Exploring the latest trends in Technology

(An Overview of the 2019 Stack Overflow Developer Survey)

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OUTLINE

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- Discussion
  - Findings & Implications
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EXECUTIVE SUMMARY

- The survey results show that the majority of respondents are developers who work with JavaScript, HTML/CSS, and SQL languages.
- The survey had a higher participation rate from men than women:
  - Over 93% of respondents identifying as male
  - Most respondents were in their mid-20s to early 30s
  - Most respondents came from North America, Europe, and Asia.
  - Most respondents have Master's and Bachelor's degrees.
- There is a growing interest in emerging technologies such as machine learning and blockchain.

INTRODUCTION

- I am excited to present to you the key findings of our recent survey on technology usage and trends conducted in 2019.
- The data indicates that Stack Overflow saves a developer 30 to 90 minutes of time per week!
- I will present the key findings from our survey:
  - the top languages, databases, platforms, and frameworks that are currently in use
  - the technologies that respondents expressed a desire to learn in the near future.
- I will provide demographic information from the survey, including gender and age distribution of respondents.
- The survey will show that developers come from a range of different educational backgrounds.

METHODOLOGY

- For this presentation, I utilized the survey within IBM Cloud Pak for Data with embedded Cognos dashboard tool for visualizations.
- The survey was designed to capture information on current technology usage, desired future technologies, demographics, and other information.
- The survey collected responses from around 90,000 developers in 179 countries.
- The data from last year's survey was analyzed to identify commonly used technologies. There was a research the trending technologies in tags on Stack Overflow:
  - prioritizing popular and fast-growing technologies
  - considering smaller or shrinking technologies

RESULTS

- The dashboards contain four graphs each that provide insights into the top technologies currently being used by developers based on the 2019 Stack Overflow Developer Survey results.

- I used several types of visualizations: bar charts, column charts, word cloud graph, hierarchical chart, heatmap, and other.

- The bar graph utilizes bars and columns to represent the frequency of each language and datasets, with the length and color of the bars/columns being used to distinguish between them.
- The heatmap uses a color gradient to represent the intensity of the response frequency for each platform, with darker colors indicating higher frequency.
- The word cloud titled "Top platforms worked with" shows the most commonly used platforms by developers. The size of each word in the cloud is proportional to the frequency of the platform being used.
- The hierarchical chart utilizes a hierarchy to represent the relationship between each web framework, with the length and color of the bars being used to distinguish between them.

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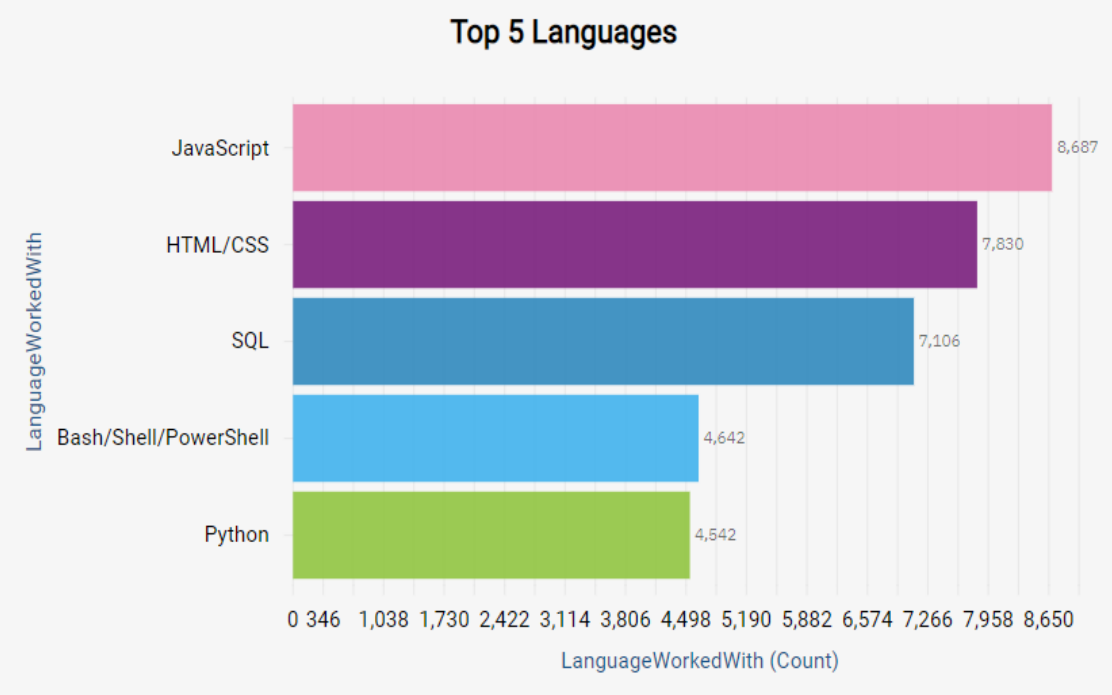
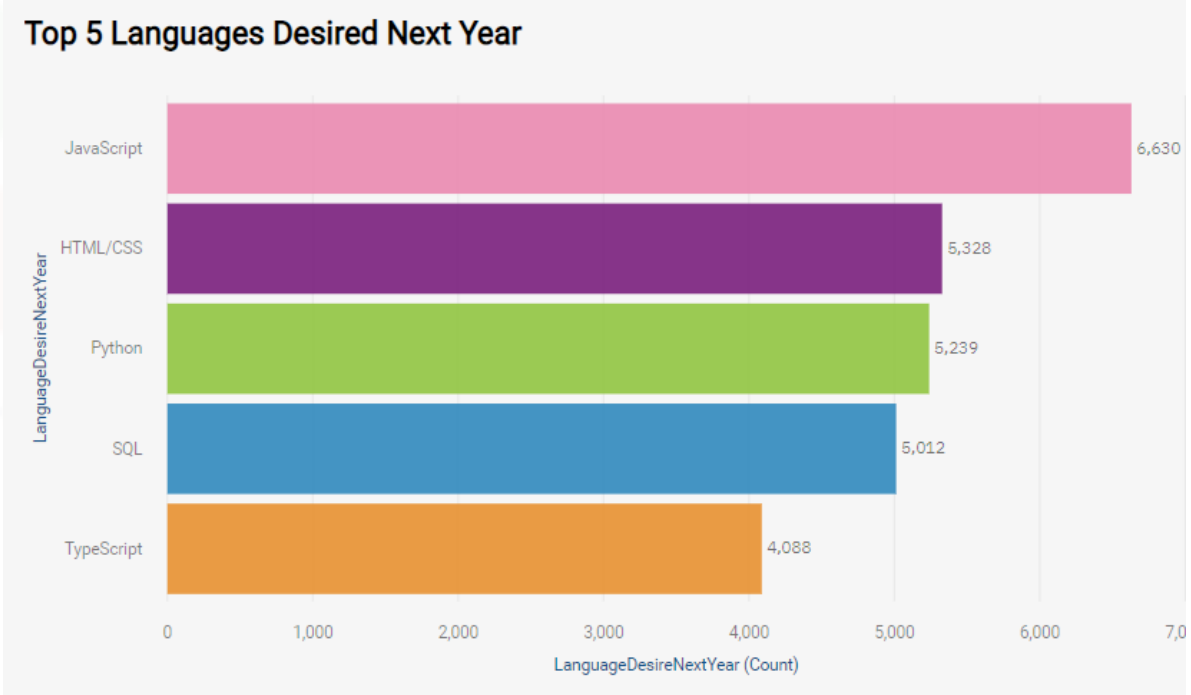
PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

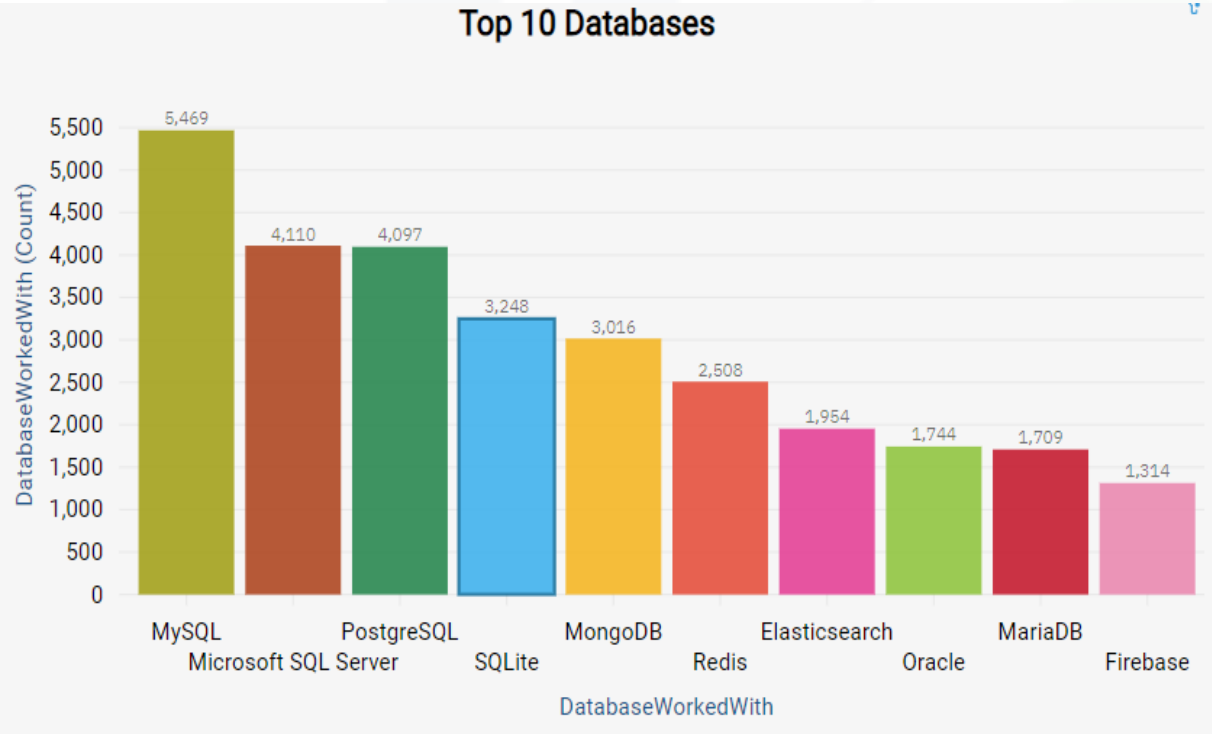
- The most commonly used programming language among respondents was JavaScript. This was followed by HTML/CSS and SQL. Other popular programming languages included Bash and Python.
- Looking ahead to the next year, the top 5 languages that respondents expressed a desire to learn are JavaScript, HTML/CSS, Python, SQL, and TypeScript.
- Python's usage has increased significantly, while the use of JavaScript has decreased slightly.

Implications

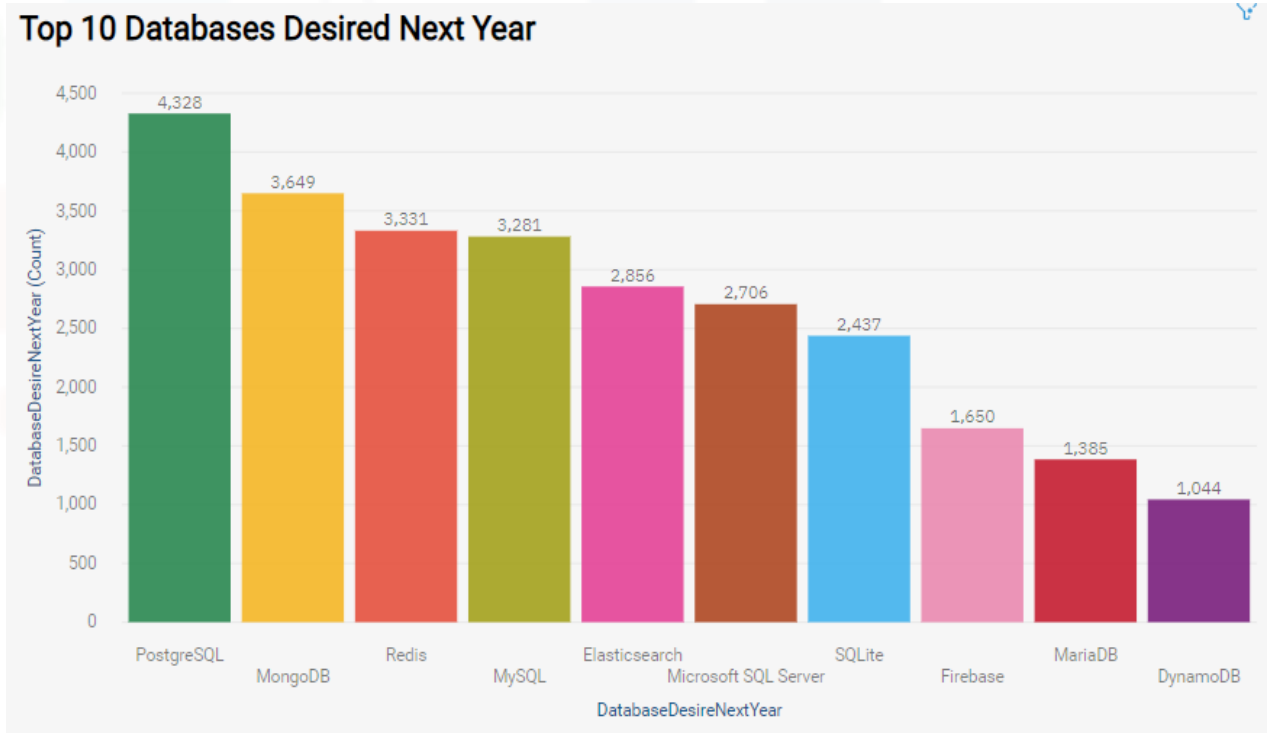
- Python is becoming an increasingly important language in the tech industry.
  - Developers may want to focus on learning Python in order to remain competitive in the job market
  - Employers may want to consider investing in Python training for their employees
- The decrease in JavaScript usage may suggest that developers are looking for alternatives to the language
- These findings have important implications for education and training programs, as well as for employers seeking to attract and retain talented developers.

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

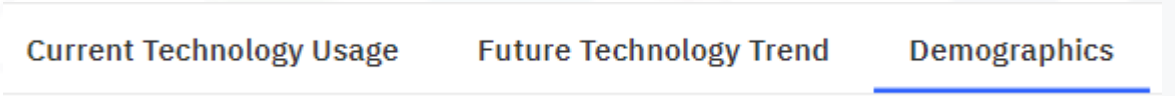
Findings

- Among the databases used by respondents, MySQL was the most popular, followed by Microsoft SQL Server and PostgreSQL.
- Looking ahead to the next year, PostgreSQL, MongoDB, Redis, MySQL, and Elasticsearch are the top 5 databases that respondents expressed a desire to learn.
- Interestingly, there has been a shift in usage from MySQL to PostgreSQL and MongoDB, which have gained popularity over the last year.

Implications

- Based on the findings, PostgreSQL and MongoDB are becoming increasingly popular databases among developers.
  - Employers may want to consider incorporating these databases into their technology stack
  - Developers may also want to consider focusing on learning these databases to remain competitive in the job market.
- The usage of MySQL has slightly decreased, while the use of Elasticsearch has significantly increased. This suggests that developers are looking for more specialized databases for their projects.
- These findings highlight the importance of staying up-to-date with database trends in the industry to make informed decisions about technology adoption and training programs.

DASHBOARD



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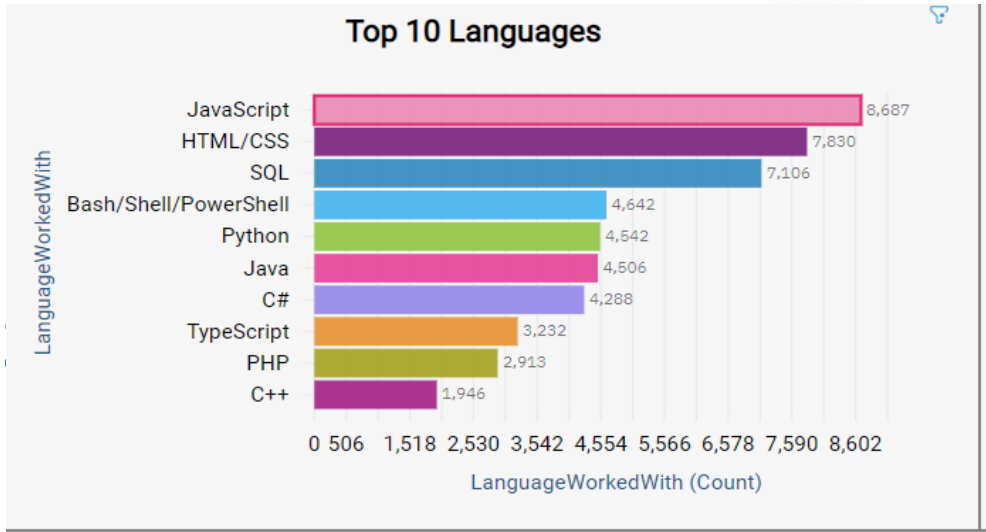
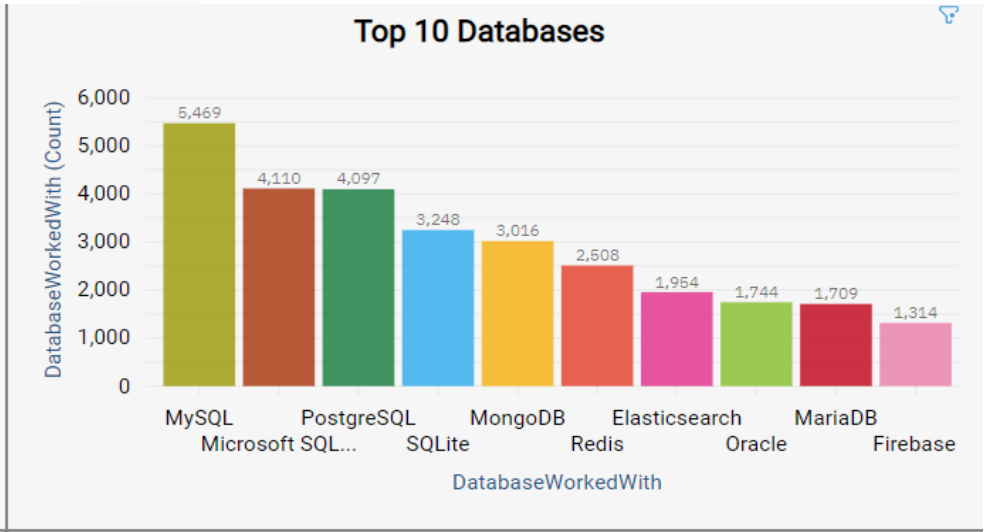
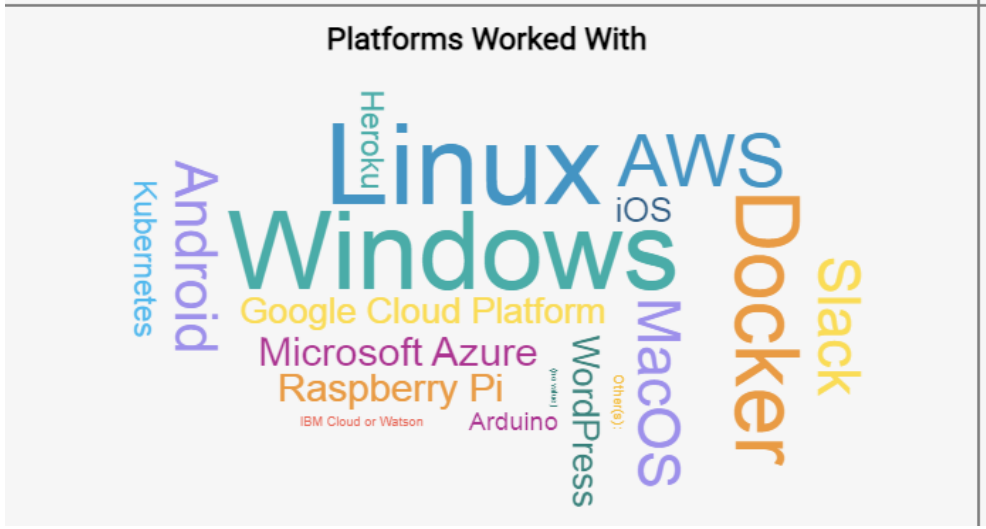
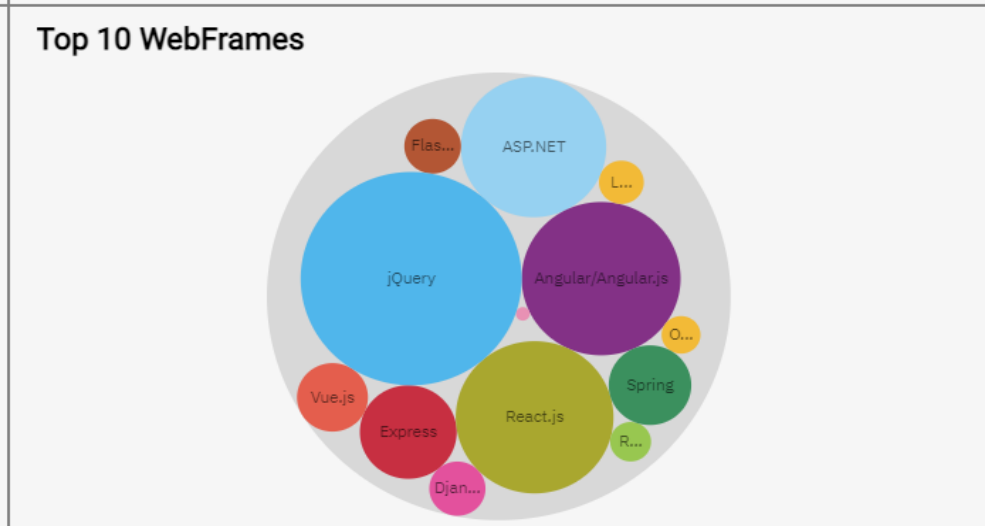
DASHBOARD TAB 1









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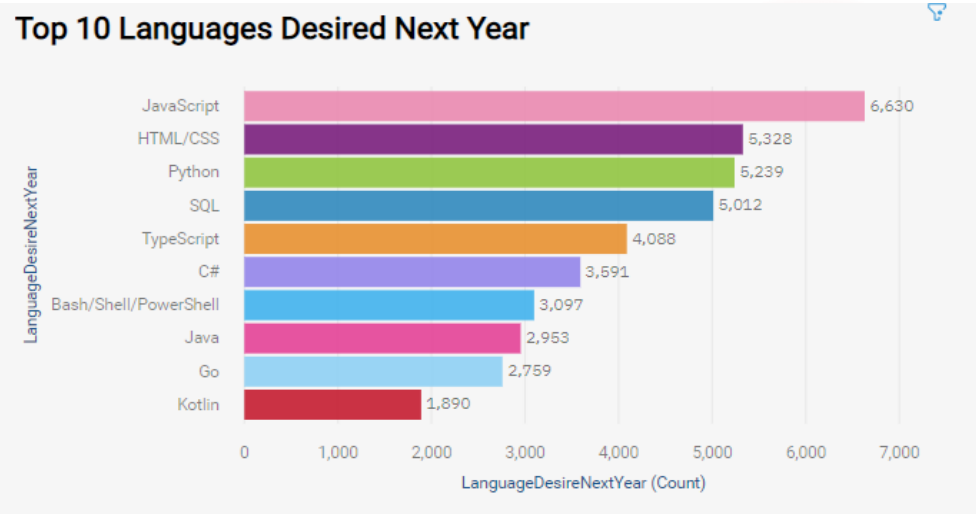

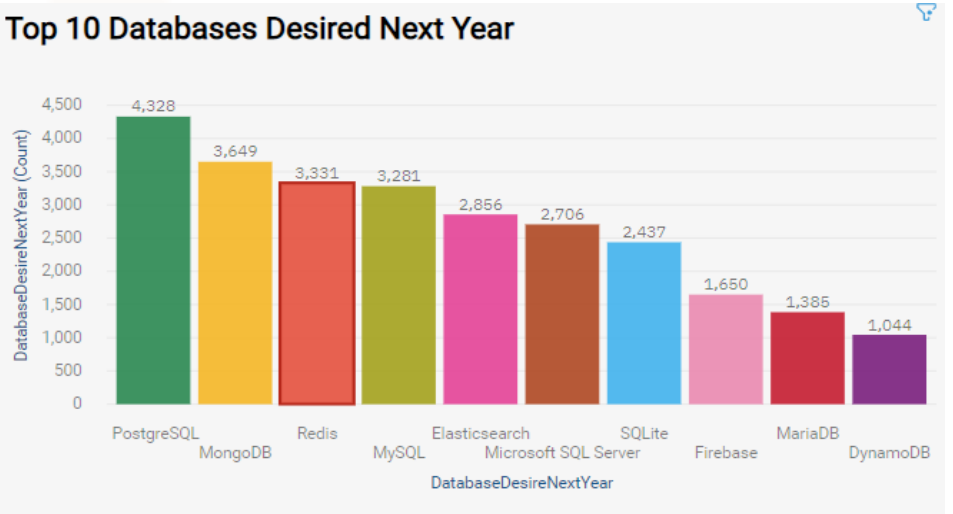

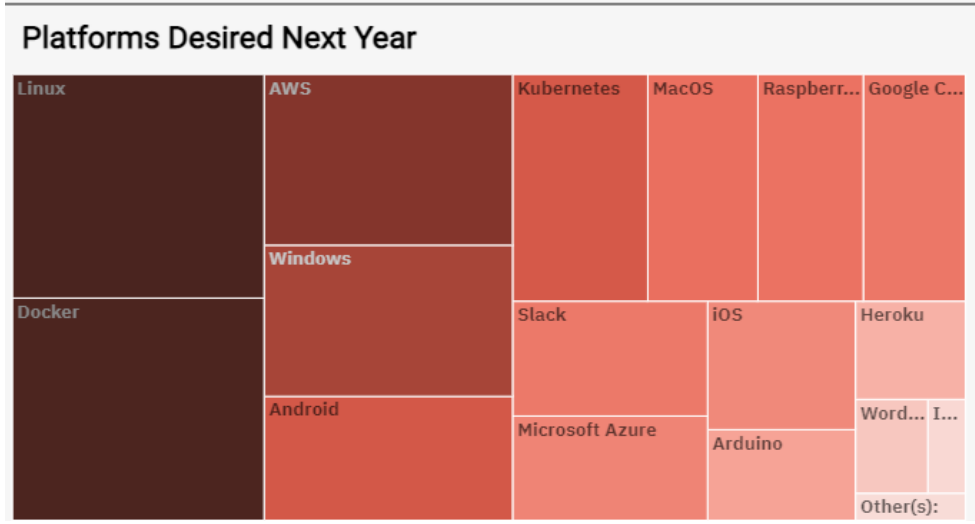

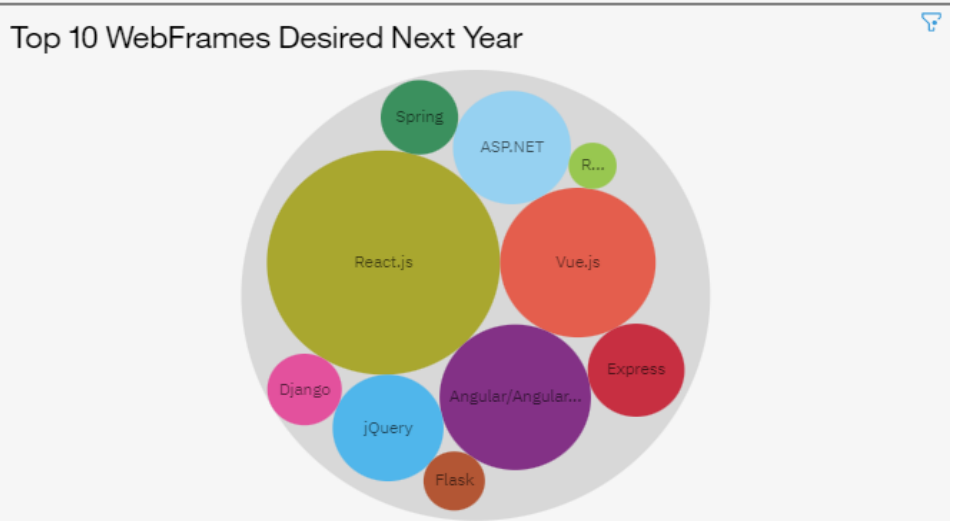

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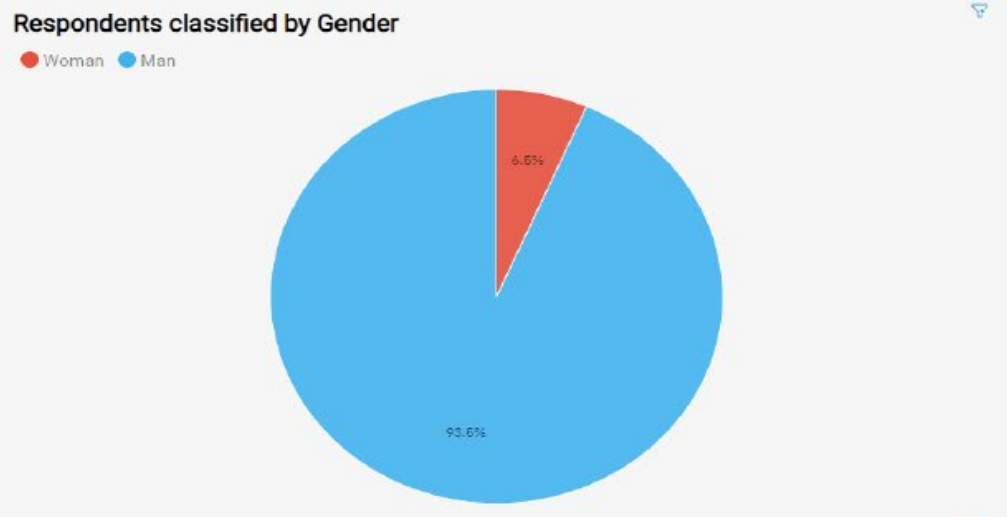
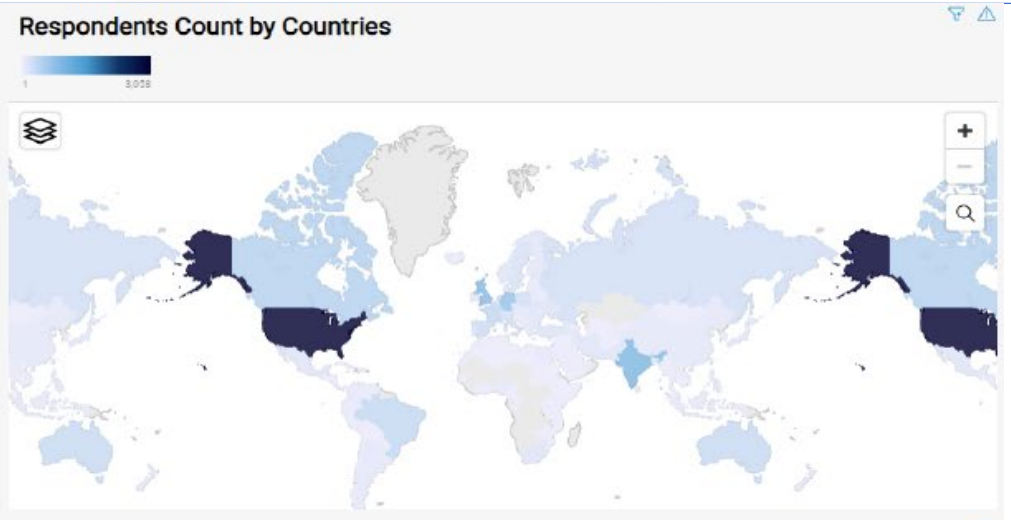
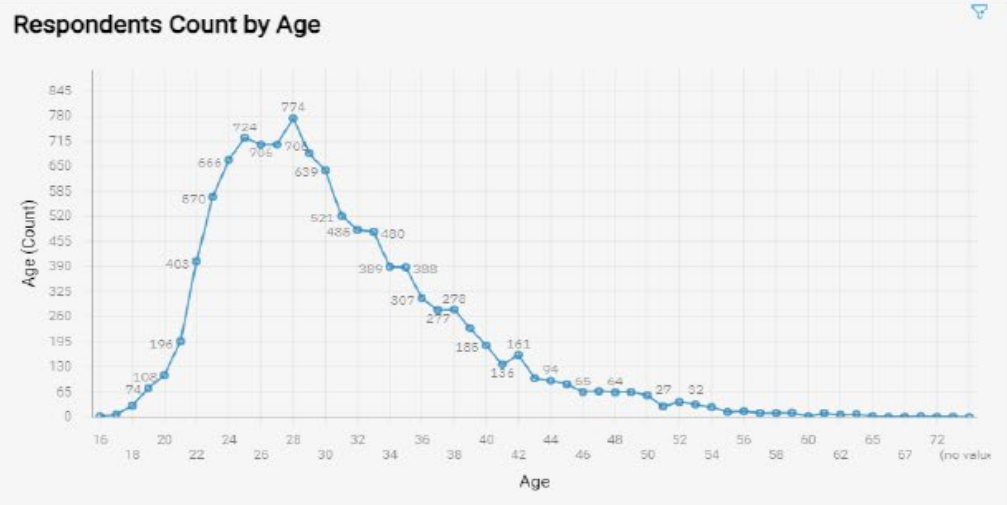
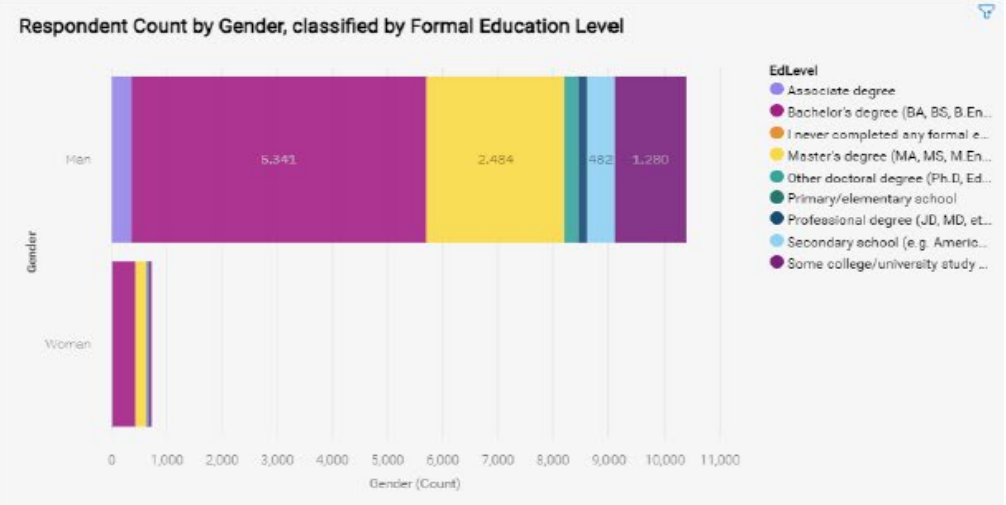




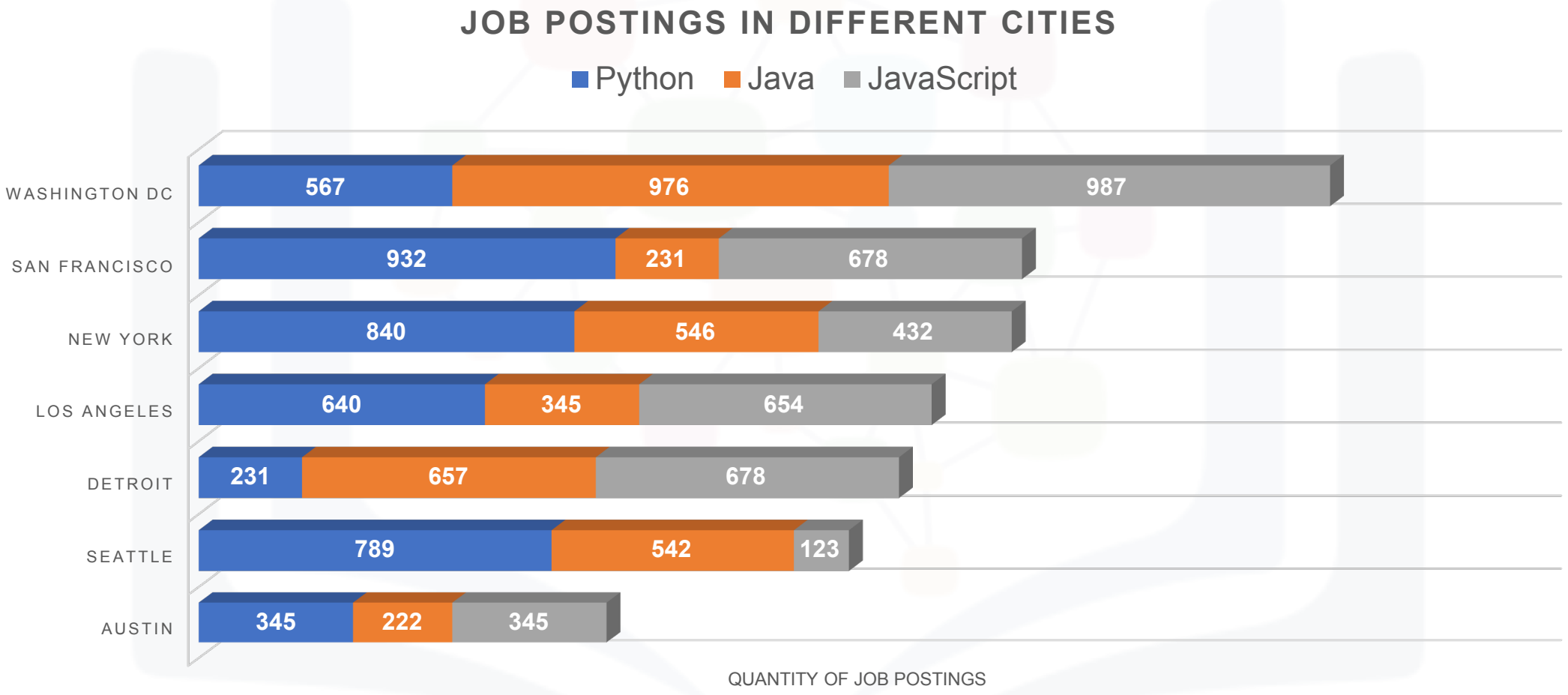




DISCUSSION

- In this survey, *I* set out to identify the current trends in programming languages and databases among developers, as well as their future aspirations in these areas.
- Looking at programming languages, the results show that JavaScript remains the most commonly used language among respondents.
- However, it is interesting to note that Python has been rapidly increasing in popularity and is now among the top 5 most commonly used languages.
- The majority of respondents were male, with only a small percentage identifying as female or non-binary. Additionally, the majority of respondents were located in USA, with fewer respondents from other regions.
- These demographic findings are important to consider when interpreting the results, as they may limit the generalizability of the findings to a more diverse population.

JOB POSTINGS



POPULAR LANGUAGES

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

OVERALL FINDINGS & IMPLICATIONS

Findings

- JavaScript, HTML/CSS, and SQL are the most commonly used programming languages among respondents, while Python and TypeScript are the most desired languages to learn in the next year.
- MySQL, Microsoft SQL Server, and PostgreSQL are the most commonly used databases among respondents.
- Linux and Docker are the most desired platforms to learn. React.js and ASP.NET are the most desired frameworks to learn in the future.
- In terms of demographics, our study found that the majority of respondents were male and under the age of 35 located in USA.

Implications

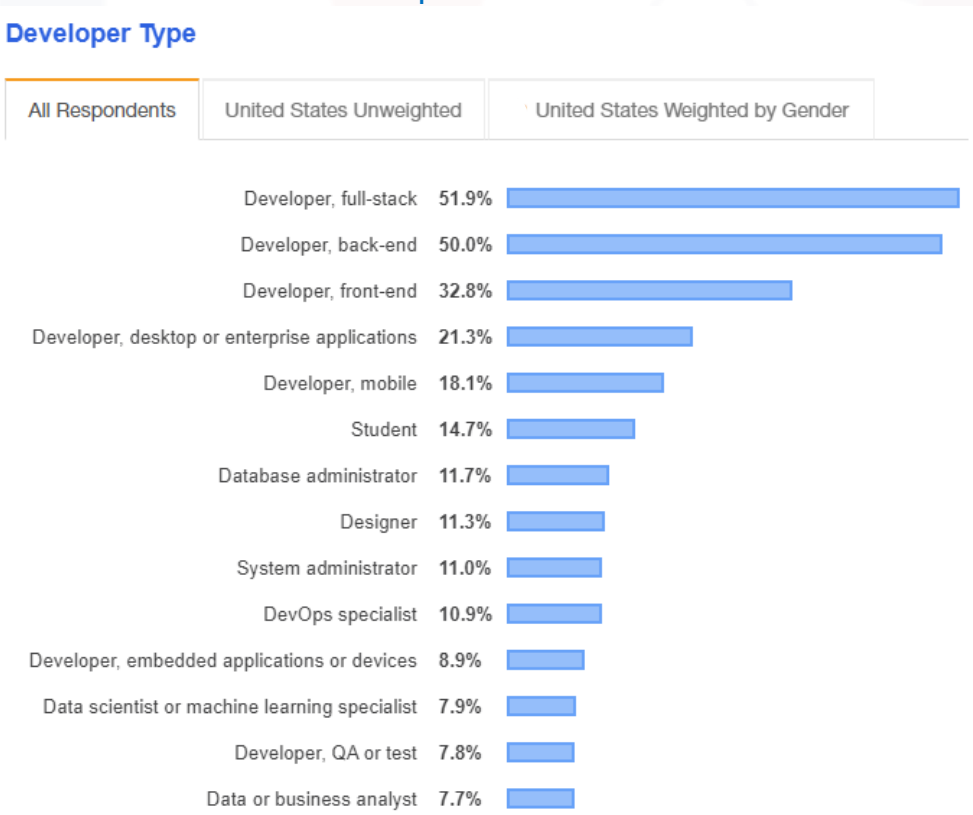
- Python is becoming increasingly important in the tech industry and that developers may want to focus on learning this language to remain competitive in the job market.
- There is a growing interest in non-relational databases and that developers may want to expand their skills in this area.
- Cloud computing and web development skills will continue to be in high demand.

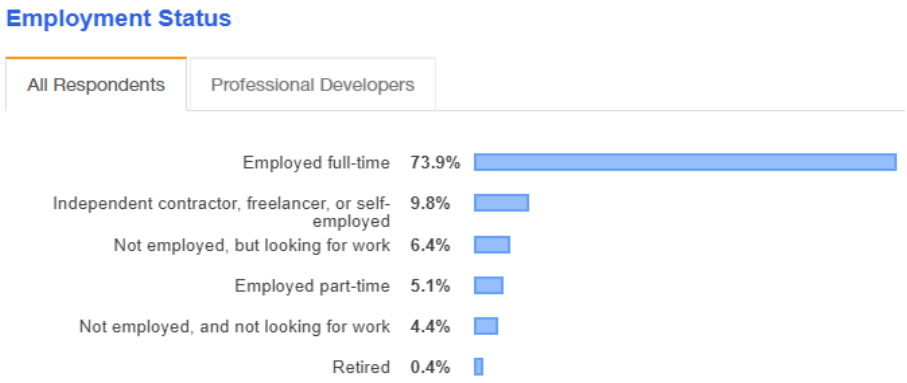
CONCLUSION

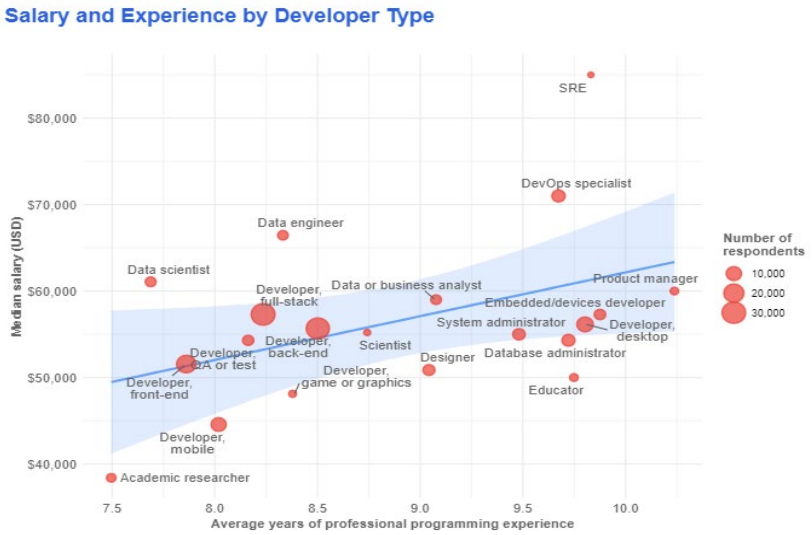
- Python has emerged as an increasingly important language in the tech industry, while JavaScript and certain databases have seen a decline in usage.
- The desire to learn Linux, Docker, React.js, and ASP.NET indicates the need for continued education and training in these areas.
- The demographic information showed that the majority of respondents were male, aged between 25-34 years, and had a bachelor's or master's degree.
- By staying up-to-date with these trends, individuals and organizations can better prepare for the challenges and opportunities that lie ahead.

APPENDIX

- Included relevant additional charts that used during the analysis phase







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SKILLS NETWORK