



Stack Overflow Developer Survey for Year 2019

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OUTLINE



- Executive Summary
- Introduction
- Methodology
- Results
 - Visualization – Charts
 - Dashboard
- Discussion
 - Findings & Implications
- Conclusion
- Appendix

EXECUTIVE SUMMARY



- **Competitive Nature of IT Industry:** The IT industry is dynamic and competitive, necessitating continuous updates to programming skills and database knowledge.
- **Project Objective:** This project aims to analyze and identify key trends within the IT industry.
- **Key Areas of Analysis:**
 - **Current Technology Usage:** Assessing the current state of programming languages, databases, and platforms used.
 - **Future Technology Trends:** Predicting upcoming trends in programming languages, databases, and platforms.
 - **Demographics in IT Industry:** Understanding the distribution of gender, age, and education levels in IT.
- **Goals:**
 - Identifying top Programming Languages in the industry.
 - Top Database Skills in high demand.
 - Popular IDEs among professionals.

INTRODUCTION



- Stack Overflow's annual Developer Survey is the largest and most comprehensive survey of people who code around the world. Each year, they field a survey covering everything from developers' favorite technologies to their job preferences. 2019, marks the ninth year they published their annual Developer Survey results, and nearly 90,000 developers took the 20-minute survey.
- Despite their survey's broad reach and capacity for informing valuable conclusions, I acknowledged that their results don't represent everyone in the developer community evenly. They have done further work to make Stack Overflow a welcoming, inclusive, and diverse platform.
- Based on their data collection, we cleaned and prepare the data to suit our research demands. We present few findings in this presentation.

METHODOLOGY



- ☐ Collect survey data & explore its content
 - Web Scraping
 - APIs.
 - Request library.
- ☐ Data Wrangling
- ☐ Exploratory data analysis
 - Analyzing data distribution.
 - Handling outliers.
 - Correlations.
- ☐ Data Visualization
 - Highlight of the distribution of data, relationships, the composition and comparison of data.
- ☐ Dashboards

RESULTS

- Python is the fastest-growing major programming language since it has risen in the ranks of programming languages in the survey.
- Over half of respondents had written their first line of code by the time they were sixteen, although this experience varies by country and by gender.
- Of the top countries on the survey, China has developers that are the most optimistic, believing that people born today will have a better life than their parents. Developers in Western European countries like France and Germany are among the least optimistic about the future.
- Respondents were asked to think about the last time they solved coding problems with and without Stack Overflow website. The data indicates that Stack Overflow saves a developer 30 to 90 minutes of time per week!

PROGRAMMING LANGUAGE TRENDS

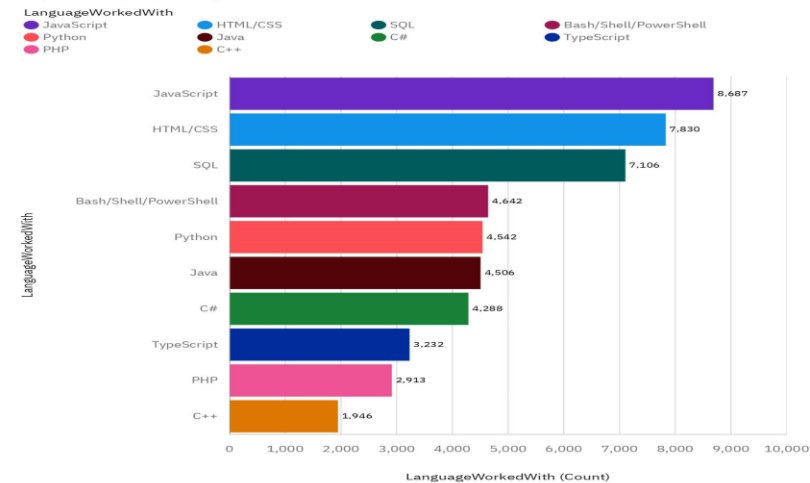
Current Year

Next Year

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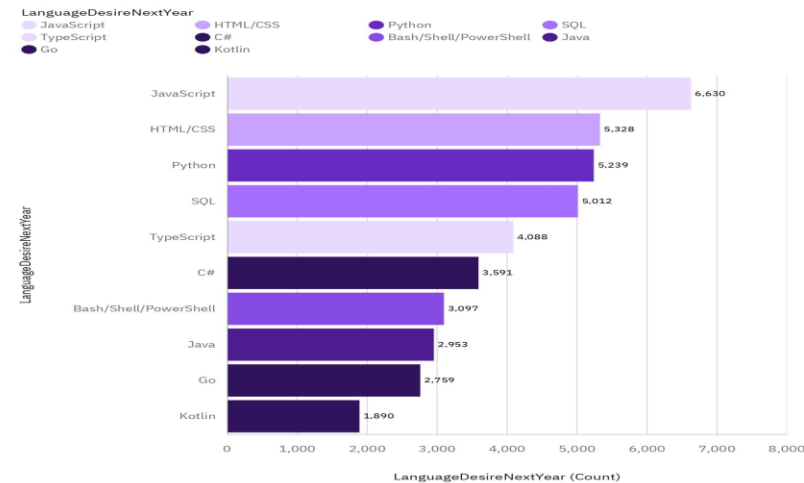
Tab 1

Top 10 Language People Worked with.



Course 9 Dashboard

Top 10 Language Desired ne



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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- For seven years in a row, JavaScript has been the most commonly used programming language, but Python has risen in the ranks again.
- In the year 2019, Python edged out Java in the overall ranking. In the same way; Python surpassed C+ in 2018 and PHP in 2017.
- We conclude that Python is the fastest-growing major programming language today.

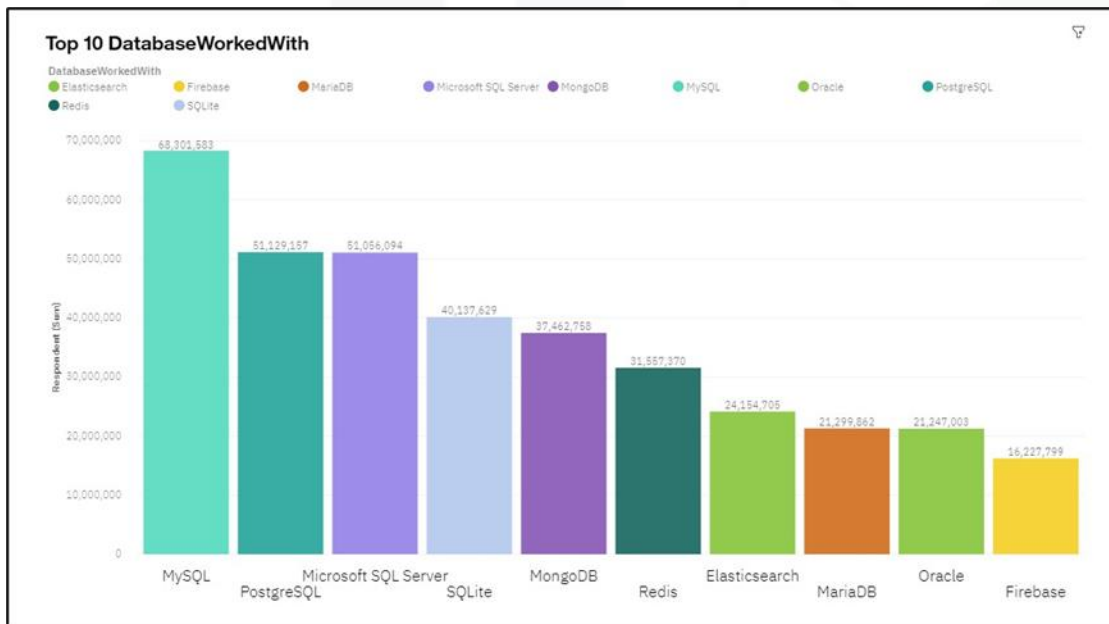
Implications

- JavaScript must be an easy program that is easy to understand so people still enjoy working with it.
- Python is an interesting program as it keeps on attracting new people each year.

DATABASE TRENDS

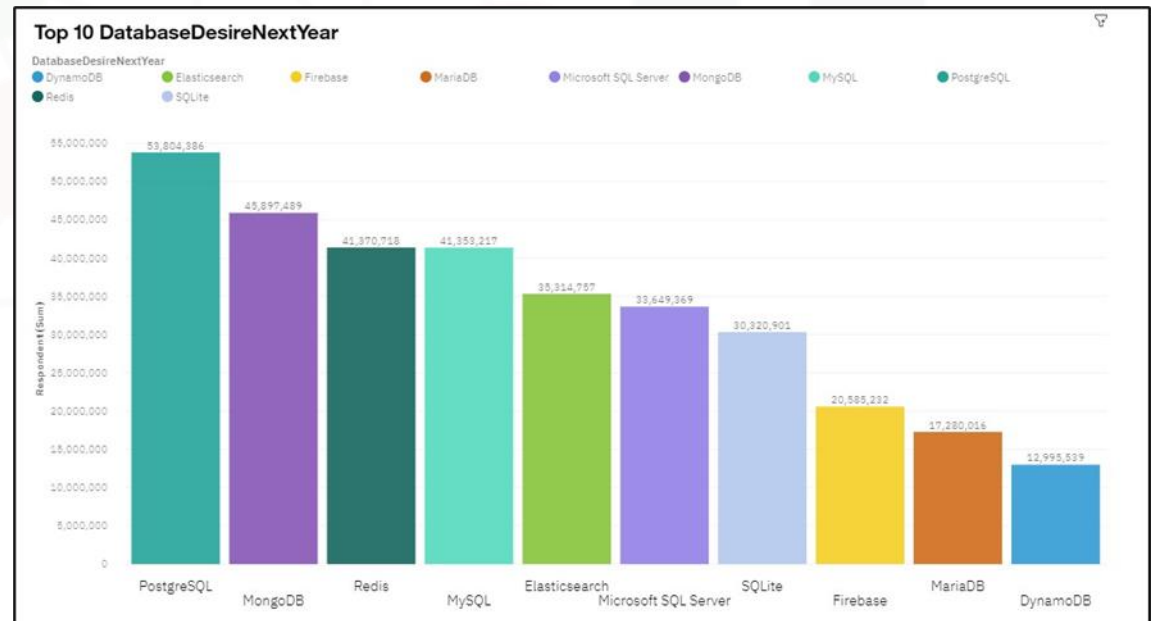
Current Year

Bar chart of top 10 databases for the current year goes here



Next Year

Bar chart of top 10 databases for the next year goes here.



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL is the most used database currently.
- There is a lack of interest in Microsoft SQL Server and SQLite.
- Increasing interest in PostgreSQL and MongoDB.

Implications

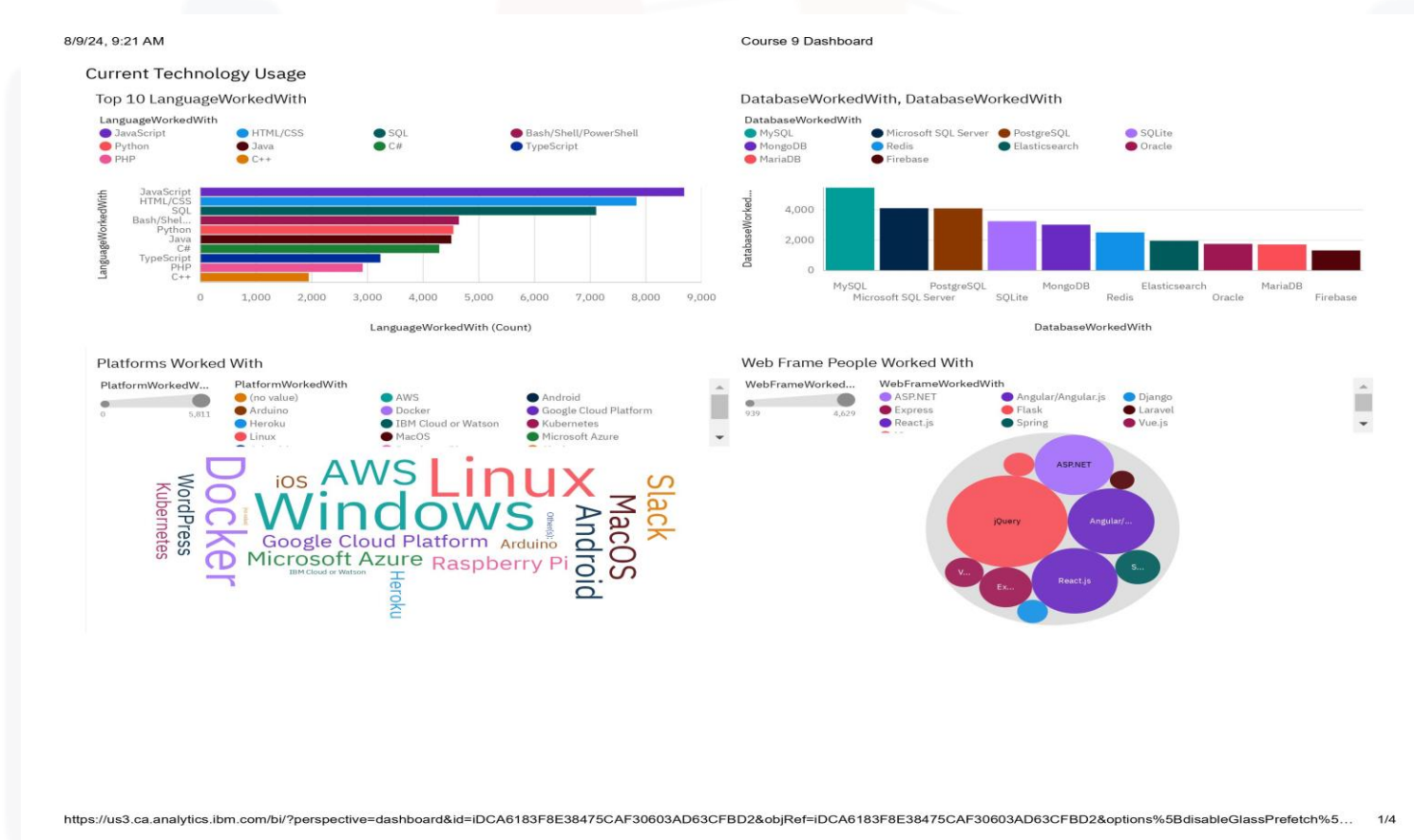
- Microsoft SQL Server and SQLite losing ground in the market.
- PostgreSQL and MongoDB establishment in the market.
- SQL Server and SQLite are losing ground in the market because their storage capacity might be low compared to PostgreSQL and MongoDB

DASHBOARD



<The GitHub link of the Cognos/Looker Studio dashboard goes here.>

DASHBOARD TAB 1

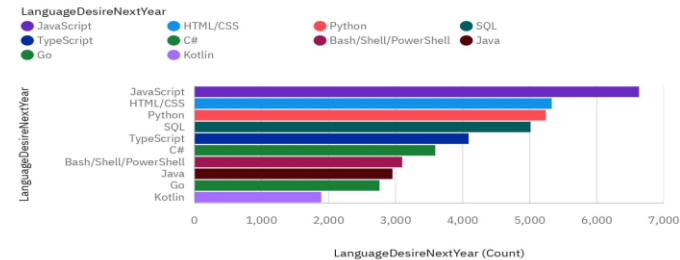


DASHBOARD TAB 2

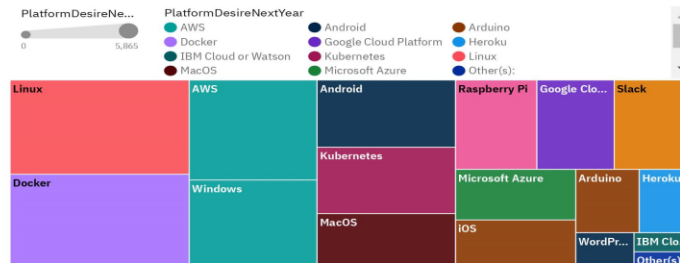
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Future Technology Trend

LanguageDesireNextYear, LanguageDesireNextYear

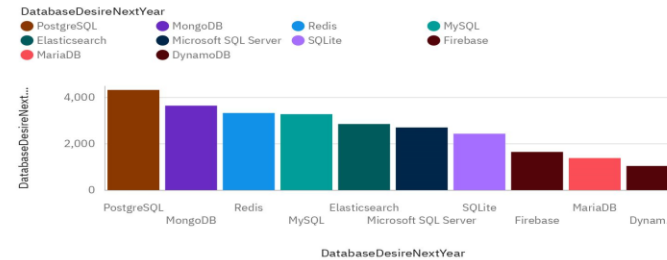


PlatformDesireNextYear for PlatformDesireNextYear hierarchy

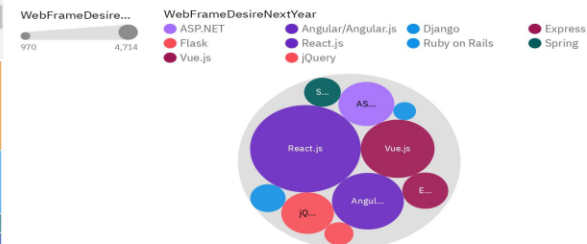


Course 9 Dashboard

DatabaseDesireNextYear, DatabaseDesireNextYear



WebFrameDesireNextYear hierarchy colored by WebFrameDesireNextYear and sized by WebFrameDesireNextYear



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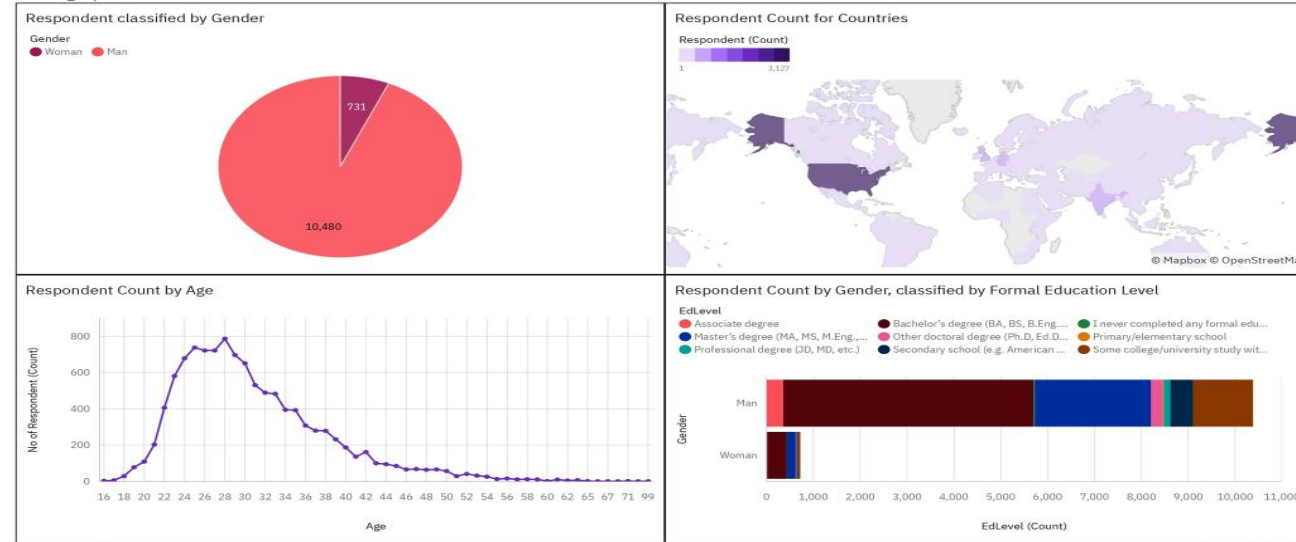
DASHBOARD TAB 3

DASHBOARD TAB 3 - Demographics

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IBM Data Analyst Capstone Project Dashboard

Demographics



IBM Developer

SKILLS NETWORK 

IBM Developer

SKILLS NETWORK 

DISCUSSION



- **Must-Have Skills and Desirable Future Trends:**

1. Languages are gaining significant popularity
 - JavaScript
 - Python
 - HTML/CSS
 - SQL
 - TypeScript
2. Databases which are becoming more popular options
 - PostgreSQL
 - MongoDB
 - Redis
 - MySQL
 - Elasticsearch
3. Popular IDEs:
 - React.js
 - Angular/Angular.js
 - Vue.js
 - jQuery
 - ASP.NET

OVERALL FINDINGS & IMPLICATIONS

Findings

- JavaScript is widely used, and TypeScript is getting popularity.
- Over 90% of men are developers while about 6% developers are women.
- Developers are mostly located in well developed countries.

Implications

- JavaScript and TypeScript web frames gaining followers.
- Global polarization of developers location and gender.
- Young developers without postgrad studies on its majority.

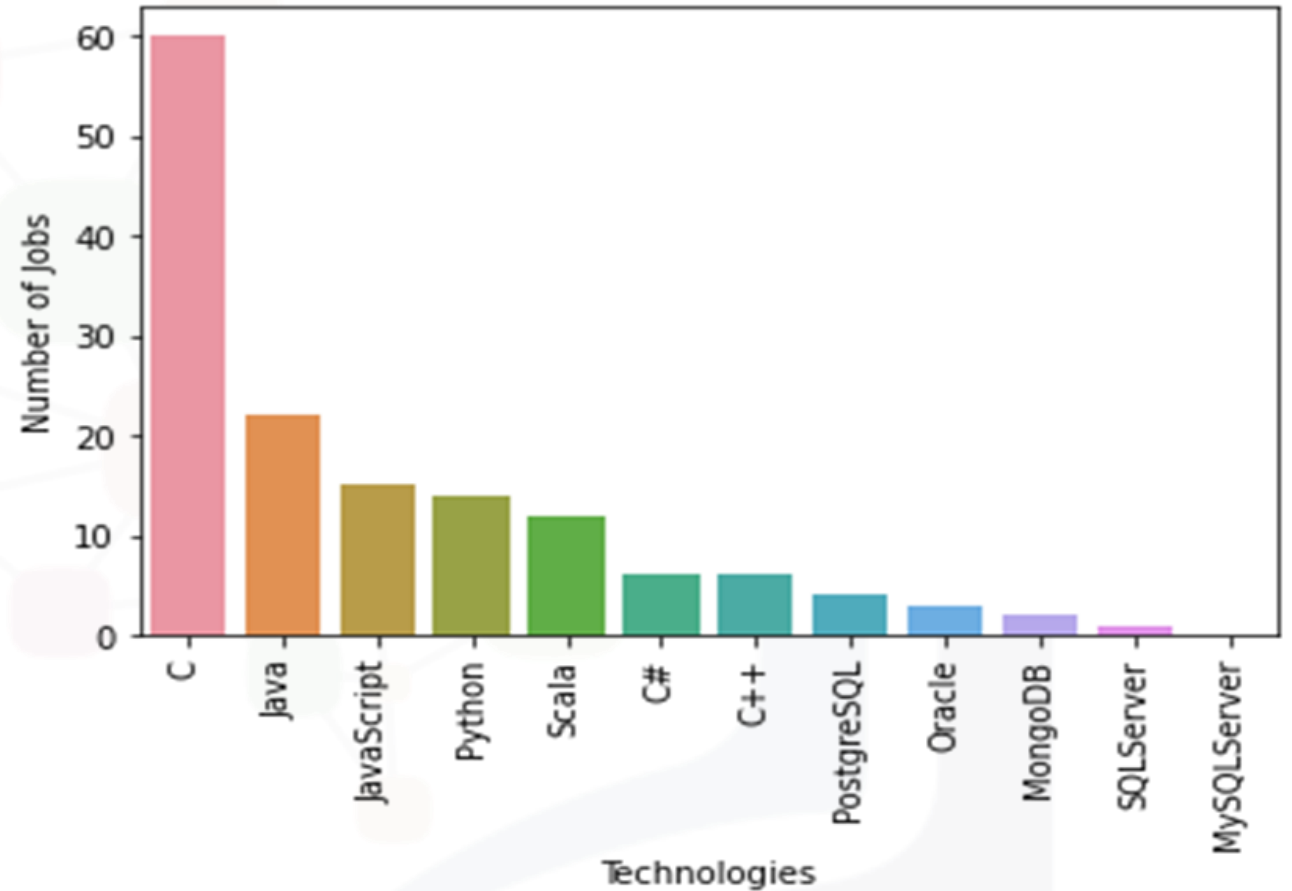
CONCLUSION



- **Unbiased Data Analysis:**
 - Open source data from Stack Overflow helps avoid data bias.
- **Shift in Technology Trends:**
 - Changes in current technology usage highlight the need for updated skills.
- **Updated Skill Requirements:**
 - **Programming Languages:**
 - JavaScript, Python, HTML/CSS, SQL, TypeScript
 - **Databases:**
 - PostgreSQL, MongoDB, Redis, MySQL, Elasticsearch
 - **IDEs:**
 - React.js, Angular/Angular.js, Vue.js, jQuery, ASP.NET
- **Key Takeaway:**
 - To remain competitive, IT professionals must adapt to evolving trends in programming languages, databases, and IDEs.

JOB POSTINGS

In Module 1 you have collected the job posting data using Job API in a file named "job-postings.xlsx". Present that data using a bar chart here. Order the bar chart in the descending order of the number of job postings.



POPULAR LANGUAGES

In Module 1 you have collected the job postings data using web scraping in a file named “popular-languages.csv”. Present that data using a bar chart here. Order the bar chart in the descending order of salary.

