OVERVIEW OF IT SKILLS IN INDUSTRY

Richard Kowalski

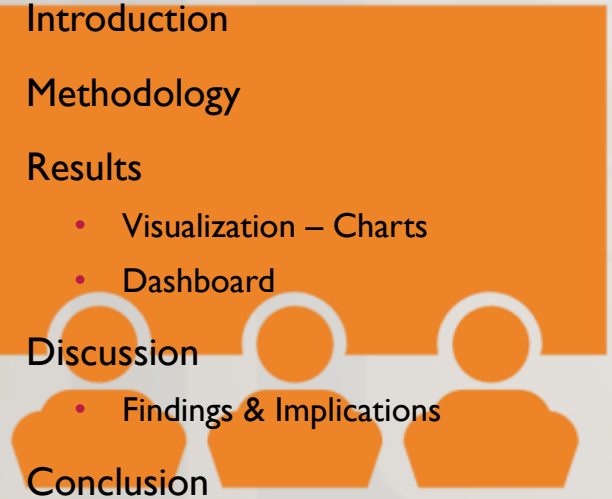
December 2024

IBM Developer

SKILLS NETWORK

OUTLINE

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



EXECUTIVE SUMMARY

- The IT field a diverse field requiring a wide skill set. Workers in the IT area must know different programming languages, databases, server platforms and web development.
- This project examines three areas:
  - Current Technology Usage
  - Future Technology Trends
  - Demographics
- Show the top languages in use
- Identify the top databases used by industry
- Show how age and gender impact the IT sector

INTRODUCTION

- What IT skills are in use and skills that will be in demand?
  - What programming languages are in demand?
  - What database skills are required?
  - Which web development platforms are in use?
- Data was collected from several different sources:
  - Surveys
  - Job postings
  - Educational statistics
- This analysis was conducted by a Data Analyst working independently, gathering data from the internet by web scraping and downloading database.

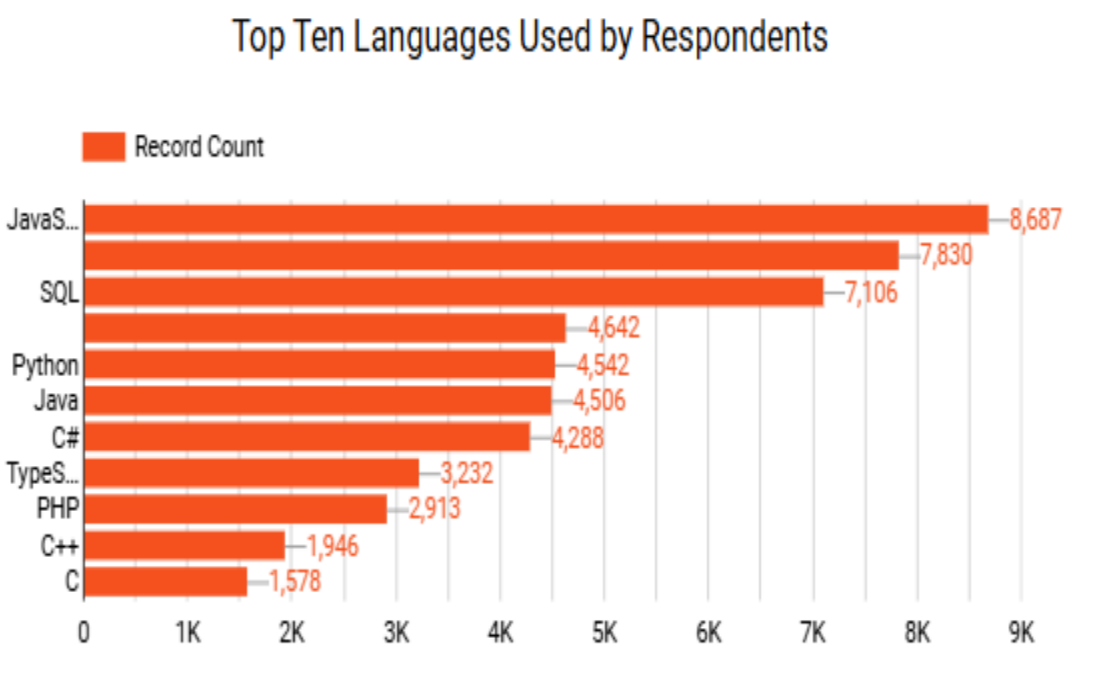
METHODOLOGY

- Data source: Stack Overflow. The databases used:
  - m5_survey_data_demographics.csv
  - m5_survey_data_technologies_normalixed.csv
- Data was cleaned and normalized by:
  - Removing blank lines and cells
  - Correcting spelling
  - Removing data outliers
- After cleaning, the databases were used to:
  - Determine the top languages and databases in use
  - Show the top operating platforms and web design tools
  - Show the gender, age and education distributions

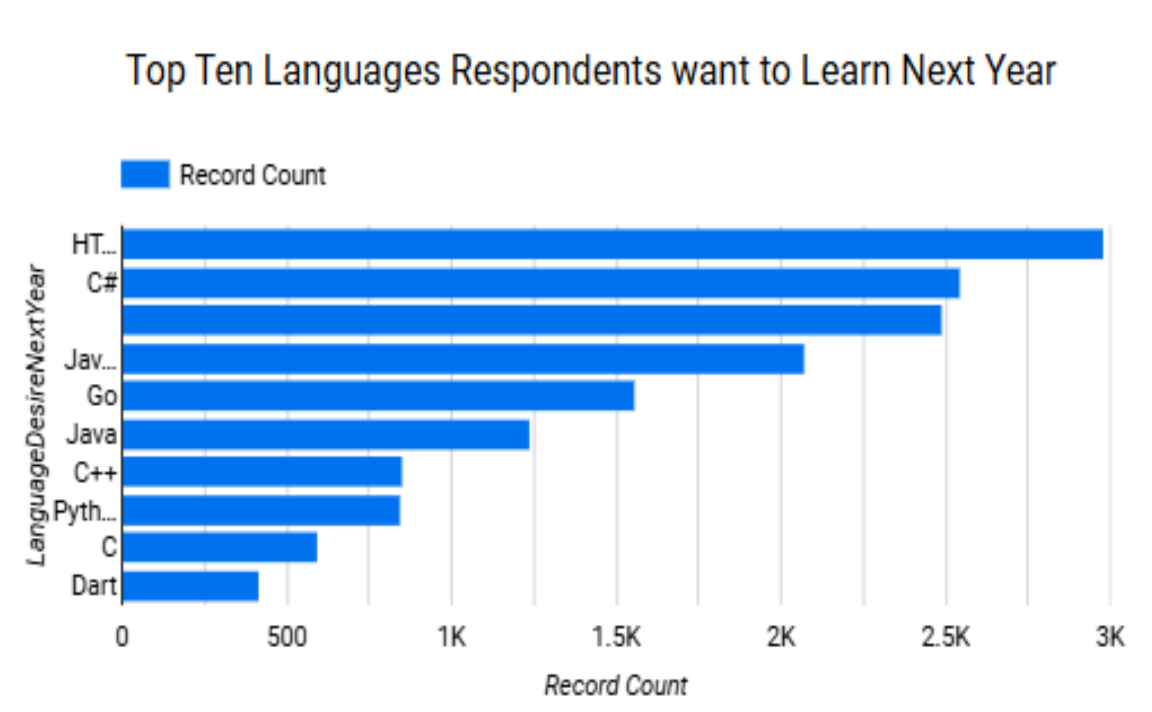
RESULTS

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

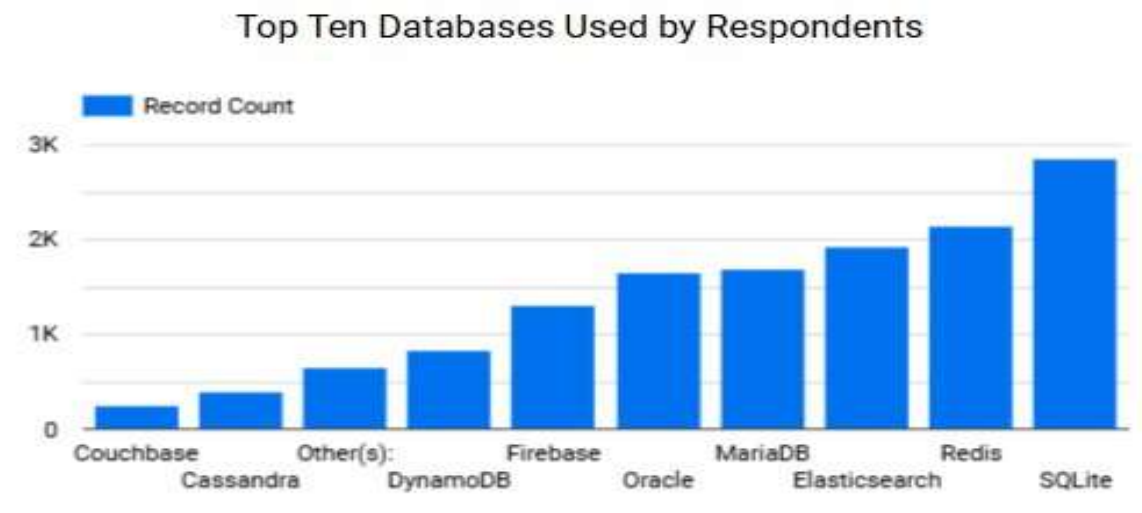
- JavaScript is the most used and most desired programming
- The top four languages are common to both lists
- There is little change between the desire for new languages and the languages in use.

Implications

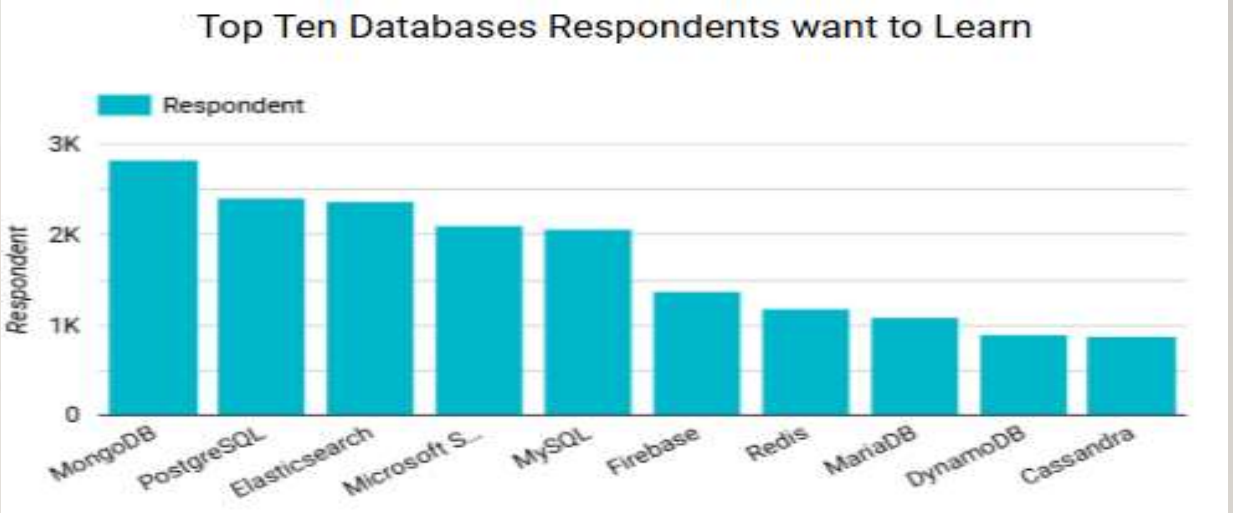
- Four languages are used by most developers
- At the present time there is not much change in the use and the desire for programming languages
- Most programming is web based

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS

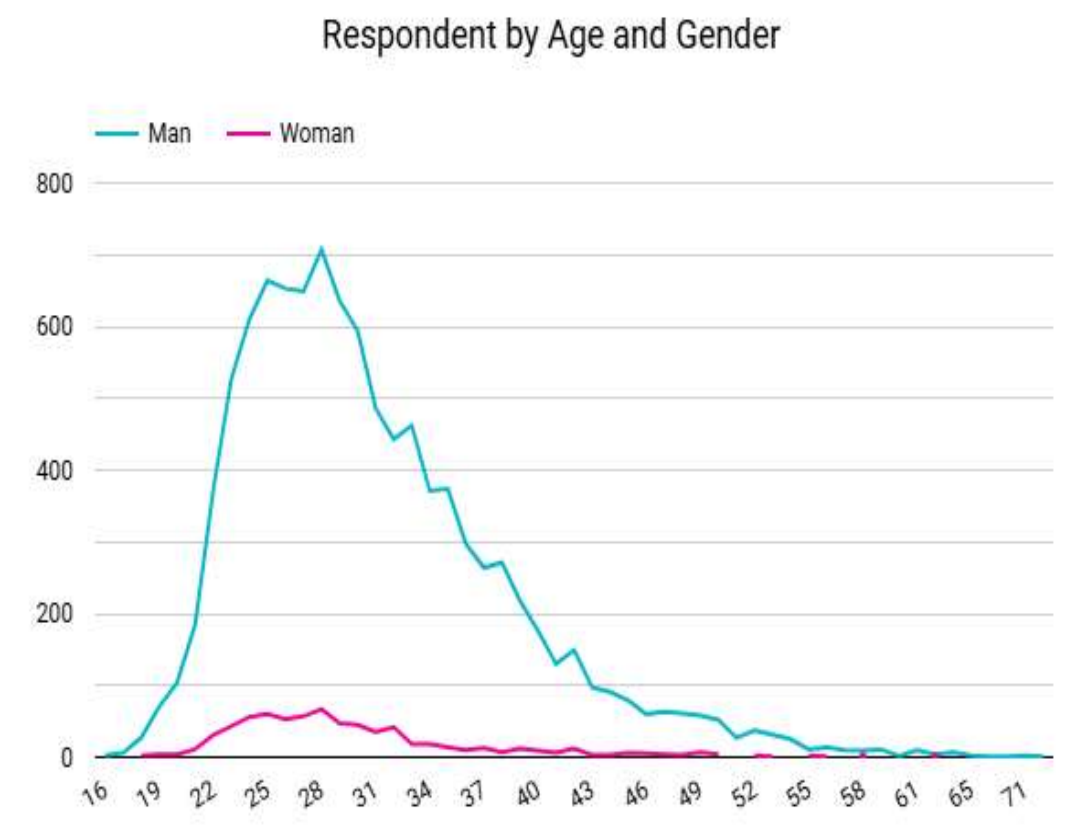
Findings

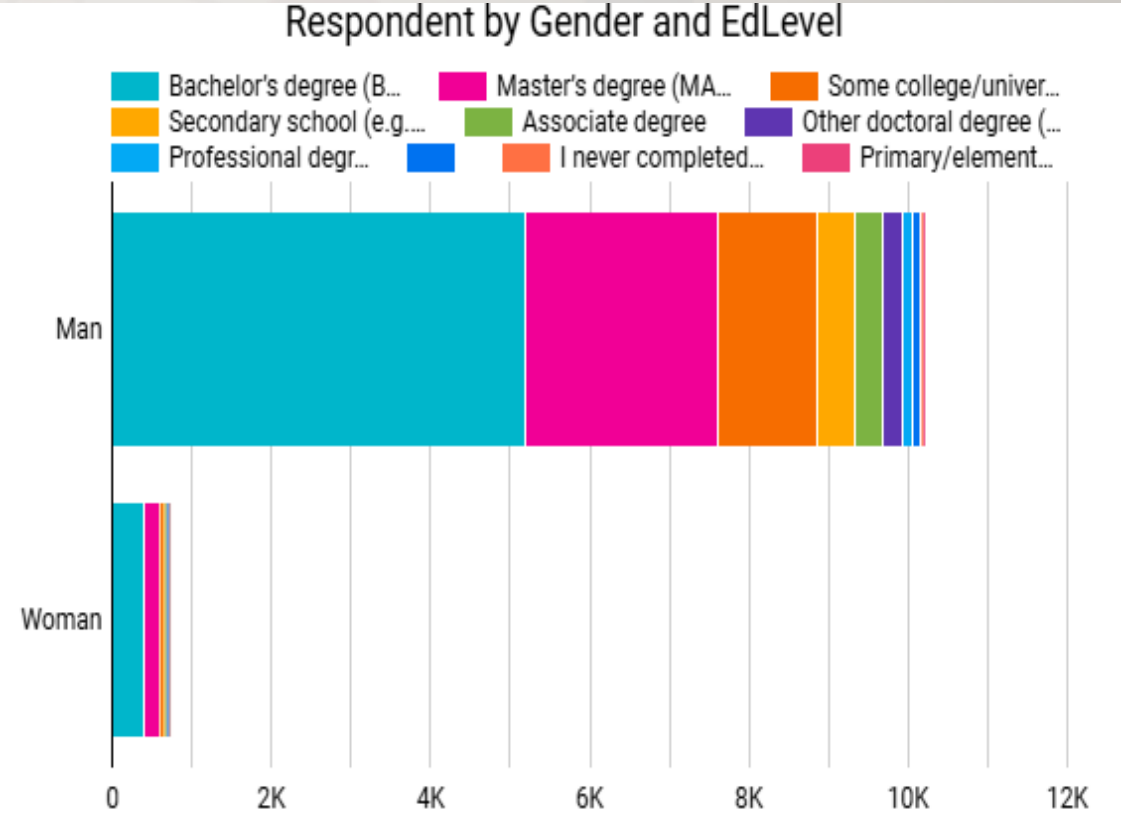
- MySQL and Microsoft SQL Server are the top two databases used by respondents
- There are five databases in demand: MongoDB, Elasticsearch, PostgreSQL, Microsoft SQL Server and MySQL

Implications

- Overall, database usage is not dominated by any one product
- MongoDB, Elasticsearch, and PostgreSQL are set to compete with MySQL and Microsoft SQL Server

AGE, GENDER AND EDUCATION LEVEL





DEMOGRAPHICS TRENDS

Findings

- Men far outnumber women in the IT field
- There is a steep decline in the IT workforce after the age of 28
- Most workers have Bachelor's or Master's degrees

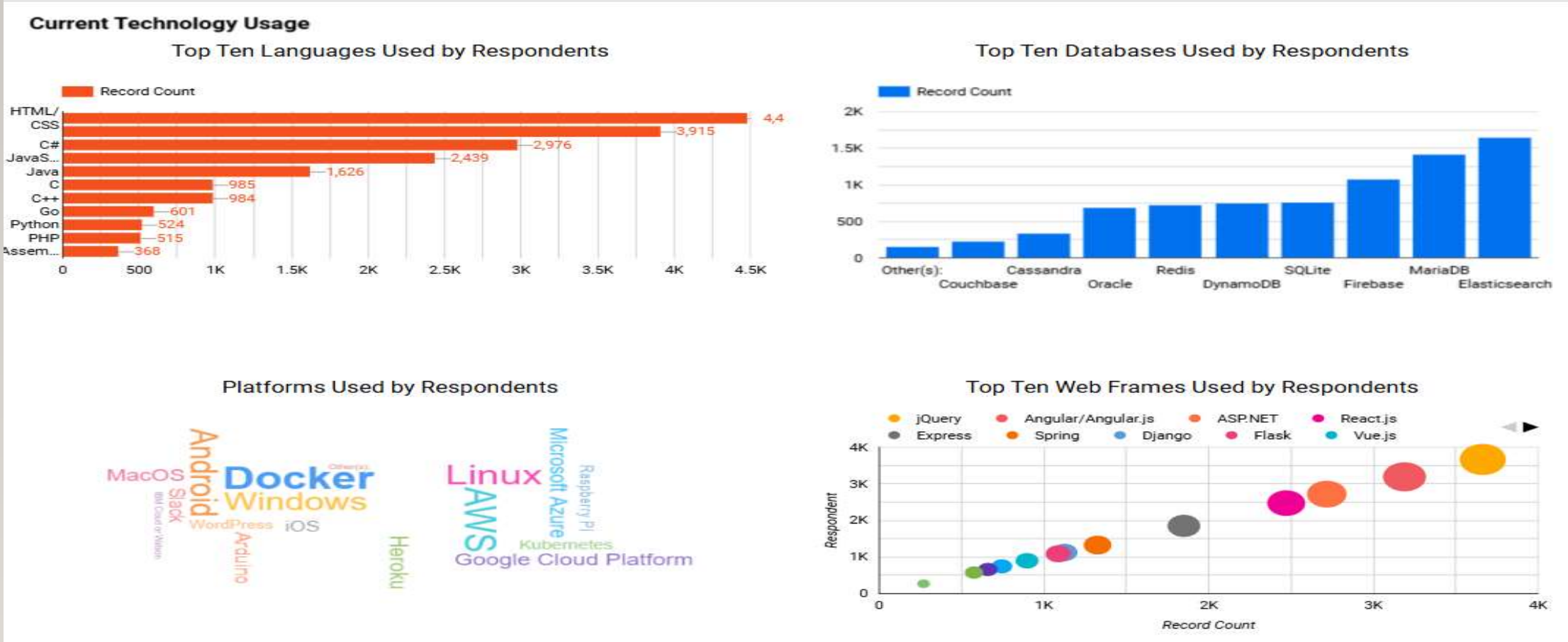
Implications

- Women are under-represented in the IT workforce
- Men and women have the highest number of employees at age 28
- The IT field is mostly men with bachelor's or master's degrees

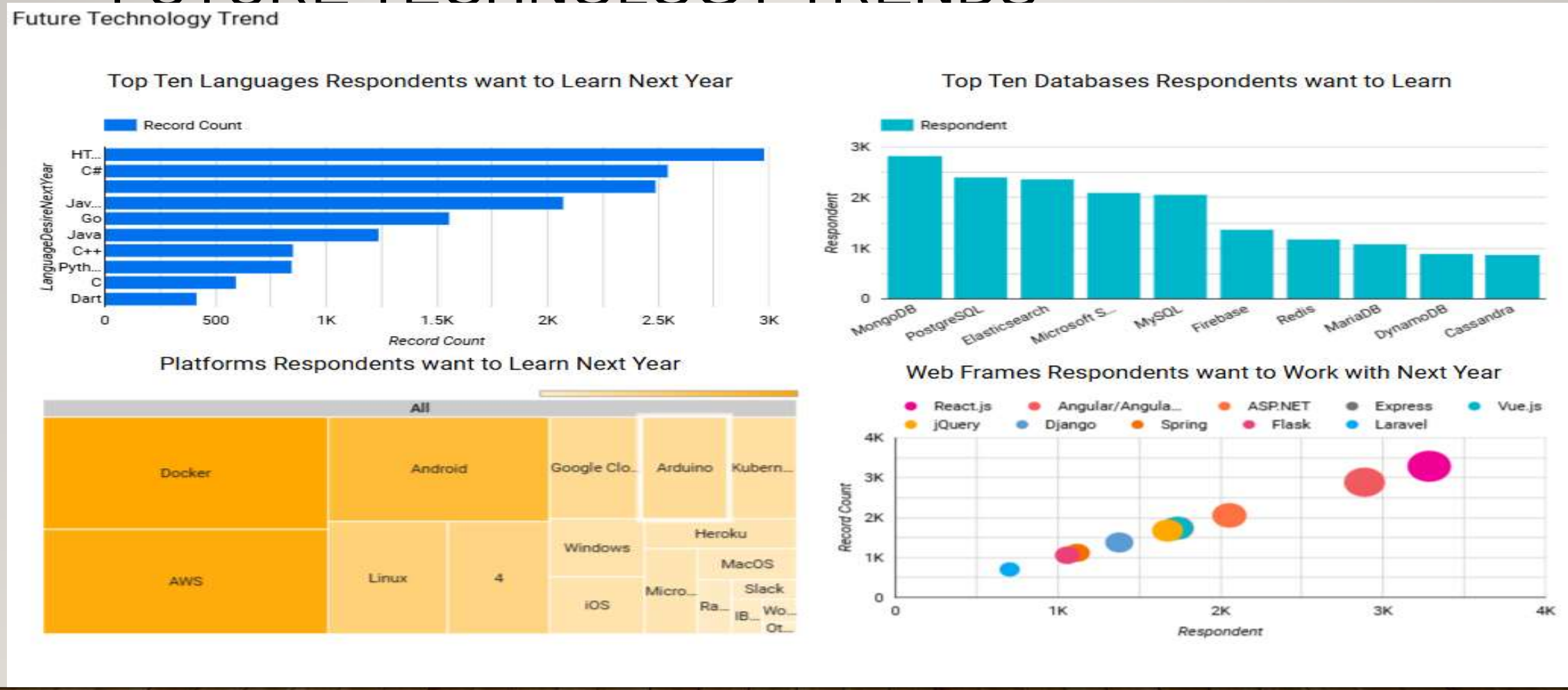
DASHBOARD

https://github.com/Rskowal/Data-Analyst-Projects/blob/main/IBM_Data_Analyst_Capstone_Project_-_Module_6_-_Looker_Studio%20(1).pdf

CURRENT TECHNOLOGY USAGE



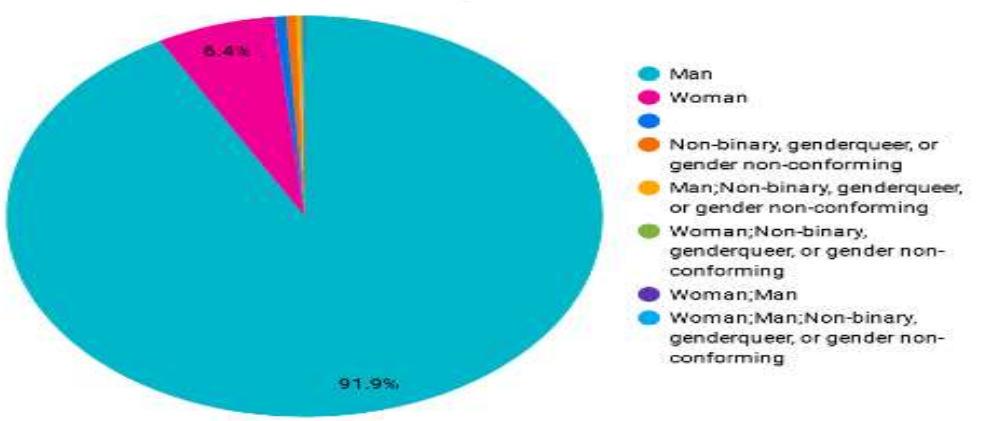
FUTURE TECHNOLOGY TRENDS

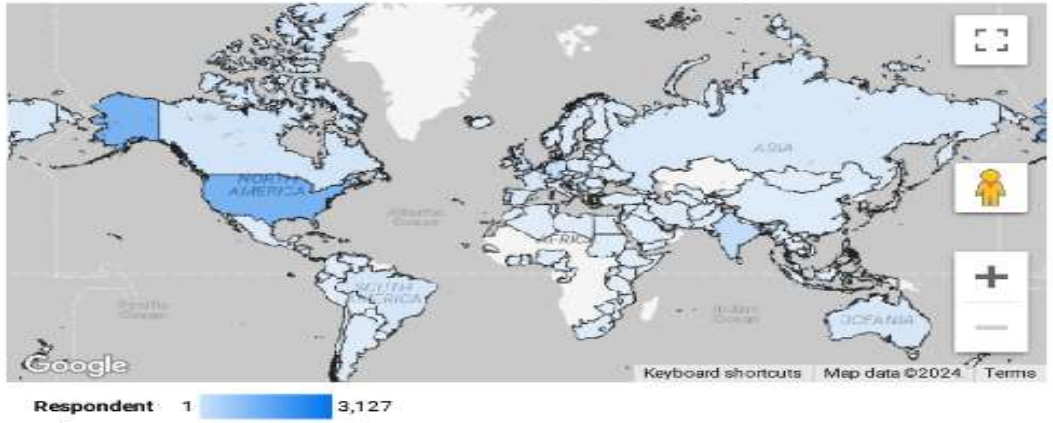


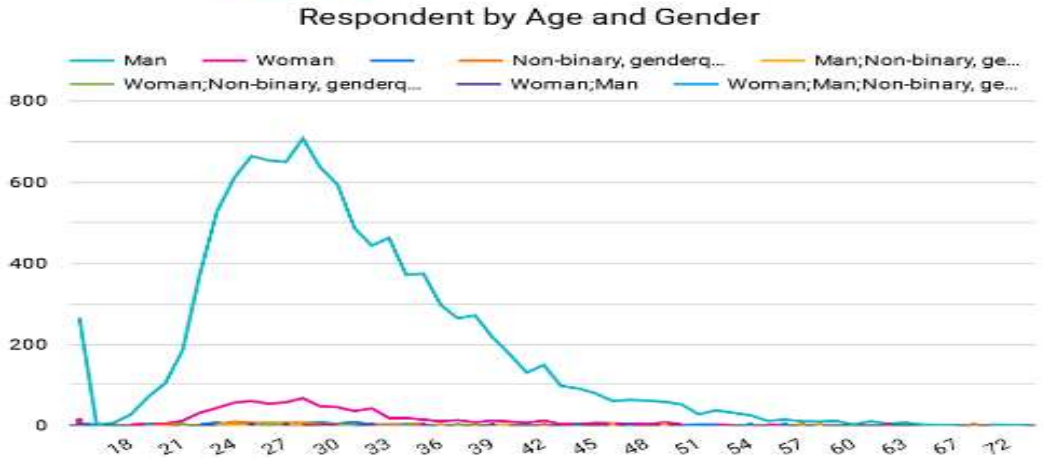
IBM Developer

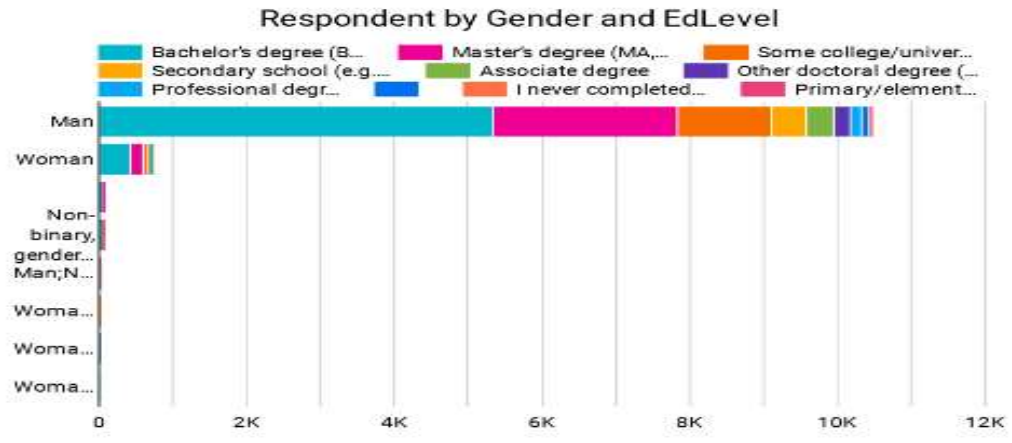
SKILLS NETWORK

DEMOGRAPHICS









IBM Developer

SKILLS NETWORK

DISCUSSION

- IT skills in demand:
  - Programming languages:
    - JavaScript, HTML/CSS, Python, SQL, TypeScript
  - Database IDEs:
    - PostgreSQL, MongoDB, Redis, MySQL, Elasticsearch
  - Operating systems:
    - Linux, Docker, AWS, Windows, Android
  - Web frames:
    - React.js, Vue.js, Angular/Angular.js, jQuery, ASP.NET

OVERALL FINDINGS & IMPLICATIONS

Findings

- JavaScript, PostgreSQL, and React.js are the most in-demand skills
- 28 is the median age for IT workers after which there is a steady decline in the workforce
- Women ae under-represented in the IT field

Implications

- In-demand skills evolve over time
- There is a high rate of employee turn-over
- Efforts should be made to interest women in the IT field

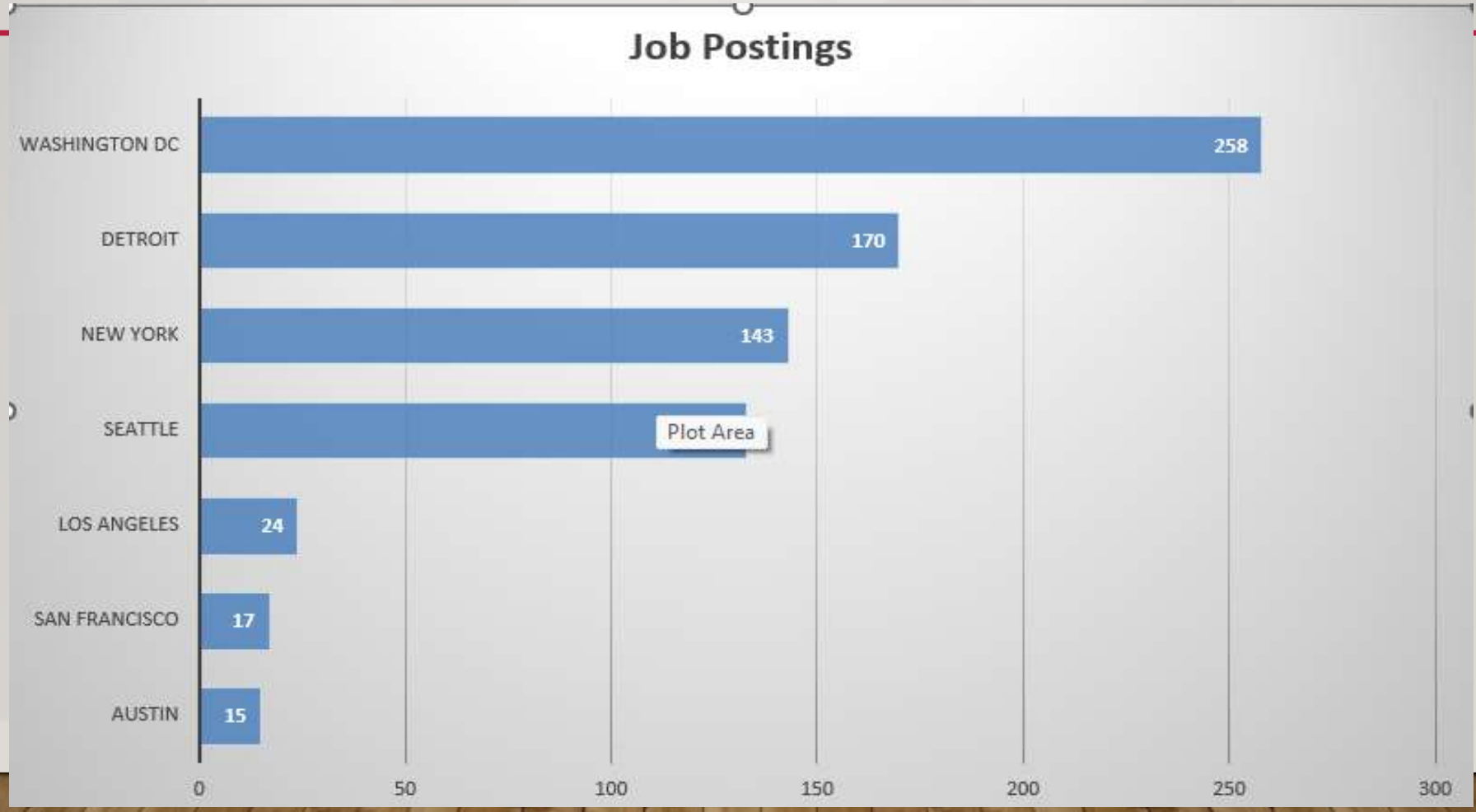
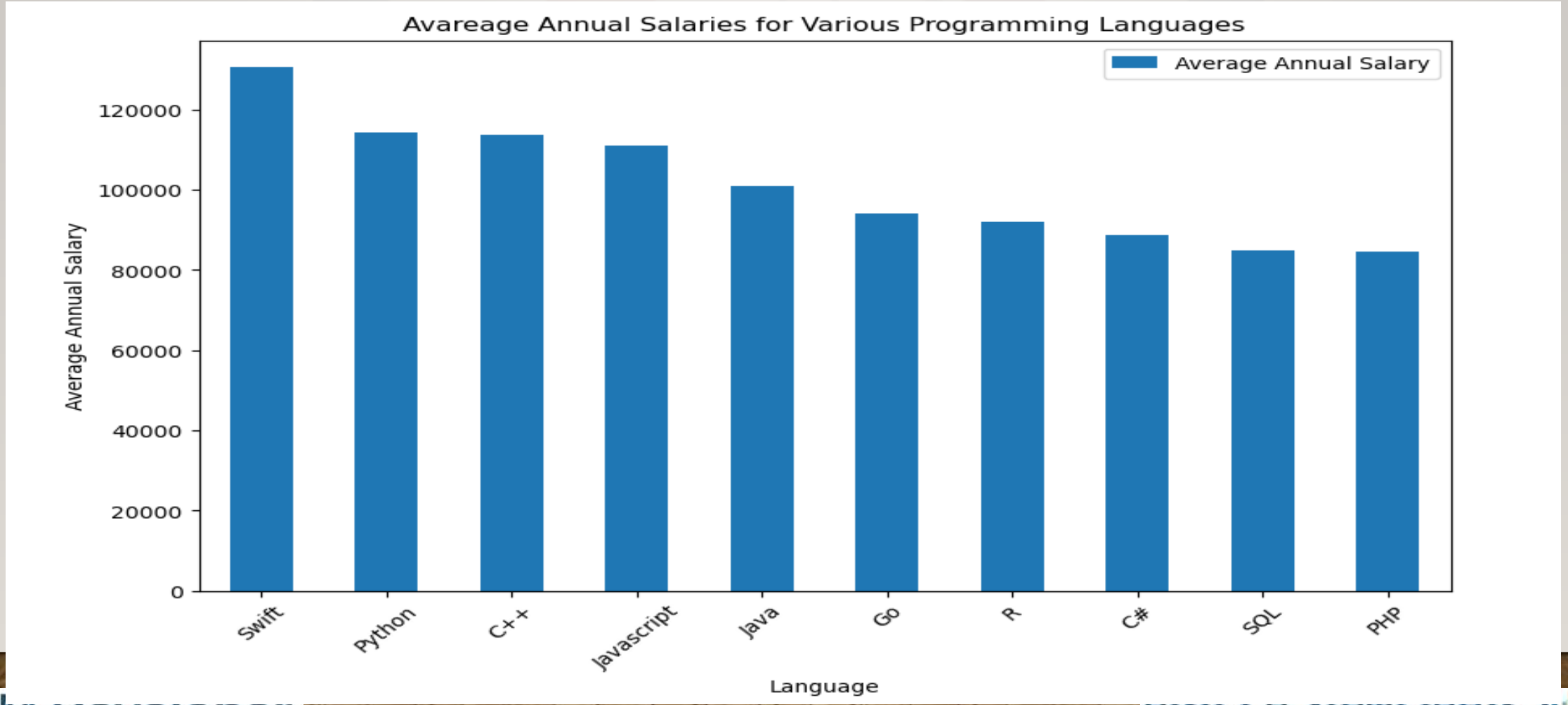
CONCLUSION

- The IT field is dynamic
- Most jobs require at least some college
- The workforce is young with rapid turn-over
- Women are vastly under-represented
- A wide variety of skills are needed

APPENDIX

- Include any relevant additional charts, or tables that you may have created during the analysis phase.

JOB POSTINGS



POPULAR LANGUAGES