



Current and Emerging Technology Trends

A Presentation by:

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30th June, 2024

OUTLINE

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EXECUTIVE SUMMARY



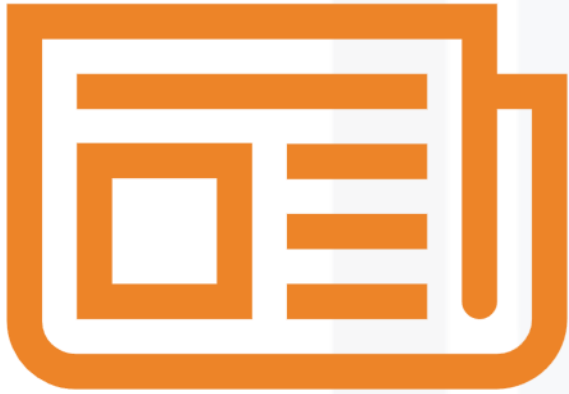
- This report uses data analytics to identify trends in programming languages, databases, and other technologies, along with the demographics of technology professionals.
- Data sources include the Stack Overflow survey, IBM site, and GitHub job postings. The data was collected, cleaned, analyzed, and visualized using Python
- JavaScript is the most popular programming language and is expected to remain so. MySQL currently leads in database usage, but PostgreSQL is projected to see higher future demand.

INTRODUCTION



- This study utilizes data analytics to identify current and projected trends in the demand for programming languages, databases, platforms, and web frameworks.
- It addresses the following areas:
 - Current and future demand for programming languages
 - In-demand and future demand for databases
 - Most popular web frameworks
 - Demographics of Technology professionals
- The target audience includes IT professionals, HR managers, and those interested in understanding the top IT skills that will remain relevant in the future.

METHODOLOGY



- Data on Job availability and technology was gathered using Github jobs API
- Programming Languages and yearly wages were scraped from the IBM website, also data was downloaded from the 2019 Stack Overflow Developer Survey
- Python was used for data cleaning, exploratory data analysis to examine the data for possible correlations, outliers, data normalization, determine distribution
- Data Visualization was done using Python and dashboards were created using IBM Cognos Analytics



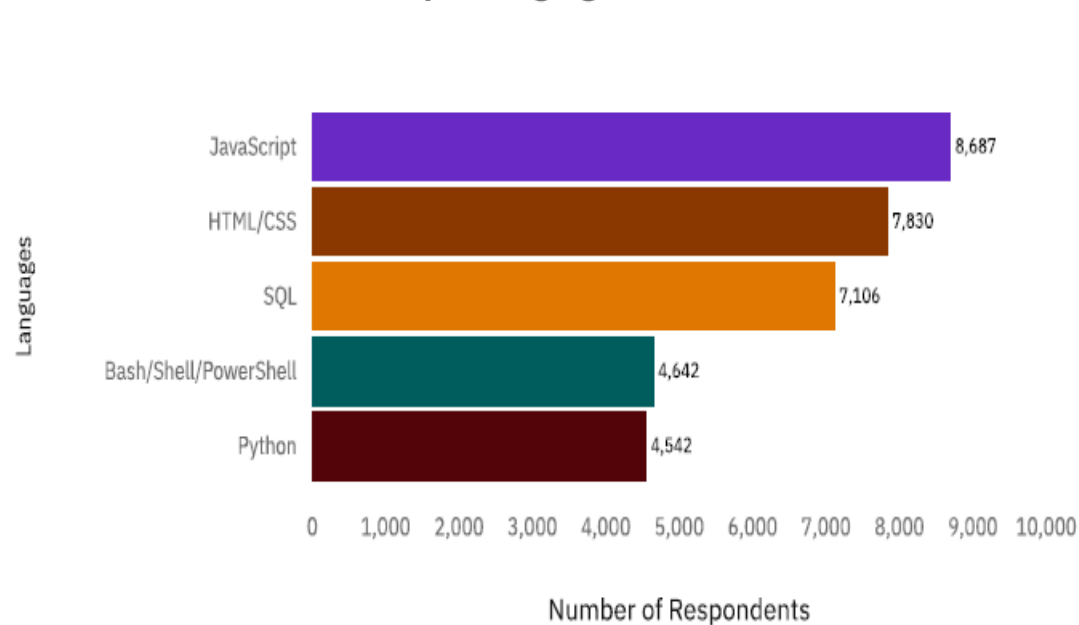
RESULTS

PROGRAMMING LANGUAGE TRENDS

Current Year

Tab 1

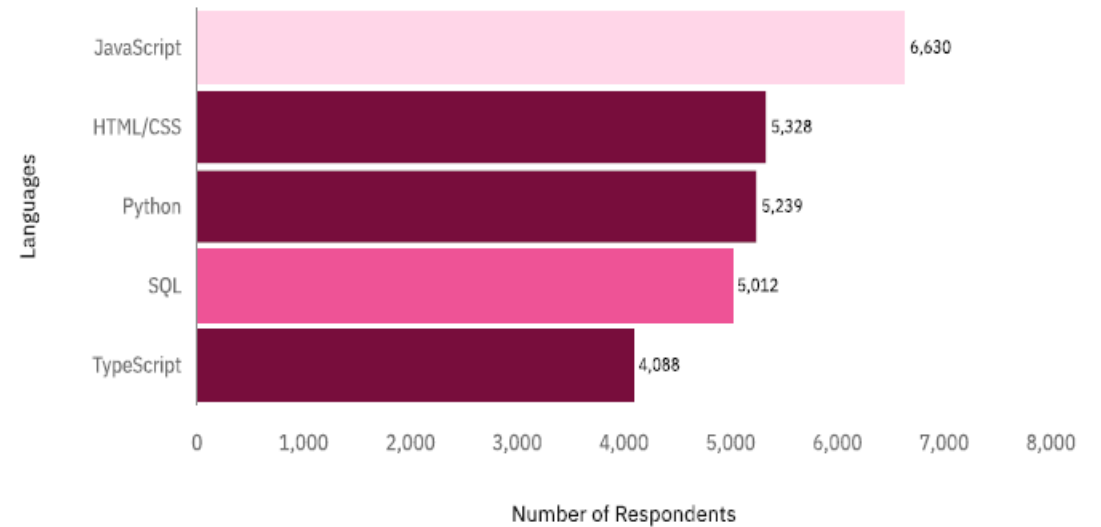
Top 10 Languages Used



Next Year

Tab 1

Top 5 desired language



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Javascript, HTML/CSS, SQL, Powershell & Python are currently the 5 programming in highest demand (in order of mention)
- Javascript, HTML/CSS, Python, SQL and Typescript will be in high demand next year
- Python will have higher demand than SQL next year, Typescript will have high demand next year and powershell will not be in demand next year

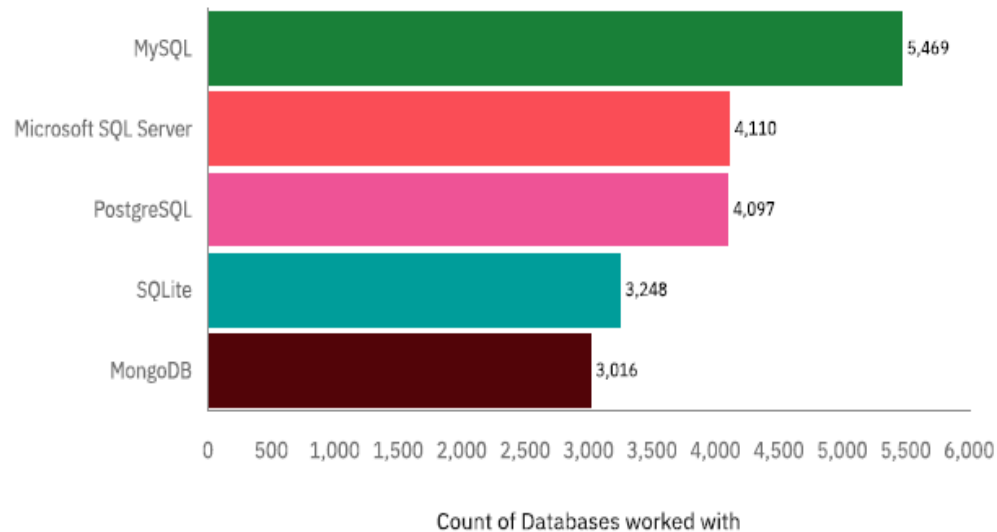
Implications

- Javascript and HTML are used for web development. They are currently top most in-demand and will still be in demand next year. This means that web development is and will still be relevant in the future
- Python is gaining more traction because of high demand in AI & ML skills
- Typescript is an open source PL and has extended features of Javascript. This could be a possible reason why there will be a higher demand for it next year

DATABASE TRENDS

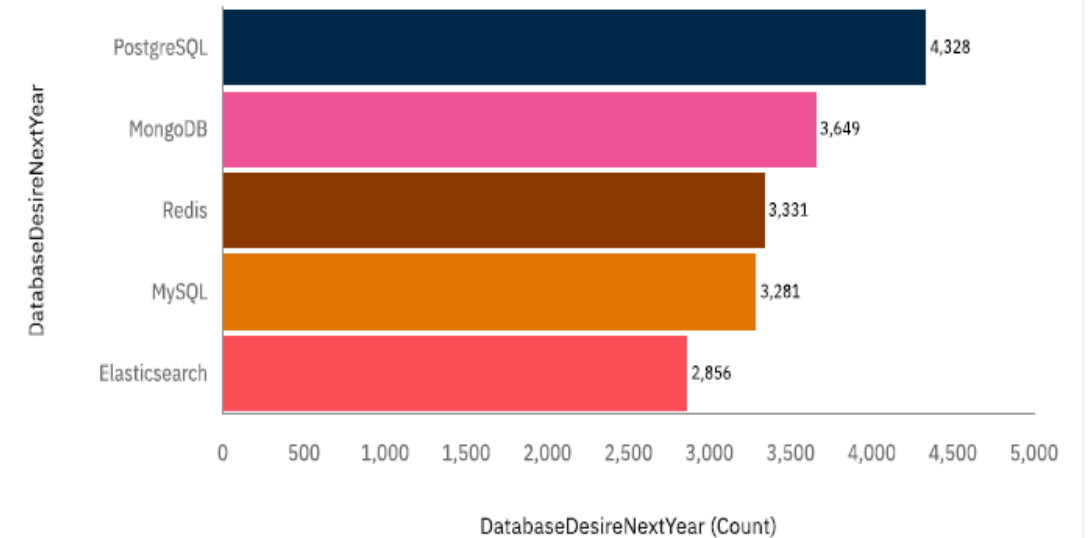
➤ Current Year

Top 5 Databases worked with



➤ Next Year

Top 5 Desired Database



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL, Microsoft SQL Server, Postgresql, SQLite and MongoDB are currently in high demand
- Postgresql, MogoDB, Redis, MySQL and Elasticsearch will be in high demand next year
- Redis and Elasticsearch are relatively new tools that will become more useful and popular in the near future

Implications

- Elasticsearch and Redis are possibly gaining more traction because they are improved versions of the older databases.
- Oracle is fast loosing relevance. It is not among the top 5 databases currently or in the future
- Databases that are Open-source are more preferred

DASHBOARD



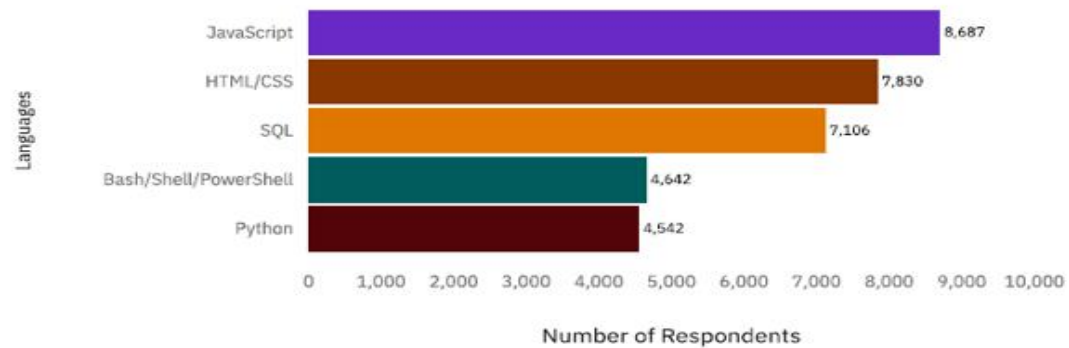
< <https://github.com/Iddydata/Iddy/tree/main> >

DASHBOARD TAB 1

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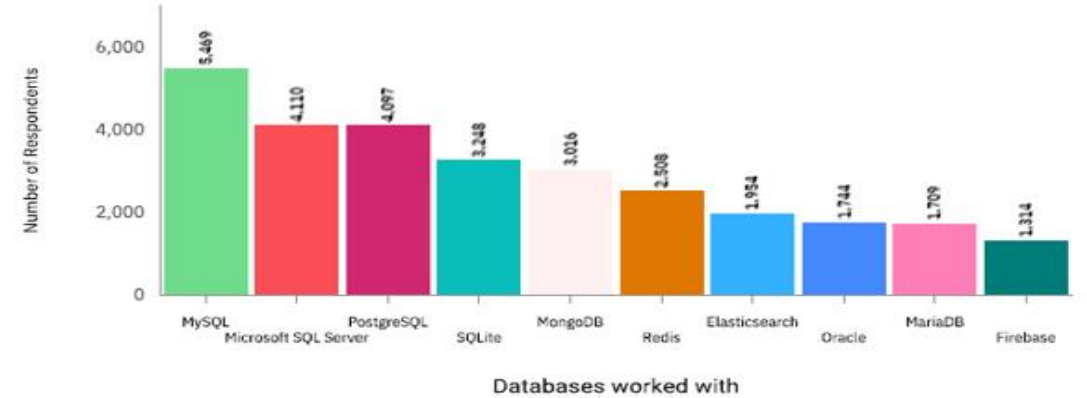
Tab 1

Top 10 Languages Used



Current Technology Usage

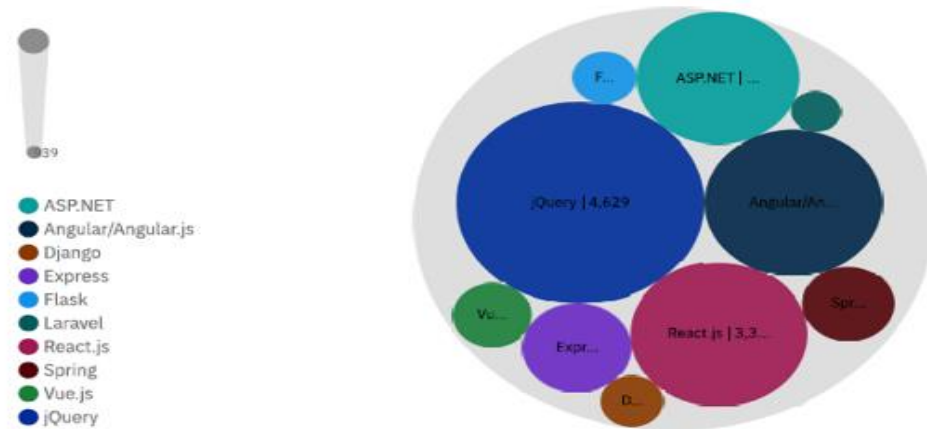
Top 10 Databases worked with



Platforms mostly used



Top 10 Webframes Used

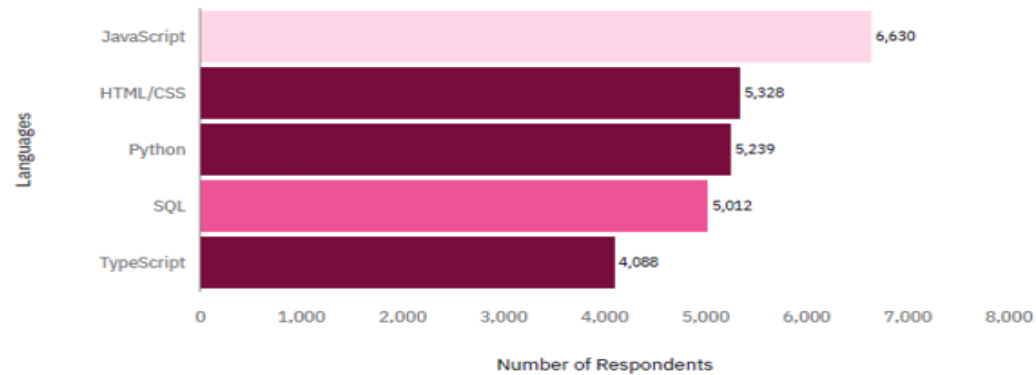


DASHBOARD TAB 2

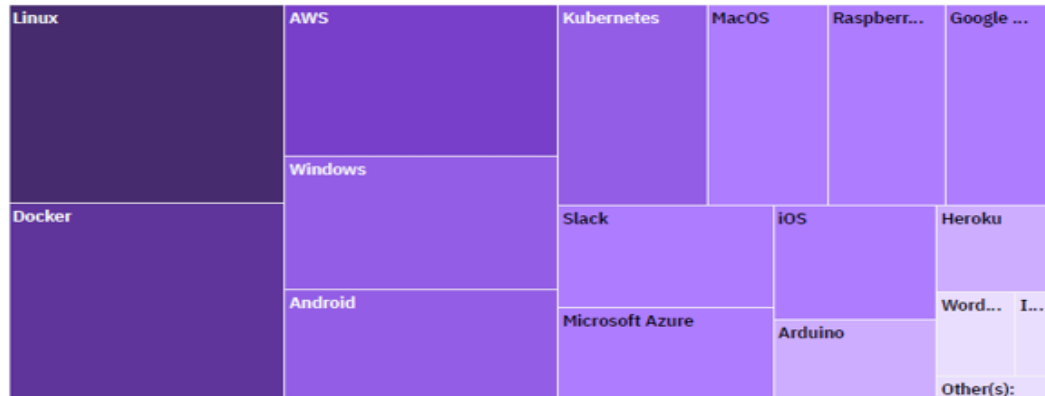
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Tab 1

Top 5 desired language

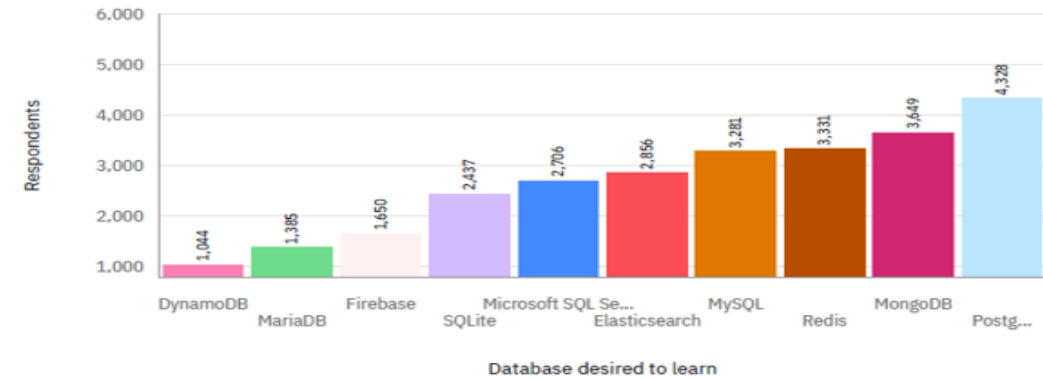


Platform Desired Next Year



Future Technology Trend

Top 10 Database desired to learn next year



Top 10 Webframes desired Next year



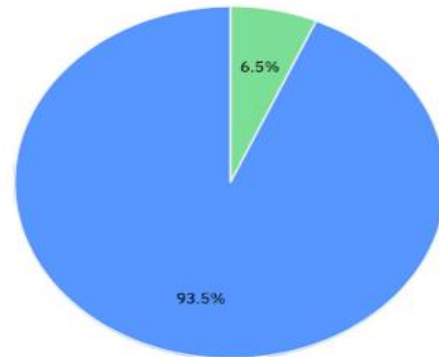
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DASHBOARD TAB 3

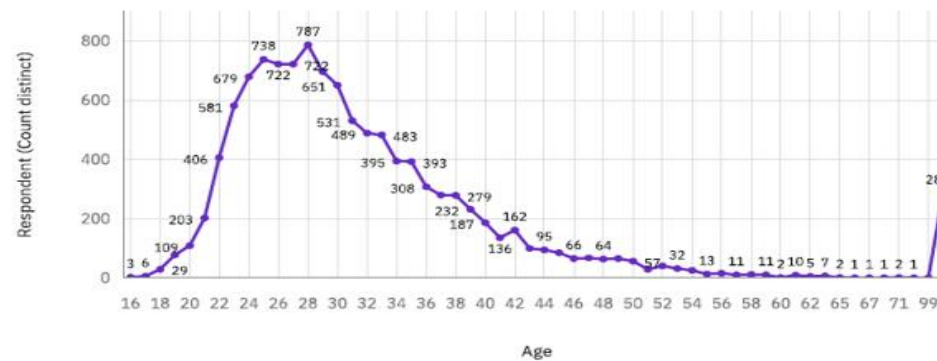
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Tab 1

Respondents by Gender



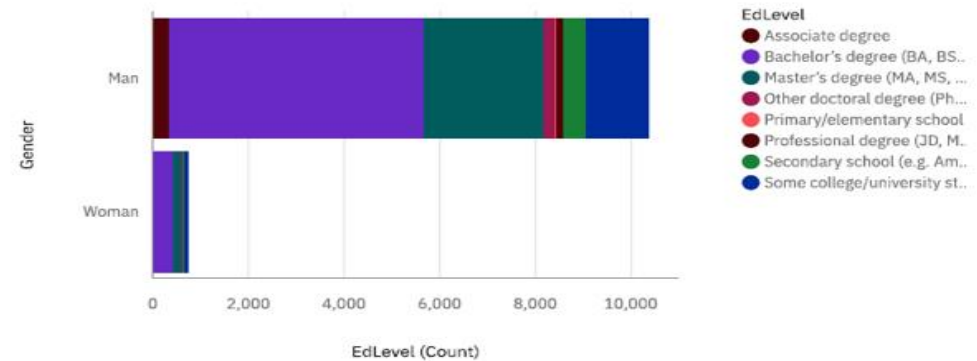
Respondent by Age



Demographics



Formal Education Level by Gender



DISCUSSION



Low Female Participation: The tech sector has a low participation rate of females.

Age Factor: Most active tech professionals are aged 20-28, with a sharp decline in participation after this age range.

Education Requirements: A Master's or doctorate degree is not a requirement for a career in tech.

Necessity of Upskilling: Upskilling is crucial in the tech sector, especially in developing regions.

OVERALL FINDINGS & IMPLICATIONS

Findings

- Most people in the IT field have a Bachelor's degree.
- Web development languages are currently the most popular and in-demand tools in IT.
- The tech sector is predominantly composed of young people under 40 years of age.

Implications

- Education is a factor for success in the IT industry
- Web Development is still a very lucrative skill to learn
- Less developed countries need more access to tech trainings and education.

CONCLUSION



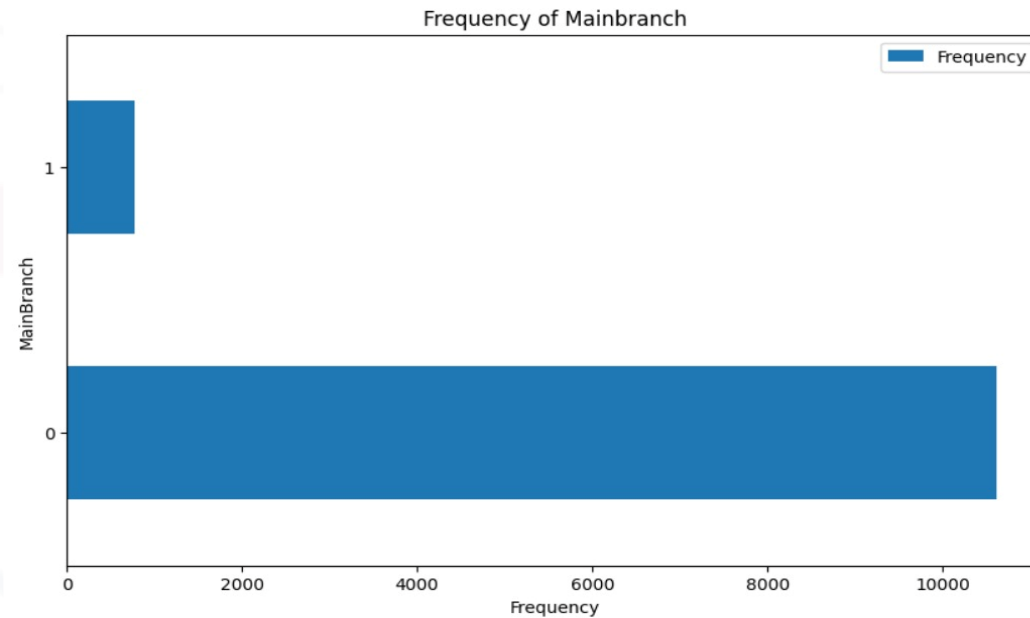
- Staying updated with the latest technologies and trends is essential for success in the tech sector.
- Lifelong learning and upskilling are crucial to remain competitive and relevant in the industry.
- Encouraging diverse participation can lead to a more innovative and inclusive tech environment.

APPENDIX



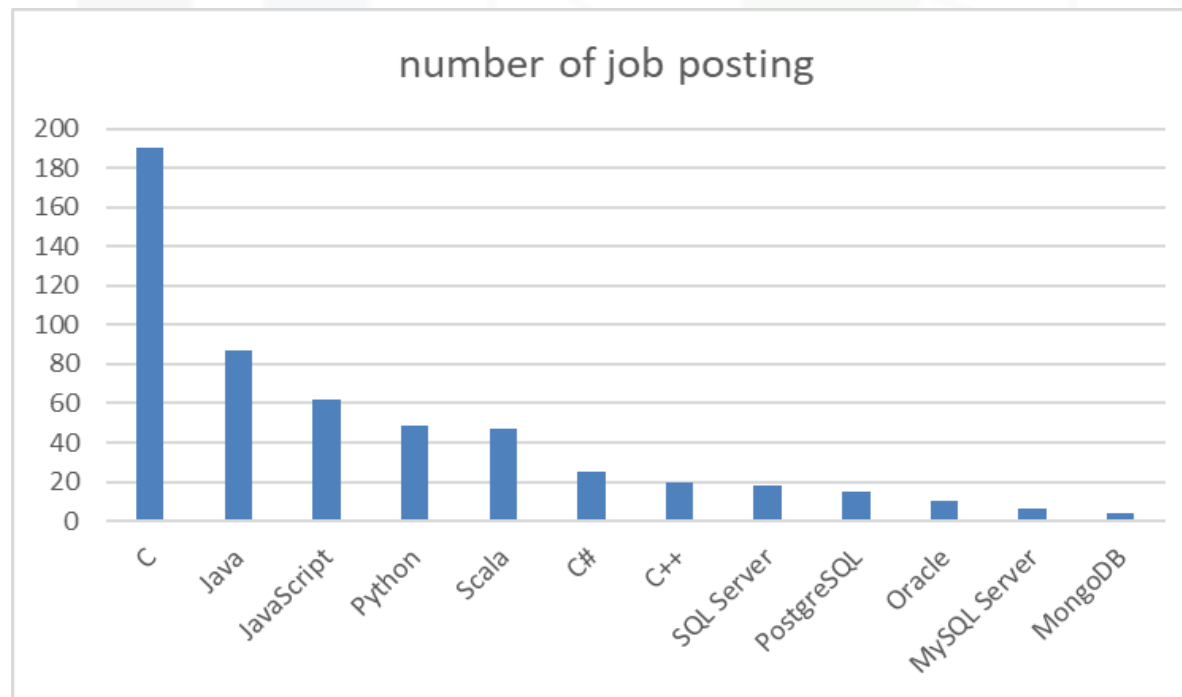
	MainBranch	Frequency
0	I am a developer by profession	10618
1	I am not primarily a developer, but I write co...	780

```
bar_df.plot(kind = 'barh', figsize=(10,6))  
plt.xlabel('Frequency')  
plt.ylabel('MainBranch')  
plt.title('Frequency of Mainbranch')  
plt.show()
```



JOB POSTINGS

A Bar chart showing job posting data collected from Github API



POPULAR LANGUAGES

Bar chart displaying popular languages and their average annual salary. The data was collected through web scraping the Github jobs data and saved in a csv file.

