



Capstone Report on programming trends

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OUTLINE



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EXECUTIVE SUMMARY



- Computer Science and its sister fields are fast paced and rapidly changing industry
- Analyzing data from previous years shows some very clear trends:
 - Scripting languages are massively in demand
 - Development fields like web dev, mobile are very popular
 - Data science and its related fields are surging in popularity
- Open-source technologies are becoming more of an industry standard
- Developer Jobs are more in demand than ever and pay relatively large salaries for specialists

INTRODUCTION



- The Computer Science Industry is rapidly changing and ever progressing
- Constant learning and expansion of skills is essential to excel in the field
- Due to its broad scope and multiple subsectors, it is daunting for newcomers to understand where and what to focus on to get the maximum benefit
- In this report I try to analyze the current and future trends in programming to provide:
 - A clear understanding of the most in-demand technologies and technologies which have massive future potential
 - A brief overview of the demographics of the programming landscape and how it has changed over the years

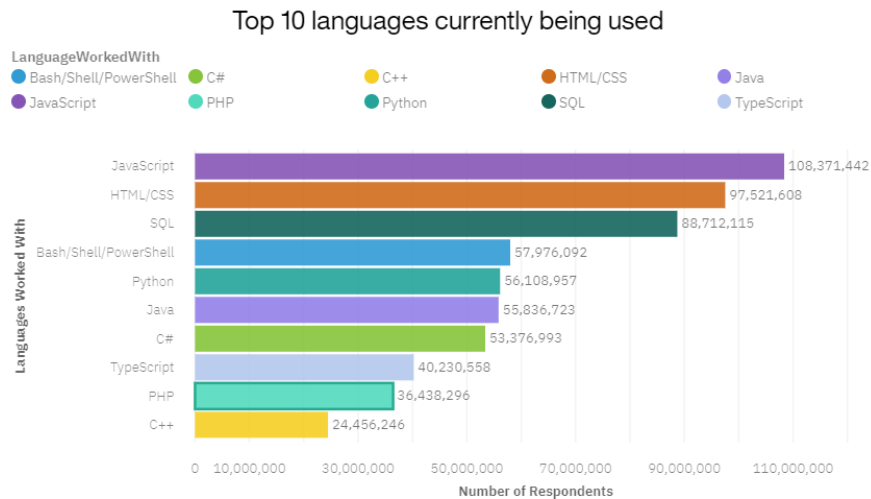
METHODOLOGY



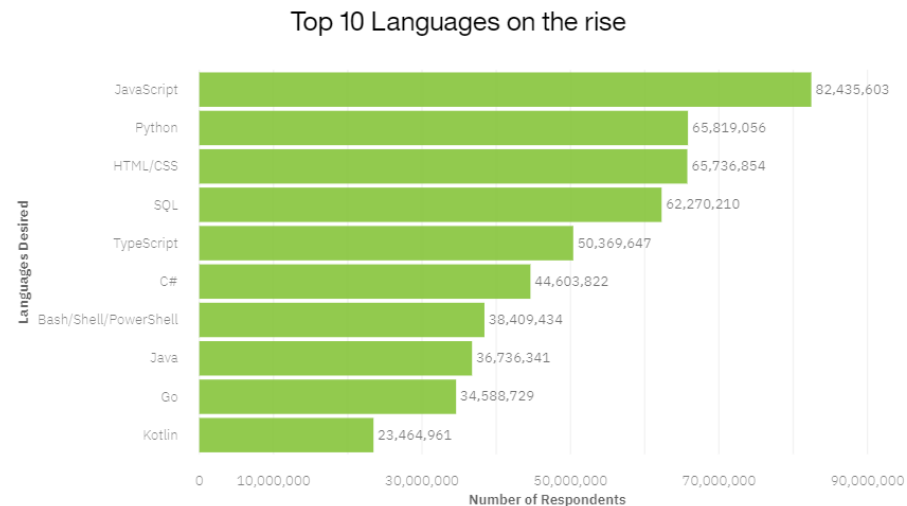
- Data is collected from the open-source Stack Overflow surveys
- Data is then imported into python. Basic wrangling and cleaning is done using pandas
- Rudimentary data exploration is done using a combination of pandas, SQL and visualizations using matplotlib
- Finally, the understandings and conclusions are formatted into an interactive dashboard using IBM Cognos

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

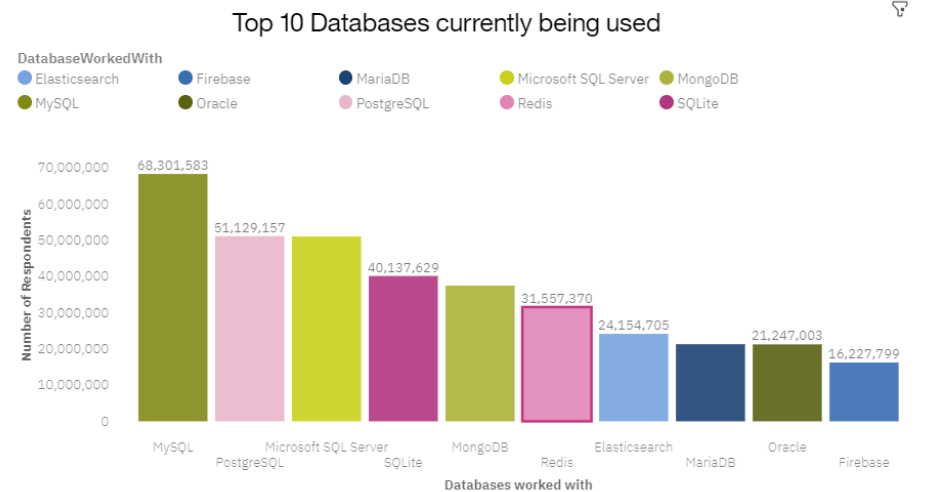
- JavaScript is and will remain the most popular language
- Python has seen a massive rise in popularity
- Newer languages like TypeScript and Go are increasing in popularity

Implications

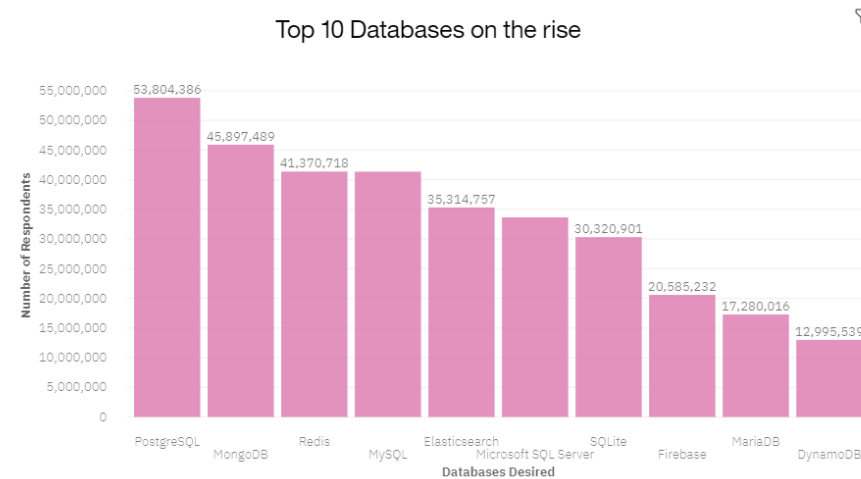
- Web Dev is and will remain one of the most popular and in demand jobs out there
- With the rise in demand of Data centric and AI related fields, python is more in demand than ever
- The constantly changing landscape of programming sees the rise of newer languages

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- No-SQL databases are rising in popularity
- MongoDB has a massive surge in popularity
- Postgres overtakes MySQL as the industry leader

Implications

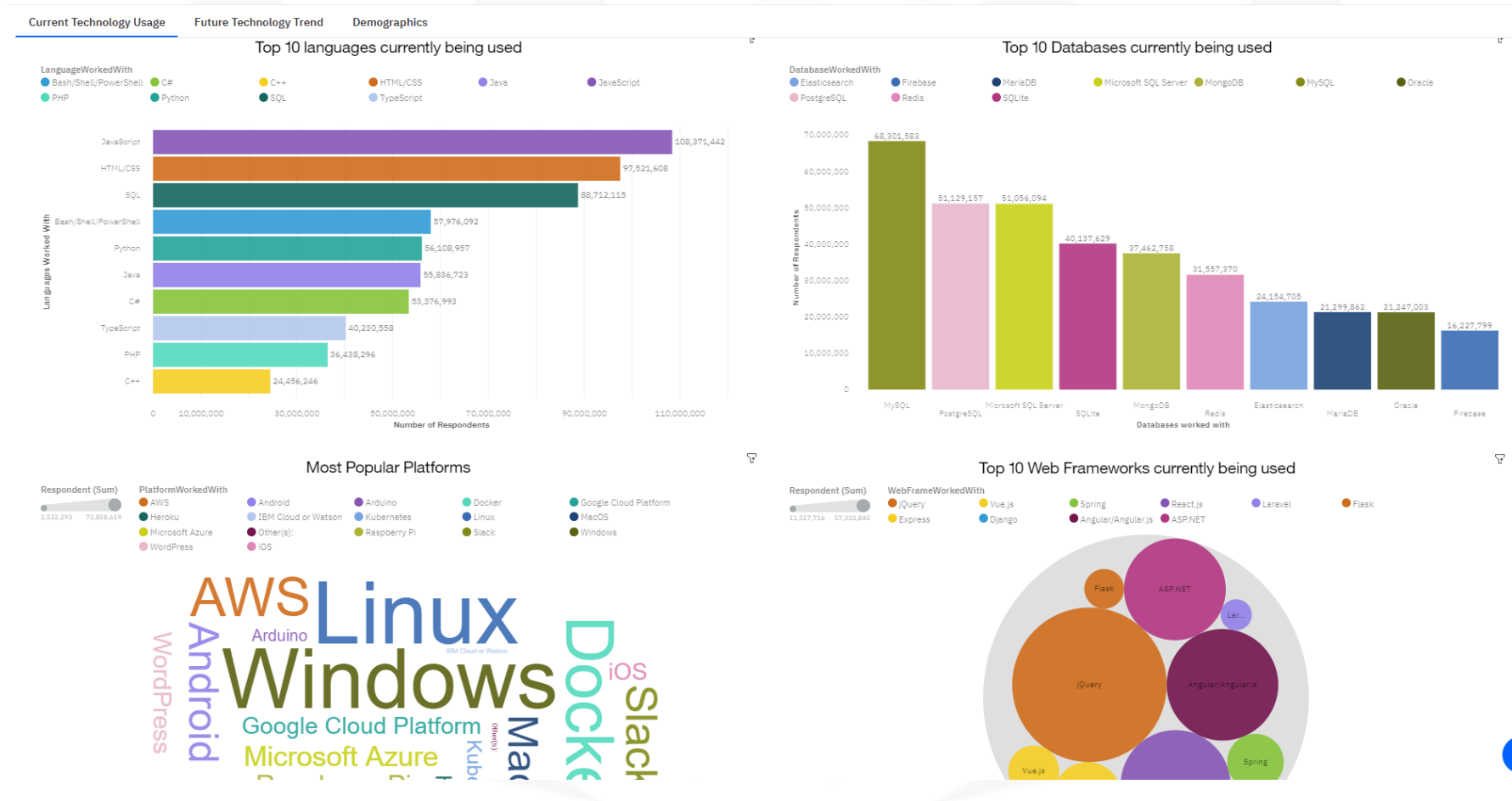
- The trend has high chance of continuing as No-SQL databases rise in popularity due to their easy integration
- Due to its effortless integration with backend development, MongoDB is being used by a massive section of developers
- There is a trend of integrating free open-source solutions in place of propriety software

DASHBOARD

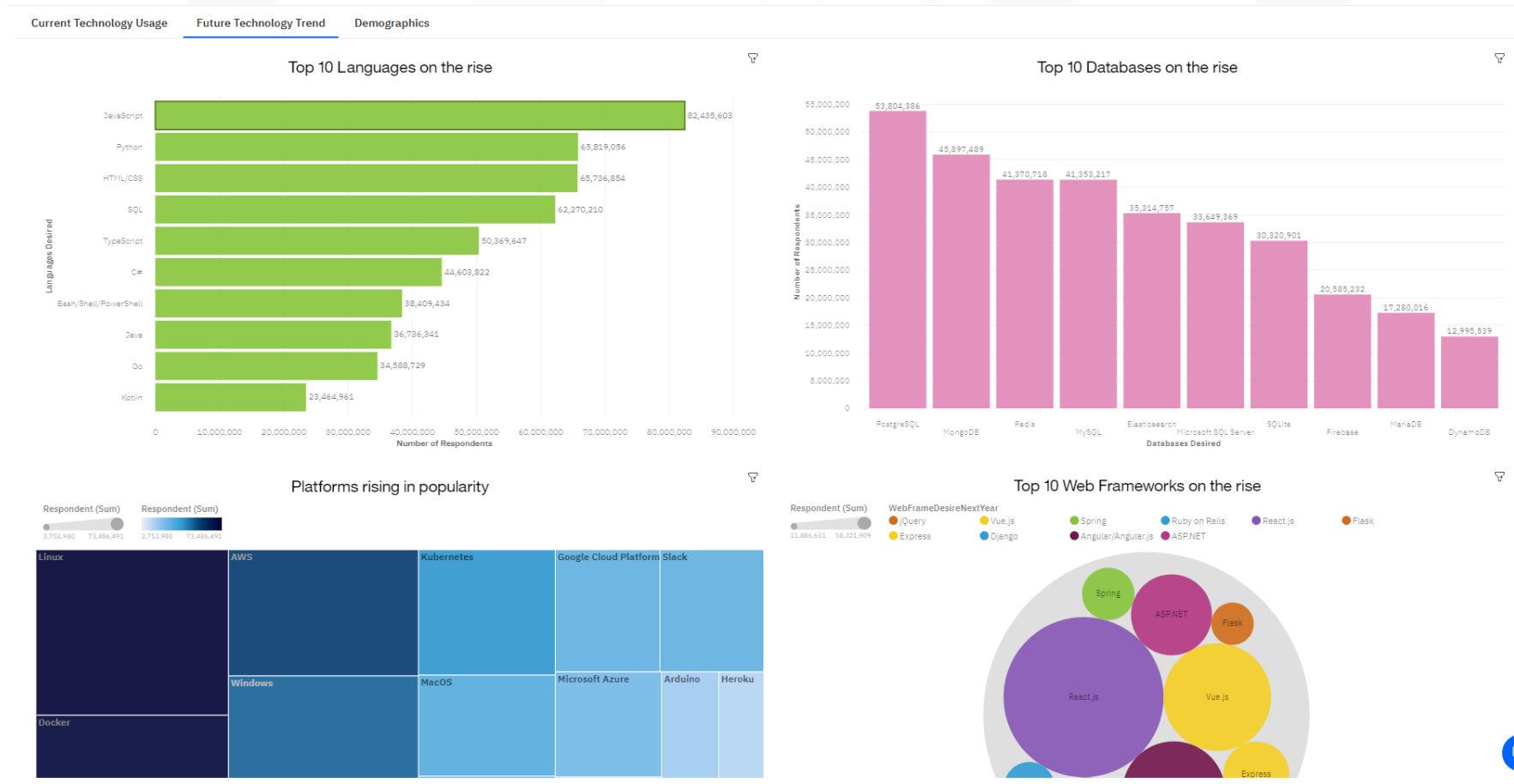


<https://eu-gb.dataplatform.cloud.ibm.com/dashboards/328c24c6-ff85-49eb-b978-4c32bea5c902/view/403ee32e67af6ed672b2d0e407ca290f74662058e7bb8505d1d77b4906697597a83a4597c8261d58d2100231a5ea130dcc>

DASHBOARD TAB 1



DASHBOARD TAB 2



DISCUSSION



- There is a trend in the industry of slowly moving from traditional software solutions to more Data Driven and AI assisted ones.
- As these fields develop more in the future, we can see technologies related with them increase in popularity as well

OVERALL FINDINGS & IMPLICATIONS

Findings

- Scripting Languages have strongly taken their position as the most in-demand technologies
- There is a clear trend of moving from propriety solutions to open-source ones

Implications

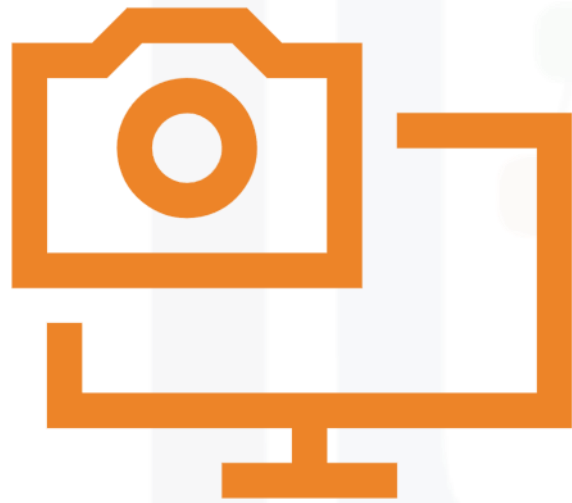
- Jobs requiring high level languages such as Web Dev or Data Science are in demand
- The cost of entry and development is reducing with open-source tech becoming more of a norm

CONCLUSION



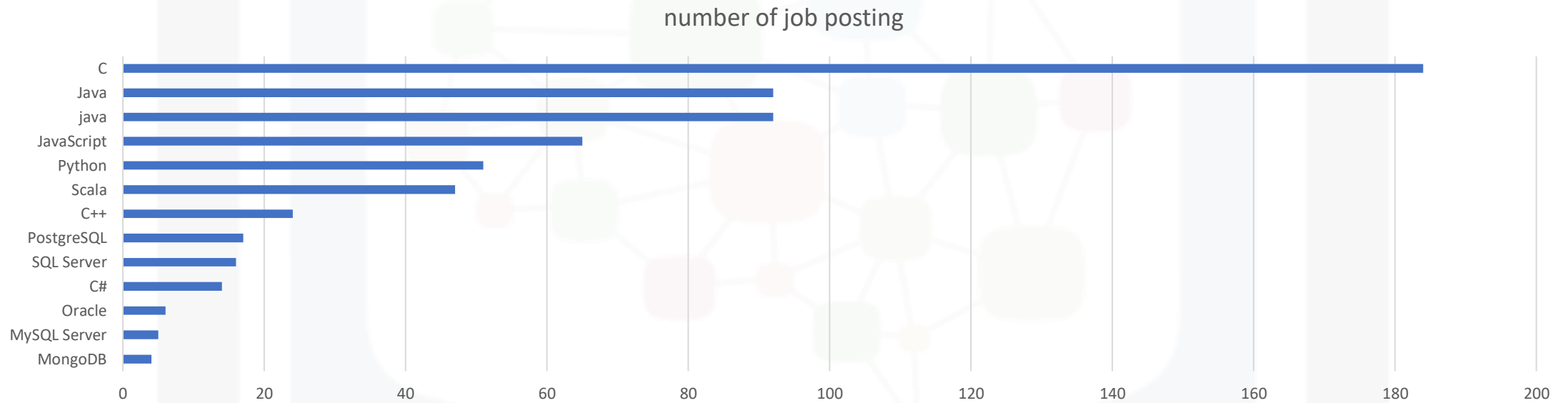
- Scripting languages are one of the most in demand tech out there
- Web dev, Mobile and Data Science related jobs are seeing a rise in demand
- Open-source utilization and collaboration is increasing

APPENDIX



- **Github API:** <https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBM-DA0321EN-SkillsNetwork/labs/module%201/datasets/githubposting.json>
- **Popular Languages:** https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBM-DA0321EN-SkillsNetwork/labs/datasets/Programming_Languages.html
- **Stack Overflow Survey:** "https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBM-DA0321EN-SkillsNetwork/LargeData/m1_survey_data.csv"

GITHUB JOB POSTINGS



POPULAR LANGUAGES

