Technologies Trend

Lucas Lu

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OUTLINE

- Executive Summary

- Introduction

- Methodology

- Results
  - Visualization – Charts
  - Dashboard

- Discussion
  - Findings & Implications

- Conclusion

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SKILLS NETWORK

EXECUTIVE SUMMARY

- Current Technology Usage
  - Top Languages: JavaScript, HTML/CSS, SQL, Bash, Python, Java
  - Top Databases: MySQL, MS SQL Server, PostgreSQL, SQLite
  - Platforms: Linux, Windows, Docker, AWS, Android, MacOS
  - Top Web Frameworks: jQuery, ASP.NET, React.js, Angular

- Future Technology Usage
  - Top Languages: JavaScript, HTML/CSS, Python, SQL, TypeScript, C#
  - Top Databases: PostgreSQL , MongoDB, Redis, MySQL
  - Platforms: Linux, Windows, Docker, AWS, Android, MacOS
  - Top Web Frameworks: React.js, Vue.js, jQuery, ASP.NET, Angular

- Demographics
  - Male 93.5%
  - Female 6.5%

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INTRODUCTION

- Analyze data to help identify future skill requirements

- Collect data from various sources and identify trends for this year on emerging skills
  - Job Postings
  - Training portals
  - Surveys

- What are the top programming languages in demand?

- What are the top database skills in demand?

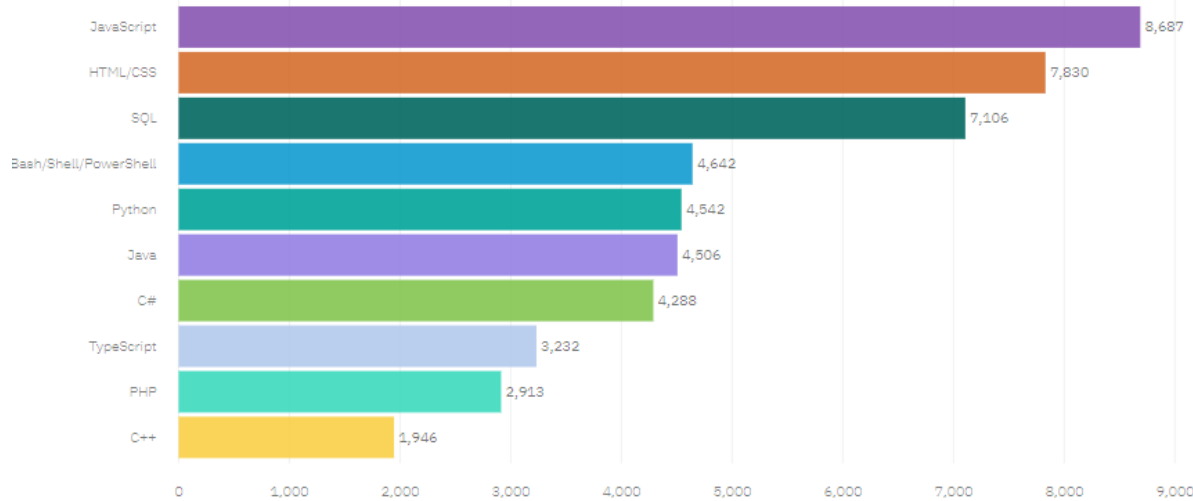- What are the Demographics?

METHODOLOGY

- Data Collection
  - GitHub Job Postings
  - Stack Overflow dataset with around 90,000 responses. In this analysis will be used a randomised subset contains around 1/10th

- Data Wrangling
  - Finding / Determine Missing Values
  - Finding / Removing Duplicates
  - Normalizing Data

- Exploratory Data Analysis
  - Distribution
  - Outliers
  - Correlation

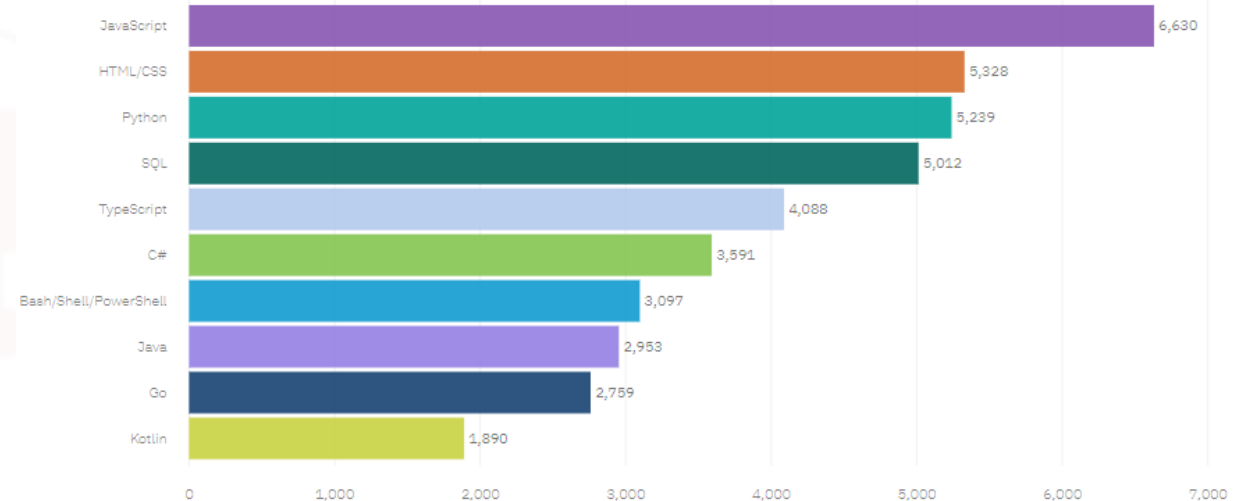- Data Visualization using IBM Cognos Analytics

RESULTS

	Respondent	CompTotal	ConvertedComp	WorkWeekHrs	CodeRevHrs	Age
count	11398.000000	1.058900e+04	1.058200e+04	11276.000000	8972.000000	11111.000000
mean	12490.392437	7.570477e+05	1.315967e+05	42.064606	4.781071	30.778895
std	7235.461999	9.705598e+06	2.947865e+05	24.672741	4.567060	7.393686
min	4.000000	0.000000e+00	0.000000e+00	3.000000	0.000000	16.000000
25%	6264.250000	2.500000e+04	2.686800e+04	40.000000	2.000000	25.000000
50%	12484.000000	6.500000e+04	5.774500e+04	40.000000	4.000000	29.000000
75%	18784.750000	1.200000e+05	1.000000e+05	43.000000	5.000000	35.000000
max	25142.000000	7.000000e+08	2.000000e+06	1012.000000	99.000000	99.000000

PROGRAMMING LANGUAGE TRENDS

Current Year

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

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

PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript and HTML/CSS are the top languages in use and for the future
- Number of people are increasing for Python, TypeScript, Go and Kotlin
- Less people interested in SQL, Bash, Java, C#, PHP, C++

Implications

- Web Developers will be widely available in the market
- Python, TypeScript, Go and Kotlin are on the rise
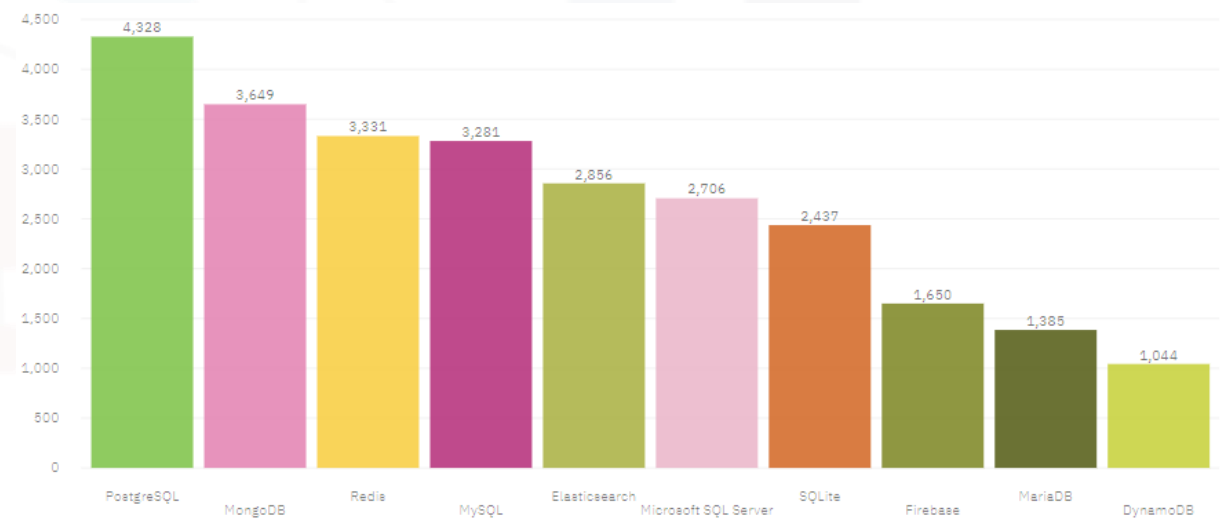- Less professionals available in the market

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DATABASE TRENDS

Current Year
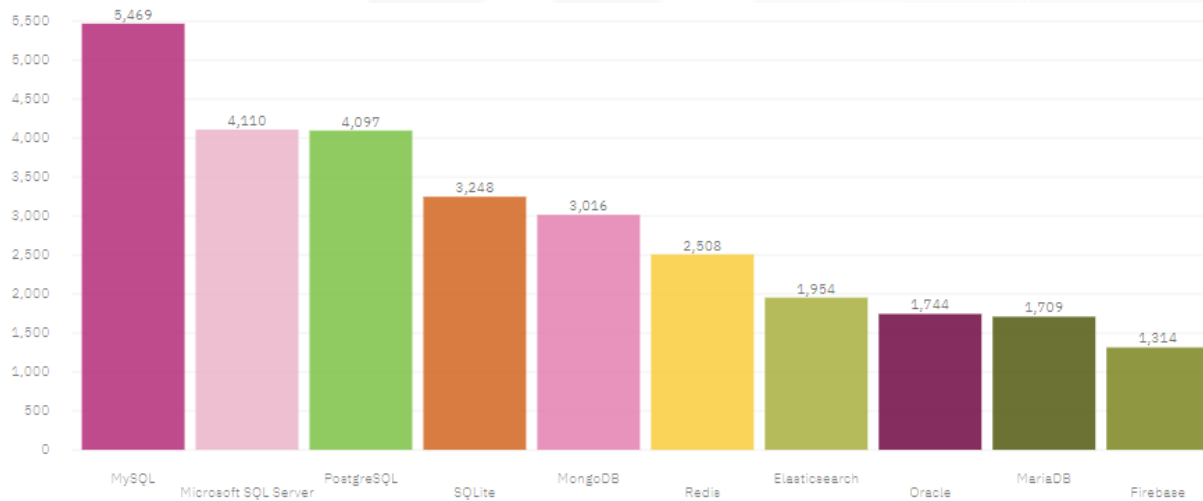
Next Year

DATABASE TRENDS-FINDINGS & IMPLICATIONS

Findings

- MySQL, MS SQL Server and PostgreSQL are the most popular

- More people are interested in PostgreSQL, MongoDB, Redis

- Less people interested in MySQL, MS SQL Server, SQLite

Implications

- Open-source database plays an important role

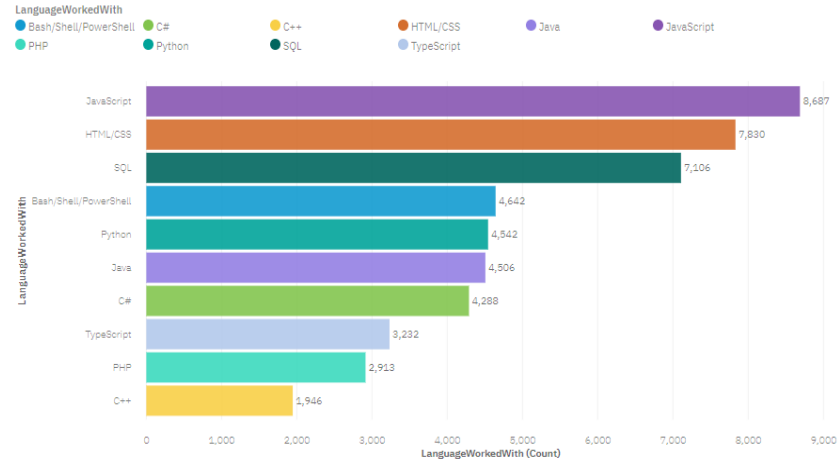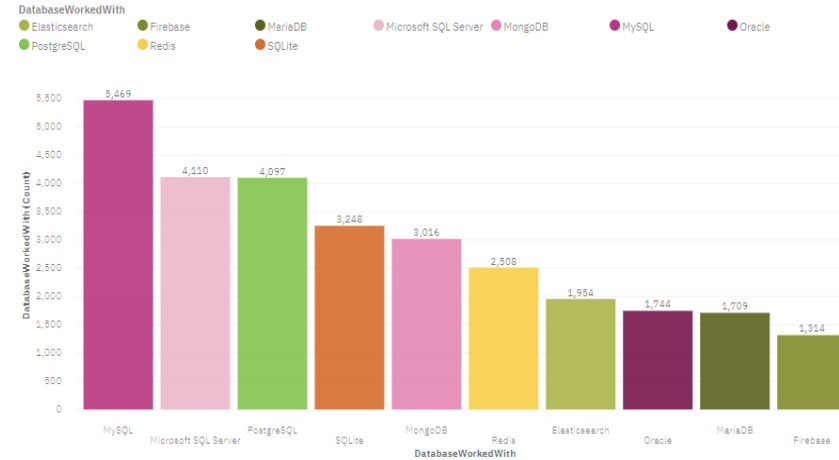- Increasing interest in NoSQL

- Decreasing interest in RDBMS

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DASHBOARD

https://dataplatform.cloud.ibm.com/dashboards/8a2ace30-0d4e-46ba-bbb9-8691c90a8c7c/view/4529df0233bb62eb11d5c4e4079d24552c352d5fb3bbd20087807b490b622597a83c4796c87c1a5a8b400460f4ec430acf

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DASHBOARD CURRENT TECHNOLOGY USAGE

Top 10 Languages

LanguageWorkedWith
● Bash/Shell/PowerShell ● C# ● C++ ● HTML/CSS ● Java ● JavaScript ● PHP ● Python ● SQL ● TypeScript

Language	Count
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 Databases

DatabaseWorkedWith
● Elasticsearch ● Firebase ● MariaDB ● Microsoft SQL Server ● MongoDB ● MySQL ● Oracle ● PostgreSQL ● Redis ● SQLite

Database	Count
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

Platforms

PlatformWorked... 0 — 5,811

PlatformWorkedWith
● (no value) ● Android ● Arduino ● AWS ● Docker
● Google Cloud Platform ● Heroku ● IBM Cloud or Watson ● iOS ● Kubernetes
● Linux ● MacOS ● Microsoft Azure ● Other(s): ● Raspberry Pi
● Slack ● Windows ● WordPress

Top 10 Web Frameworks

WebFrameWorke... 939 — 4,629

WebFrameWorkedWith
● Angular/Angular.js ● ASP.NET ● Django ● Express ● Flask ● jQuery
● Laravel ● React.js ● Spring ● Vue.js

DASHBOARD FUTURE TECHNOLOGY TREND

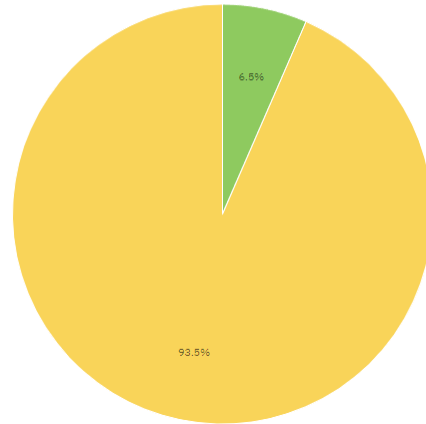**Top 10 Languages**
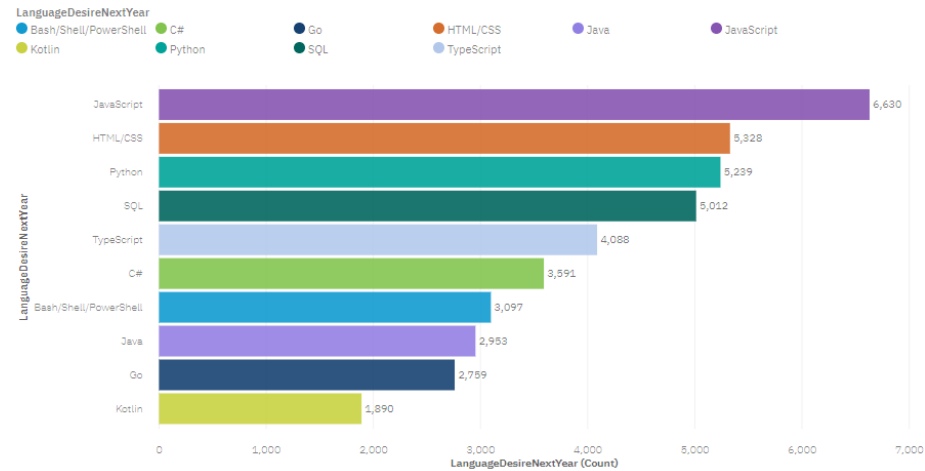
Top 10 Databases
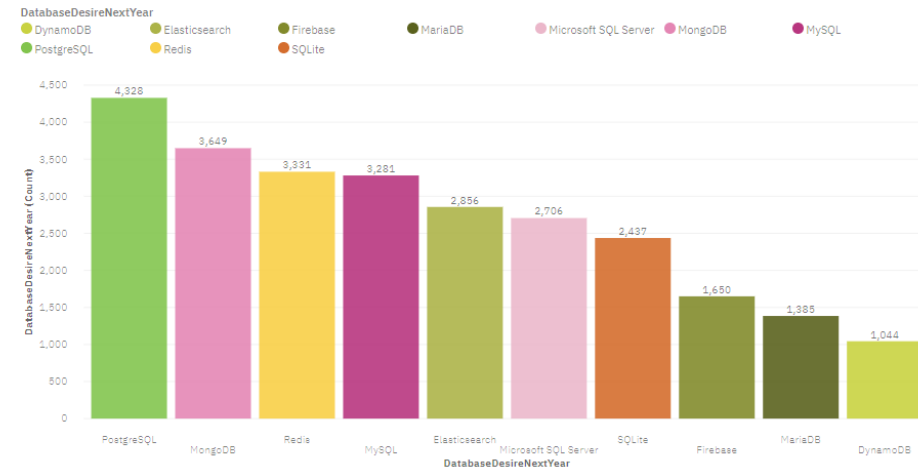
Platforms

Top 10 Web Frameworks

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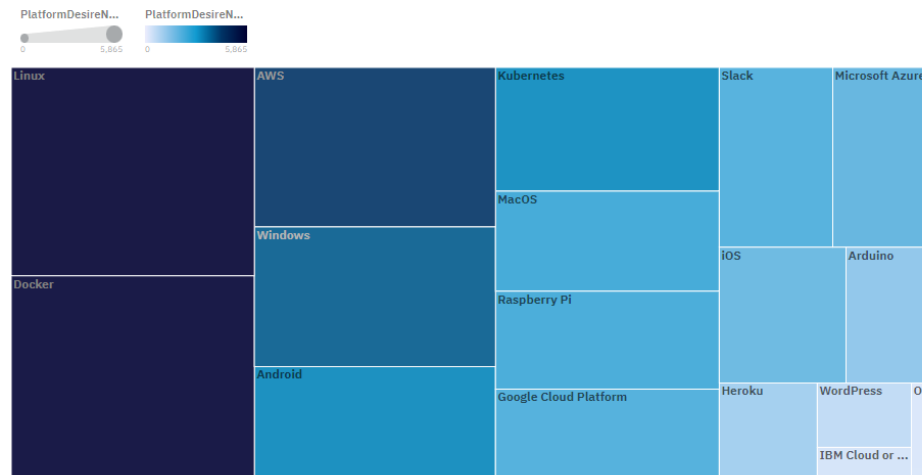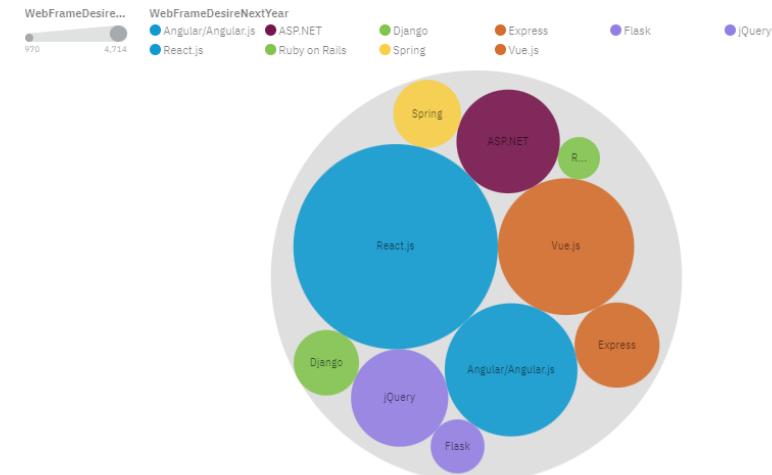
DASHBOARD DEMOGRAPHICS
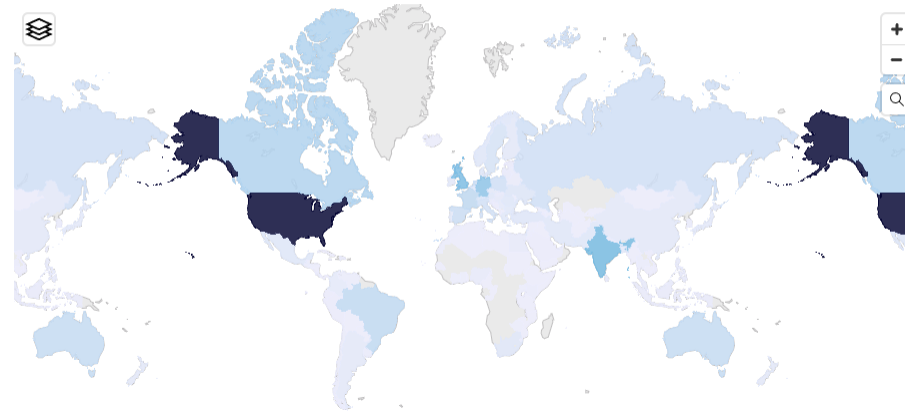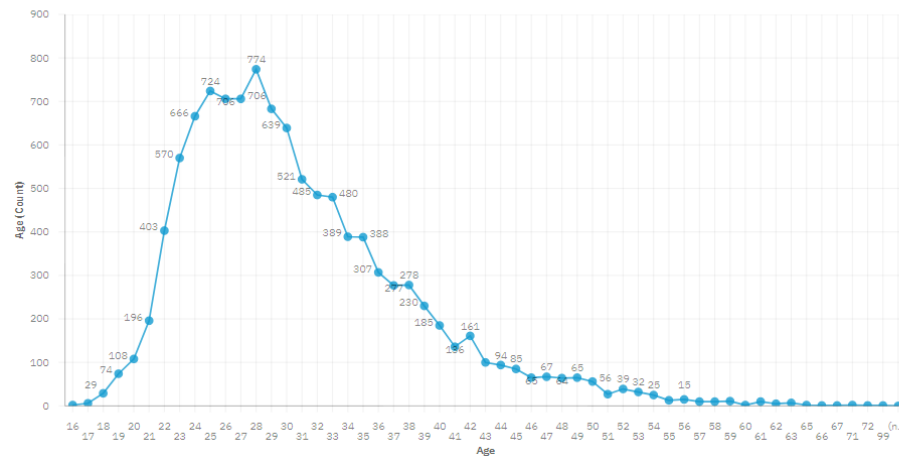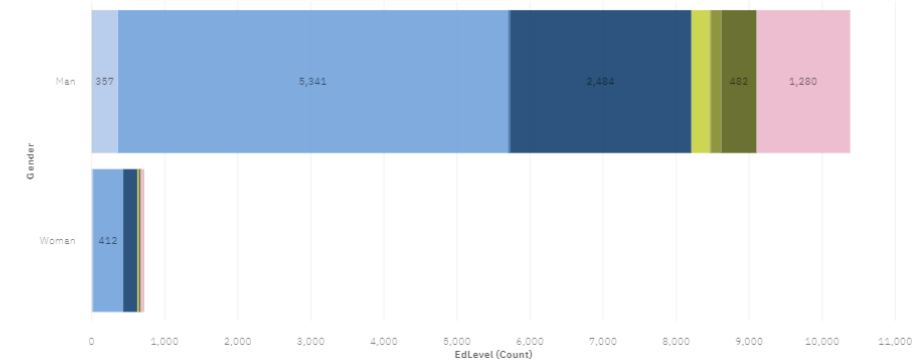
DISCUSSION

- Technology usage trend and the emerging technologies
- Gender, Age and Education in IT industry

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OVERALL FINDINGS & IMPLICATIONS

Findings

- Most people is using and intend to use JavaScript and HTML/CSS

- More people are interested in Python

- Most of the respondents are male

Implications

- Web Developers will be widely available

- Machine Learning/AI are technologies on the rise

- Most of the workers in the IT industry are male, incentives to bring more females must be adopted by companies

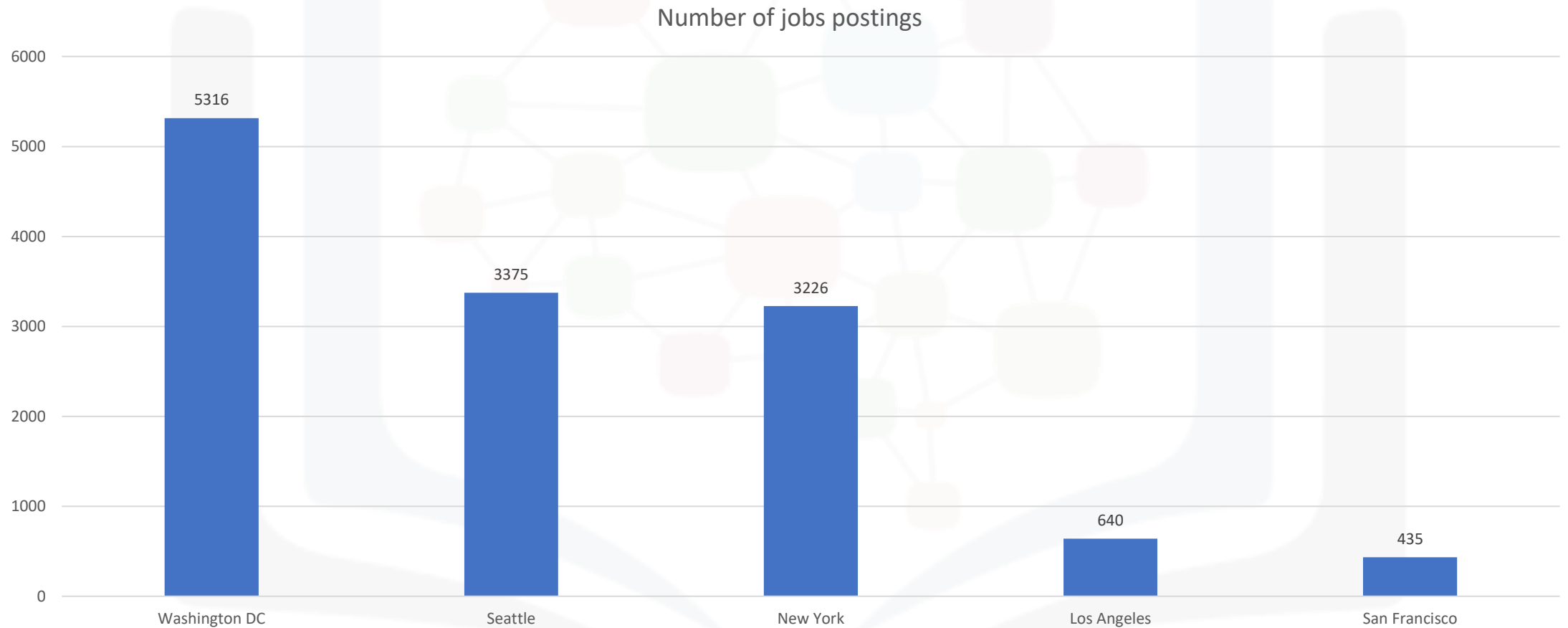IBM **Developer**

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CONCLUSION

- Most common technologies being used:
  - Programming language: JavaScript
  - Database: MySQL
  - Platform: Linux
  - Web Framework: jQuery
- Technologies intended to be used:
  - Programming language: JavaScript
  - Database: PostgreSQL
  - Platform: Linux
  - Web Framework: React.js

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APPENDIX

JOB POSTINGS

Number of jobs postings

POPULAR LANGUAGES

Number of jobs postings