

The Future of Programming: A Data-Driven Perspective

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OUTLINE



- **Executive Summary**
- **Introduction**
- **Methodology**
- **Results**
 - Visualization – Charts
 - Dashboard
- **Discussion**
 - Findings & Implications
- **Conclusion**
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EXECUTIVE SUMMARY



- **Project Objective:** To identify the most in-demand programming skills and technologies for the current year.
- **Data Sources:**
 - Job postings.
 - Training portals offering programming courses
 - Developer surveys and community forums.
- **Collection of Data**
- **Key Findings**
- **Future recommendations of skill requirement**



INTRODUCTION



- **Introduction:**

A comprehensive data analysis to identify the most in-demand programming skills and technologies.

- **Data Sources:**

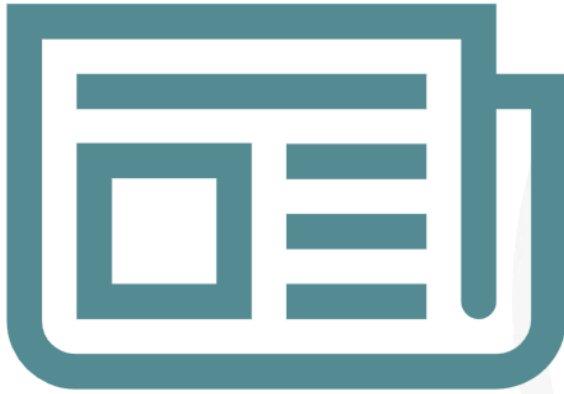
- Job postings
- Training portals
- Developer surveys

- **Research Questions:**

- What are the top programming languages?
- Which databases are most sought-after?
- What are the preferred IDEs?
- How are emerging technologies impacting the skill landscape?



METHODOLOGY



1.Data Collection:

- Job Postings: Scraped job postings from different platforms.
- Training Portals: Collected data on popular courses and certifications from platforms.
- Developer Surveys: Analyzed survey data from platforms.

2.Data Cleaning and Preprocessing:

- Removed duplicates and inconsistencies in the data.
- Standardized the data format.
- Handled missing values and outliers.

3.Data Analysis:

- Text Analysis: Used techniques like text mining and sentiment analysis to extract keywords and themes from job descriptions and survey responses.
- Statistical Analysis: Employed statistical techniques like frequency analysis, correlation analysis, and trend analysis to identify patterns and trends.

4.Visualization:

- Created visualizations (e.g., bar charts, word clouds) to communicate findings effectively.



RESULTS

- **Current Landscape:**

- **Dominant Technologies:** JavaScript, HTML/CSS, and Python continue to be the most widely used technologies, highlighting their versatility and importance in web development and data science.
- **Database Fundamentals:** SQL remains a core skill for data management and analysis.
- **System Administration:** Bash/Shell/PowerShell are essential for system administration and automation tasks.
- **Enterprise and Mobile Development:** Java and C# are widely used in enterprise applications and mobile development.

- **Future Trends:**

- **JavaScript and Python:** These languages will remain highly sought-after, especially for web development, data science, and machine learning.
- **TypeScript:** As a superset of JavaScript, TypeScript is gaining popularity for its strong typing and improved tooling.
- **Database Technologies:** SQL and NoSQL databases will continue to be essential for data storage and retrieval.
- **Cloud Computing:** Cloud platforms like AWS, Azure, and GCP will drive demand for cloud-native skills.
- **AI and Machine Learning:** These technologies will continue to shape the future of software development, requiring skills in Python, R, and specialized frameworks.

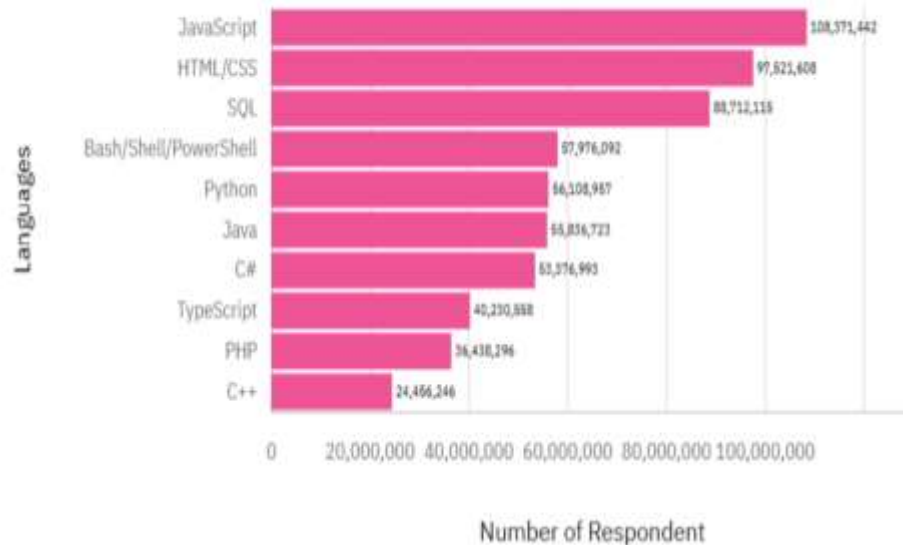


PROGRAMMING LANGUAGE TRENDS

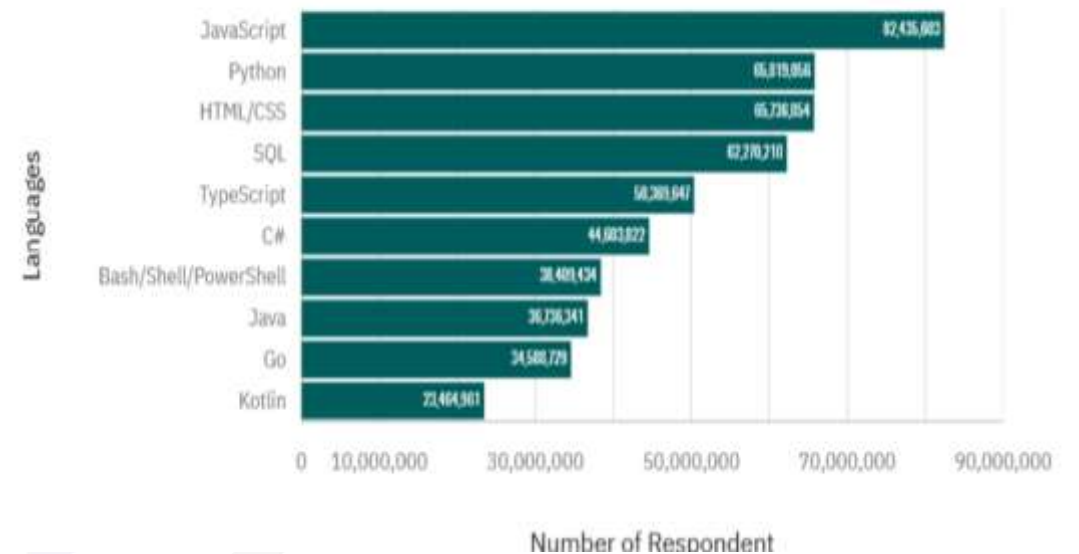
Current Year

Next Year

Top 10 languages experience



Top 10 Desired Languages to learn



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings:

- **JavaScript** and **Python** are the most sought-after languages.
- **HTML/CSS** remains crucial for web development, highlighting the importance of front-end skills.
- **SQL** is essential for data management and analysis.

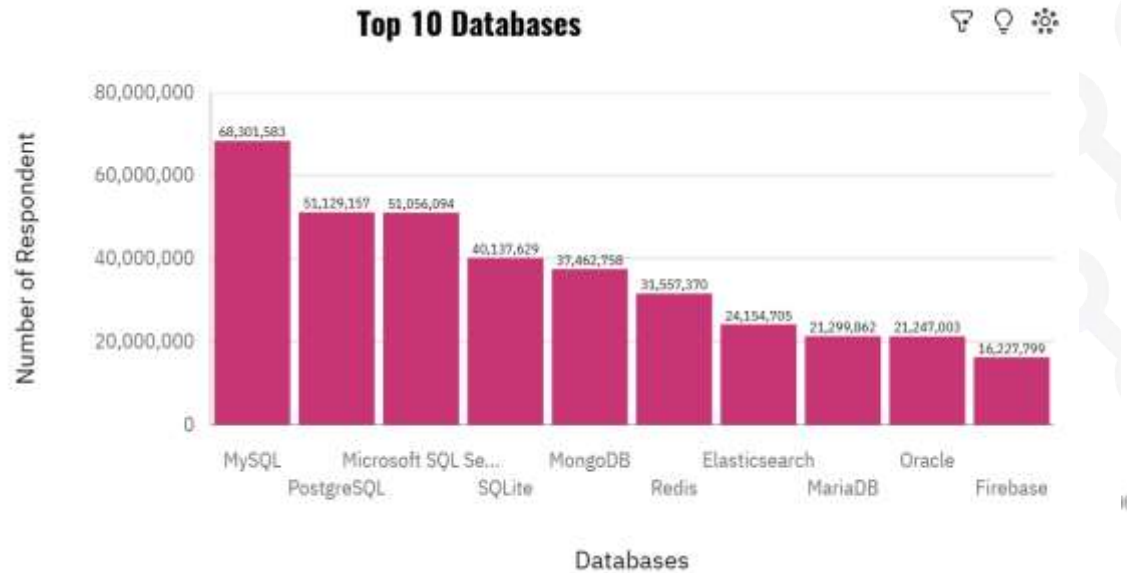
Implications:

- **Skill Development:** Individuals and organizations should prioritize learning and mastering JavaScript, Python, HTML/CSS, and SQL to stay competitive in the job market.
- **Full-Stack Development:** A strong foundation in both front-end (HTML/CSS, JavaScript) and back-end (Python, Java) technologies is essential for full-stack developers.
- **Data-Driven Insights:** SQL and Python are crucial for data analysis, machine learning, and data science.
- **System Administration and Automation:** Bash/Shell/PowerShell are essential for system administrators and DevOps engineers.

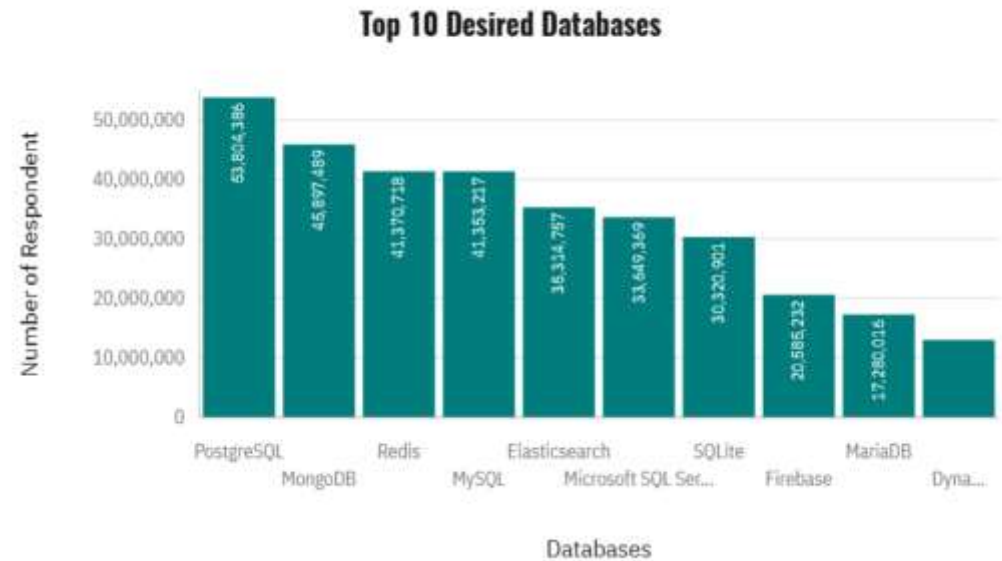


DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings:

- **PostgreSQL** and **Redis** are the most desired databases.
- **Elasticsearch** is a powerful tool for search and analytics.
- **SQLite** is a lightweight embedded database suitable for various applications.

Implications:

- **Data-Driven Insights:** Understanding the demand for different databases is crucial for data-driven organizations.
- **Skill Development:** Individuals should focus on learning SQL, NoSQL databases, and database administration skills.
- **Cloud-Native Databases:** Cloud-based databases like Firebase and DynamoDB are gaining popularity, especially for modern applications.

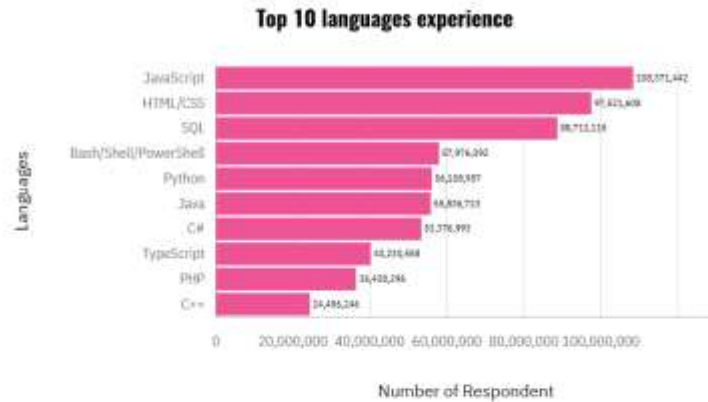
DASHBOARD



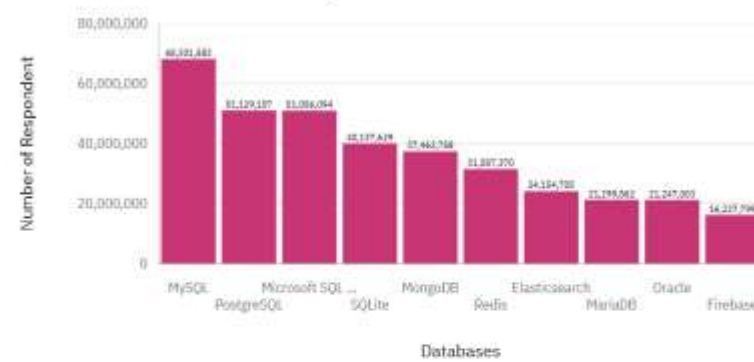
The [GitHub](#) link of the Cognos dashboard.



Current Technology Usage



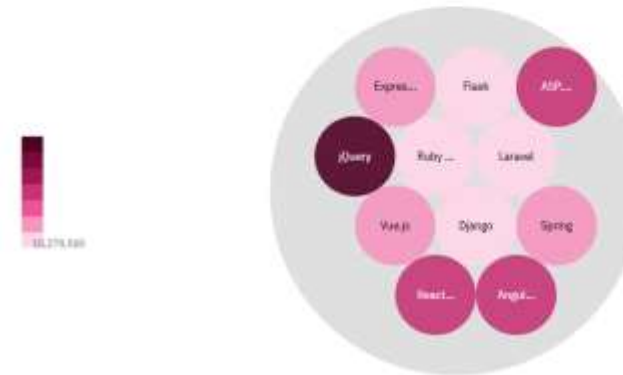
Top 10 Databases



Platforms worked with



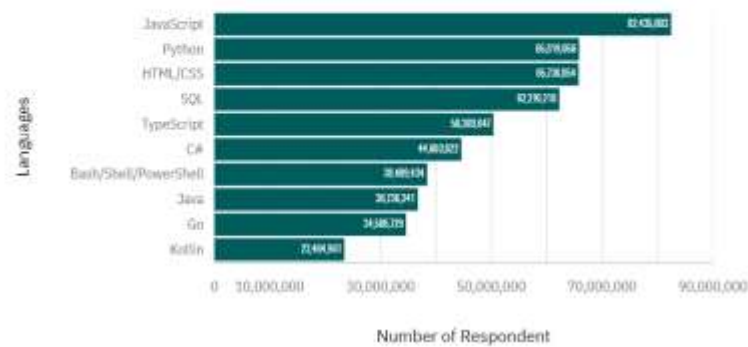
Top 10 WebFrames Used



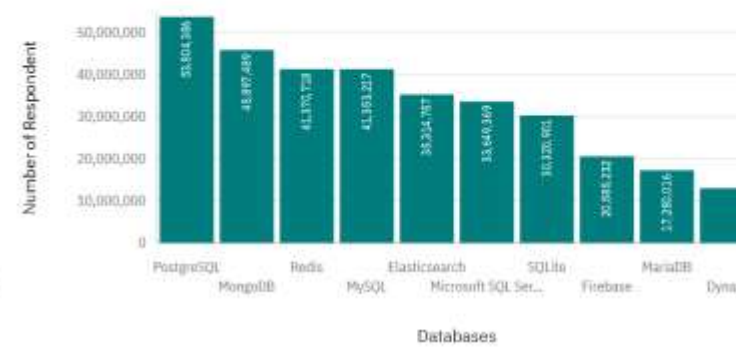
DASHBOARD TAB 2

Future Technology Trend

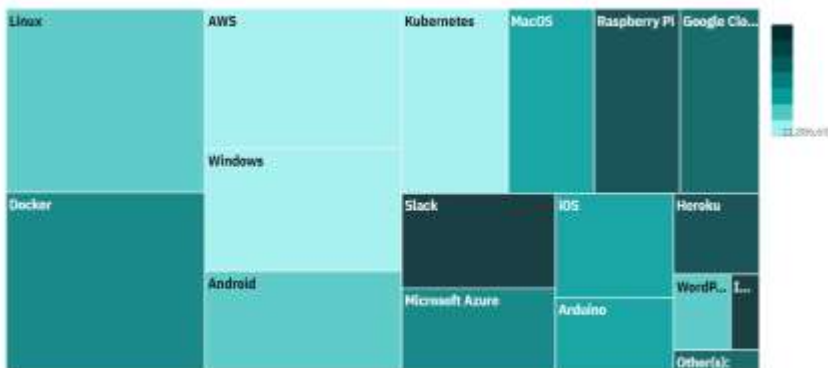
Top 10 Desired Languages to learn



Top 10 Desired Databases



Desired Platforms to work



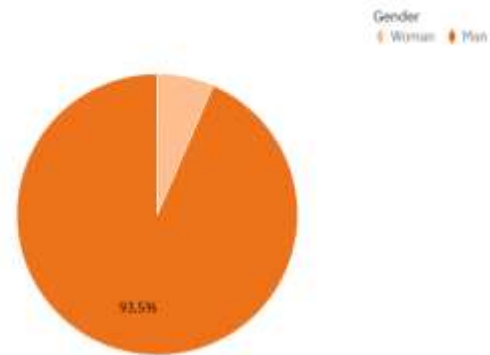
Top 10 Desired WebFrames



DASHBOARD TAB 3

Demographics

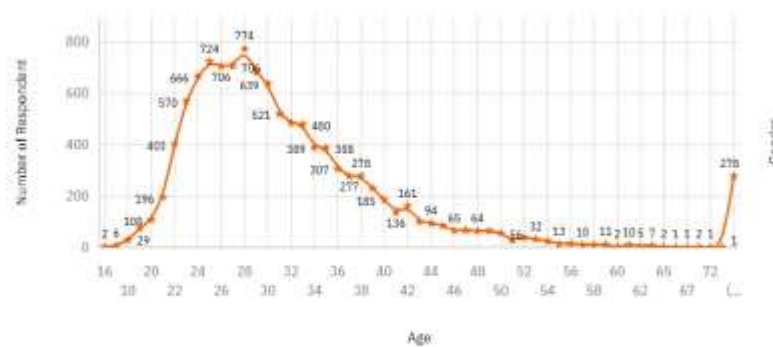
Respondent by Gender



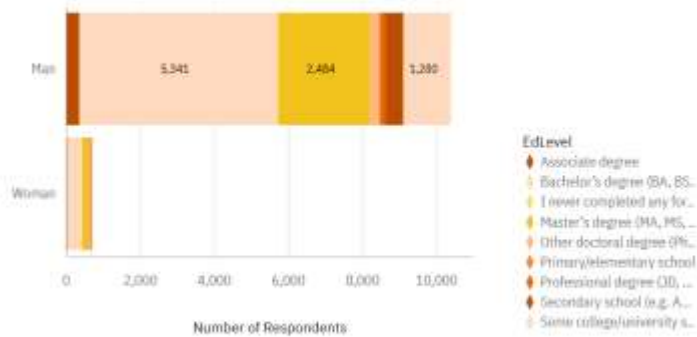
Respondent Locations



Respondents by Age



Formal Education level/Gender



DISCUSSION



- Our analysis reveals that **JavaScript**, **HTML/CSS**, and **Python** remain dominant, while **SQL** and **NoSQL** databases are crucial for data management. Cloud platforms like **AWS**, **Azure**, and **GCP** are driving innovation, and cloud-native skills are in high demand.
- To stay competitive, individuals should prioritize learning these core technologies and continuously adapt to emerging trends. Organizations must invest in training and development to build a skilled workforce.
- Future research could delve deeper into niche technologies, regional variations, and the impact of AI and machine learning on the job market.



OVERALL FINDINGS & IMPLICATIONS

Findings:

- Dominant Technologies:** JavaScript, HTML/CSS, and Python remain the most widely used and in-demand technologies, especially for web development and data science.
- Database Systems:** SQL and NoSQL databases are essential for data storage and retrieval. MySQL, PostgreSQL, and MongoDB are popular choices
- Education and Skills:** A strong educational foundation and relevant technical skills are crucial for success in the tech field.

Implications:

- Skill Development:** Individuals should focus on learning and mastering core programming languages, data analysis, and cloud technologies.
- Continuous Learning:** The tech industry is constantly evolving, so continuous learning is essential to stay updated with the latest trends.
- Adaptability:** The ability to adapt to changing technologies and trends is crucial for success in the tech industry.



CONCLUSION



Core Technologies: JavaScript, HTML/CSS, and Python dominate the tech landscape.

Database Solutions: SQL and NoSQL databases, especially MySQL, PostgreSQL, and MongoDB, are essential.

Cloud Computing: Cloud platforms like AWS, Azure, and GCP are driving innovation.

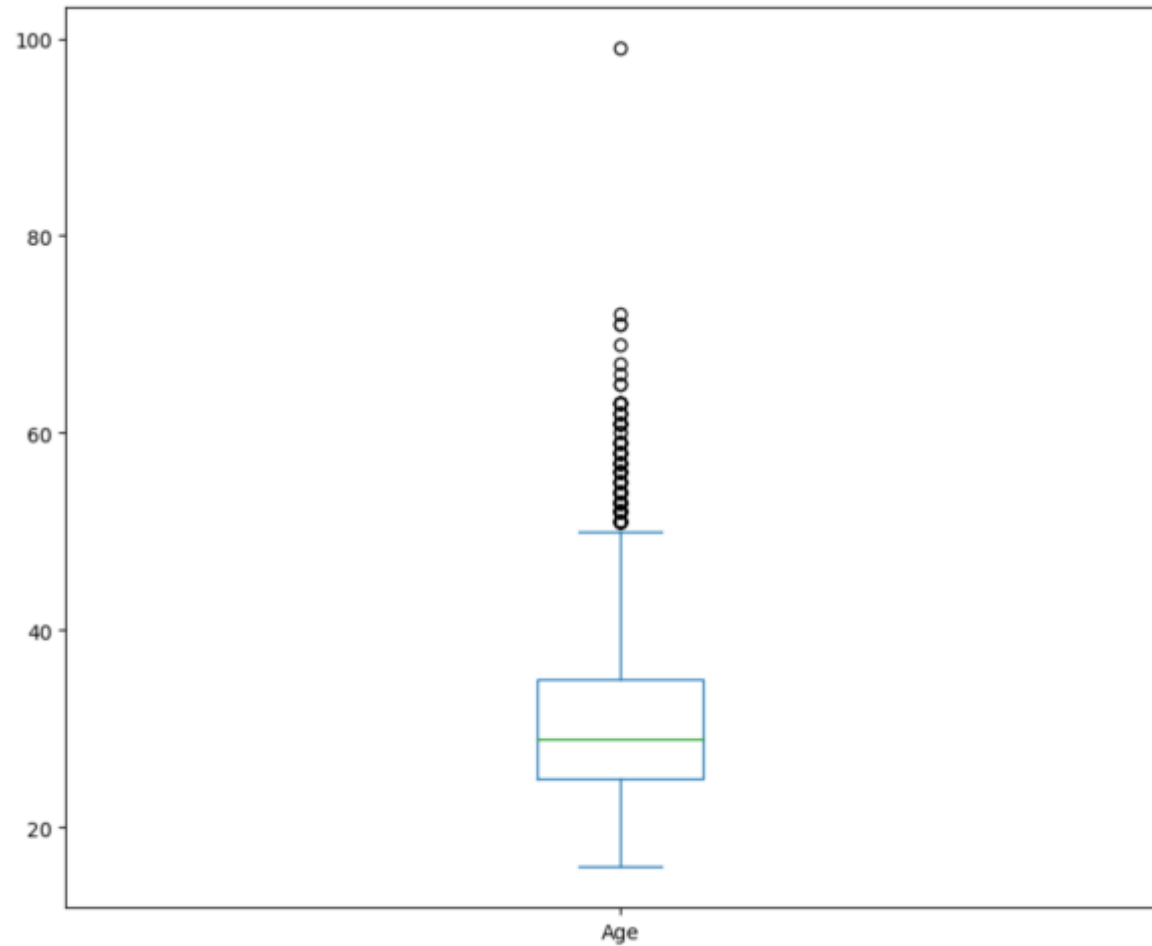
Diverse Workforce: The tech industry benefits from a diverse range of ages and experiences.

By understanding these trends, individuals and organizations can make informed decisions to stay ahead in the ever-evolving tech industry.

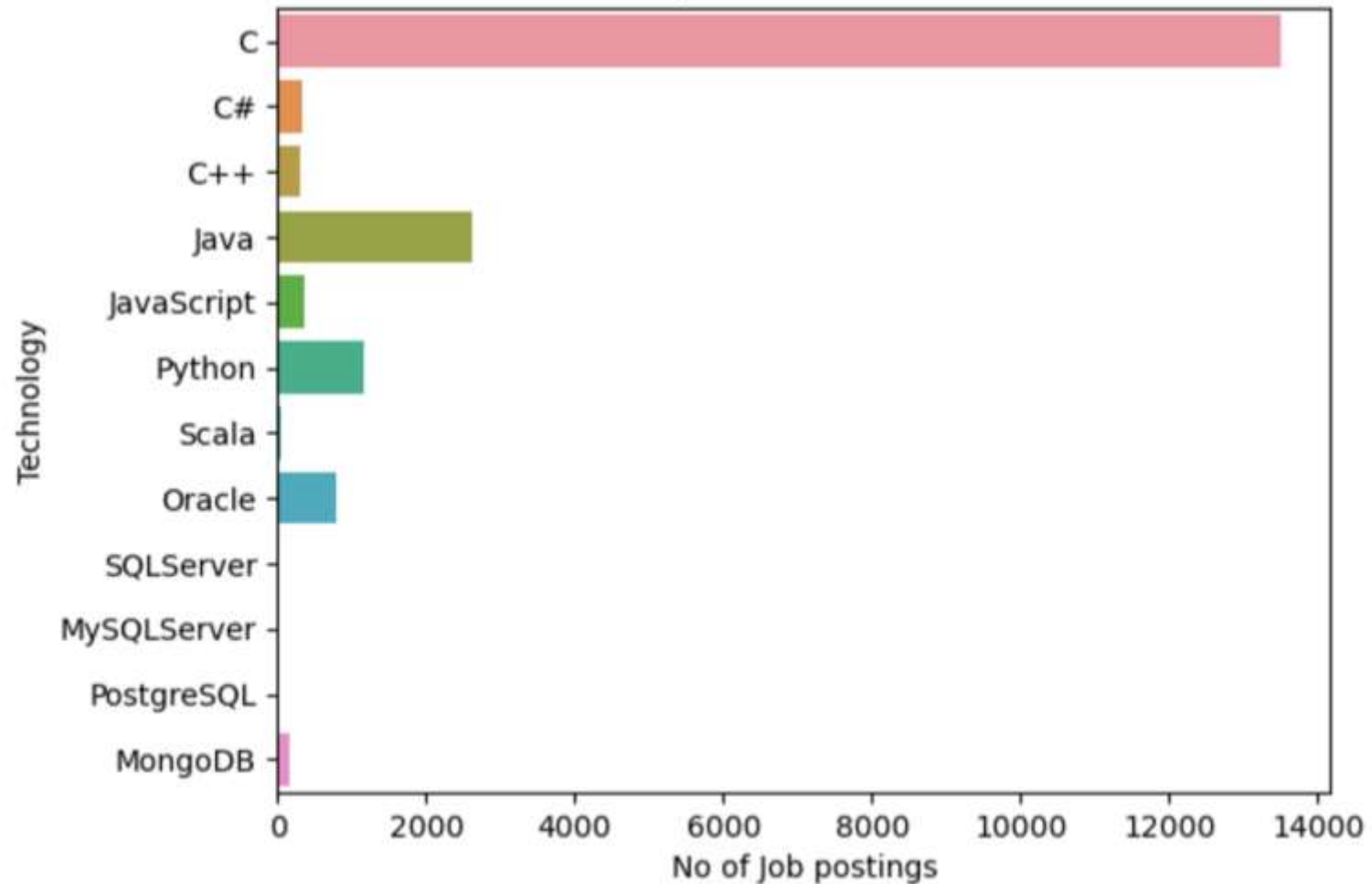
APPENDIX



Age Distribution



JOB POSTINGS



POPULAR LANGUAGES

