Data Analysis on Emerging IT Skills

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OUTLINE

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- Methodology
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- Discussion
  - Findings & Implications
- Conclusion
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EXECUTIVE SUMMARY

- Objective: Analyze trends in IT skills over the years
- Data Cleaning and extraction
  - Normalization
  - Handle missing values
- Statistical Analysis: Utilize std(), mean(), var(), corr() etc.
- Data Cleaning and extraction
  - Major gap in gender distribution
  - Increasing popularity with AI related languages and skills

INTRODUCTION

- Trends with preferred languages and databases for future
- Characterizations of developers worldwide
- Identifying Technologies most popular with respondents
  - Languages
  - Databases
- Distribution of Salaries in context with age
- Relation between
  - Age of respondents and hours worked

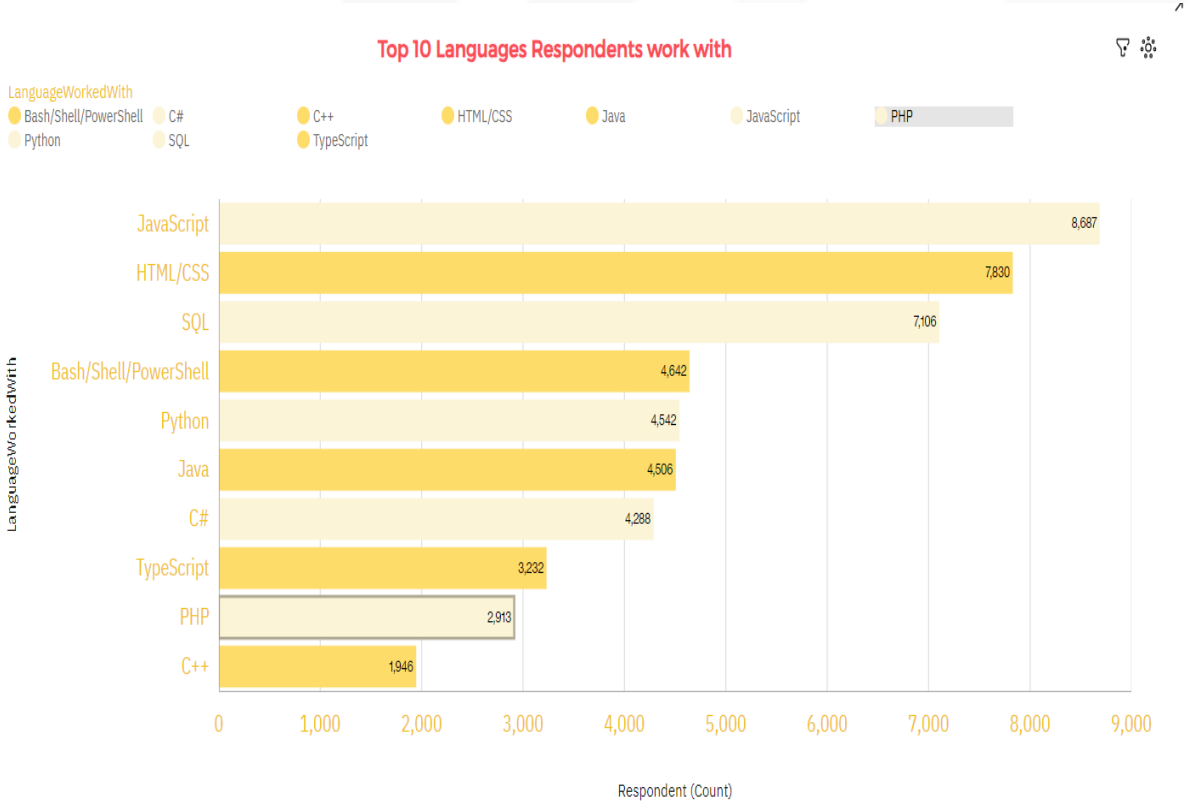
METHODOLOGY

- Data collection and exploration
  - Collecting data from various sources like surveys, training portals
  - Web scraping
  - APIs
- Data Wrangling
  - Handling missing values
  - Normalization
- Data Visualization using various python libraries and functions
- Presenting the findings using
  - Cognos
  - PowerPoint presentation

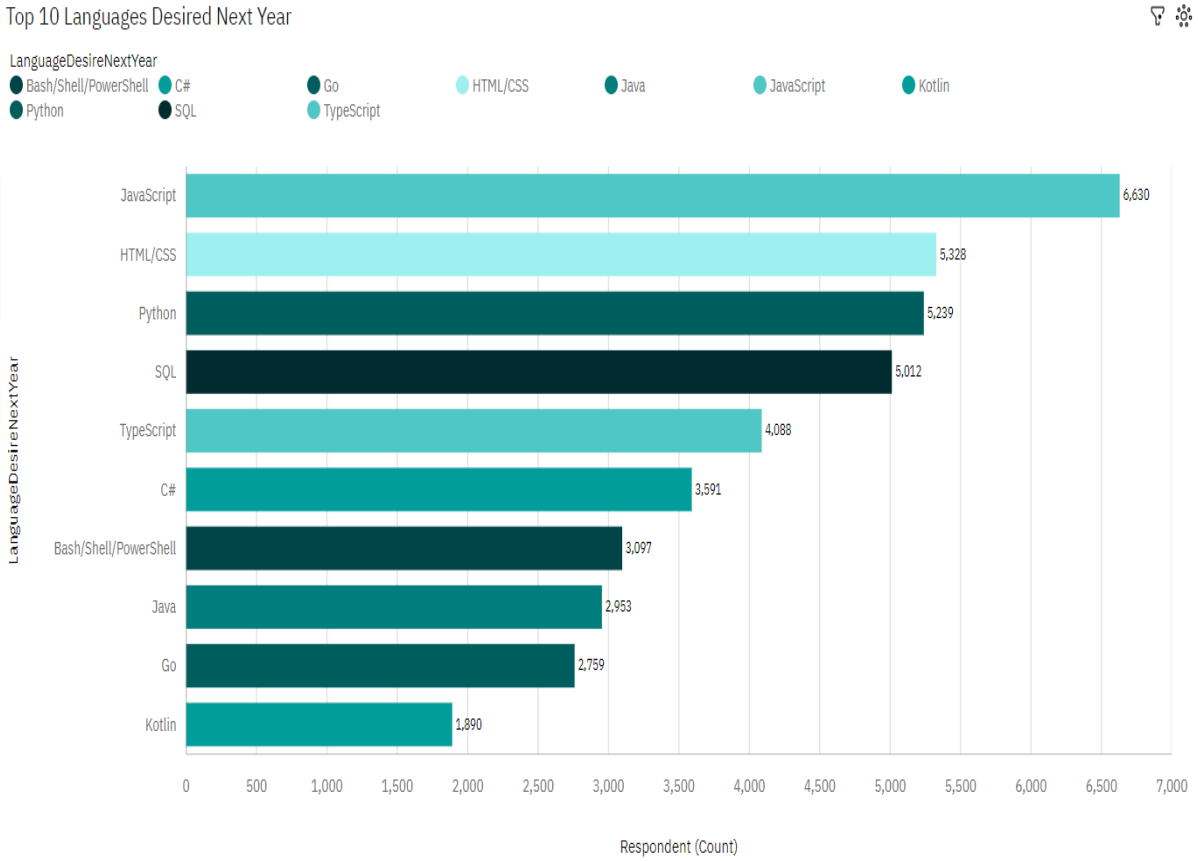
RESULTS

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

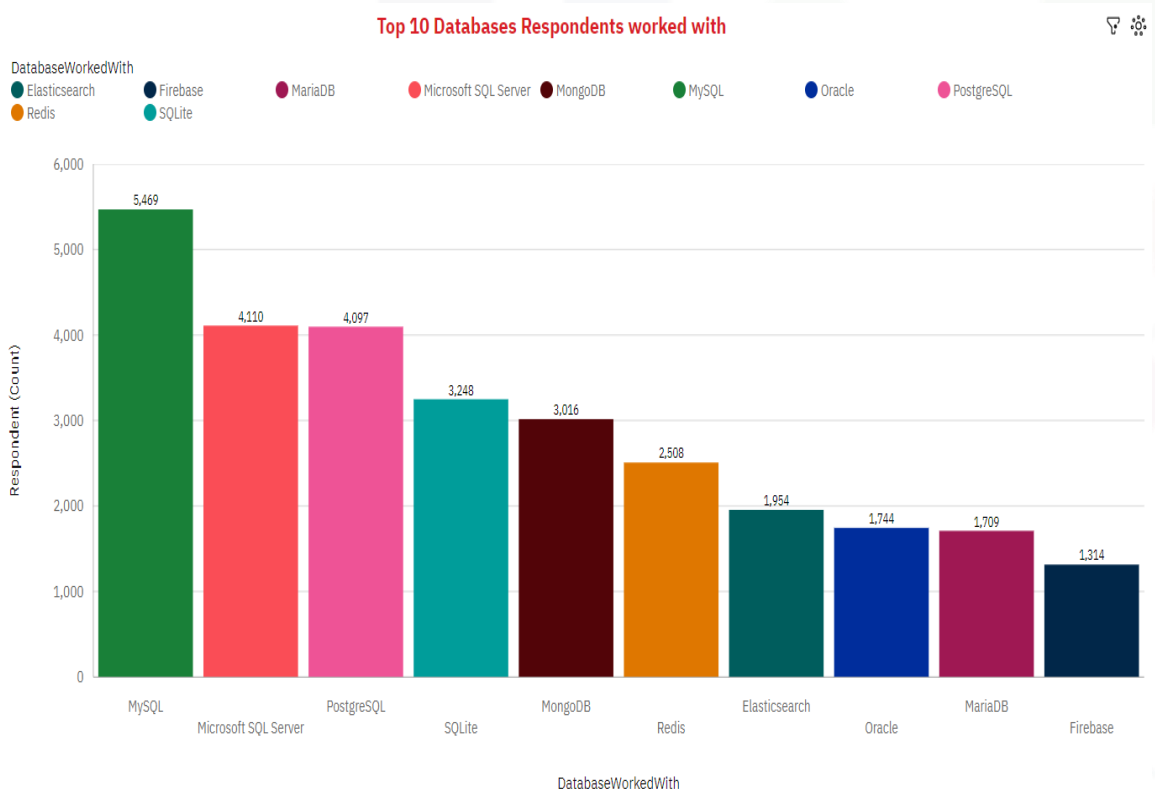
- JavaScript and HTML/CSS remain high in popularity
- TypeScript and python gaining popularity
- C++ loses its place in top 10, replaced by Go and Kotlin

Implications

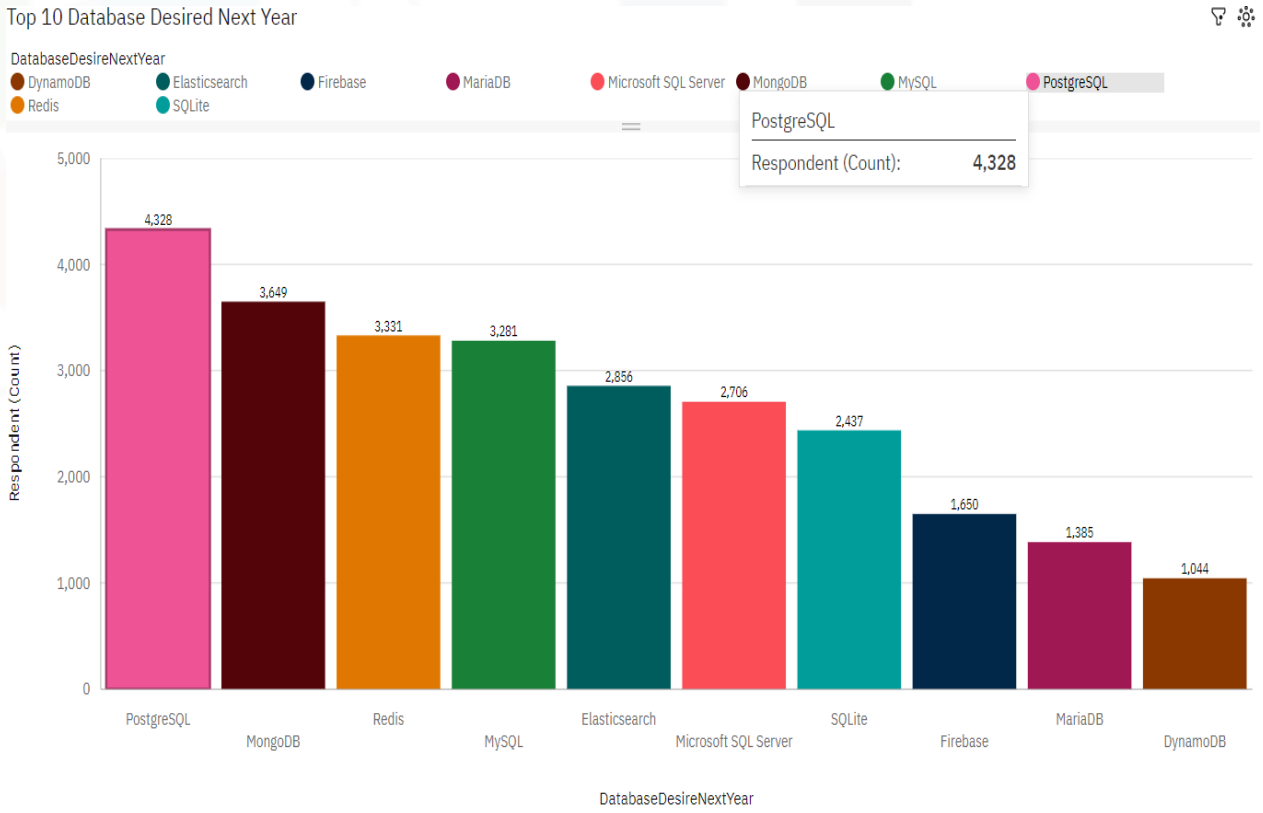
- No new language to take over popularity of JavaScript and HTML/CSS for web developing
- Languages proficient with AI are get more popular
- Older languages are slowly being replaced

DATABASE TRENDS

Current Year



Next Year



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DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- PostgreSQL replaced mySQL securing first place for database desired next year
- SQLite and MS SQL Server dropped in popularity
- MongoDB and Redis rise in popularity securing 2nd and 3rd places respectively

Implications

- Trends are changing as newer databases are replacing old ones
- Companies are reducing the use of a few popular databases
- MongoDB and Redis rise in popularity due to their flexibility, performance and scalability

DASHBOARD

https://github.com/sachpreetk12/JDA_Final_Project/tree/main

DASHBOARD TAB 1

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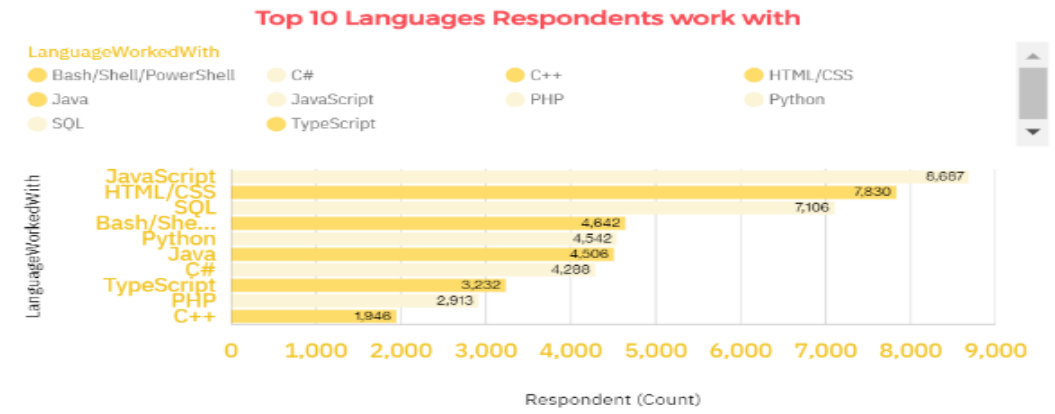
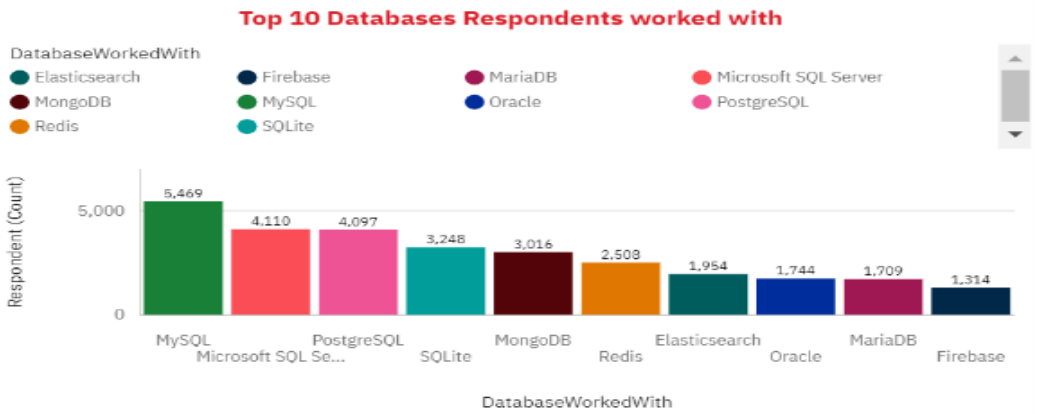
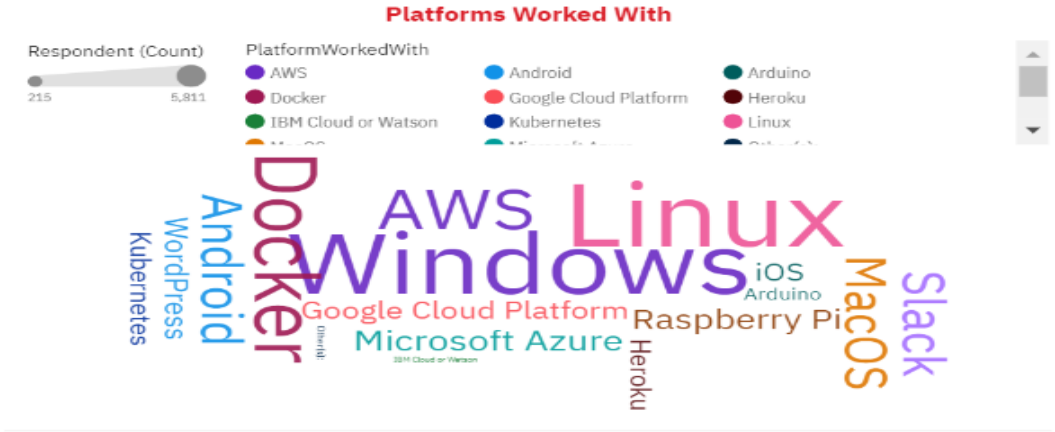
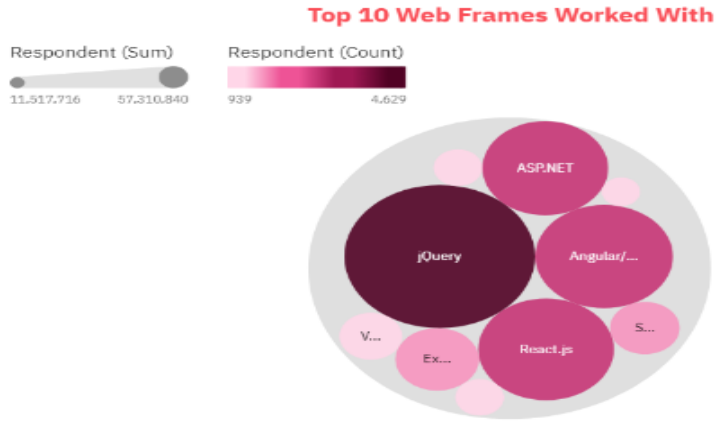
Final Project

Current Technology Usage









DASHBOARD TAB 2

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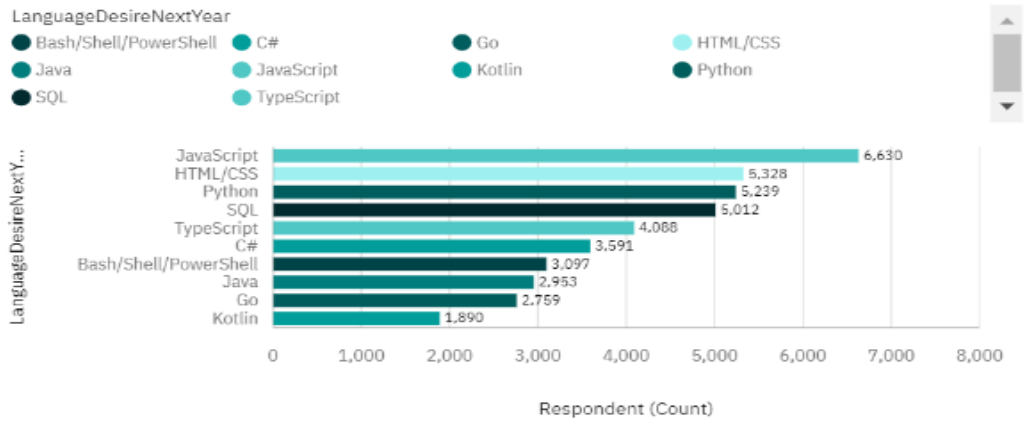
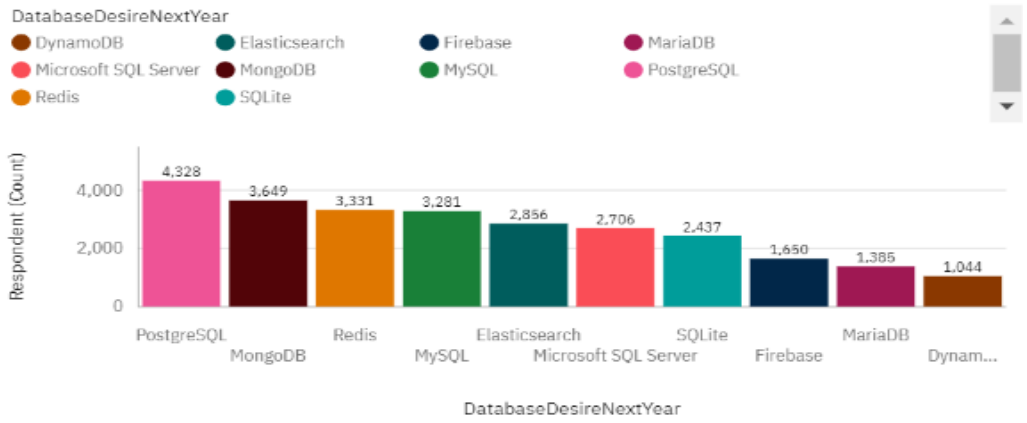
Final Project

Future Technology Trend

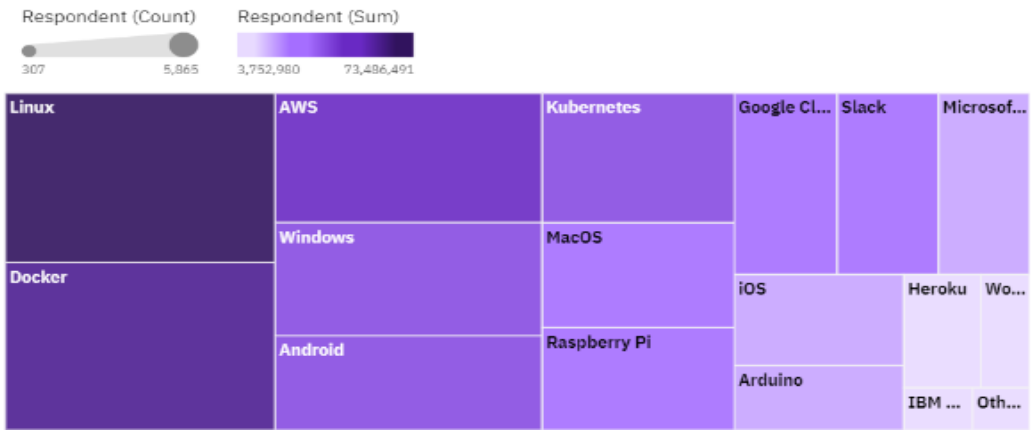
Top 10 Languages Desired Next Year



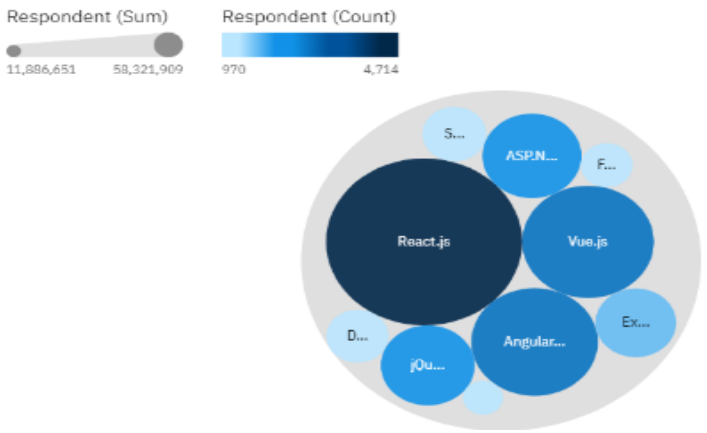
Top 10 Database Desired Next Year



Platform Desired Next Year



Top 10 Web Frames Desired Next Year



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DASHBOARD TAB 3

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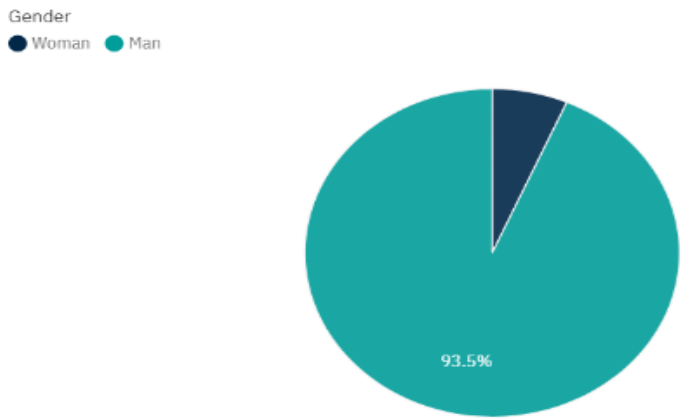
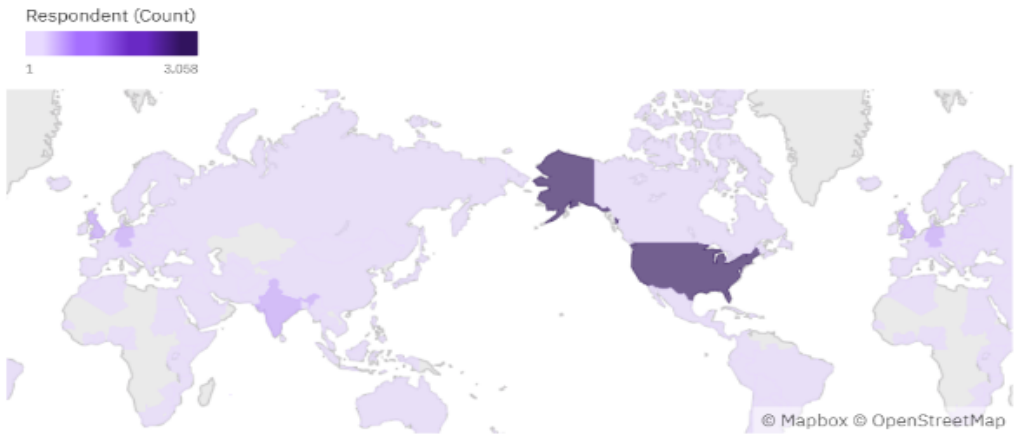
Demographics

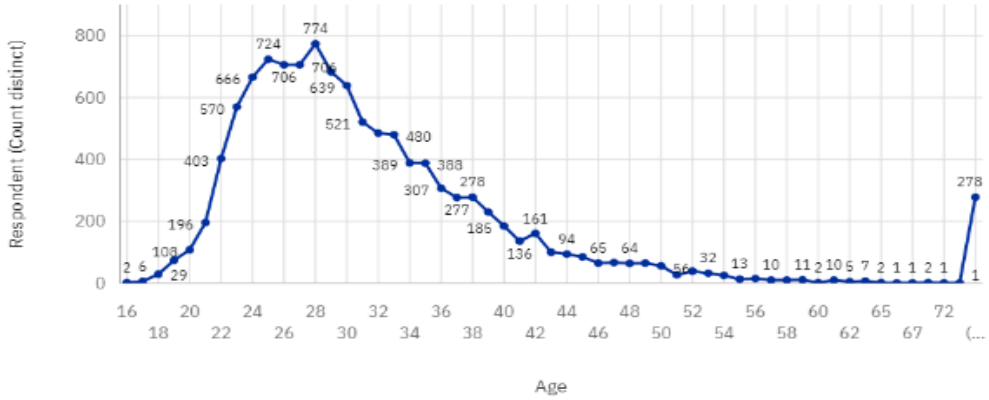
Respondent by Gender



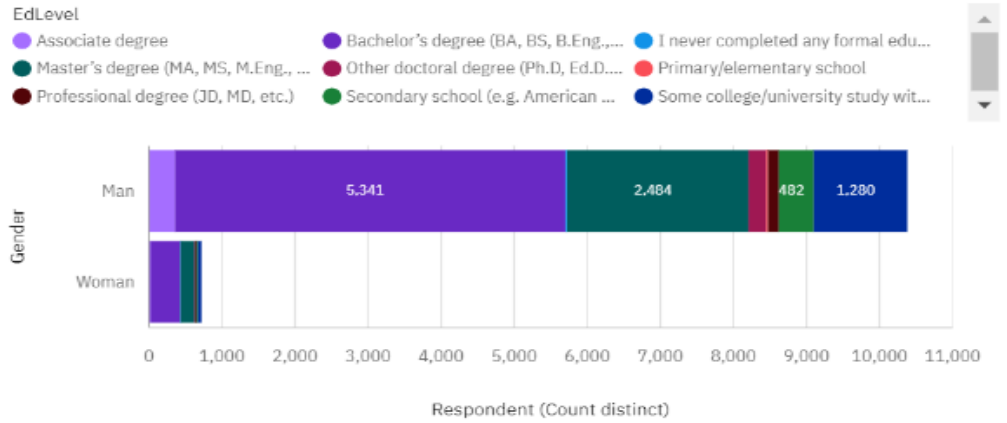
Respondent for Country regions



Respondent by Age



Respondent by Gender classified by Education Level



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DISCUSSION

- Technology Trends worldwide
- Future impacts on changing technologies and services
- Affects of AI on future technology changes

OVERALL FINDINGS & IMPLICATIONS

Findings

- 93.5% IT jobs are occupied by Men and women only hold 6.5%
- Languages and databases like Python, JavaScript, MongoDB are securing top places in popularity
- There are different technology trends in different regions

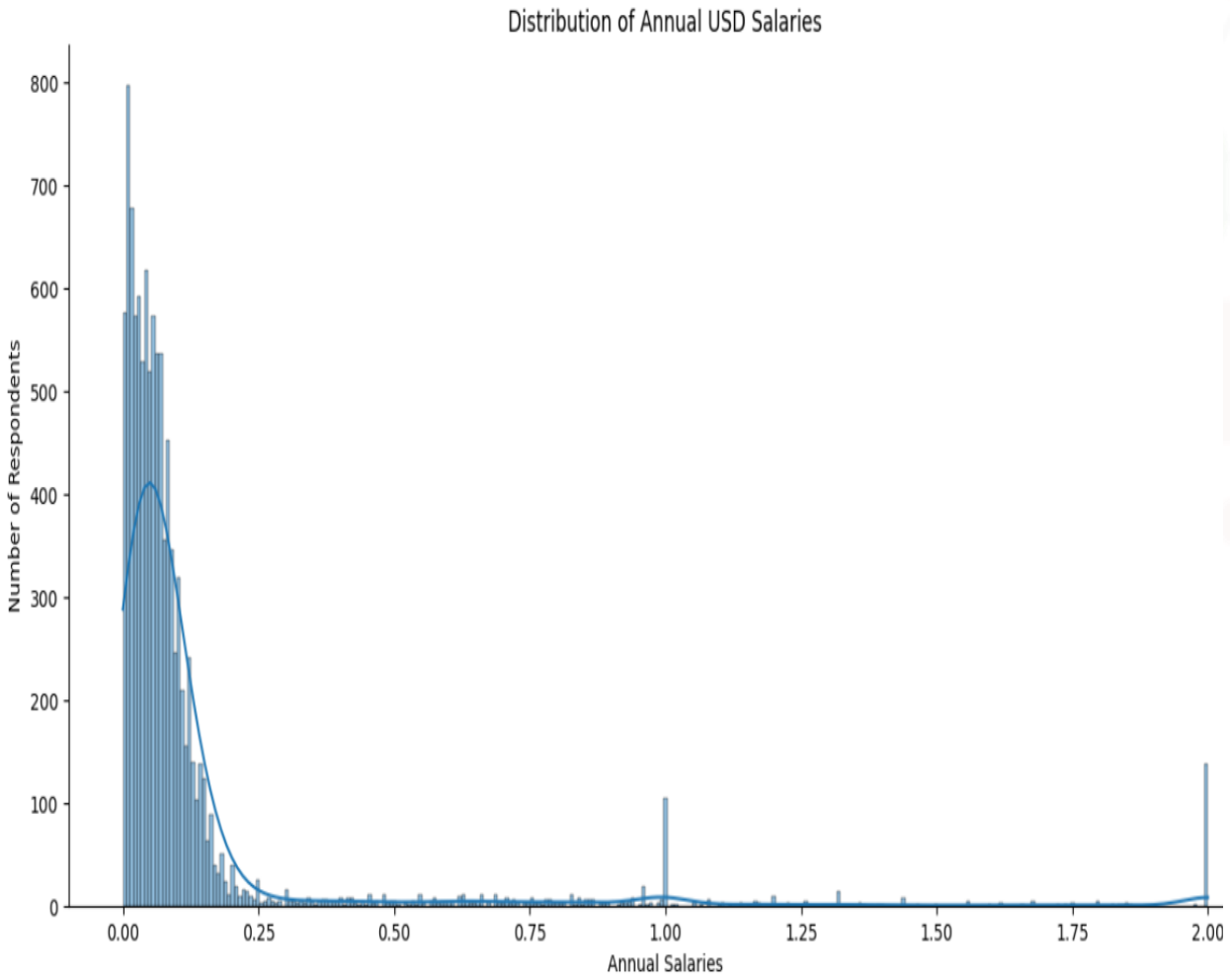
Implications

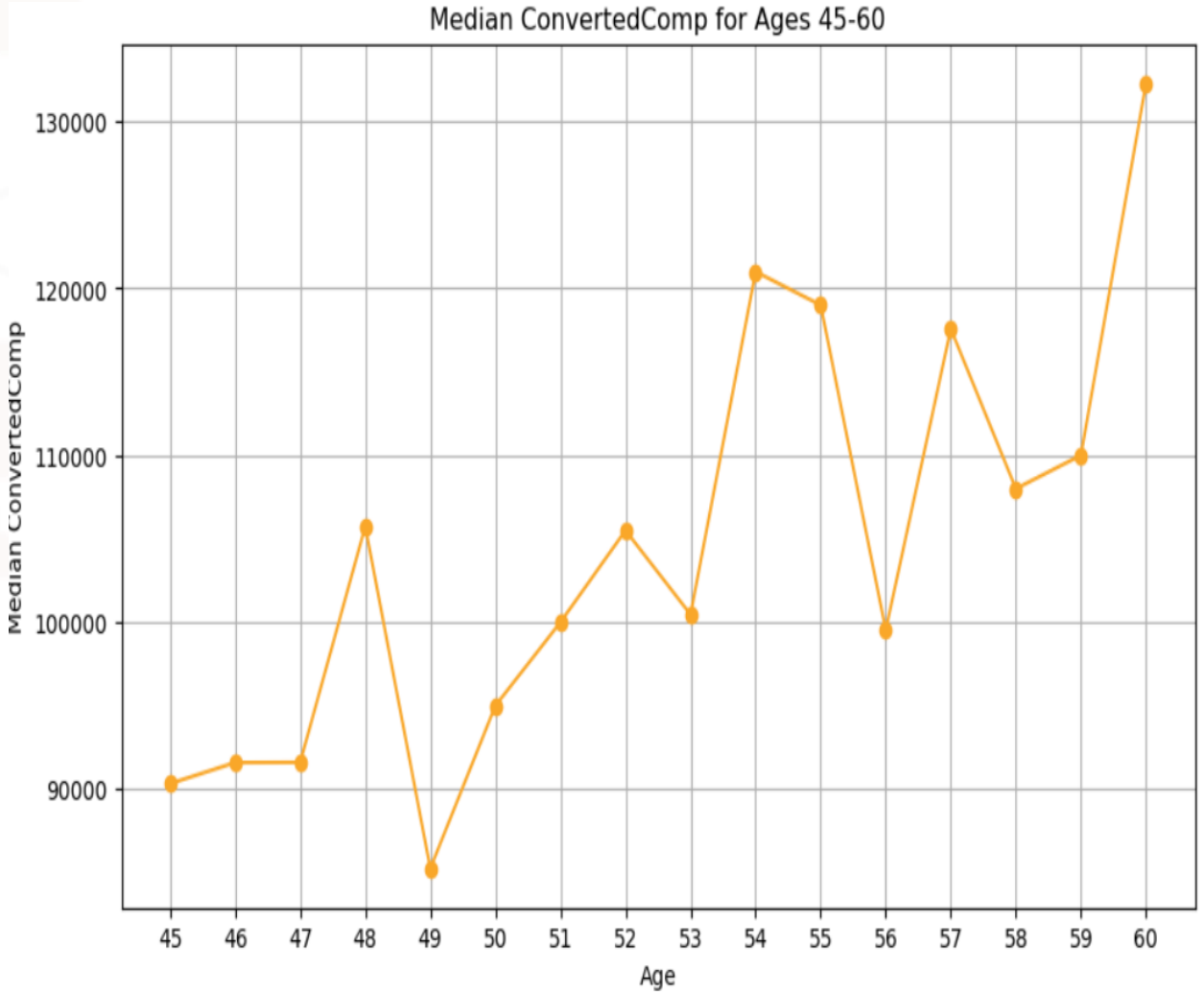
- There is an alarming gender gap in IT field
- Emerging technologies with AI are influencing Trends in IT industry
- Various countries need to keep up with ever changing technology

CONCLUSION

- IT industry is changing at a fast pace since introduction to AI
- A variety of characteristics can be found in Developers' hobbies, education, age
- Younger developers tend to work more and overtime than older ones
- Women in IT field are still significantly less than men

APPENDIX





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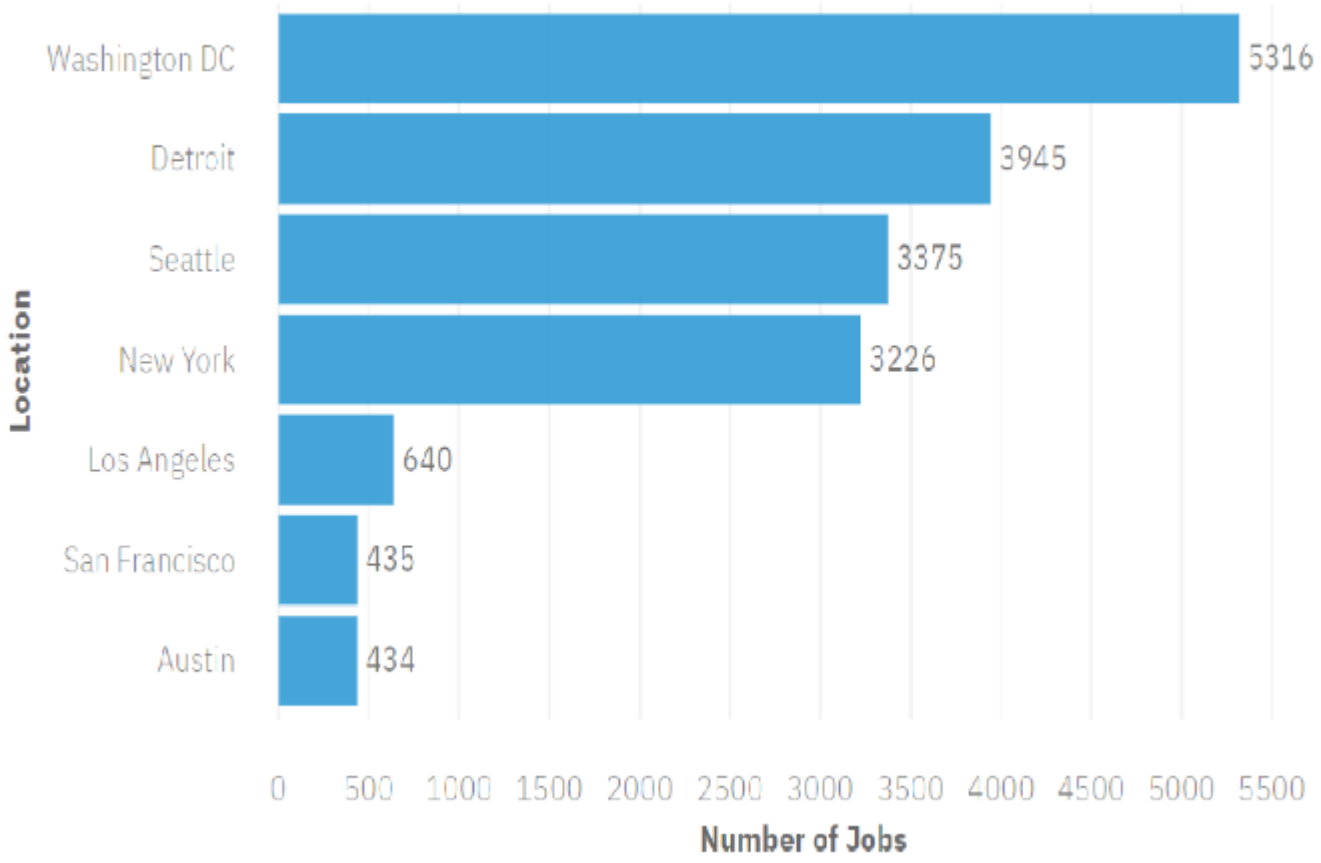
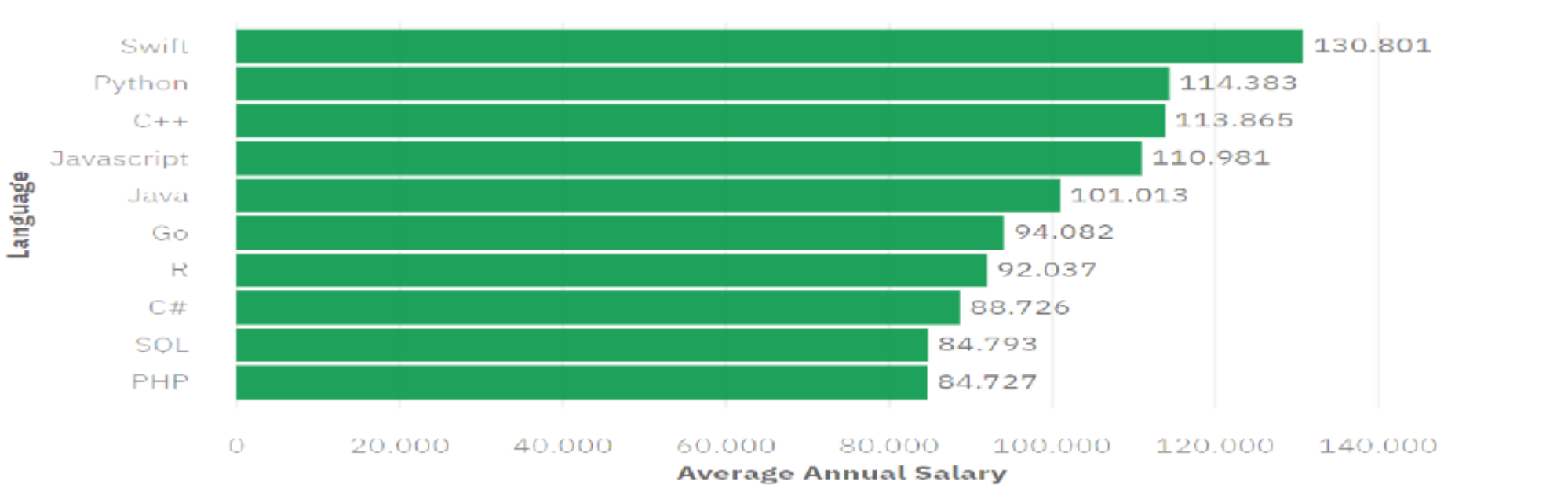
JOB POSTINGS

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.