TECHNOLOGY TREND: REVEALING INSIGHTS FROM SURVEY DATA

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OUTLINE

EXECUTIVE SUMMARY

Purpose:

Analyze current trends in programming languages, databases, frameworks, platforms, and future tech preferences among professionals and students.

Recommendations:

- **Upskill**: JavaScript, HTML/CSS, and Python .

- **Invest in Cloud Infrastructure**: Supports scalable and agile workflows.

Findings

- Top Desired Languages: JavaScript, HTML/CSS, and Python rank highest for demand, suggesting a shift toward web development and data-related skills Finding 2

- Platform Diversification: Demand for versatile languages (e.g., Python) suggests an increasing emphasis on cross-platform functionality.

- **Cloud platforms (AWS, Google Cloud Platform, Microsoft Azure)** are gaining popularity, with **AWS** being the most preferred.

- **MySQL** and **Microsoft SQL Server** are the most popular and still expected to be the most popular databases in upcoming years, while **PostgreSQL** follow closely behind and shows a significant increase in popularity, suggesting a growing trend towards open-source options.

INTRODUCTION

Analysis Purpose:

- Examine trends in programming language, database, framework, and platform usage.

Problem Statement:

- Organizations need data to understand technology trends for strategic decision-making and resource allocation.

Research Questions:

- What are the most widely used programming languages, databases, and frameworks

- How do platform and tool preferences vary by role?

- What are future trends in technology preferences among professionals?

METHODOLOGY

- **Data Sources:**
  - Survey responses from worldwide tech professionals and students.
  - Data includes demographics, role, industry, and tech preferences.
  - Job posting and salary information of technology professionals

- **Data Collection:**
  - Online survey with both multiple-choice and open-ended questions.
  - Targeted outreach to diverse tech industry roles.
  - Job posting data from Github

- **Analysis Methods:**
  - Trend Analysis: Identifying emerging tech and shifts in usage.
  - Descriptive Statistics: Quantitative summaries for each technology category.
  - Cluster Analysis: Grouping of respondents by technology preferences.

RESULTS

- **Data Insights:**
  - Programming Languages: HTML/CSS leads, followed by JavaScript; strong interest in C#.
  - Database Preferences: MySQL, SQL Servers and PostgreSQL are Top 3, with rising interest in MongoDB and ElasticSearch.
  - Frameworks: Jquery and Angular dominate frontend; ASP.Net and React.js for backend.
  - Platforms: Linux, Android and Windows are the preferred OS (45%), with cloud services (AWS, Google Cloud, Docker) widely adopted.
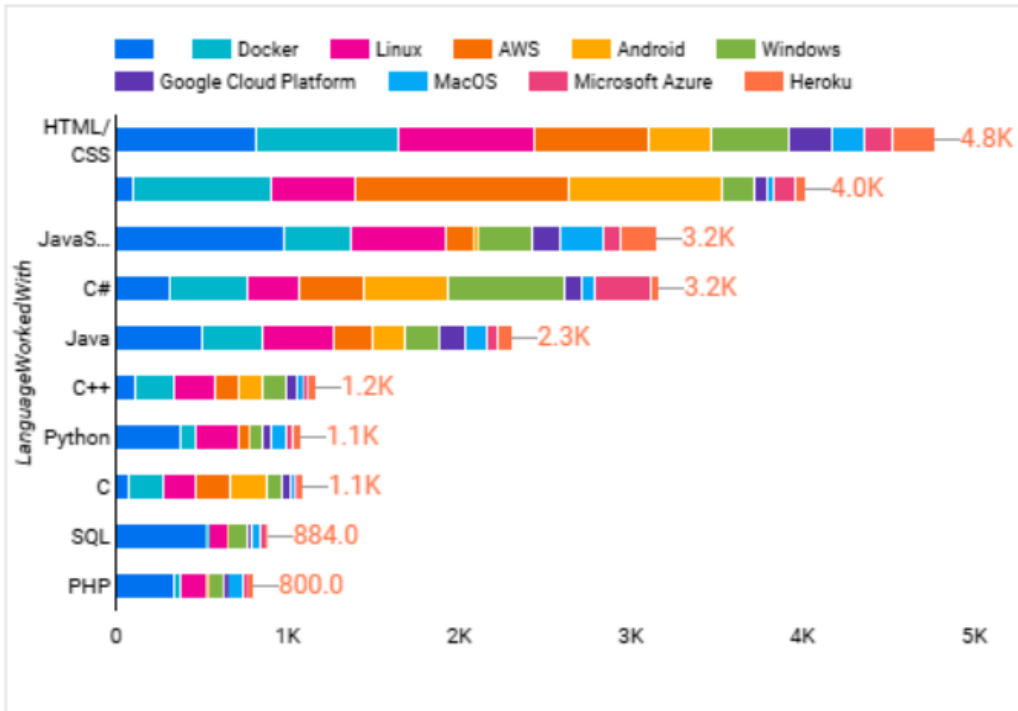
- **Findings:**
  - Strong shift toward cloud-based databases (MongoDB).
  - Lesering demand for PHP
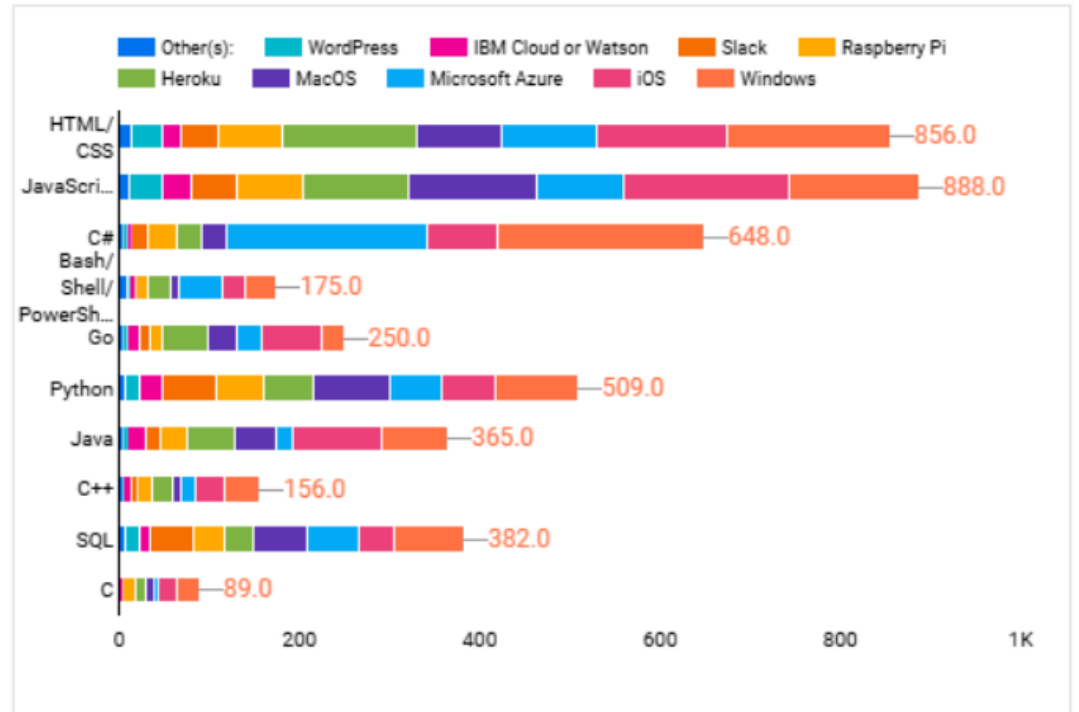
PROGRAMMING LANGUAGE TRENDS

Current Year

Next Year

PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Top Desired Languages: JavaScript, HTML/CSS, and Python rank highest for demand, suggesting a shift toward web development and data-related skills.

- Diverse Platform Compatibility: Popular languages show compatibility with a broad range of platforms, indicating high adaptability across tech stacks.

- Platform Diversification: Demand for versatile languages (e.g., Python) suggests an increasing emphasis on cross-platform functionality.
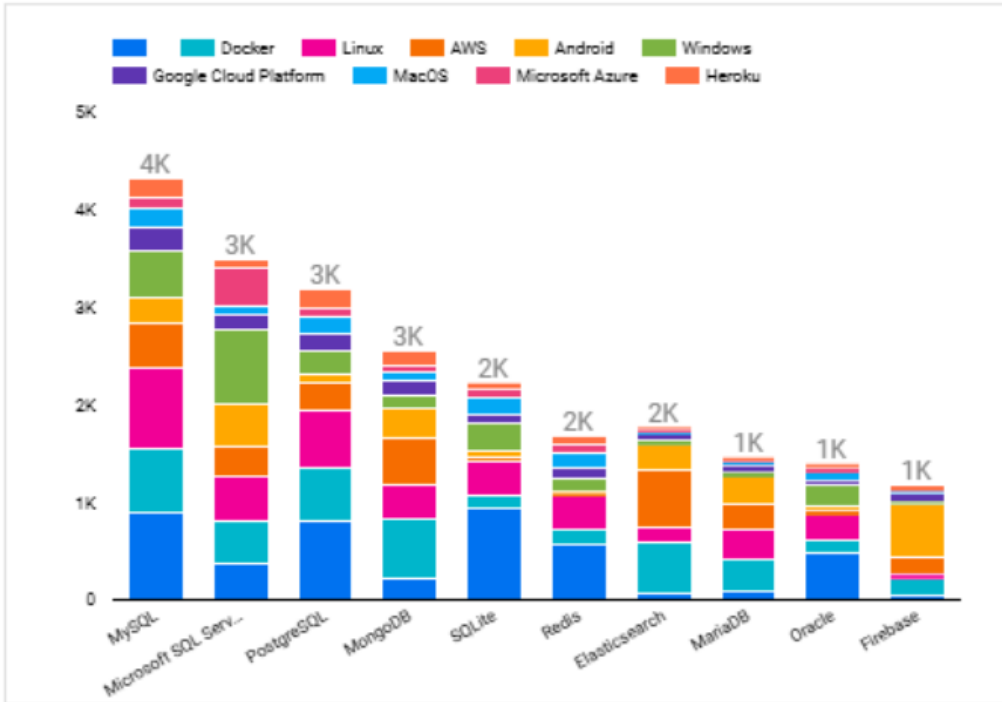
Implications

- Skill Development: Developers should focus on JavaScript, HTML/CSS, and Python to meet future demand.

- Cross-Platform Proficiency: Familiarity with diverse platforms (e.g., Windows, iOS, and cloud services) may enhance employability.

- Web and Data Focus: Companies may prioritize candidates with web development and data skills, aligning with broader industry trends.
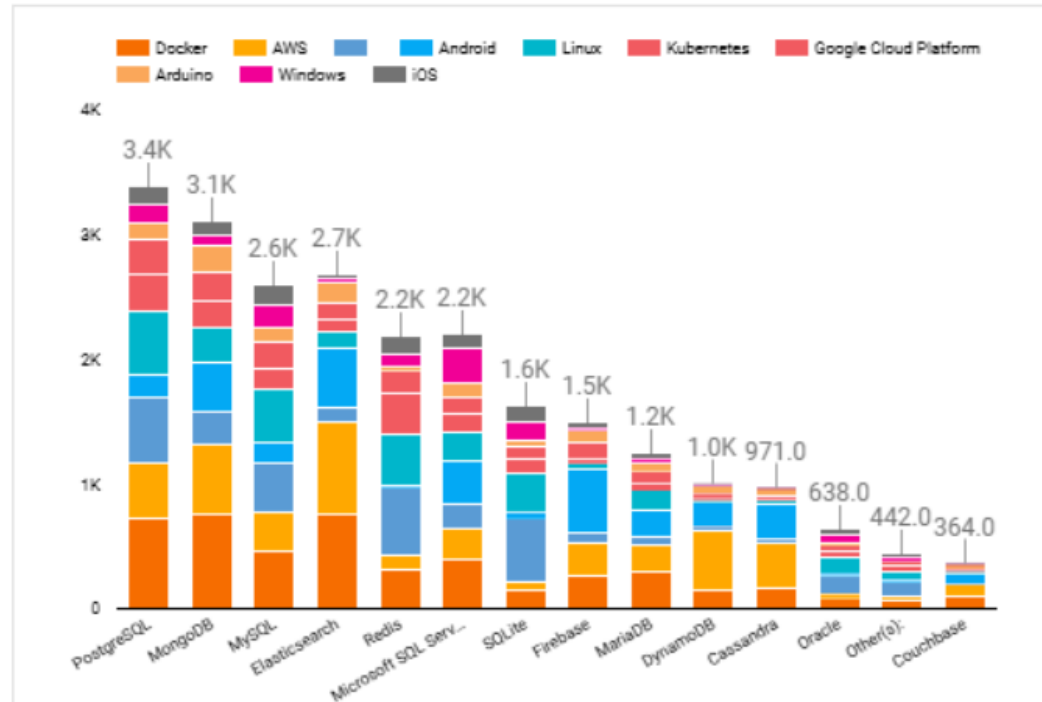
DATABASE TRENDS

Current Year

Top 10 Database by Platform

Next Year

Top 10 Desired Database by Platform

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- **MySQL** and **Microsoft SQL Server** are the most popular and still expected to be the most popular databases in upcoming years

- **PostgreSQL** follow closely behind and shows a significant increase in popularity, suggesting a growing trend towards open-source options.

- **Cloud platforms (AWS, Google Cloud Platform, Microsoft Azure)** are gaining popularity, with **AWS** being the most preferred.

- **Docker** and **Kubernetes** are also becoming significant platforms for database deployment.

- **PostgreSQL Cloud platforms** continue to be a major trend, with **Google Cloud Platform** gaining momentum.

- **Kubernetes** is expected to be the most popular platform for database deployment.

Implications

- **MySQL** and **Microsoft SQL Server** remain the safe choices for database solutions due to their widespread adoption and maturity.

- **PostgreSQL** is emerging as a strong contender, especially for organizations looking for open-source alternatives and advanced features like JSON support.

- **Cloud platforms** are becoming the preferred way to deploy databases, offering scalability, cost-effectiveness, and ease of management.

- **Kubernetes** is establishing itself as the leading platform for container orchestration, making it a crucial tool for managing database deployments in a cloud-native environment.

- The popularity of **NoSQL** databases like **MongoDB** and **Elasticsearch** is increasing, indicating a growing need for flexible and scalable data storage solutions.

- The rise of **serverless databases** like **Firebase** and **FaunaDB** could further disrupt the traditional database landscape.
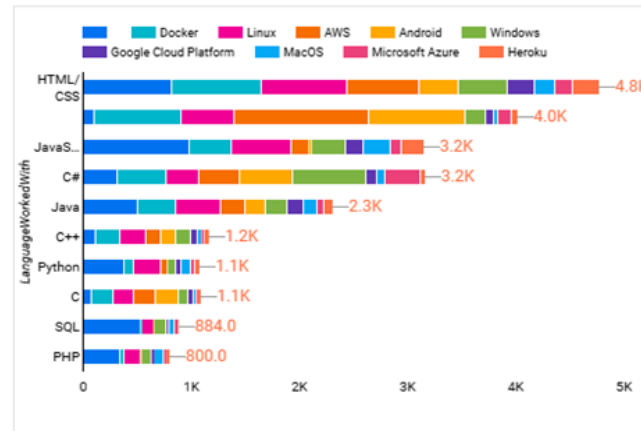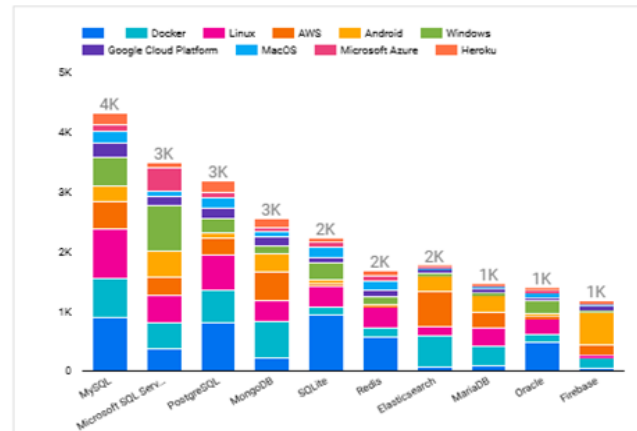
DASHBOARD

https://github.com/gitkurt450/Capstone-Project.git

DASHBOARD TAB 1: CURRENT TECHNOLOGY USAGE

DASHBOARD TAB 2: FUTURE TECHNOLOGY TREND

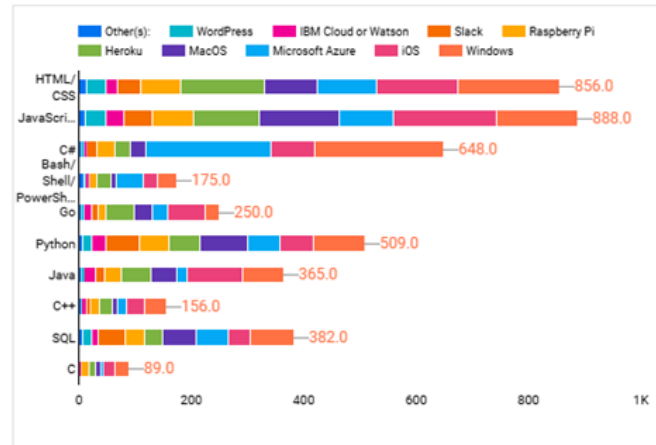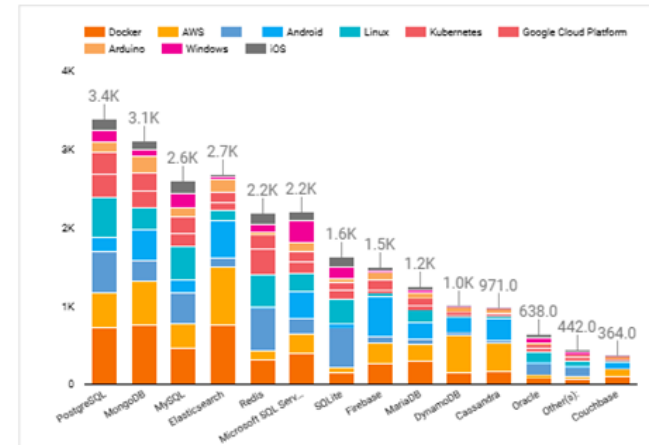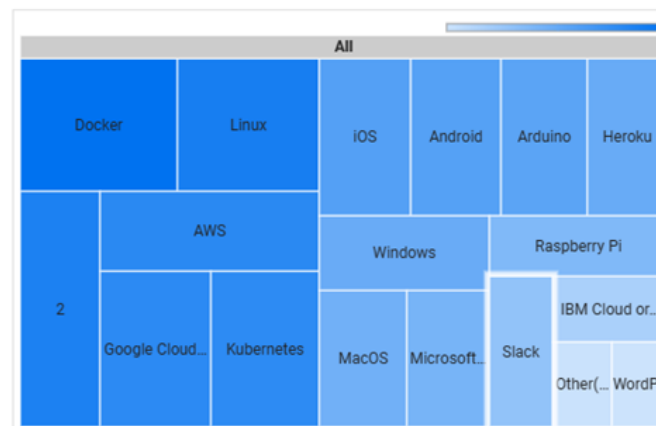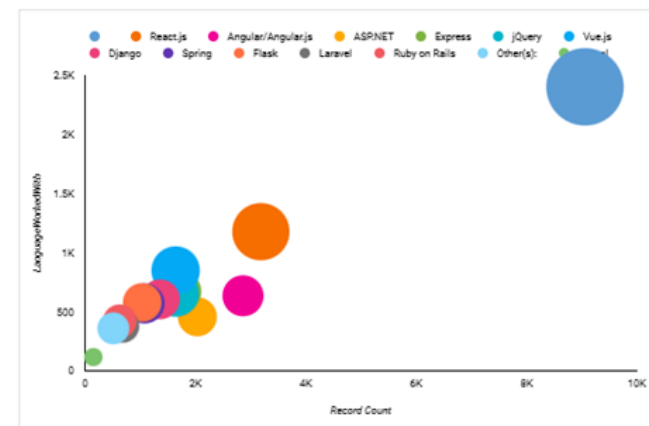**Top 10 Desired Programming Language by Platform**

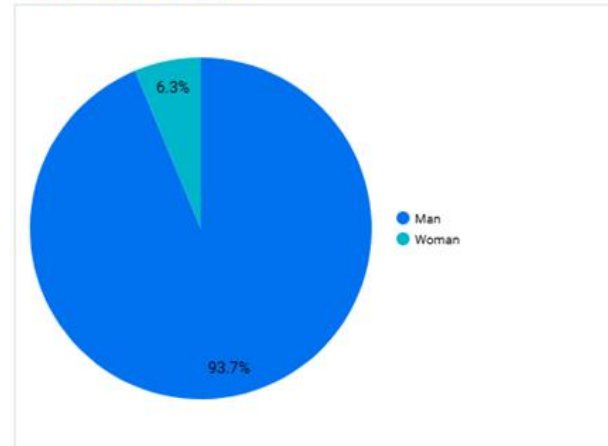**Top 10 Desired Database by Platform**

Most Desired Platforms

Most Desired Web Frames

DASHBOARD TAB 3: DEMOGRAPHICS
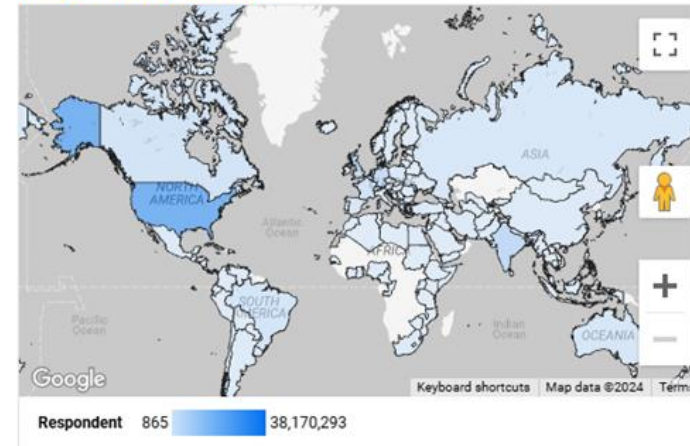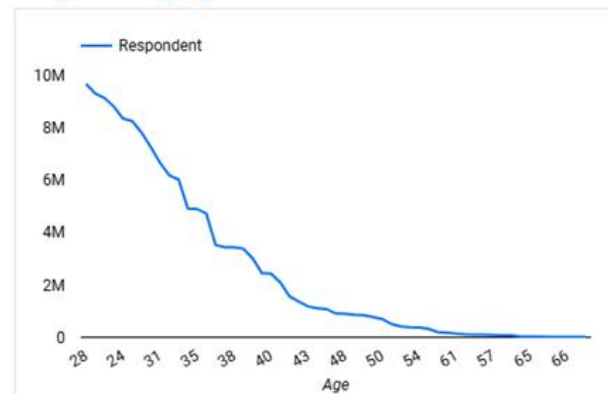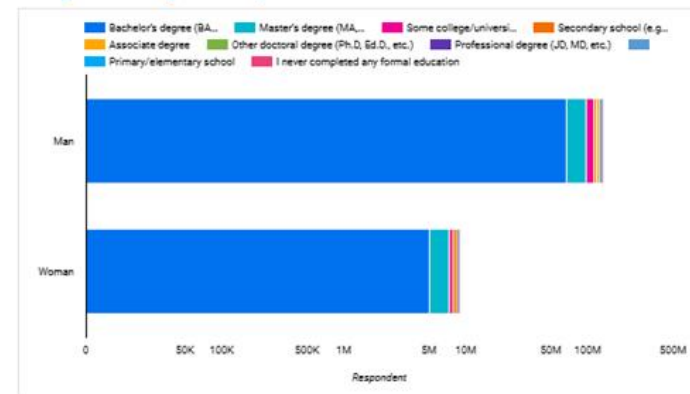
DISCUSSION

- What are the benefits of cloud-native development, including scalability, flexibility, and cost-effectiveness and explore the role of cloud platforms (AWS, GCP, Azure) in this paradigm.

- Open-Source Technologies: Discuss the advantages of open-source technologies such as Python

- Data-Driven Decision Making: Discuss the importance of data in modern organizations and the role of databases and data analytics tools in extracting valuable insights.

OVERALL FINDINGS & IMPLICATIONS

Findings

- Top Desired Languages: JavaScript, HTML/CSS, and Python rank highest for demand, suggesting a shift toward web development and data-related skills Finding 2

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Implications & Recommendations

- Skill Development: Developers should focus on JavaScript, HTML/CSS, and Python to meet future demand.

- Web and Data Focus: Companies may prioritize candidates with web development and data skills, aligning with broader industry trends.

- **Cloud platforms** are becoming the preferred way to deploy databases, offering scalability, cost-effectiveness, and ease of management.

- Staying updated with emerging technologies like **TypeScript** and **serverless computing** can help developers stay ahead of the curve.

CONCLUSION

Database Trends:

- **MySQL** and **Microsoft SQL Server** remain dominant, but **PostgreSQL** is gaining popularity due to its open-source nature and advanced features.

- Cloud platforms (AWS, GCP, Azure) are increasingly being used for database deployments, offering scalability and flexibility.

- **Kubernetes** is emerging as the preferred platform for containerized database deployments.

Programming Language Trends:

- **HTML/CSS** and **JavaScript** continue to be the core technologies for web development.

- **Python** and **Go** are gaining traction for backend development and system programming.

- Cloud platforms and container orchestration (Kubernetes) are becoming essential for modern application deployment.

Overall, the trends indicate a shift towards cloud-native development, open-source solutions, and a focus on productivity and scalability.
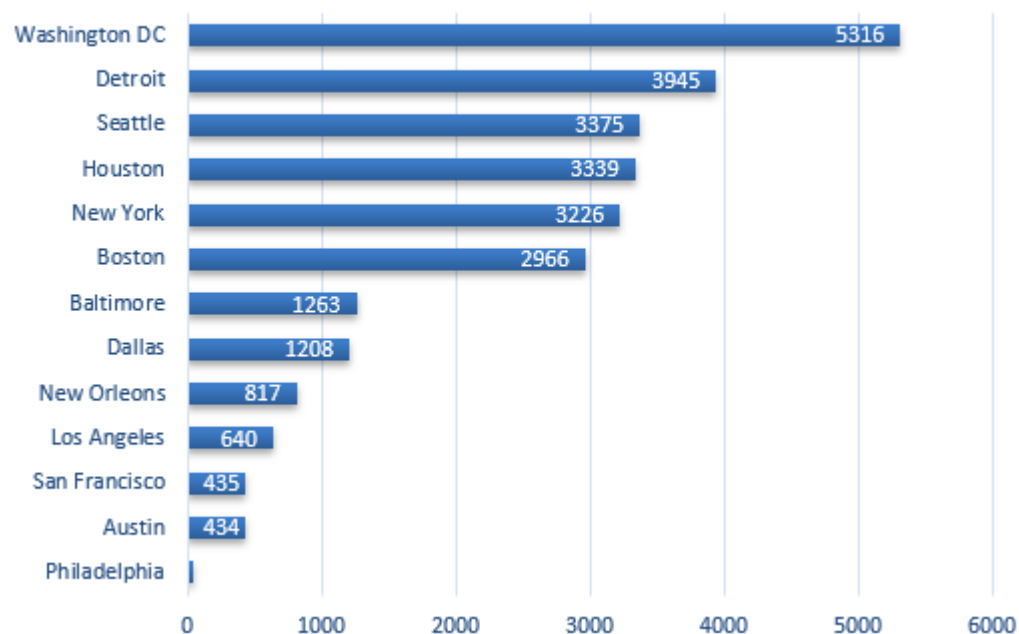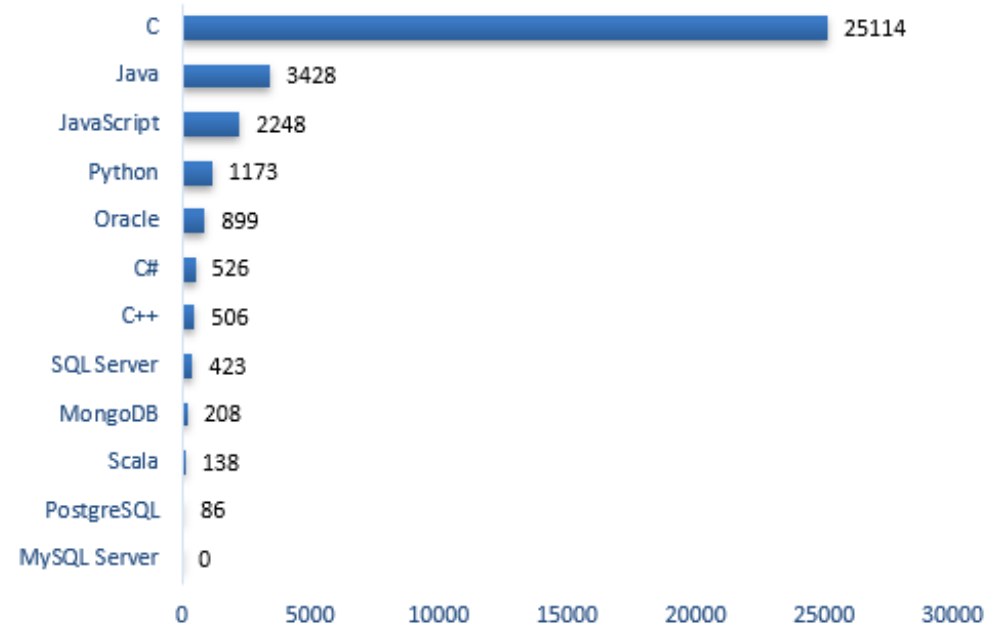
APPENDIX

- Job Posting chart
- Salary of Programmer by Popular Language

JOB POSTINGS

Number of Job Posting by Location

Location	Postings
Washington DC	5316
Detroit	3945
Seattle	3375
Houston	3339
New York	3226
Boston	2966
Baltimore	1263
Dallas	1208
New Orleons	817
Los Angeles	640
San Francisco	435
Austin	434
Philadelphia	

Number of Job Posting by Key Skill

Skill	Postings
C	25114
Java	3428
JavaScript	2248
Python	1173
Oracle	899
C#	526
C++	506
SQL Server	423
MongoDB	208
Scala	138
PostgreSQL	86
MySQL Server	0

POPULAR LANGUAGES

Annualized Salary of Programmer by Programming Language (USD)

Language	Salary
Swift	130,801
Python	114,383
C++	113,865
Javascript	110,981
Java	101,013
Go	94,082
R	92,037
C#	88,726
SQL	84,793
PHP	84,727