



ANALYSIS OF FUTURE TECHNOLOGY TRENDS

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EXECUTIVE SUMMARY



Staying Ahead in IT:

This report analyzes current and future trends in IT skills using data extracted using API's and web scraping. It explores what programming languages, databases, and other technologies are in demand and who the current tech professionals are.

Key Findings:

1. **JavaScript Reigns Supreme:** JavaScript is the most popular programming language now and is expected to stay on top.
2. **Database Shift:** MySQL is currently the leading database, but PostgreSQL is gaining traction and might become more sought-after.
3. **Current Tech Professionals:** Mostly males in age group 21-43 residing in US are the major respondents.

INTRODUCTION



Presentation Overview:

This report leverages data analytics to identify current and future trends in IT skills, focusing on programming languages, databases, platforms, and web frameworks.

Key Questions Addressed:

- 1. Most Sought-After Programming Languages:** Which languages are currently in highest demand?
- 2. In-Demand Database Skills:** What database expertise is most valuable?
- 3. Popular IDEs and Web Frameworks:** What tools are widely used in IT development?
- 4. Demographics:** Growth in technology and education across the globe.

Target Audience:

This research is designed for IT professionals, HR managers, and anyone interested in the IT sector. The goal is to provide insights into the top in-demand IT skills that will remain relevant in the future.

METHODOLOGY



Data Collection:

1. **Web Scraping:** Extract data from websites using automated techniques.
2. **API Integration:** Utilize APIs to access data from external sources.

Data Wrangling: Clean and prepare data for analysis, including tasks like handling missing values and inconsistencies.

Exploratory Data Analysis: Explore the data to uncover patterns, trends, and anomalies.

1. **Data Distribution Analysis:** Examine how data points are distributed, including measures like mean, median, and standard deviation.
2. **Outlier Handling:** Identify and address extreme data points that might skew results.
3. **Correlation Analysis:** Determine the relationships between different variables.

Data Visualization: Create visual representations of data to enhance understanding.

- **Data Distribution:** Show how data points are spread out.
- **Relationships:** Illustrate connections and correlations between variables.
- **Composition:** Analyze the parts that make up a whole.
- **Comparison:** Compare different datasets or groups

Dashboard Creation: Develop interactive dashboards to present findings in a clear and accessible manner.

RESULTS

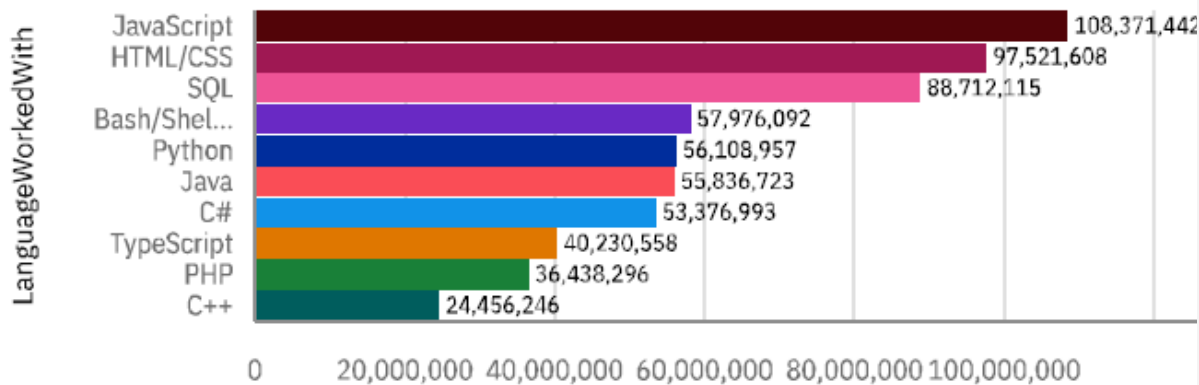


PROGRAMMING LANGUAGE TRENDS

Current Year

Top 10 languages

LanguageWorkedWith

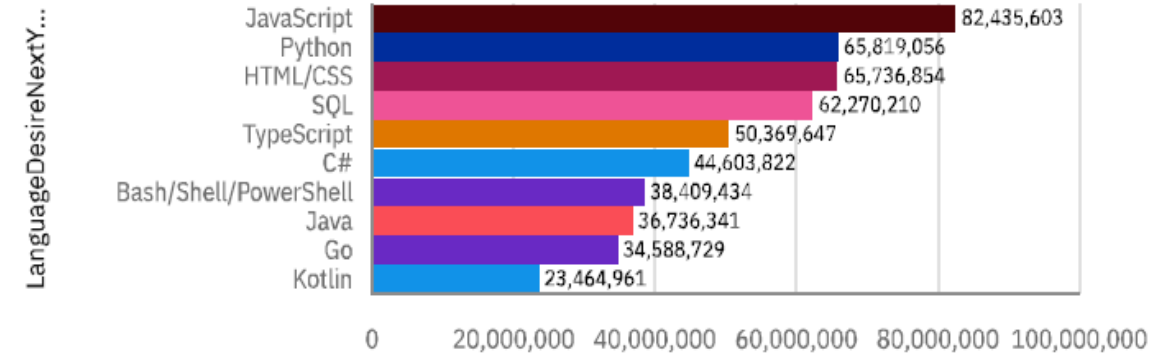


Respondent (Sum)

Next Year

Top 10 languages

LanguageDesireNextYear



Respondent (Sum)

PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- **Current Usage:** JavaScript, HTML/CSS, SQL, Shell languages, and Python are the most widely used programming languages today.
- **Future Projections:** JavaScript, HTML/CSS, Python, SQL, and TypeScript are expected to remain popular in the coming years.

Implications

- **Web Development Dominance:** The prevalence of JavaScript and HTML/CSS indicates strong demand for web development skills, especially as TypeScript gains popularity.
- **Python's Rise:** Python is projected to surpass SQL in demand, driven by the growing need for AI and ML expertise.
- **SQL's Enduring Relevance:** SQL remains essential for data professionals, making it a crucial skill for aspiring data analysts, scientists, and business analysts.

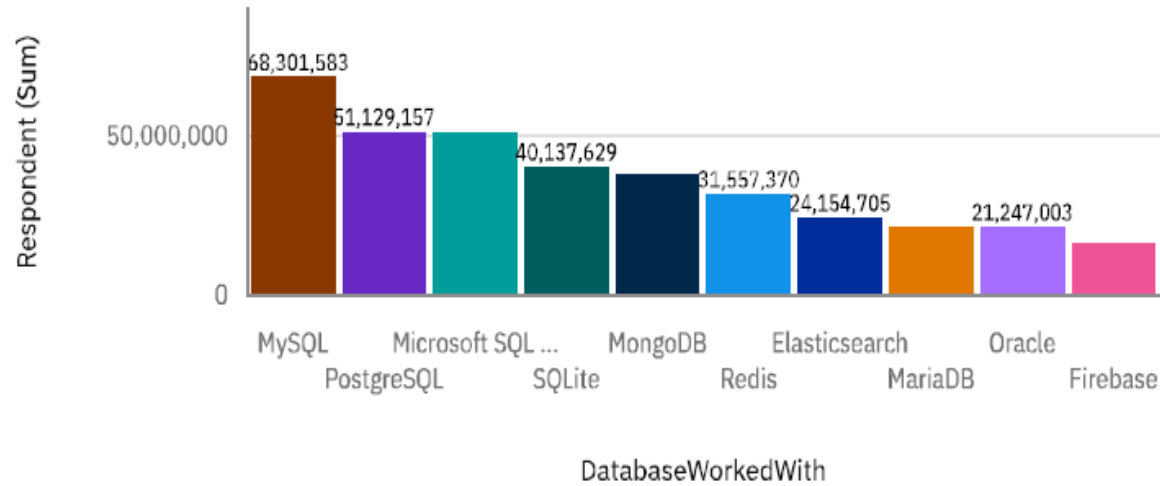
DATABASE TRENDS

Current Year

Top 10 DataBases

2

DatabaseWorkedWith

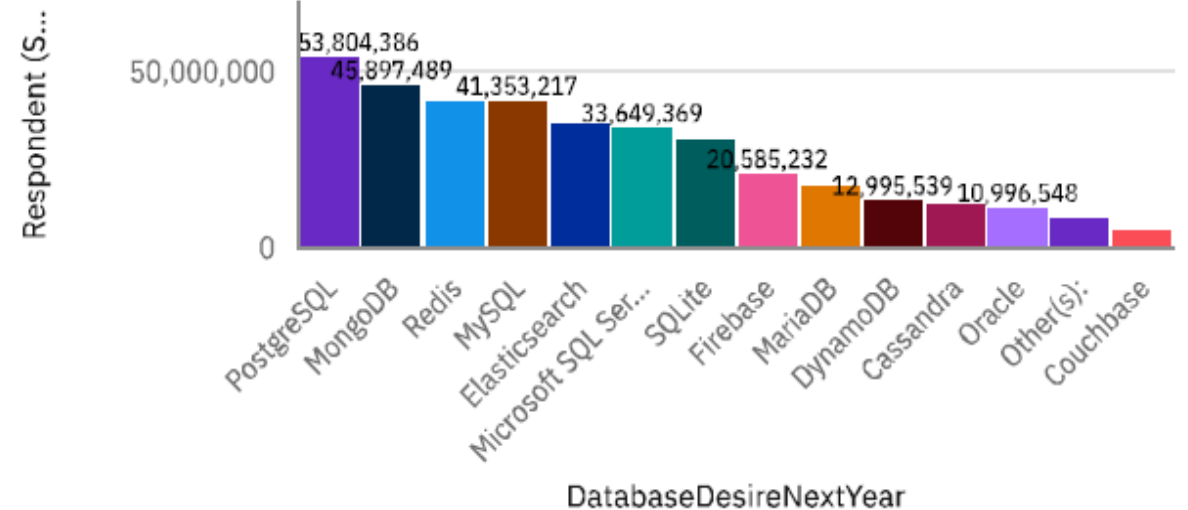


Next Year

Top 10 Databases

6

DatabaseDesireNextYear



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- **Current Usage:** MySQL, Microsoft SQL Server, PostgreSQL, SQLite, and MongoDB are the top five most-used databases.
- **Future Projections:** PostgreSQL, MongoDB, Redis, MySQL, and Elasticsearch are expected to gain popularity.
- **Emerging Tools:** Redis and Elasticsearch, as relatively new technologies, are poised for growth

Implications

- **SQL's Continued Importance:** SQL remains a vital tool for data specialists.
- **Open-Source Preference:** Companies continue to favor open-source database solutions.
- **Oracle's Declining Relevance:** Oracle SQL, once a leader, has seen its popularity wane over time

DASHBOARD

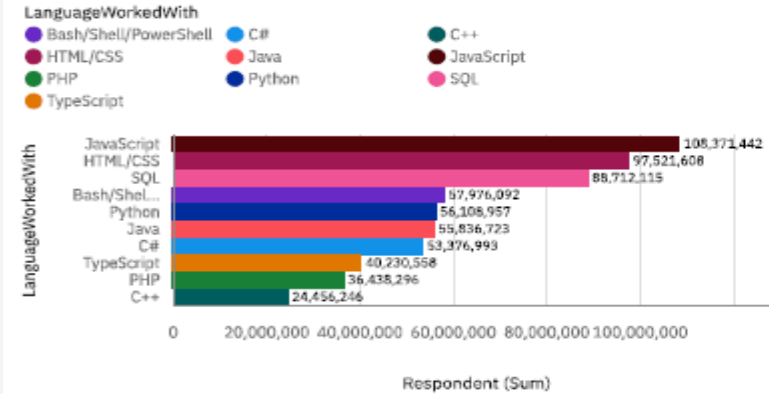


https://github.com/Sugiuma/Cognos-Dashboard/blob/main/Capstone_Dashboard.pdf

CURRENT TECHNOLOGY USAGE

Current Technology Usage

Top 10 languages

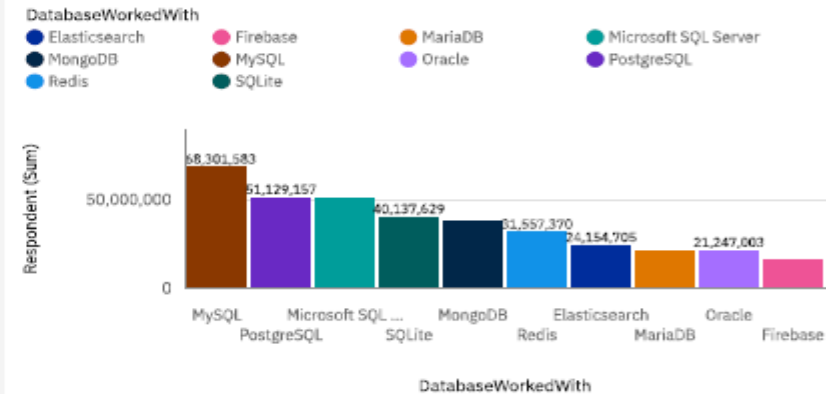


Platforms Worked



1

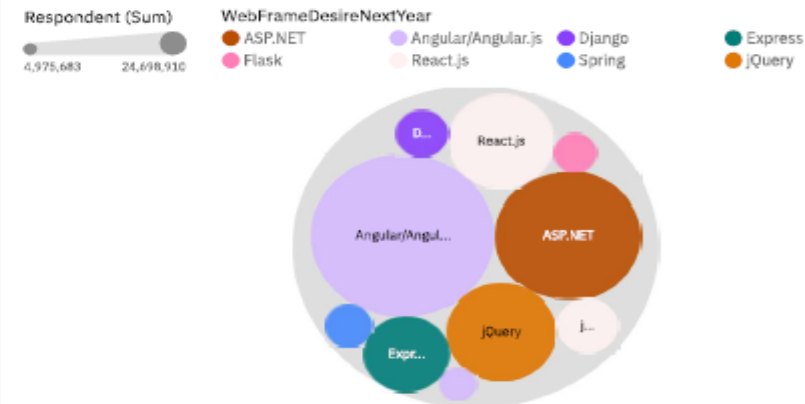
Top 10 DataBases



2

3

Top 10 Web Frameworks

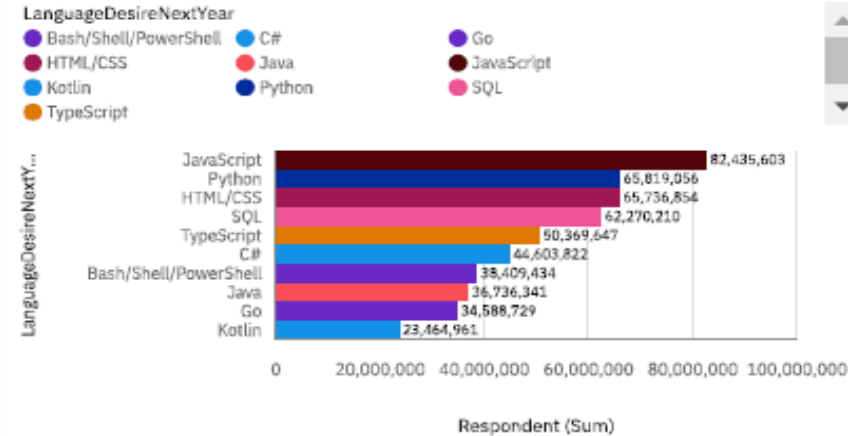


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FUTURE TECHNOLOGY TREND

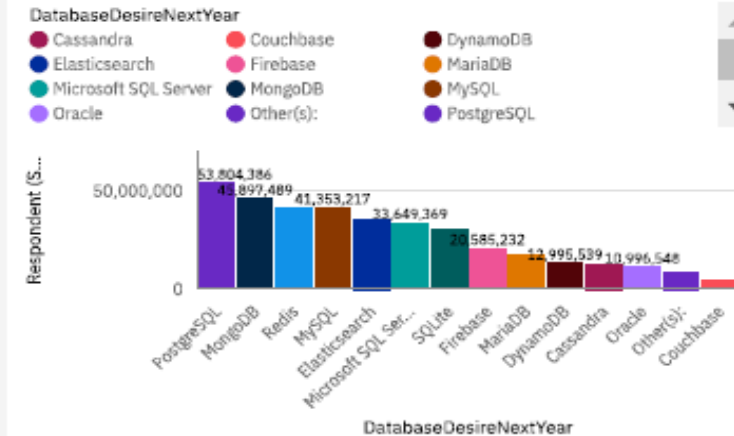
Future Technology Trend

Top 10 languages



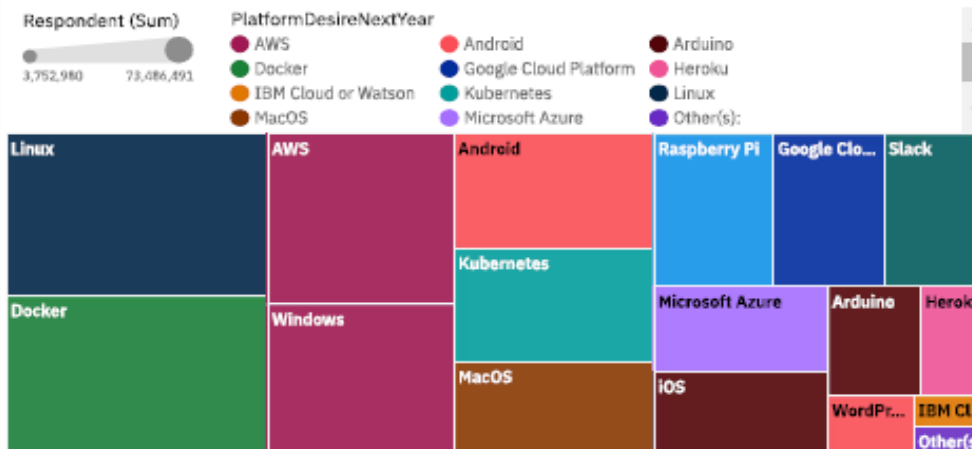
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Top 10 Databases



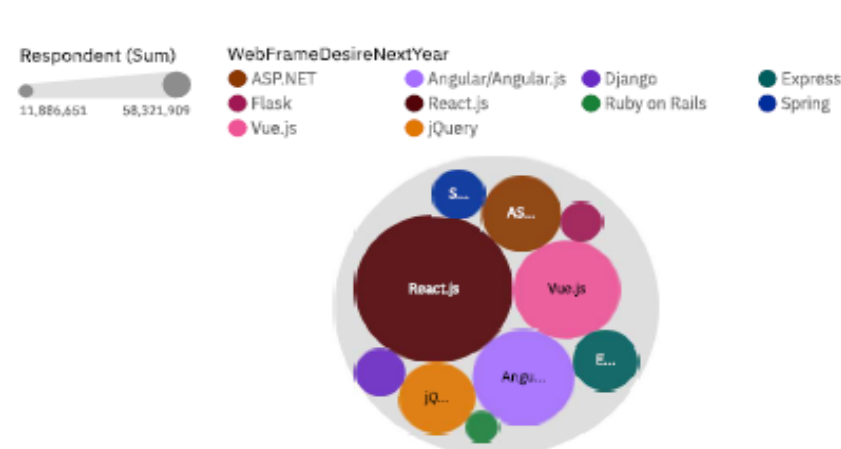
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Platform Desire



7

Top 10 Web Frame Works



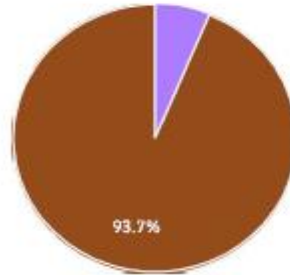
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DEMOGRAPHICS

Demographics

Respondent by Gender

Gender
Woman Man



9

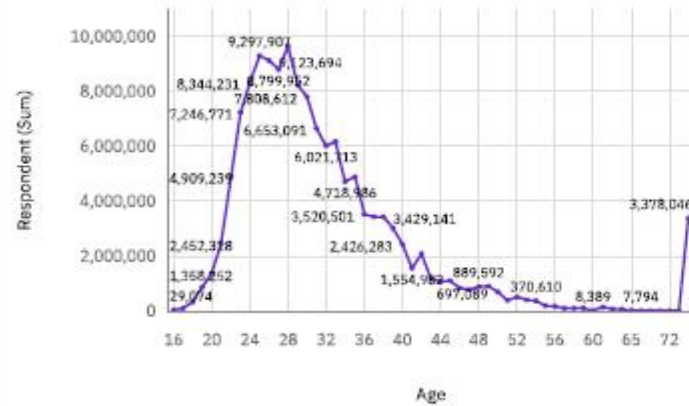
Respondent Count for Countries

Respondent (Sum)

865 38,170,293



Respondents by Age

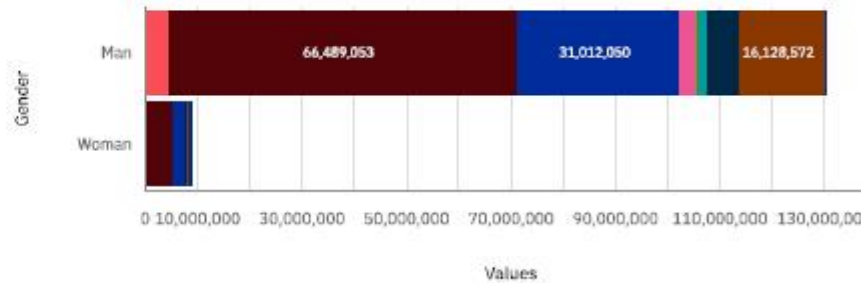


Respondent Count by Gender, classified by Formal Education Level

10

Measures - EdLevel

Respondent | Associate degree Respondent | Bachelor's degree (M... Respondent | I never completed a...
Respondent | Master's degree (M... Respondent | Other doctoral degr... Respondent | Primary/elementary...
Respondent | Professional degree... Respondent | Secondary school (... Respondent | Some college/unive...
EdLevel | Associate degree EdLevel | Bachelor's degree (BA, ... EdLevel | I never completed any f...



DISCUSSION



- **Bridging the Gender Gap:** How can we address the disparity in gender representation within the tech industry?
- **Advanced Degrees: Necessary or Not?** Is a master's or doctorate degree essential for success in tech?
- **Oracle SQL's Future:** Will Oracle SQL remain relevant in the years to come?

OVERALL FINDINGS & IMPLICATIONS

Findings

- **Educational Background:** Most IT professionals hold bachelor's degrees.
- **Web Development Dominance:** Web development languages, such as JavaScript, HTML, and CSS, are the most popular and in-demand tools.
- **Youthful Workforce:** The tech sector is predominantly composed of young professionals under 40 and male.

Implications

- **Web Development's Lucrative Potential:** Web development remains a highly profitable field.
- **Global Tech Access:** Expanding access to tech training and education is crucial for less developed countries.
- **Javascript** and Typescript web frames gaining more popularity.

CONCLUSION

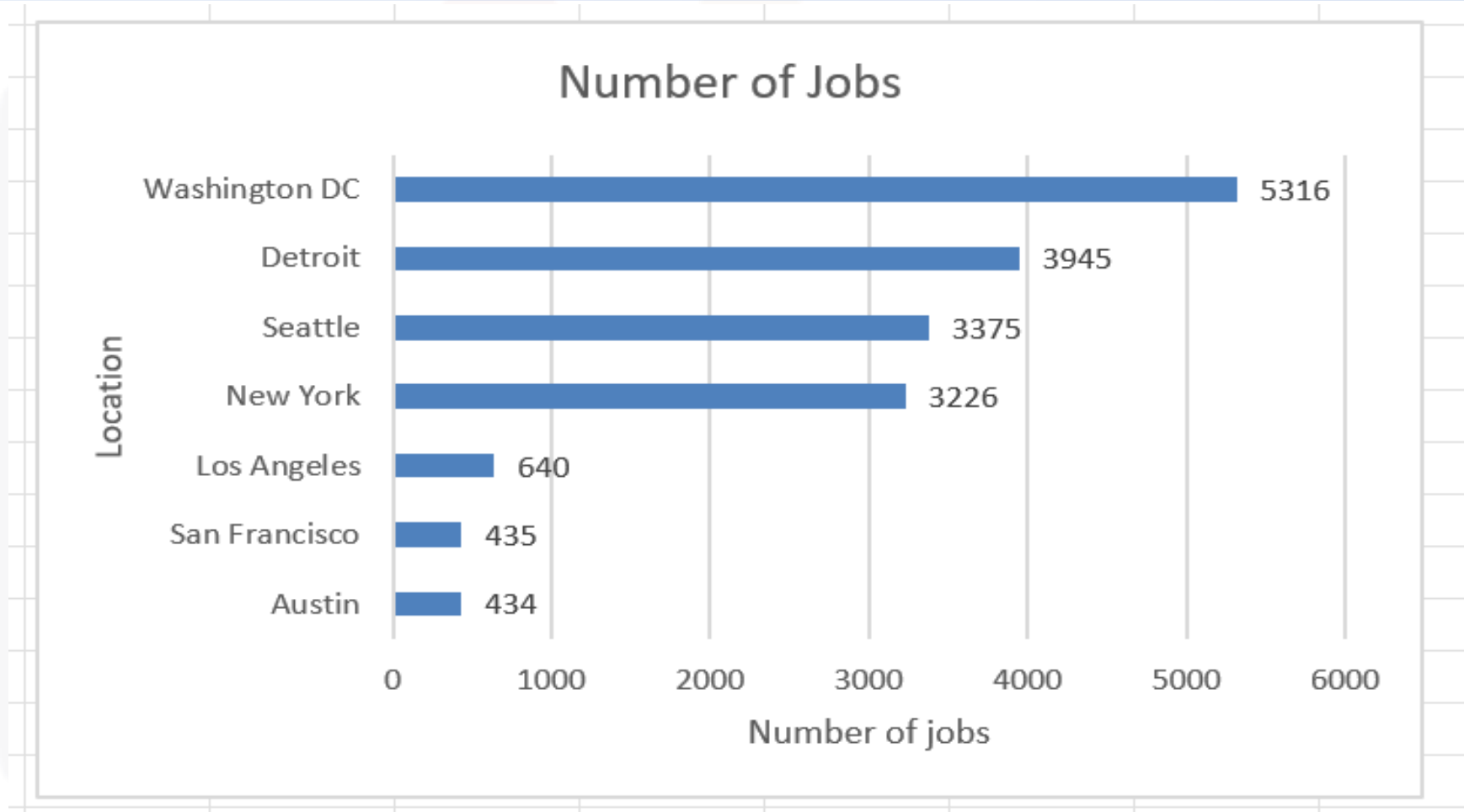


- Upskilling in Technology is a must for every IT professional.
- Web development continues its dominance.
- Companies might prioritize web development initiatives and invest in the necessary talent.

APPENDIX



JOB POSTINGS



POPULAR LANGUAGES

