IT Trends

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July 1, 2024

OUTLINE

- **Executive Summary**
- **Introduction**
- **Methodology**
- **Results**
  - **Visualizations - Charts**
  - **Dashboard**
- **Discussion**
  - **Findings & Implications**
- **Conclusion**
- **Appendix**

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EXECUTIVE SUMMARY

- **Current Technology Usage Trend**
  - **Language**
  - **Database**
  - **Platform**
  - **Web Frame**
- **Desired Technology Usage Trend**
  - **Language**
  - **Database**
  - **Platform**
  - **Web Frame**
- **Demographics Survey**
- **Country & Gender Difference**

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INTRODUCTION

- **Analyze Current Trends in Technology**

- **Purpose of this Analysis**
  - **Identify top skills in programming languages, databases, platforms, and web frames**
  - **Identify future skills requirements**
  - **Identify human resource gap in the industry**

- **Audience for this presentation**
  - **Programmers**
  - **IT Industry Leader**
  - **Computer Science Students**
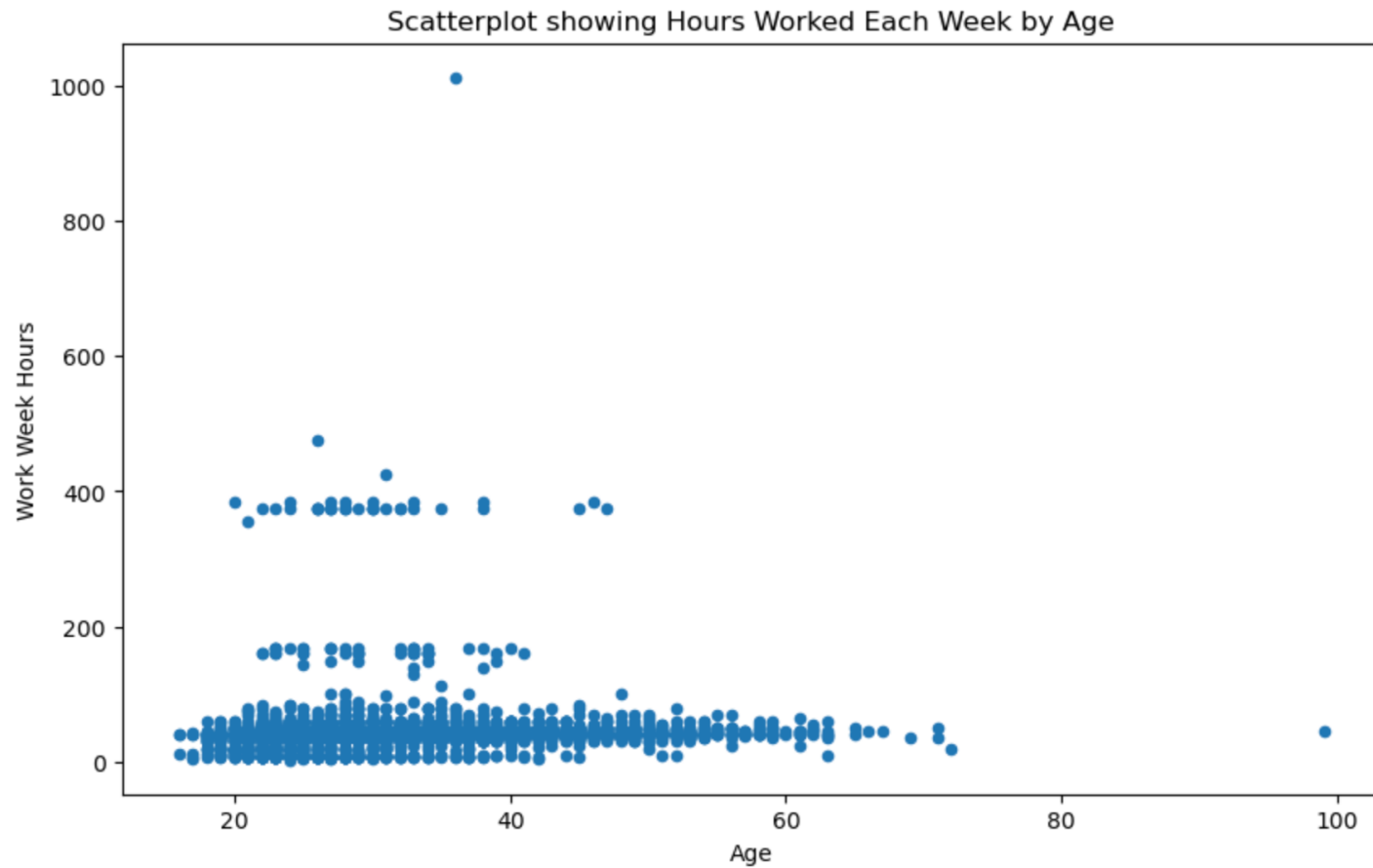
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METHODOLOGY

- **Data Wrangling**
  - **GitHub job postings API using Python**
  - **Programming Languages annual salary**
  - **Stack Overflow Developer 2019 survey**

- **Data Cleaning, Data Exploration**
  - **Excel**
  - **Python**

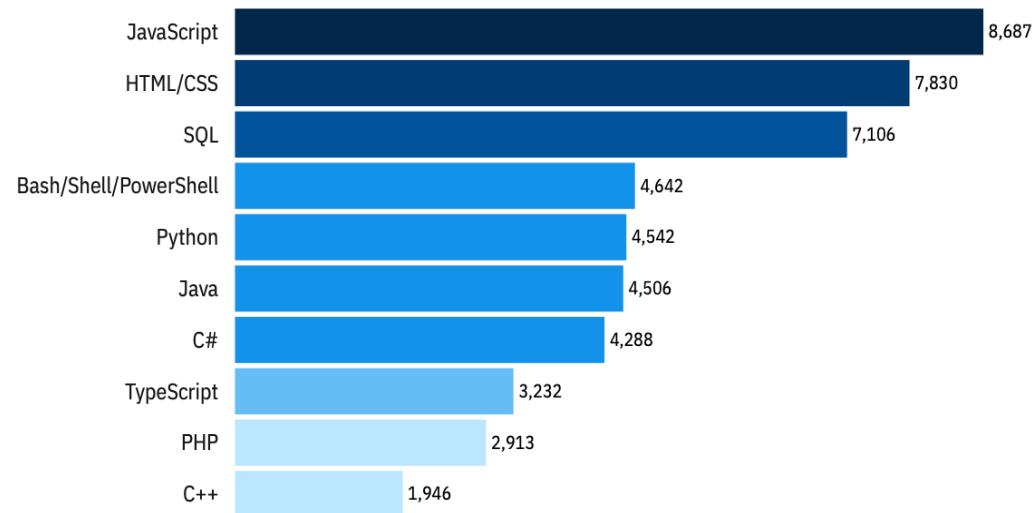- **Data Visualization**
  - **IBM Cognos**
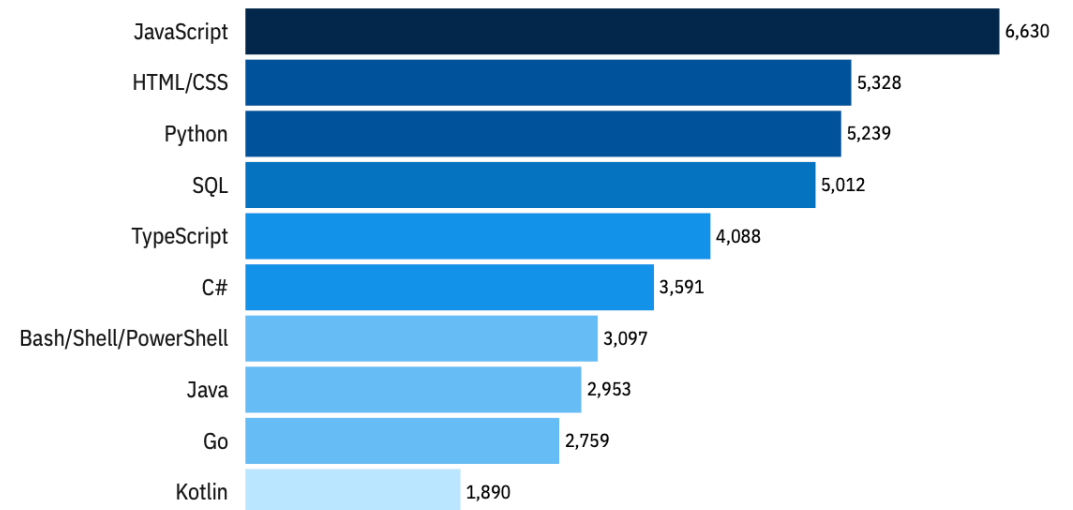 - **Tableau**

- **Presentation**

RESULTS

Scatterplot showing Hours Worked Each Week by Age

PROGRAMMING LANGUAGE TRENDS

Top 10 Languages Worked With

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

Top 10 Languages Desired Next Year

Language	Value
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

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FINDINGS & IMPLICATIONS

Findings

- JavaScript is currently the most used programming language throughout the world

- Python and TypeScript are becoming more popular

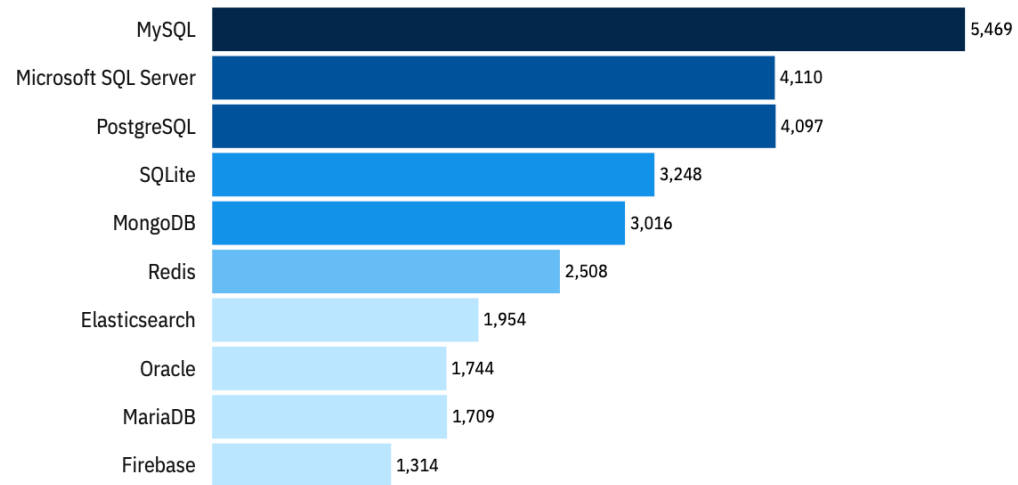- HTML, CSS and SQL are still among the top programming languages

Implications

- Web Development and Developers are still in high demand

- JavaScript, HTML, and TypeScript are essential to learn for web developers

- Python is highly desired, as it's the primary language used for AI development and ML
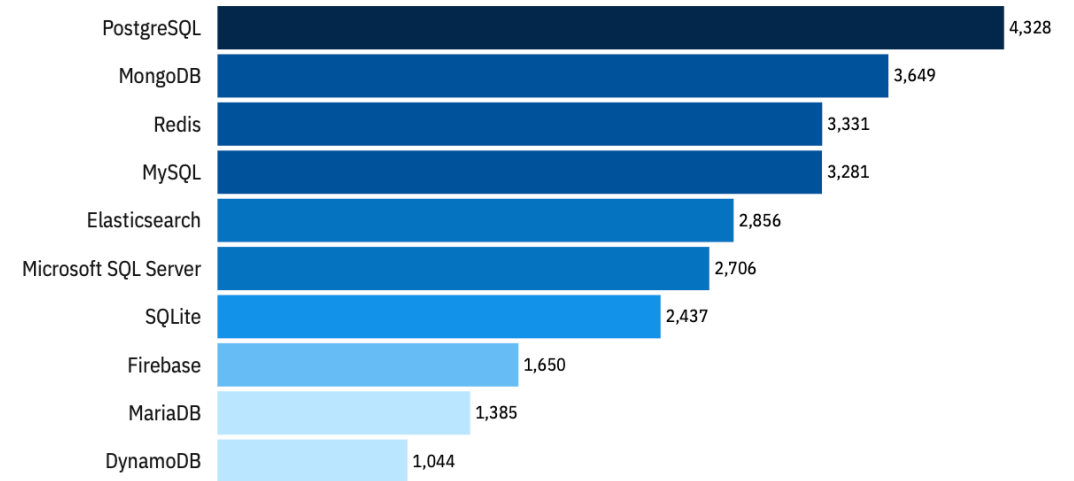
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DATABASE TRENDS

Top 10 Databases Worked With

Database	Value
MySQL	5,469
Microsoft SQL Server	4,110
PostgreSQL	4,097
SQLite	3,248
MongoDB	3,016
Redis	2,508
Elasticsearch	1,954
Oracle	1,744
MariaDB	1,709
Firebase	1,314

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Elasticsearch	2,856
Microsoft SQL Server	2,706
SQLite	2,437
Firebase	1,650
MariaDB	1,385
DynamoDB	1,044

FINDINGS & IMPLICATIONS

Findings

- MySQL is currently the most used database used in the world

- Microsoft SQL Server is still used by a lot of companies

- MongoDB and Redis are the most popular NoSQL Databases

Implications

- Open-source databases such as MySQL are still preferred

- Software development and Big Data technology still use SQL

- NoSQL databases will have a significant impact on the future of relational databases
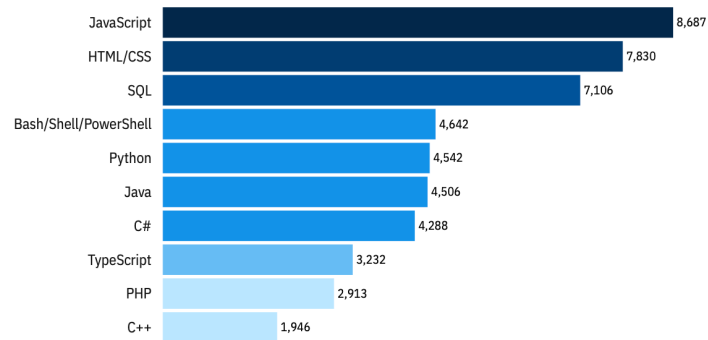
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DASHBOARD

Link to read-only version of IBM Cognos dashboard
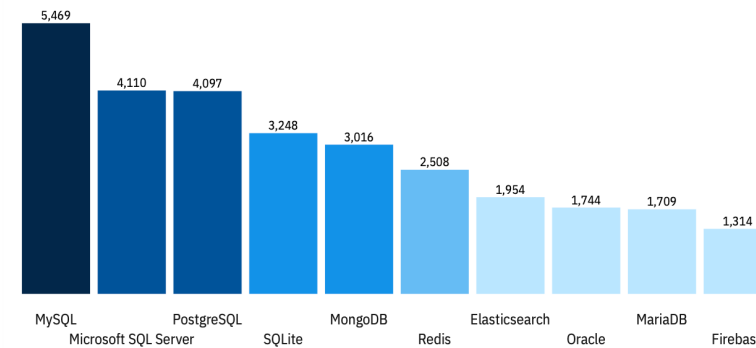
https://github.com/scaponigro/Business-Intelligence-Projects/blob/main/IBM Data Analyst Capstone Project (Cognos Dashboard).pdf

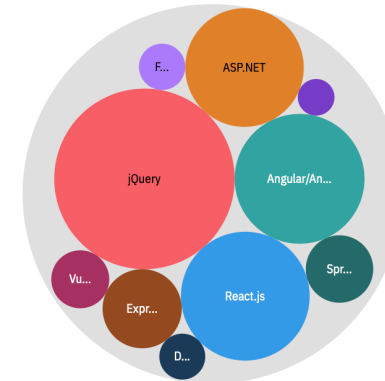# Current Technology Usage

Top 10 Languages Worked With

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Platforms Worked With

AWS Linux Windows Docker Slack Kubernetes Android Google Cloud Platform MacOS Microsoft Azure WordPress Raspberry Pi Heroku iOS Arduino Other(s): IBM Cloud or Watson

Top 10 Web Frames Worked With

jQuery, ASP.NET, Angular/An..., React.js, F..., Vu..., Expr..., Spr..., D...

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Future Technology Trends

Top 10 Languages Desired Next Year

Language	Value
JavaScript	6,630
HTML/CSS	5,328
Python	5,239
SQL	5,012
TypeScript	4,088
C#	3,591
Bash/Shell/PowerShell	3,097
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Top 10 Databases Desired Next Year

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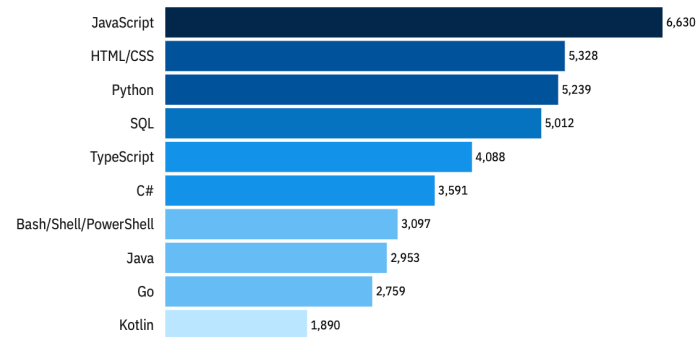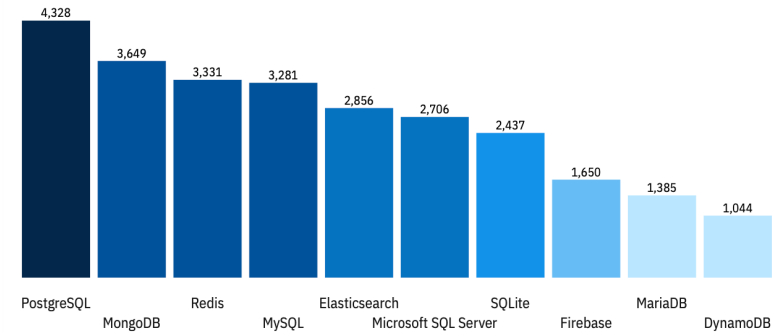
Platforms Desired Next Year

Linux, AWS, Kubernetes, MacOS, Raspberry Pi, Google Clo..., Windows, Docker, Slack, iOS, Heroku, Android, Microsoft Azure, Arduino, WordP..., IB..., Other(s):
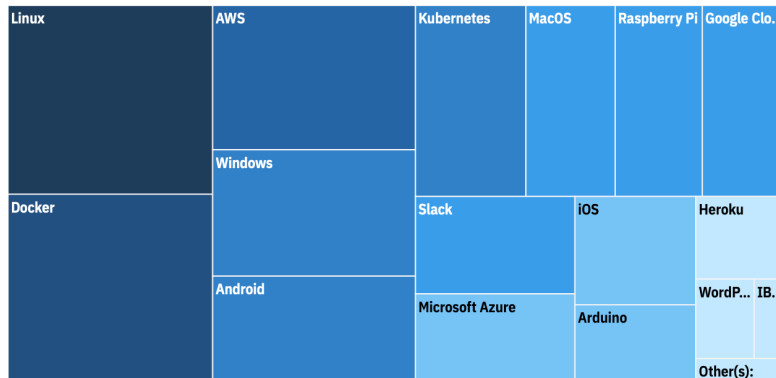
Top 10 Web Frames Desired Next Year
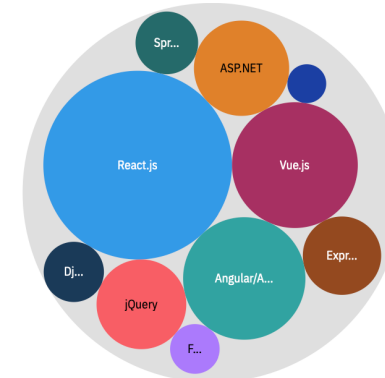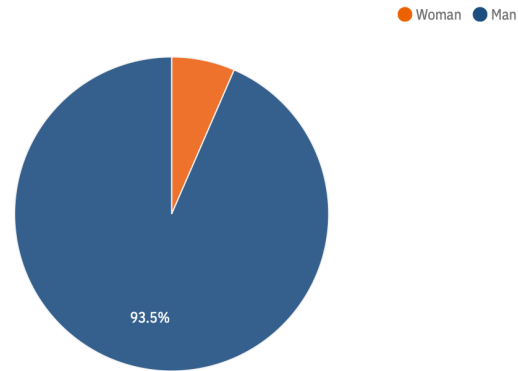
Spr..., ASP.NET, React.js, Vue.js, Dj..., jQuery, Angular/A..., Expr..., F...

Demographics
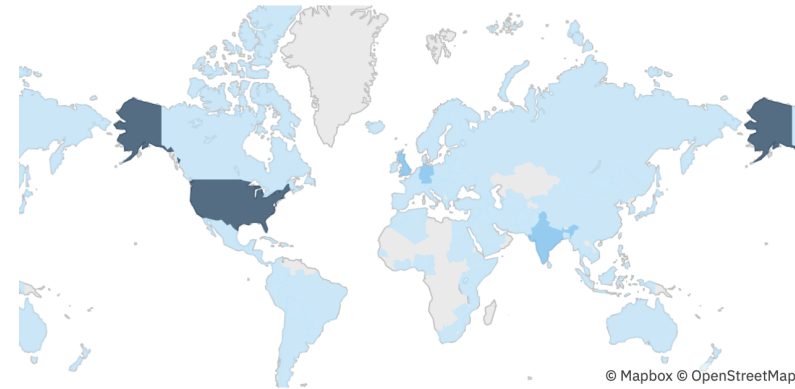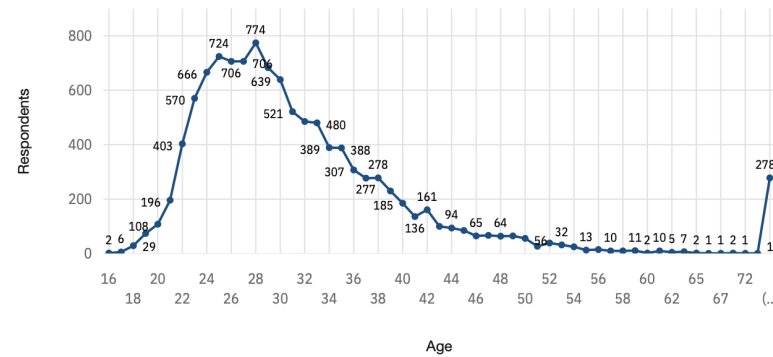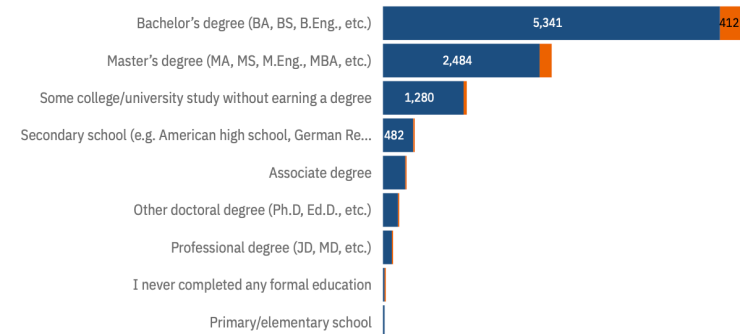
DISCUSSION

- **Technology Usage**
  - Current Trends
  - Future Trends

- **Discrimination in the IT Industry**
  - Gender
  - Age
  - Education

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OVERALL FINDINGS & IMPLICATIONS

Findings

- IT usage trends change every year
- Most of the top technology in the world located in the USA
- There is extreme Gender and Age discrimination in the IT industry
- Only 6.5% Developers are Female

Implications

- Programmers should always follow the latest technology trends
- More countries should have access and exposure to new technology
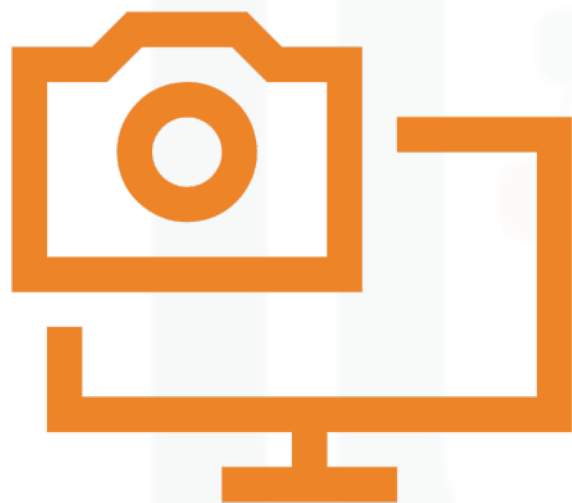- Gender and Age should never be an issue when it comes to the use of technology

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CONCLUSION

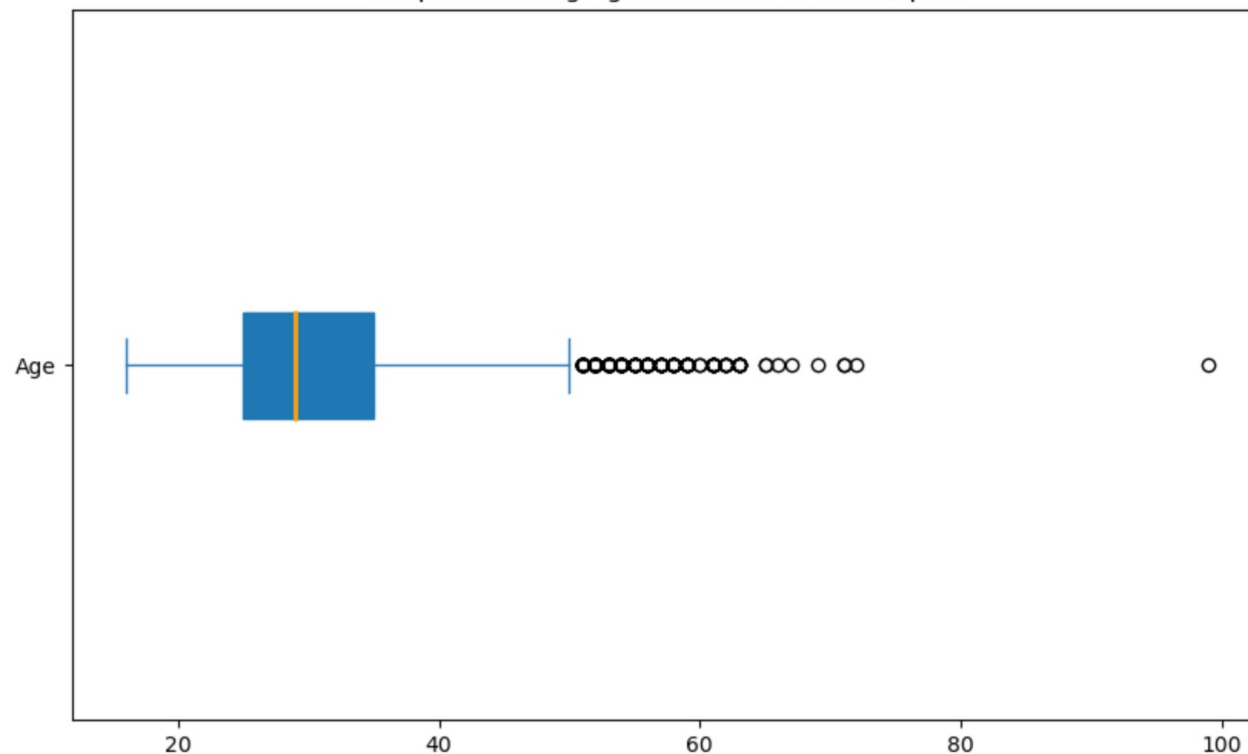- JavaScript is still the most used of all programming languages

- The findings underscore the dynamic nature of programming and the critical role of technology in driving innovation across various industries

- Database systems are essential to meet the demands of modern applications

- Understanding of programming has become diverse

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APPENDIX

Boxplot showing Age Difference of Developers

JOB POSTINGS: City

Job Postings by City

City	Job Postings
Washington DC	5,316
Detroit	3,945
Seattle	3,375
New York	3,226
Los Angeles	640
San Francisco	435
Austin	434

JOB POSTINGS: Experience

Job Postings by Programming Experience

Language	Postings
C	13,498
Java	2,609
Python	1,173
Oracle	784
JavaScript	355
C++	333
C#	305
SQl Server	250
MongoDB	174
Scala	33
PostgreSQL	10

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POPULAR LANGUAGES

Average Annual Salary

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

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Age vs Hours Worked Each Week

Scatterplot showing Hours Worked Each Week by Age