Presentation of technological trends and patterns

Ehikwe Ozioma Henry

June 2023

IBM Developer

SKILLS NETWORK

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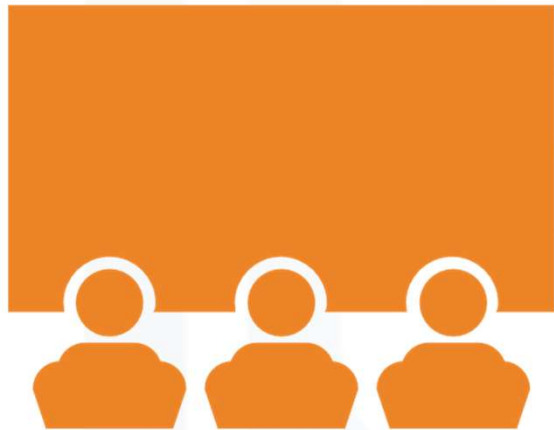
- Executive Summary
- Introduction
- Methodology
- Results
  - Visualization – Charts
  - Dashboard
- Discussion
  - Findings & Implications
- Conclusion
- Appendix

IBM Developer

SKILLS NETWORK

EXECUTIVE SUMMARY

- Trends in programming languages and databases
- Demographics survey
- Technological gap in countries
- Gender gap in jobs

INTRODUCTION

- Focus on: Analyzing the trends in software development

- Objective:
  - Identify skill requirements for future
  - What are the programming language in high demand?
  - What are the skills for database that are in high demand?
  - What are the popular IDEs?

- Audience: Human Resource and IT Head

METHODOLOGY

- Data Collection Sources
  - Stack Overflow Developer 2019 Survey:
  - https://stackoverflow.blog/2019/04/09/the-2019-stack-overflow-developer-survey-results-are-in/

  - GitHub Job Postings
  - Programming Languages Annual Salary
- Data Exploration
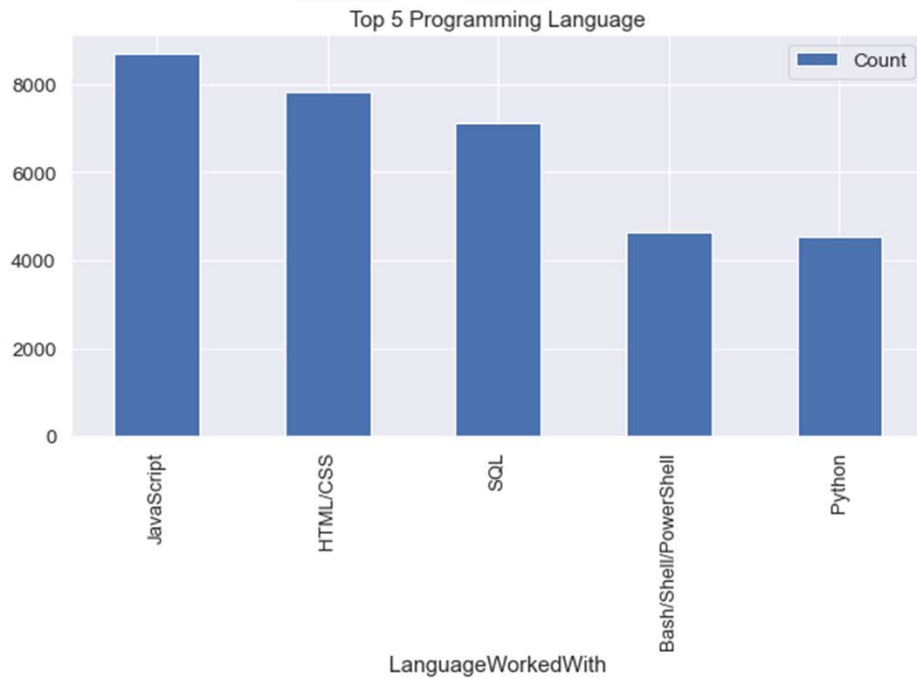- Data Cleaning
- Data Visualization
- Presentation

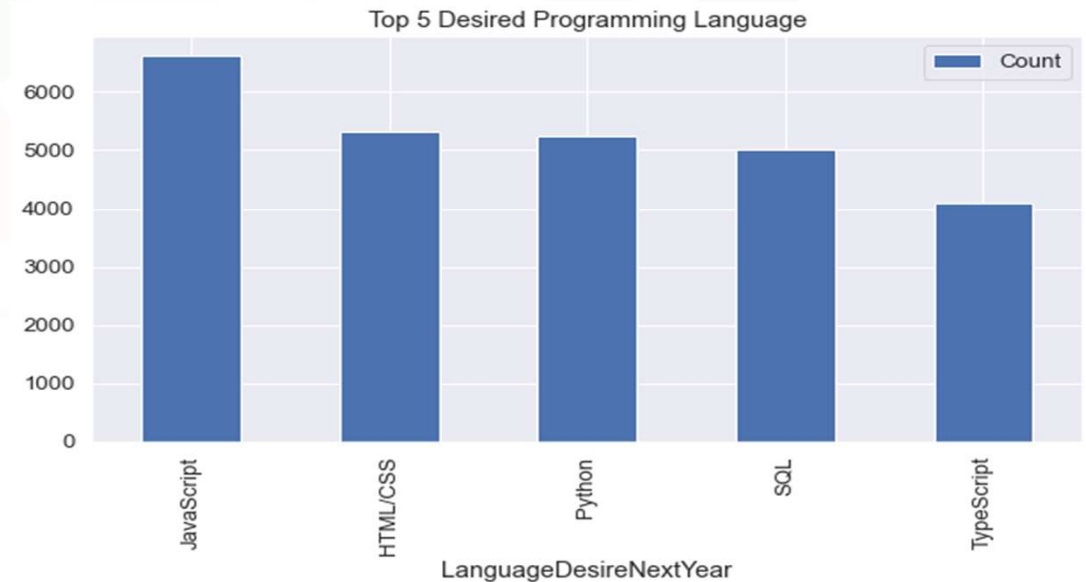# RESULTS

Results are based on this table:

	Respondent	LanguageWorkedWith	LanguageDesireNextYear	DatabaseWorkedWith	DatabaseDesireNextYear	PlatformWorkedWith
0	4	C	C	MySQL	MySQL	Linux
1	4	C++	C#	SQLite	SQLite	Windows
2	4	C#	JavaScript	NaN	NaN	NaN
3	4	Python	SQL	NaN	NaN	NaN
4	4	SQL	NaN	NaN	NaN	NaN
...	...	...	...	...	...	...
74584	25142	Go	Python	NaN	NaN	NaN
74585	25142	HTML/CSS	R	NaN	NaN	NaN
74586	25142	PHP	NaN	NaN	NaN	NaN
74587	25142	Python	NaN	NaN	NaN	NaN
74588	25142	R	NaN	NaN	NaN	NaN

PROGRAMMING LANGUAGE TRENDS

Current Year

Next Year

Top 5 Programming Language

Current Year chart — LanguageWorkedWith: JavaScript, HTML/CSS, SQL, Bash/Shell/PowerShell, Python

Top 5 Desired Programming Language

Next Year chart — LanguageDesireNextYear: JavaScript, HTML/CSS, Python, SQL, TypeScript

PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript, HTML/CSS, SQL are top 3 this year

- Python and Typescript becoming popular next year

- PowerShell edged out in next year

Implications

- Web development are still in high demand

- Big Data technology in companies still requires SQL

- With AI and ML in rising demand, Python is best choice

IBM Developer
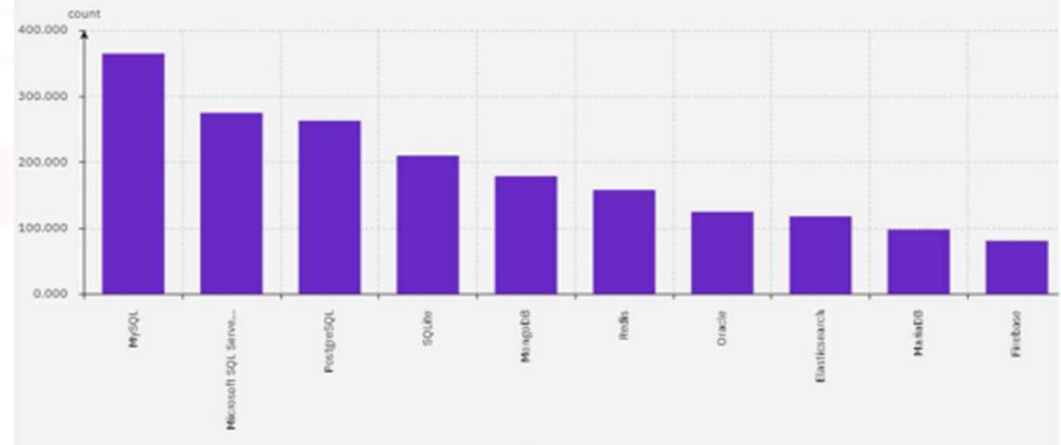
SKILLS NETWORK

DATABASE TRENDS

Current Year

Next Year

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL most popular

- Behind is Microsoft SQL

- MongoDB and Redis are upcoming favorites

- New kid on the block: Elasticsearch

Implications

- Majority of the company prefer open-source database

- NoSQL databases will make an impact for storing non-relational data

- Redis supports abstract data types

- Pre-tuned search to website, app, or ecommerce store

IBM Developer

SKILLS NETWORK

DASHBOARD

Github link:

Oziomahenry/capstone_final_project
(github.com)

CURRENT TECHNOLOGY USAGE DASHBOARD

FUTURE TECHNOLOGY TREND DASHBOARD
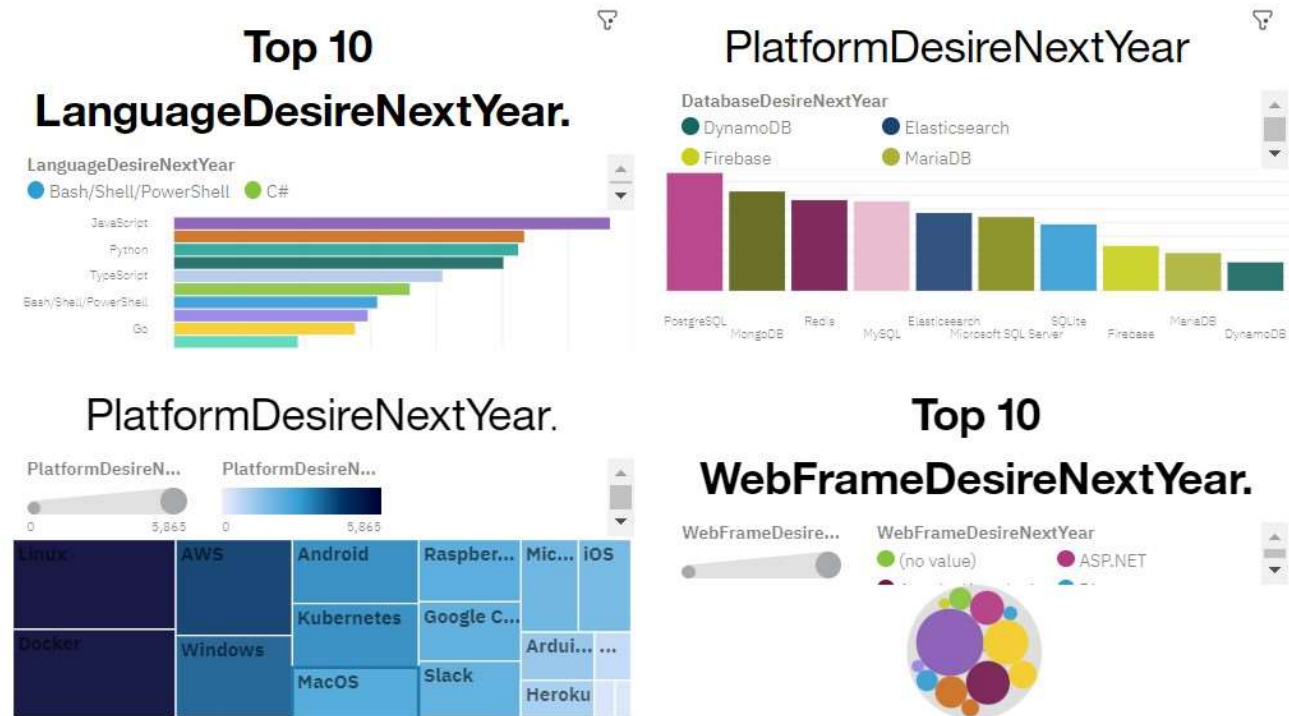
DEMOGRAPHICS DASHBOARD
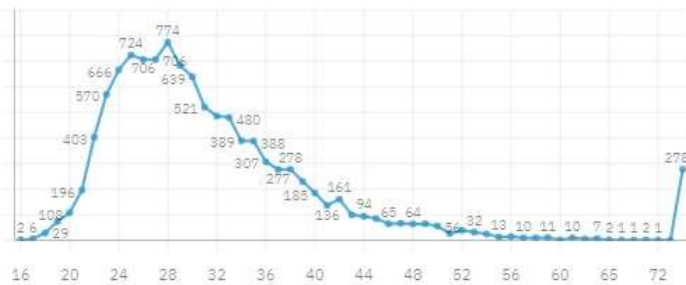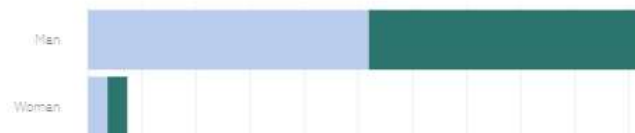
DISCUSSION

- Technology Trends now and future
- Training and upskilling of workers
- Encourage female participation in Technology field
- Bridge the technology gaps in developing countries
- Eliminate age and education discrimination in employment

IBM Developer

SKILLS NETWORK

summary of findings and implications

Findings:

- Technology are fast emerging on yearly basis

- Unequal distribution of jobs in different regions

- Gender gap in technological jobs

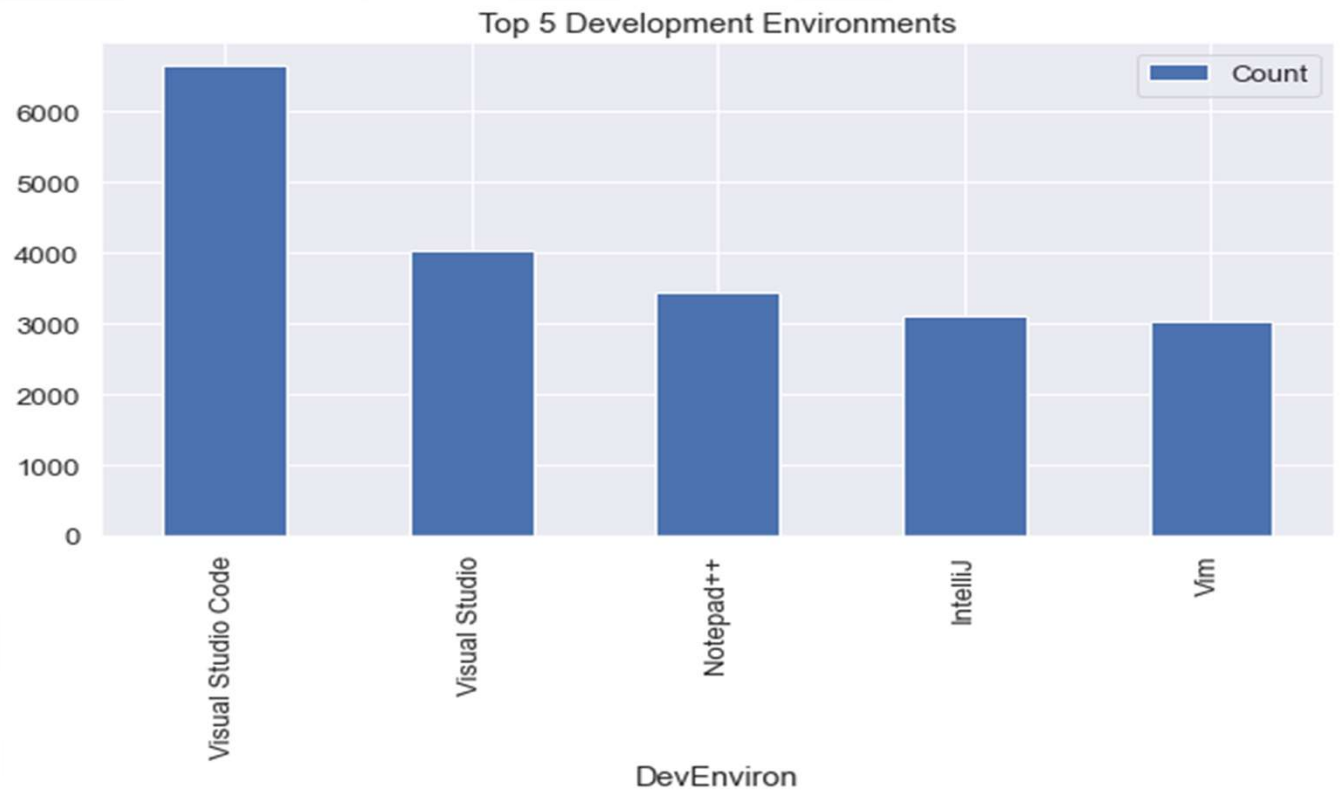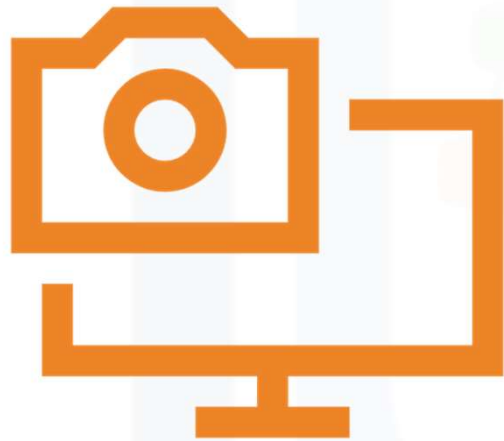- Docker and AWS platforms are growing fast

Implications:

- Companies need to be dynamics to the emerging technology

- Uniform distribution of tech to the developing countries

- Impact of job hiring's

- Paradigm shift to faster app deployments and cloud services in the future
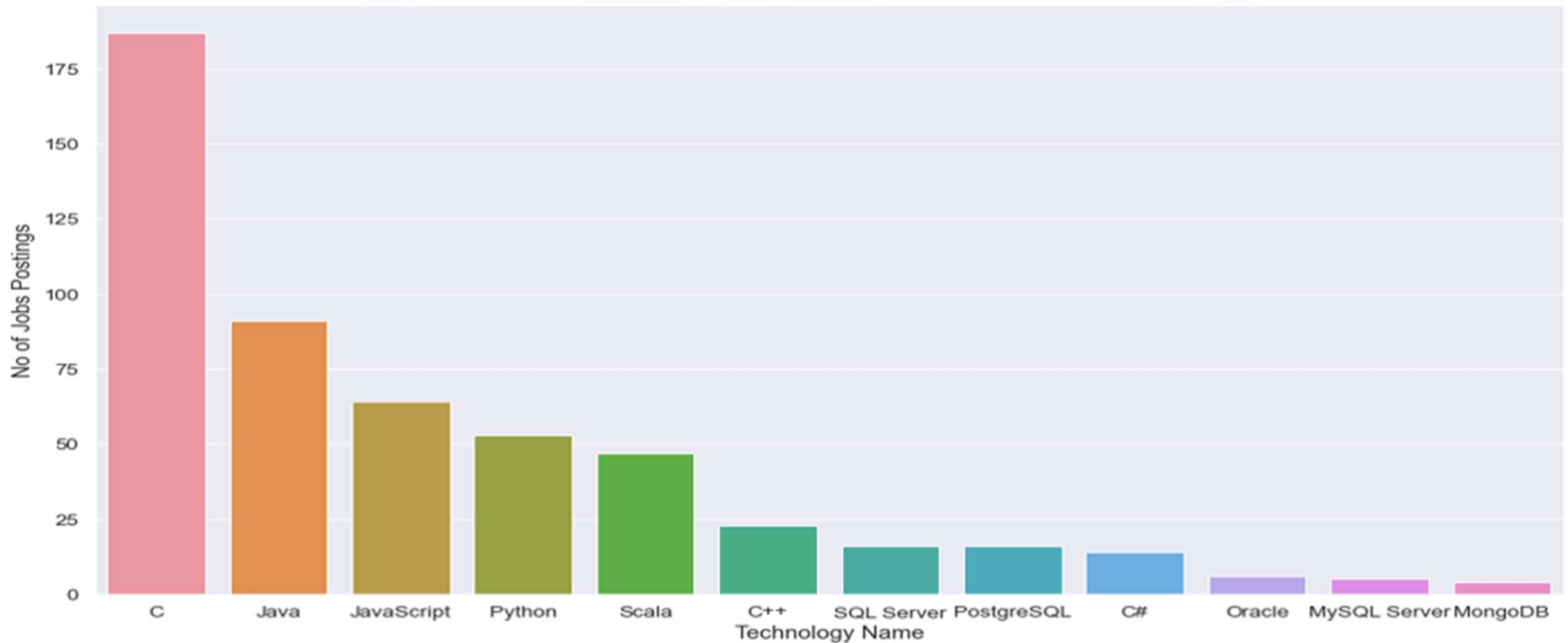
IBM Developer

SKILLS NETWORK

CONCLUSION

- Technology Trends for current and next year
- Programming Languages, Database and Platform overview
- Demographics overview
- Actions to be taken
- In future, incorporate Machine Learning to predict trends and salaries

APPENDIX

Top 5 Development Environments

Legend: Count

DevEnviron	(approximate Count)
Visual Studio Code	~6600
Visual Studio	~4000
Notepad++	~3400
IntelliJ	~3100
Vim	~3000

GITHUB JOB POSTINGS

IBM Developer

SKILLS NETWORK

POPULAR LANGUAGES BY SALARY

Job Salaries