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IBM Data Analysis Capstone Project Presentation

July 2025

OUTLINE

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

EXECUTIVE SUMMARY

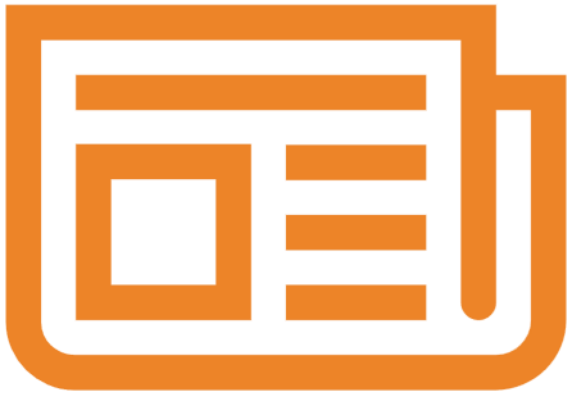
The study we conducted led us to identify the following key point of interest

- We firstly tried to identify pattern based on demographic representation of the population surveyed.
- On a more technical aspect we dived in the popularity of tools precisely: programming languages, web frameworks, databases
- Additionally investigation on compensation distribution across job title and skills/tools

INTRODUCTION

The ultimate goal of our team aimed for during this study was to determine if there are some major trends and patterns that can be used by aspiring and working tech professionals in order for them to made data-driven decision in their career based on the point previously cited

METHODOLOGY

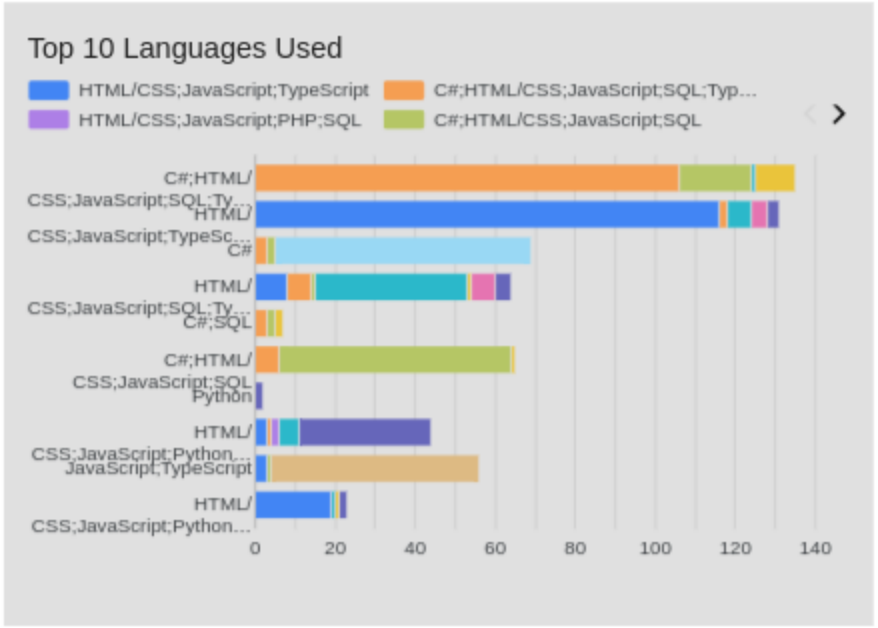


To reach our goal we meticulously applied the following methodology

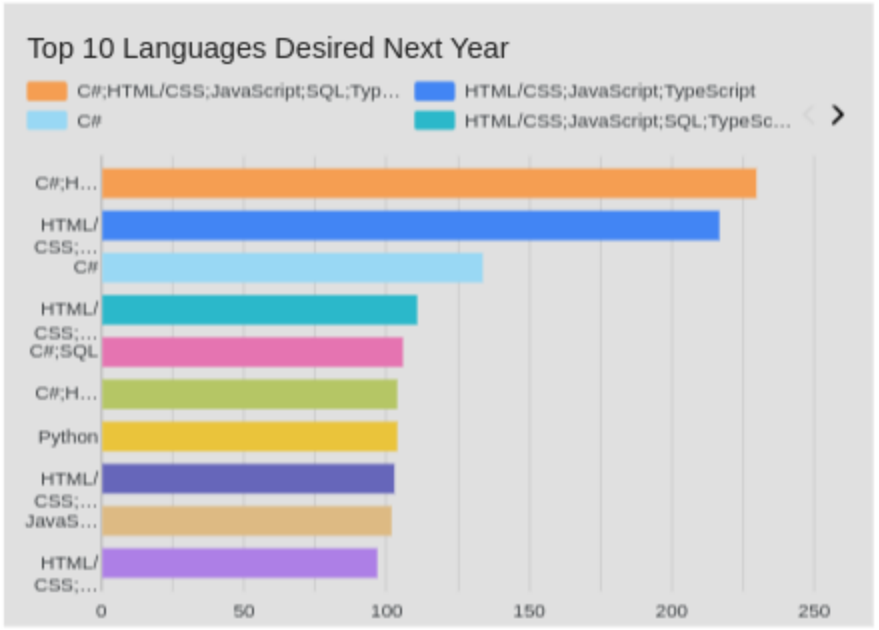
1. Data acquisition: via web scrapping and API consuming
2. Data wrangling: we performed various preprocessing techniques to ensure the integrity, confidentiality and accuracy of the data gathered
3. Correlation, trends and pattern identification: we use multiple technique to help us uncover and interpret findings in our data
4. Insight communication: we built a dashboard to communicate our main findings

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



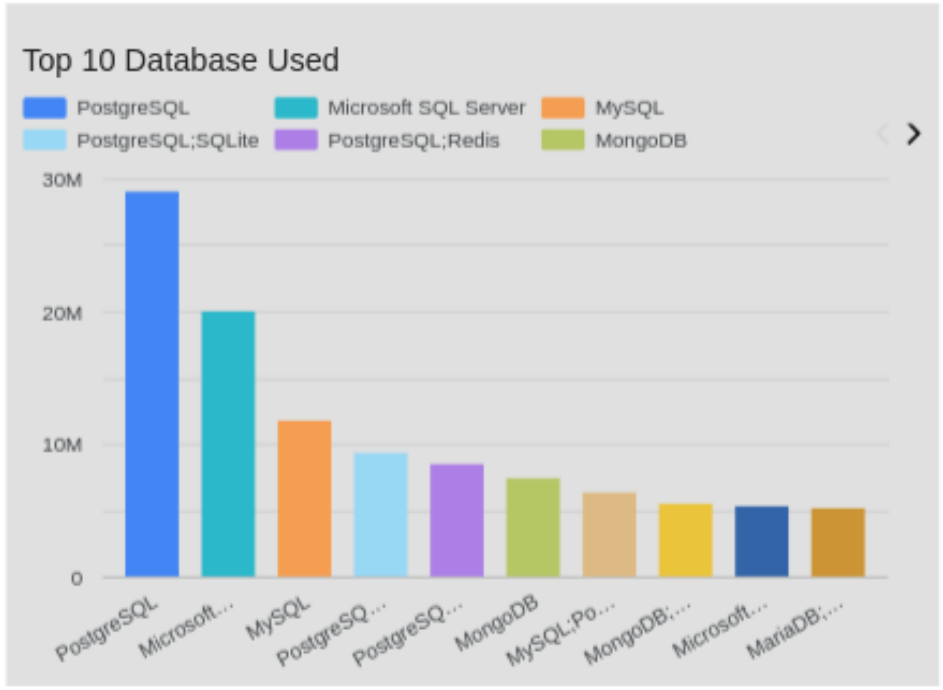
PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

As derived from the trends on programming languages we have found that

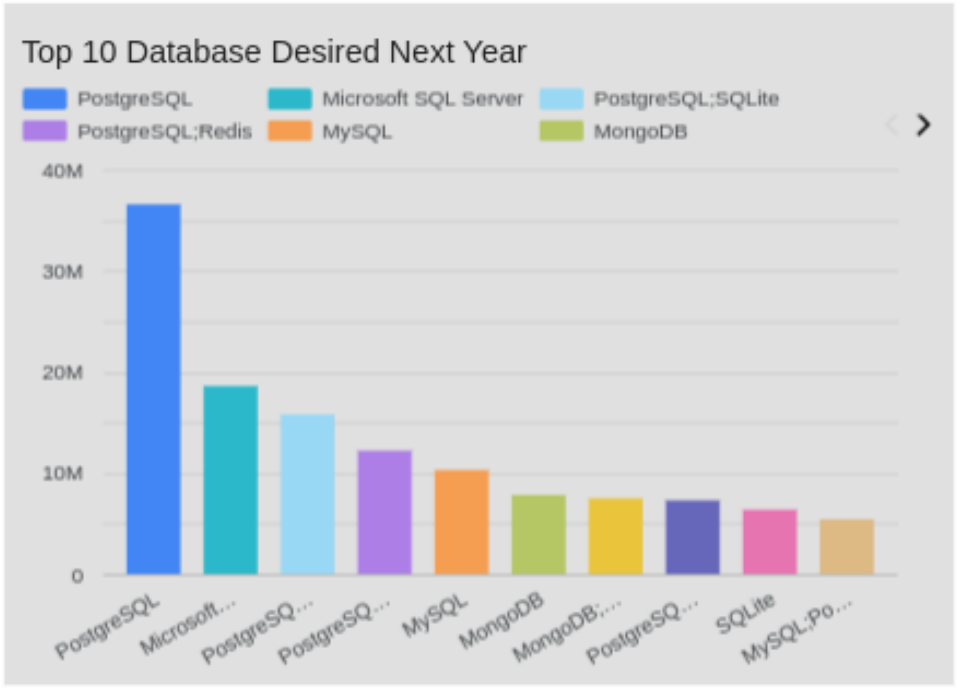
- Html, css, Javascript will stay popular in the coming years
- However some other languages such as: Php, are bound to be less popular

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

As derived from the trends on databases we have found that

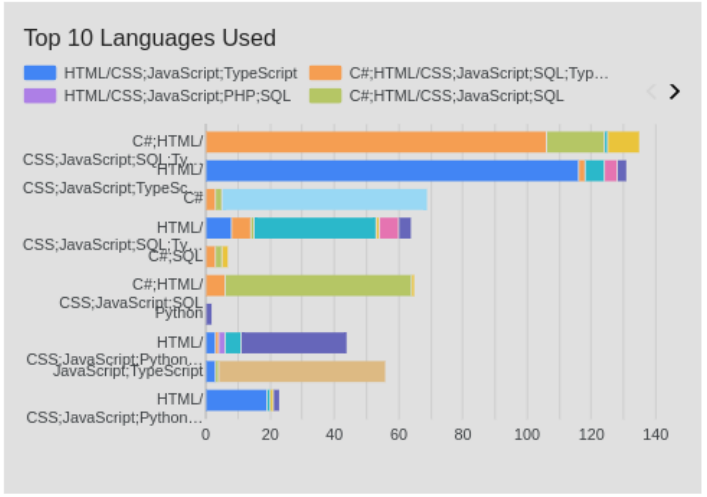
- There is an ongoing trend on relational database and there are no change in the immediate future, with PostgreSQL and Microsoft SQL still among the most popular databases.
- However there will be a change in the positionning between MySQL and SQLite in the years to come, as the latter is gainning more popularity for

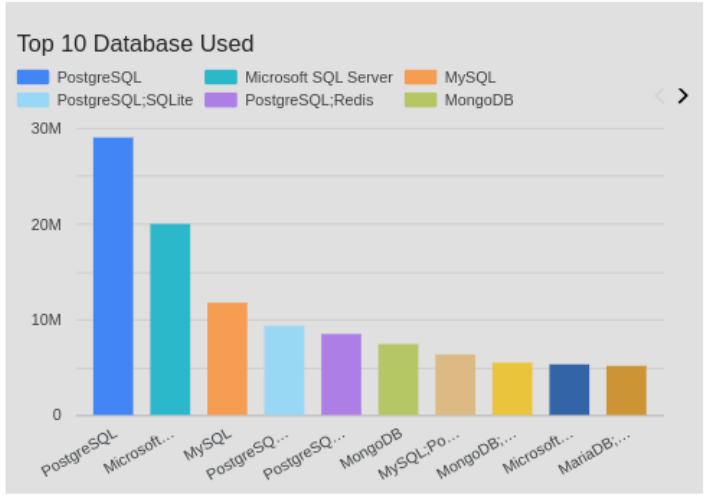
DASHBOARD

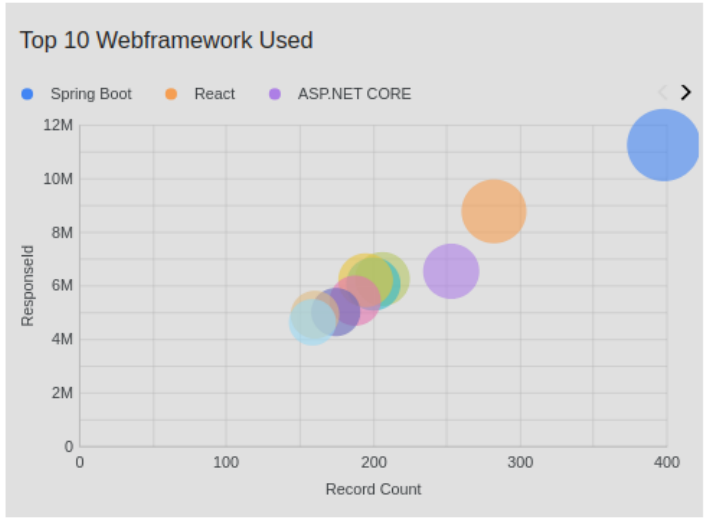
You can consult my project findings and data assets on my **Github repository** here!

DASHBOARD TAB 1

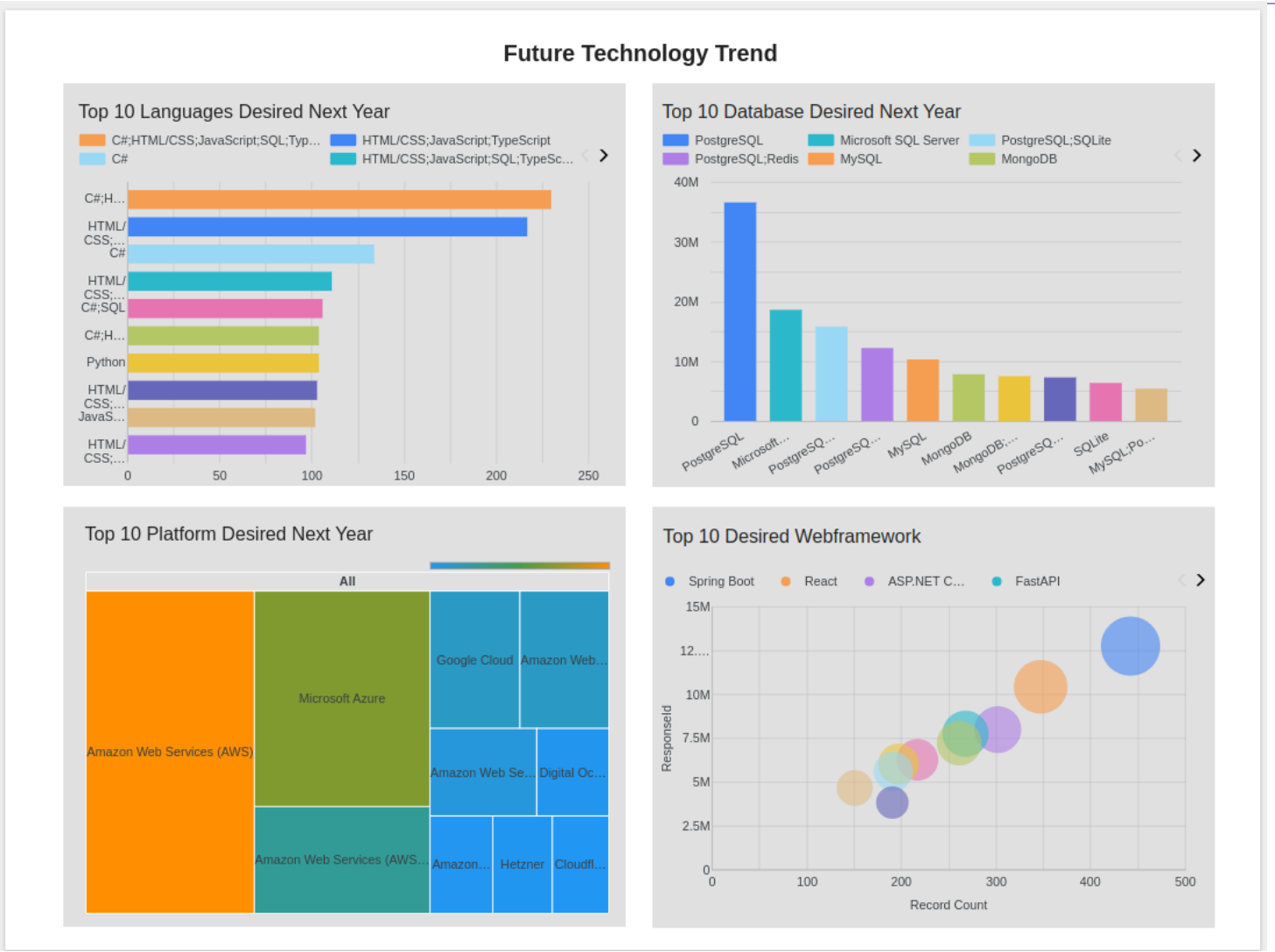
Current Technology Usage







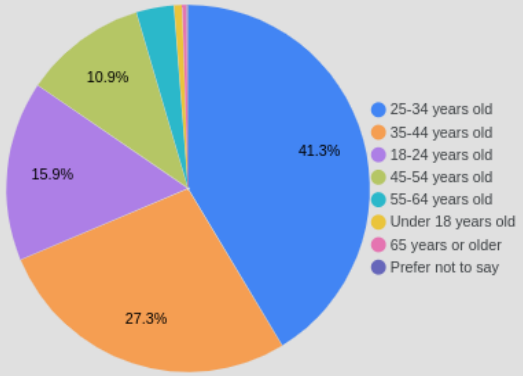
DASHBOARD TAB 2



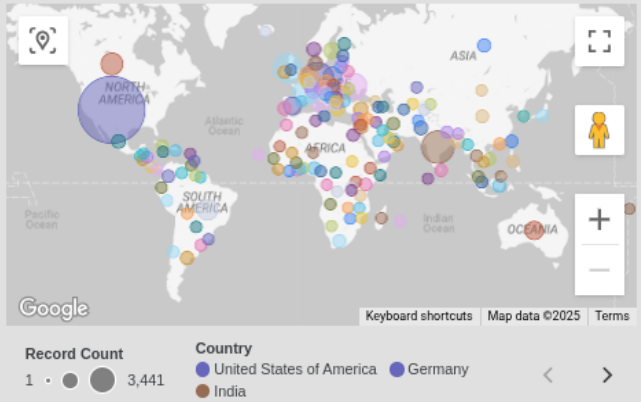
DASHBOARD TAB 3

Demographics

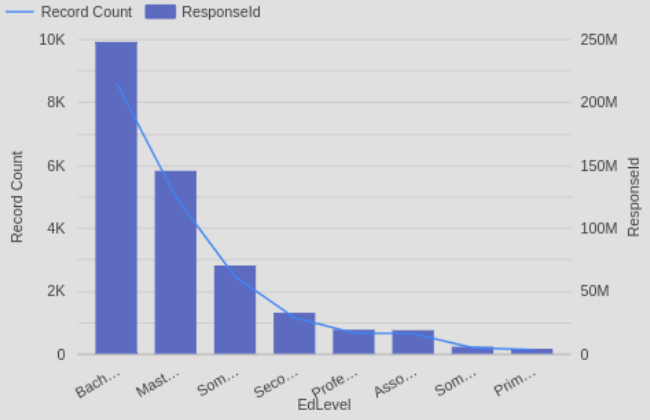
Respondents by Age



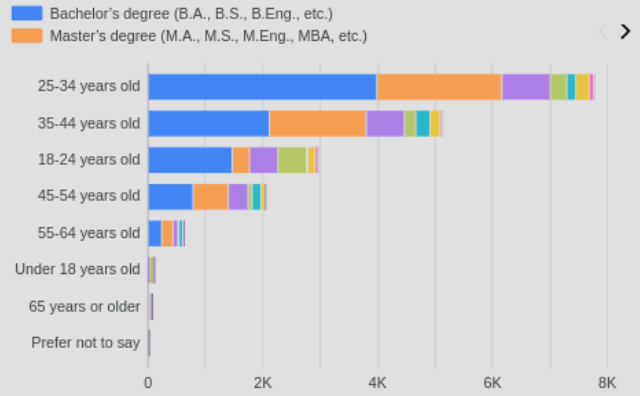
Respondent Count by Country



Respondent Distribution by Education Level



Respondent Count by Age, Classified by Education Level



DISCUSSION

The study we conducted led us to identify the following key point of interests:

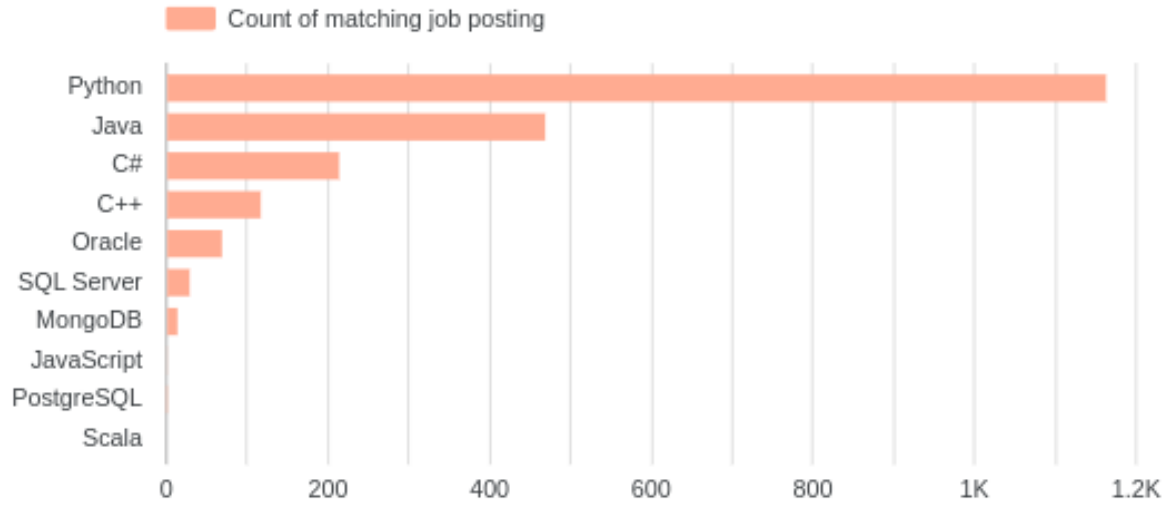
- On a demographic purpose the majority of people participating are located in **north America** and between **25-34 years old**.
- On a more technical aspect concerning the popularity of the tools, language and database there are **no major change to be anticipated** in the coming years in comparison to what is used now.
- Additionally we tried to compare the salary repartition across tools and it comes out there are **no major pattern** however we note that **Python is among the top paid and in-demand** programming language

CONCLUSION

The Stack Overflow survey reveals a developer landscape primarily composed of North American professionals aged 25-34. Current technology trends indicate stability in the popularity of existing tools, languages, and databases. While no single dominant salary pattern emerged across all tools, Python consistently stands out as a top-paying and highly in-demand programming language

JOB POSTINGS

In Module 1 you have collected the job posting data using Job API in a file named “job-postings.xlsx”. Present that data using a bar chart here. Order the bar chart in the descending order of the number of job postings.



POPULAR LANGUAGES

In Module 1 you have collected the job postings data using web scraping in a file named “popular-languages.csv”. Present that data using a bar chart here. Order the bar chart in the descending order of salary.