Technology Skills and Job Market Trends
A Data Analysis Perspective

Name: MD ZAID NUMAN
Course: IBM Data Analyst
Capstone Project
Date: 05/02/2026

IBM Developer

SKILLS NETWORK

OUTLINE

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

IBM Developer

SKILLS NETWORK

EXECUTIVE SUMMARY

- This project explores both existing and emerging technology trends by leveraging data gathered from developer surveys.
- Programming languages such as JavaScript, Python, and SQL show notable adoption rates.
- Database technologies continue to play a vital role in the development of contemporary applications.

The findings highlight the skills necessary for making well-informed career and learning decisions.

IBM **Developer**

SKILLS NETWORK

INTRODUCTION

- This report explores trends in programming languages, databases, platforms, and developer demographics.

- The target audience includes students, job seekers, and early-career professionals.

- Understanding these trends helps individuals make informed decisions about skill development.

METHODOLOGY

- Data was obtained from a global developer survey.
- The dataset was cleaned and analyzed to identify key patterns.
- Dashboards and charts were created using IBM Cognos Analytics.
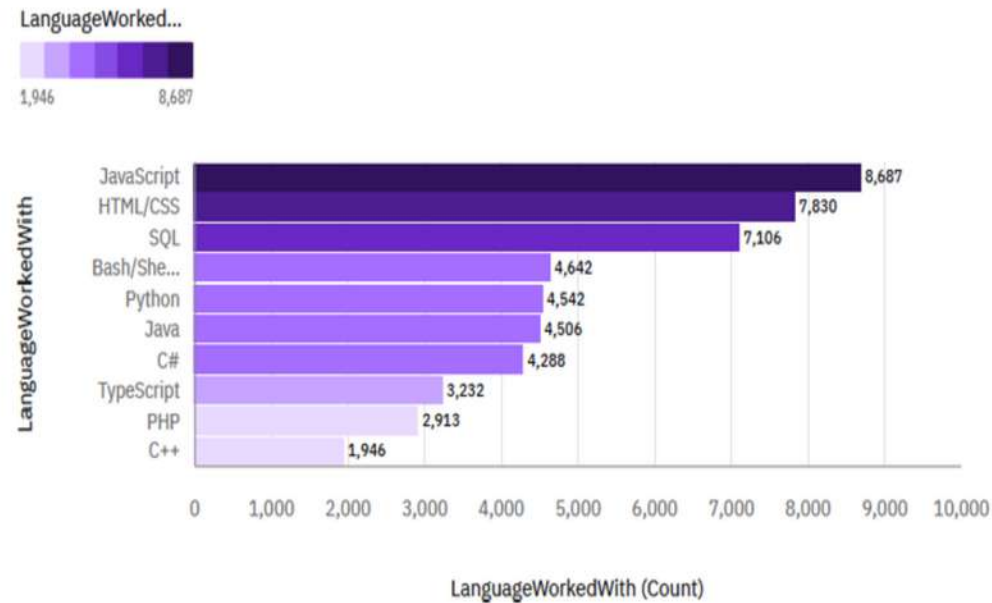
IBM **Developer**

SKILLS NETWORK

RESULTS

- **Python** overtakes **Java**, becoming the 5th most preferred language with significant growth. It stands as the fastest-growing major programming language.

- **JavaScript** remains the most used programming language.

- **jQuery** is the most widely used among web frameworks, with **React.js** surpassing **Angular** in developer usage this year.

- Globally, *men* represent approximately **90%** of respondents, with higher *female* representation among students than professional developers in regions like the US, India, and the UK.

- Around 3/4 of professional developers globally hold at least a **bachelor's degree**, aligning with past findings.

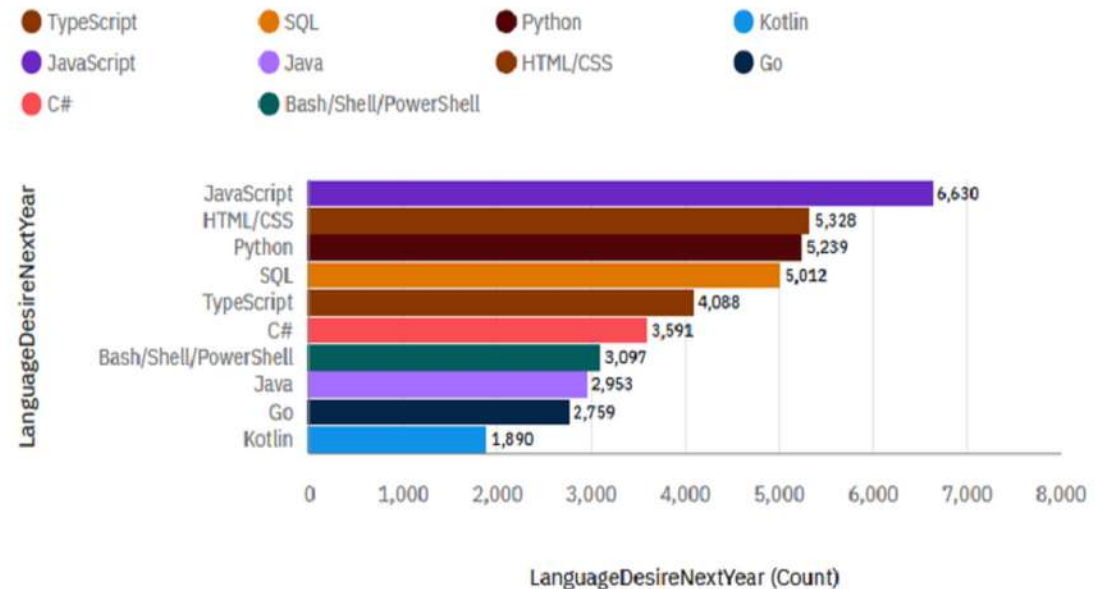- 3/4 of survey respondents in professional developer roles are **under 35 years old**.

IBM **Developer**

SKILLS NETWORK

PROGRAMMING LANGUAGE TRENDS

2019

Following Year

Top 10 Language Worked With

LanguageWorked...

1,946 — 8,687

JavaScript	8,687
HTML/CSS	7,830
SQL	7,106
Bash/She...	4,642
Python	4,542
Java	4,506
C#	4,288
TypeScript	3,232
PHP	2,913
C++	1,946

LanguageWorkedWith (Count)

Top 10 Language Desire Next Year

- ● TypeScript
- ● SQL
- ● Python
- ● Kotlin
- ● JavaScript
- ● Java
- ● HTML/CSS
- ● Go
- ● C#
- ● Bash/Shell/PowerShell

JavaScript	6,630
HTML/CSS	5,328
Python	5,239
SQL	5,012
TypeScript	4,088
C#	3,591
Bash/Shell/PowerShell	3,097
Java	2,953
Go	2,759
Kotlin	1,890

LanguageDesireNextYear (Count)

IBM Developer

SKILLS NETWORK

PROGRAMMING LANGUAGE TRENDS

FINDINGS

- JavaScript and HTML/CSS remain the most widely used technologies.
- SQL continues to be essential due to its role in data management.
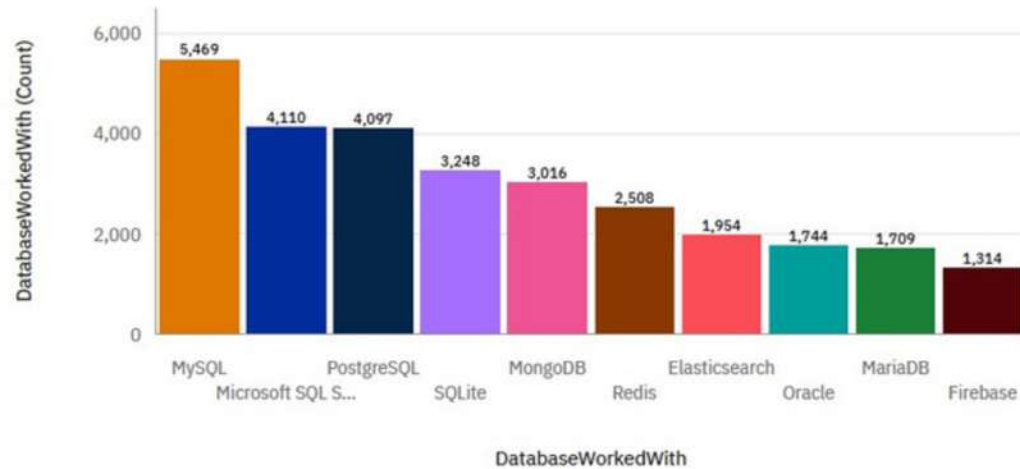- Python's growth reflects its versatility across multiple domains.

IMPLICATIONS

- The dominance of **JavaScript** and **HTML/CSS** underscores their indispensability in modern web development, highlighting the importance of mastering them for developers.

- The high usage of **SQL** emphasizes the critical role of data management and querying in modern software applications, across both web and non-web environments.

- The rise of **Python** might also reflect its versatility and ease of use, attracting developers across various domains from data science to software development.

IBM Developer

SKILLS NETWORK

DATABASE TRENDS

2019

Following Year

Top 10 Database Worked With

Top 10 Database Desire Next Year

IBM Developer

SKILLS NETWORK

DATABASE TRENDS

FINDINGS

- MySQL and PostgreSQL are the most commonly used relational databases.

- MongoDB leads among NoSQL databases.

- This shows the importance of learning both SQL and NoSQL systems.

IMPLICATIONS

- The popularity of **MySQL**, **PostgreSQL**, and **Microsoft SQL Server** underscores the importance of relational databases in various applications.

- The high usage of **MongoDB** reflects the growing trend towards **NoSQL** databases, driven by the need for flexible data models and scalability, particularly in modern web and mobile applications.

- The diverse range of database systems utilized by developers indicates the importance of selecting the right tool for the job, considering factors such as data structure, scalability, and performance requirements.

IBM Developer

SKILLS NETWORK

DASHBOARD

Dashboards were created using IBM Cognos Analytics to visualize:
- **Current technology usage**
- **Future technology trends**
- **Developer demographics**

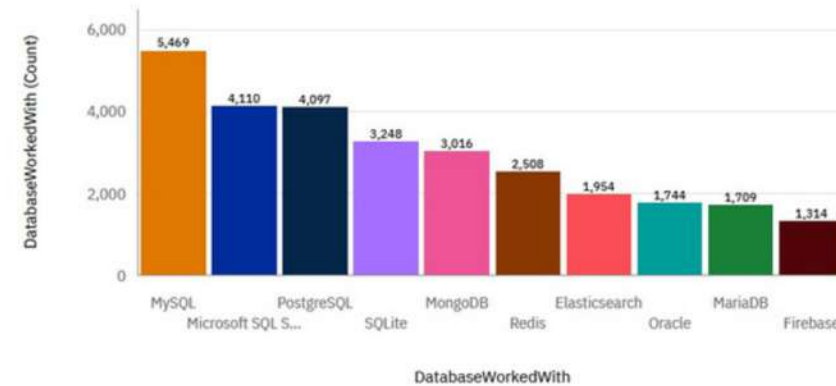**Selected dashboard screenshots are shown in the following slides.**

IBM Developer

SKILLS NETWORK

CURRENT TECHNOLOGY USAGE

Current Technology Usage

This dashboard summarizes the most commonly used technologies.
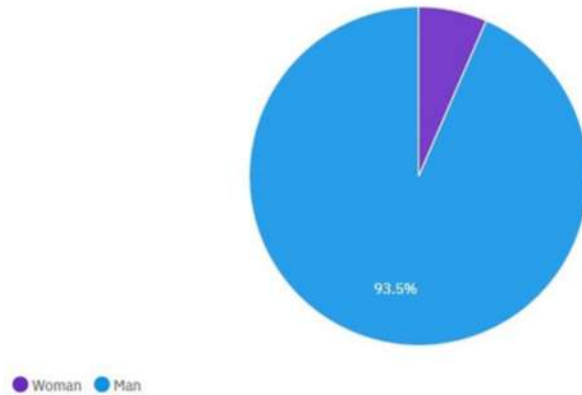
FUTURE TECHNOLOGY TREND
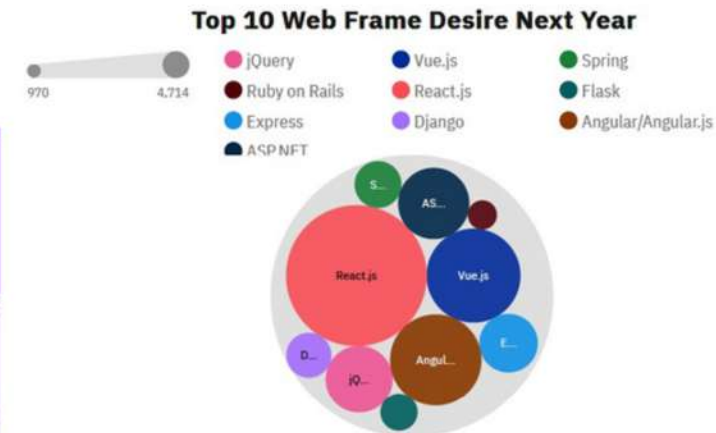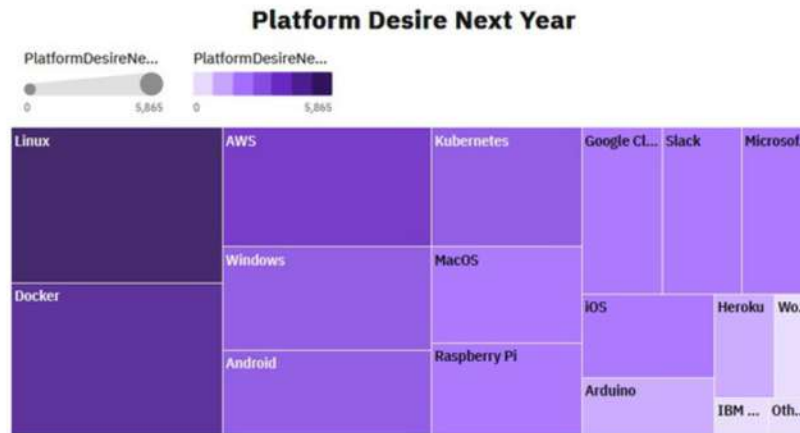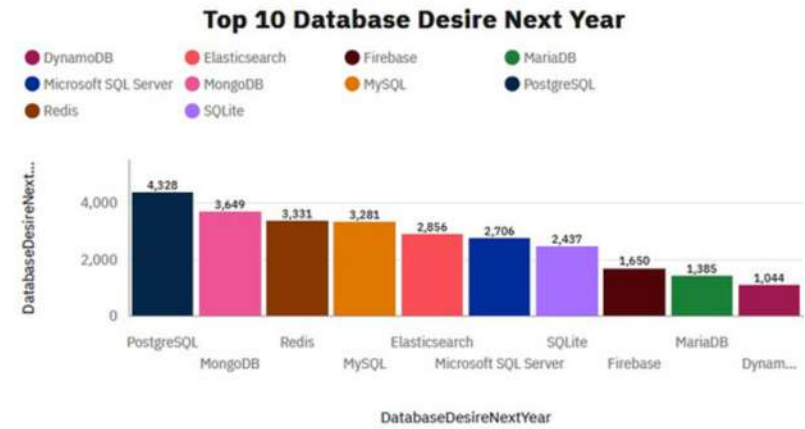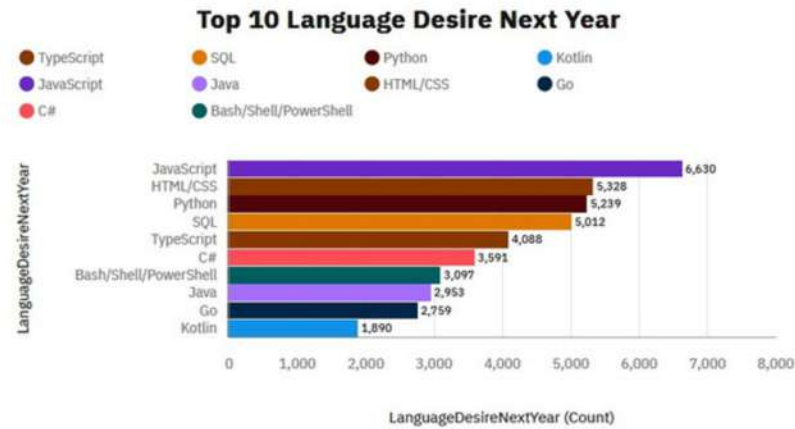
This dashboard highlights technologies developers want to use in the future.

DEMOGRAPHICS

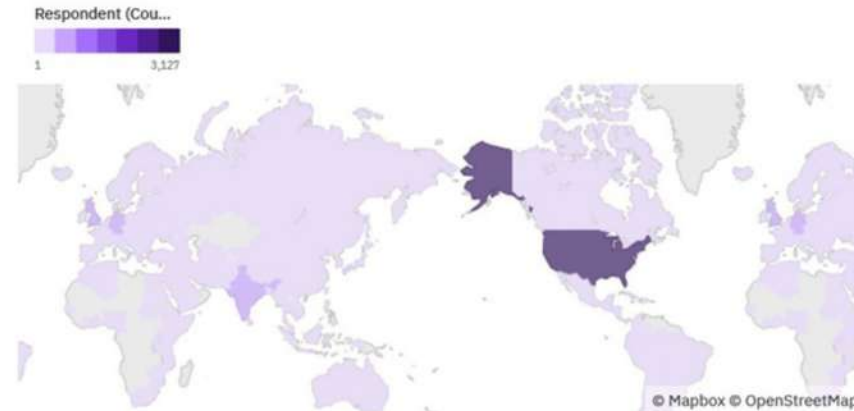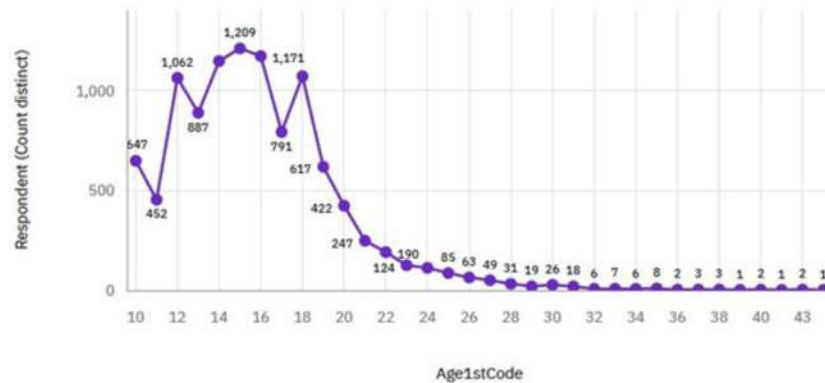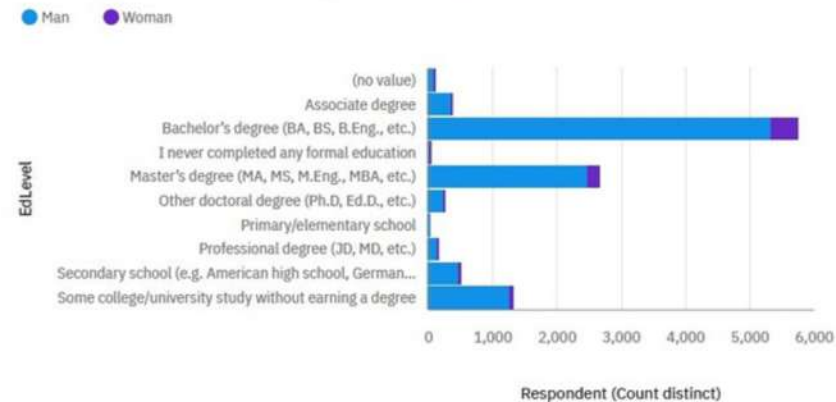Demographics

Respondent classified by Gender

93.5%

● Woman ● Man

Respondent Count for Countries

Respondent (Cou...

1   3,127

© Mapbox © OpenStreetMap

Respondent Count by Age

Respondent Count by Gender and Formal Education Level

● Man ● Woman

This dashboard presents demographic insights of survey respondents.

IBM Developer

SKILLS NETWORK

DISCUSSION

- The dominance of **JavaScript** and **HTML/CSS** and the adoption of **MySQL** as the leading database management system

- Highlights the central role of **web development** in the programming landscape

- Opens up discussions on the significance of **client-side scripting and styling**, trends in web development frameworks, and the evolving nature of **web technologies**

IBM Developer

SKILLS NETWORK

CONCLUDING REMARKS

FINDINGS

- **Technology Trends**: The dominance of **JavaScript** and **HTML/CSS** underscores the importance of staying updated with technology trends in web development.

- **Data Management**: The prevalence of **MySQL**, **PostgreSQL**, and **Microsoft SQL Server** highlights the critical role of effective data management in software development. **Diversity of Tools**: The

- diverse range of programming languages and database systems utilized by developers underscores the importance of understanding the strengths and weaknesses of different tools.

IMPLICATIONS

- **Web Dominance**: The widespread usage of JavaScript and HTML/CSS indicates the dominance of web development in the programming ecosystem, reflecting the growing importance of online platforms and digital experiences.

- **Database Diversity**: The variety of database management systems used highlights the importance of flexibility and adaptability in data storage solutions. Organizations must consider factors such as data structure, scalability, and performance when selecting a database system.

- **Industry Standardization**: The popularity of certain technologies like JavaScript and MySQL suggests a degree of industry standardization, where certain tools become widely adopted due to their proven reliability and effectiveness. This can simplify collaboration and interoperability within the developer community.

IBM Developer

SKILLS NETWORK

PERSONAL INSIGHTS

- This project helped me understand current job market requirements.
- Python and SQL appear essential for data-related roles.
- Dashboards made it easier to identify technology trends.

CONCLUSION

- Technology trends show increasing demand for data and web-related skills.

- Learning in-demand tools can improve career opportunities.

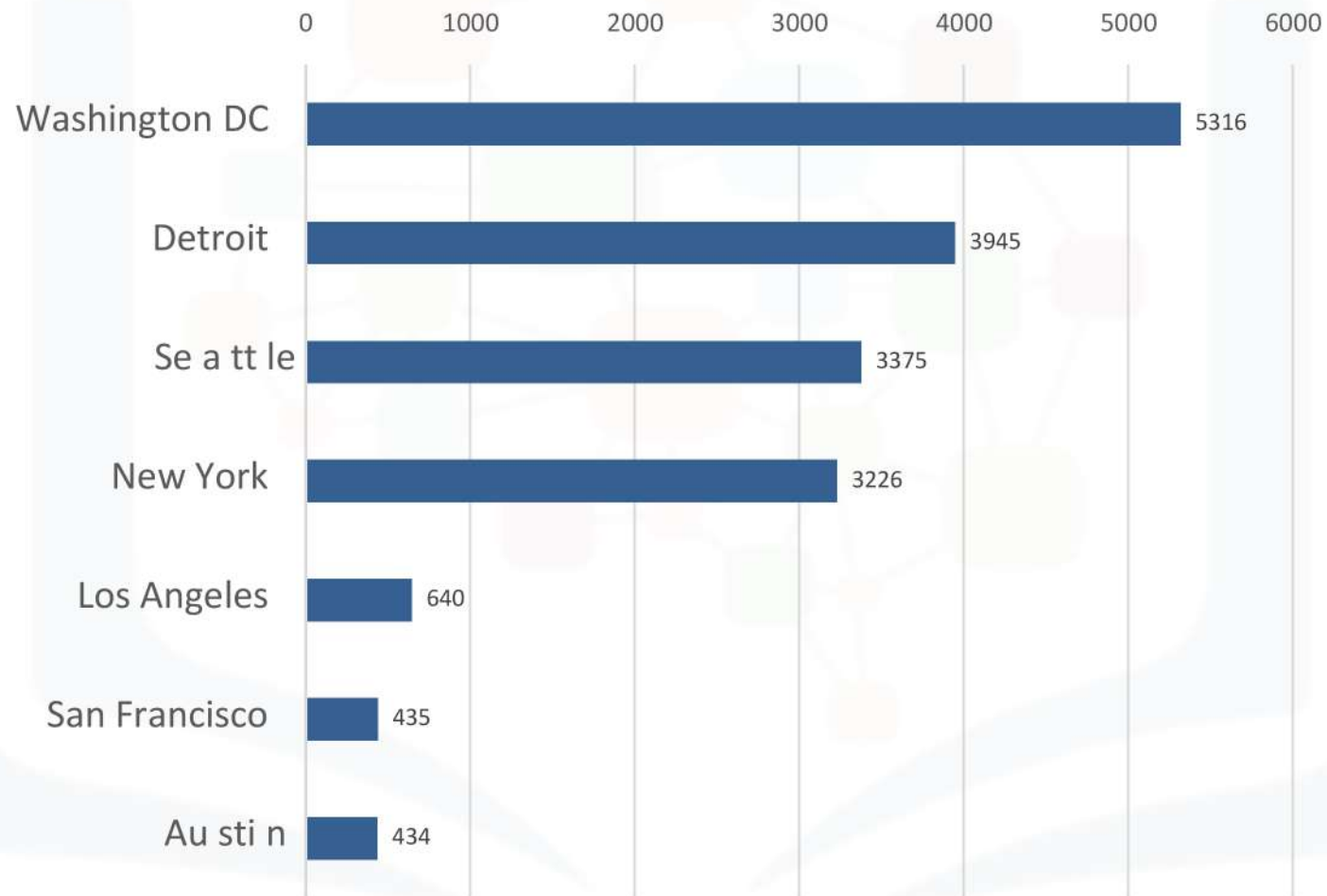- Data analysis is valuable for understanding workforce trends.

IBM **Developer**

SKILLS NETWORK

APPENDIX
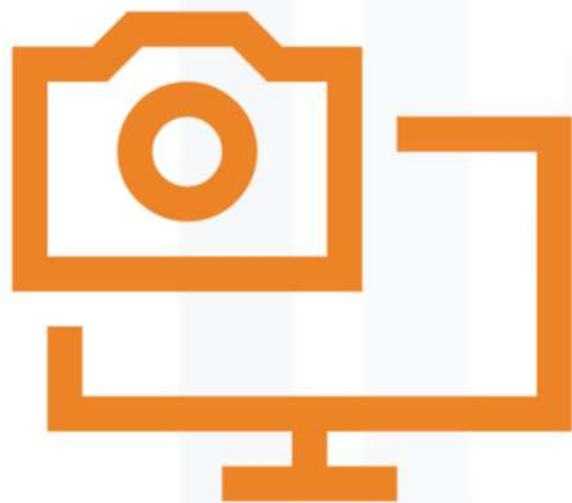
A – Job Postings Chart → Job Market Demand Chart

B – Popular Languages Chart → Programming Language Popularity

IBM Developer

SKILLS NETWORK

A-JOB POSTINGS CHART

IBM Developer

SKILLS NETWORK

B-POPULAR LANGUAGES CHART