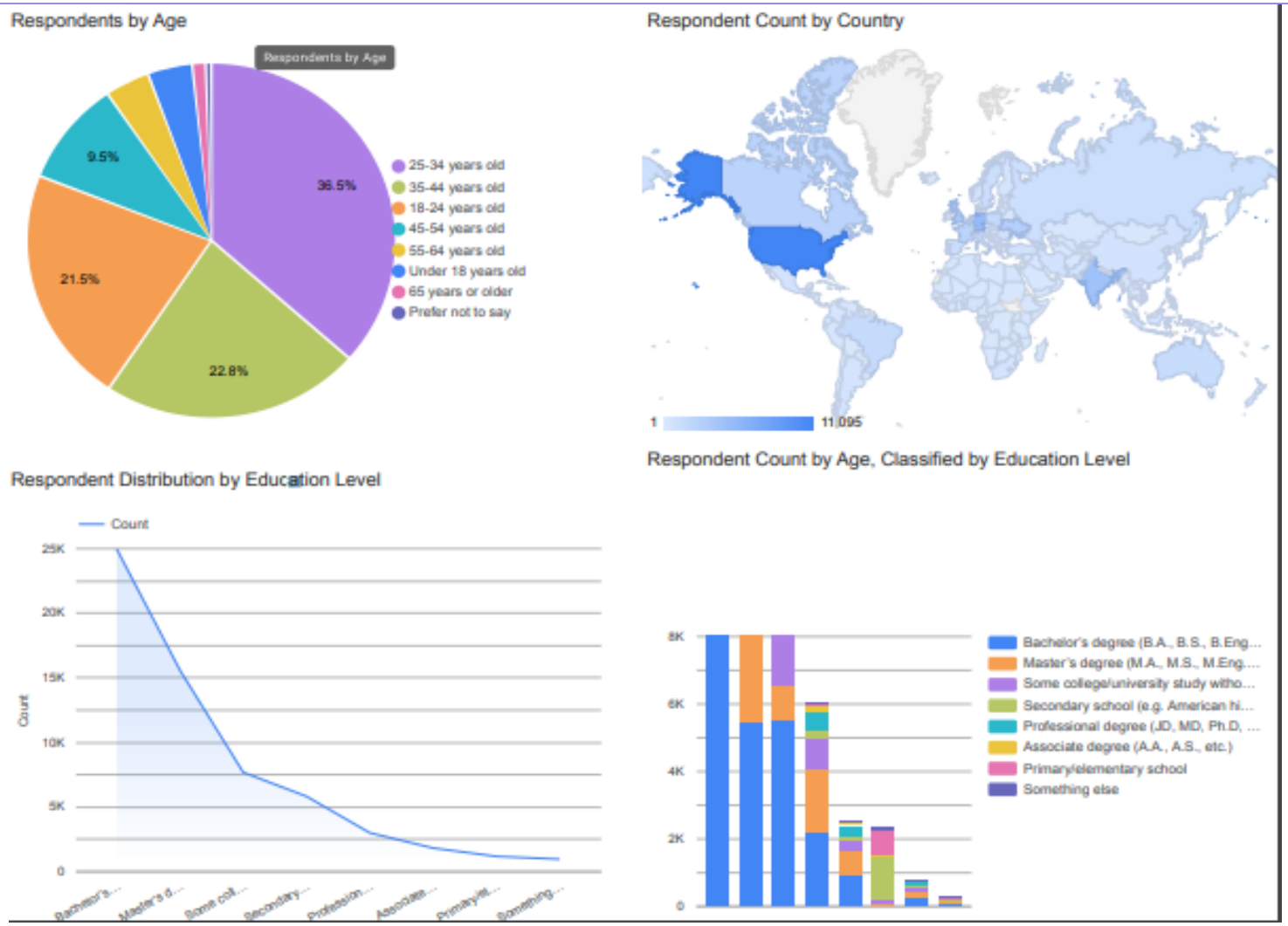
DASHBOARD TAB 1- Current Technology Usage



DASHBOARD TAB 2- Future Technology Trends



DASHBOARD TAB 3- Demographics



DISCUSSION

OVERALL FINDINGS & IMPLICATIONS

Findings

- Cloud, open-source, and modern tech are widely favored.
- React, Node.js, and AWS lead across categories.
- Developer demographics skew young and educated.

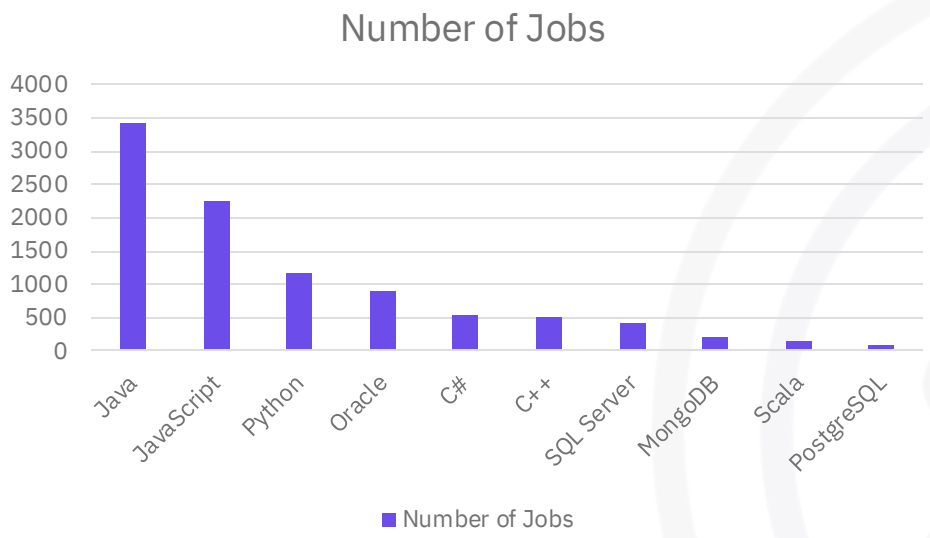
Implications

- Companies must align with developer tech preferences to attract talent.
- Investments in cloud and open-source tools are essential.
- Global education outreach remains vital for long-term innovation.

CONCLUSION

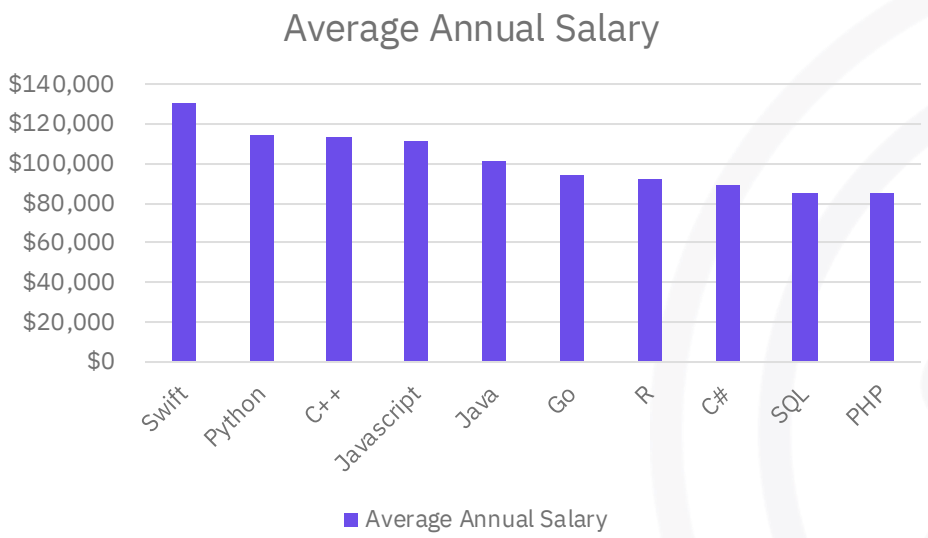
- **Modern technologies** are rapidly replacing legacy tools—adaptation is key.
- **Developer preferences** lean toward flexible, open-source, and cloud-native solutions.
- **Talent strategies** must focus on education, diversity, and emerging tech to stay competitive.

JOB POSTINGS



Insight: Java remains the most in-demand, highlighting ongoing enterprise reliance on Java-based systems.

POPULAR LANGUAGES



Insight: Swift and Python offer high earning potential, signaling value in mobile and data science expertise.