

# TECHNOLOGIES TRENDS

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# OUTLINE

- Executive Summary
- Introduction
- Methodology
- Results
  - Visualization: Charts
  - Dashboard

- Discussion
  - Findings & Implications
- Conclusion
- Appendix



# EXECUTIVE SUMMARY



- This report provides information about today's trending technologies and a prediction for the future trend of technologies.
  - Top Programming Language
  - Top Databases
  - Top Platform
- Top Web Framework
- This report aims to give insight to fresh graduates on what skills are best to develop in today's market.
- This report discusses why technologies are popular

# INTRODUCTION



Today's market develops technology in an extremely fast progress than our imaginations can keep up. Newly graduated computer specialists are confused about which skills to develop in order to succeed in the competitive industry. **This report gives them insights on trending technologies this year and in the future.**

# METHODOLOGY

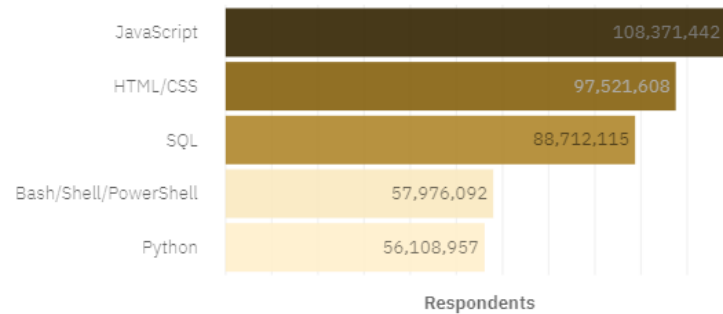
The dataset you are going to use in this assignment comes from the following source: <https://stackoverflow.blog/2019/04/09/the-2019-stack-overflow-developer-survey-results-are-in/> under a **ODbL: Open Database License**.

1. Download [m5\\_survey\\_data\\_technologies\\_normalised.csv](#)
2. Download [m5\\_survey\\_data\\_demographics.csv](#)
3. Open [IBM Cloud Pak for Data](#)
4. Create Project
5. Upload CVS files on Project/Assets
6. Add Project, Select Dashboards
7. Create Charts in Dashboards

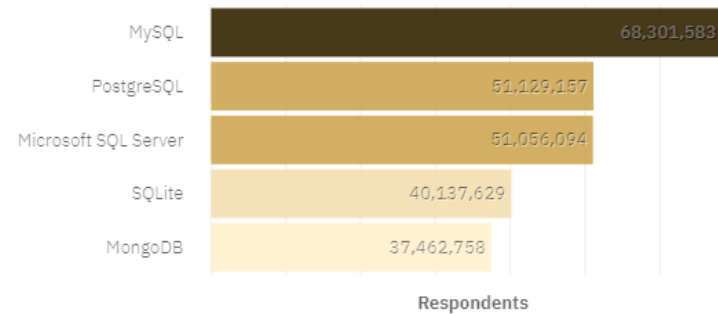


# RESULTS: Current Technology Trends

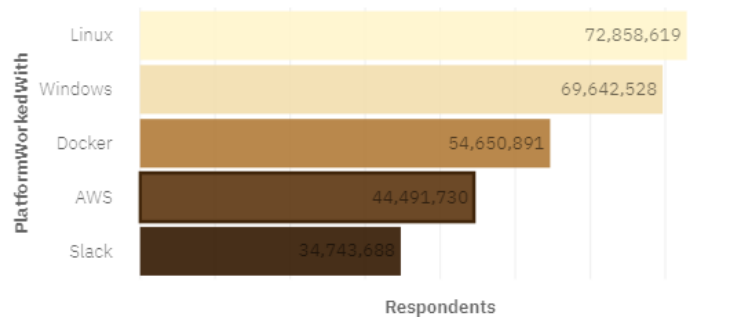
## Top Programming Languages



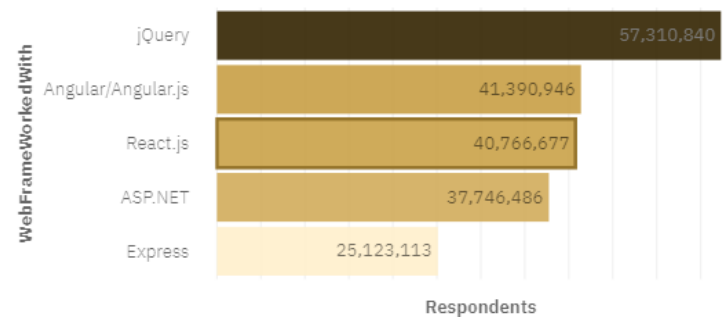
## Top Database



## Top Platforms



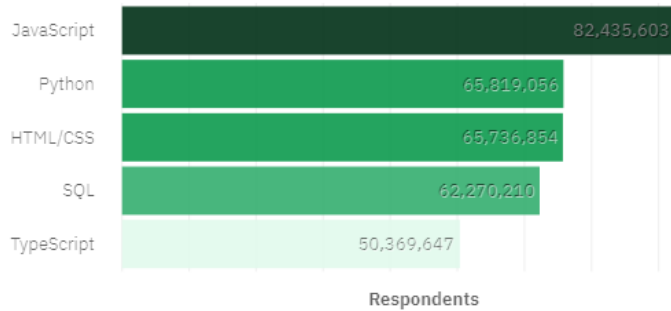
## Top Web Framework



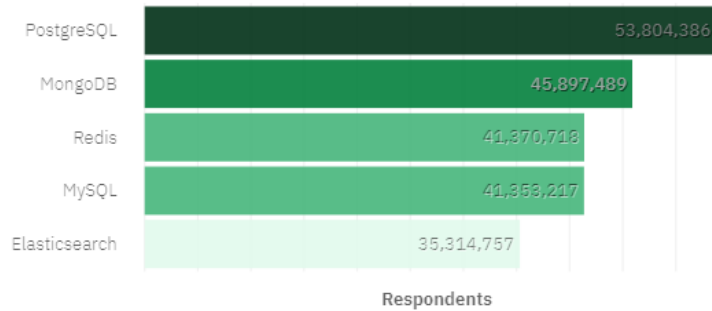
- Current Technology Trends Dashboard shows the **Top Most Used** in each Technologies
- These Technologies are:
  - Programming Languages
  - Databases
  - Platforms
  - Web Framework

# RESULTS: Future Technology Trends

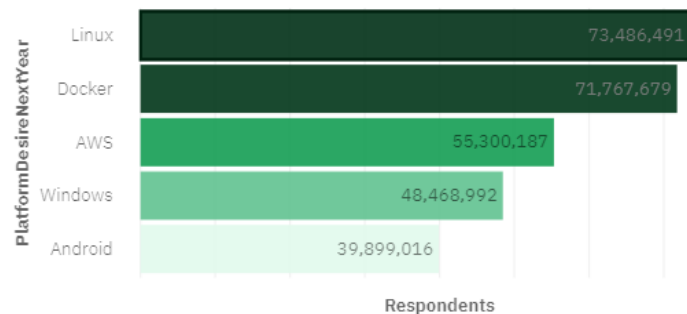
Top Language Desire for Next Year



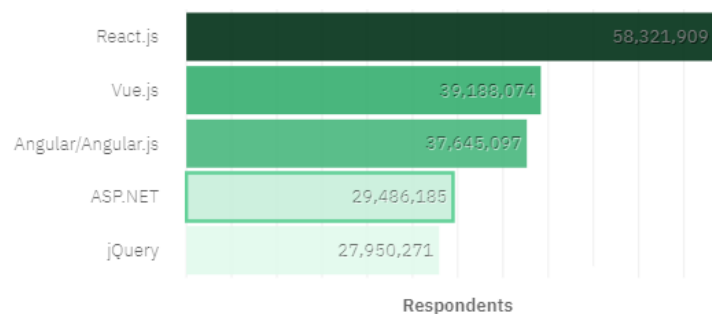
Top Database Desire for Next Year



Top Platform Desire for Next Year



Top Web Framework Desire for Next Year

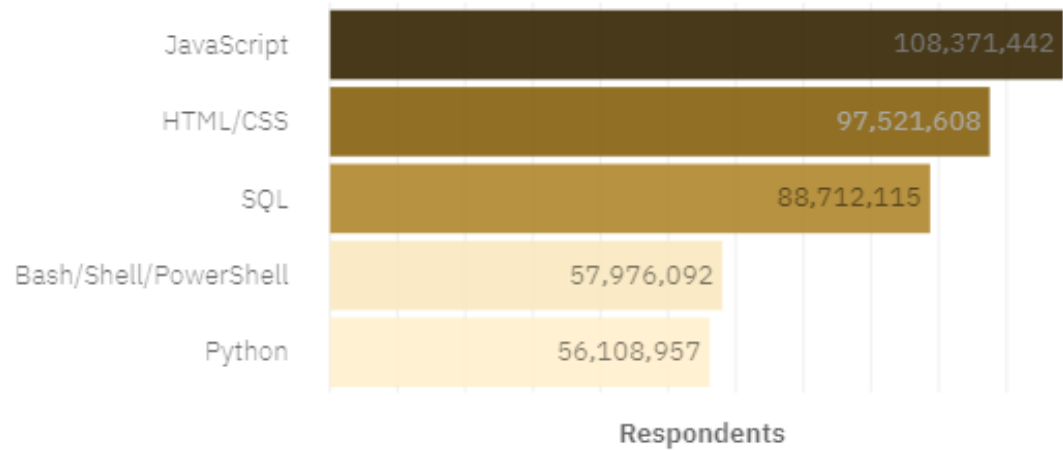


- Future Technology Trends Dashboard shows the **Top Most Used in the Future** for each Technologies
- These Technologies are:
  - Programming Languages
  - Databases
  - Platforms
  - Web Framework

# PROGRAMMING LANGUAGE TRENDS

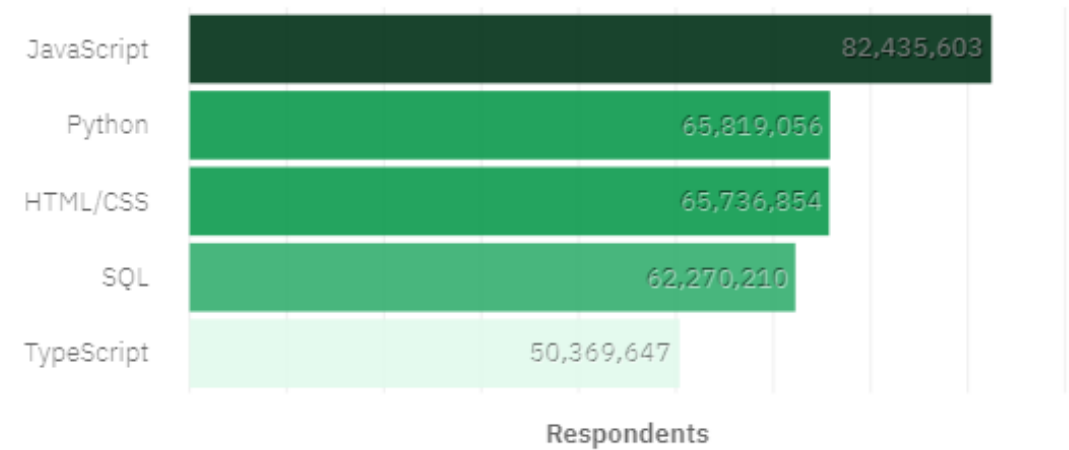
## Current Year

Top 5 Programming Languages



## Next Year

Top 5 Language Desire for Next Year





# Programming Language Trends: FINDINGS & IMPLICATIONS

## Findings

- **Java Script** is on the top of the list on both years
- **Python** rise to 2nd place from 5th place
- **PowerShell** dropped from the list
- **TypeScript** rise on the list

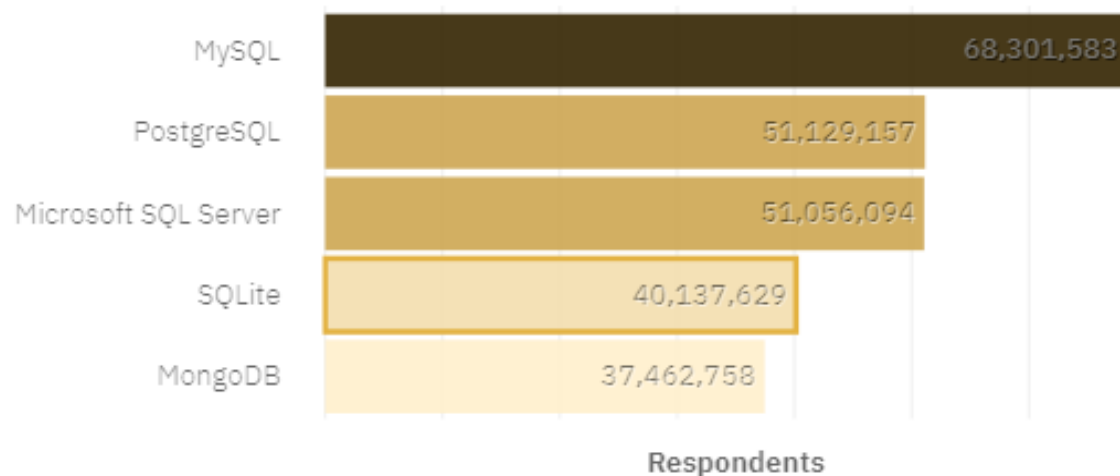
## Implications

- **Java Script** will maintain its place because of its speed, simplicity, and versatility
- **Python** is on rise because it's not only flexible but also easy to learn
- **PowerShell** does not plan to introduce new functionalities so it drops out the list
- **TypeScript** gained popularity because it is a superset of the JavaScript language

# DATABASE TRENDS

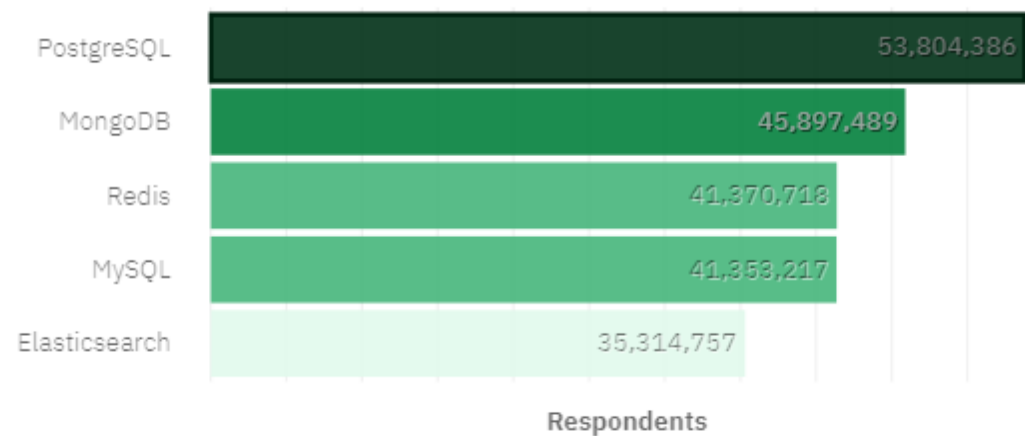
## Current Year

### Top 5 Database



## Next Year

### Top 5 Database Desire for Next Year



# Programming Language Trends: FINDINGS & IMPLICATIONS

## Findings

- **PostgreSQL** is on the top of the list on both years
- **MongoDB** rise to 2nd place from 5th place
- **Redis** and **Elasticsearch** rise to the rank
- **Microsoft SQL Server** dropped from the rank

## Implications

- **PostgreSQL** became popular because of its ability to safely store and scale the most complicated data workloads.  
**Postgres** is a perfect match for data science.
- **MongoDB** is popular because it's easy to learn and get started, especially for new users.
- **Redis** is on the rise being an advanced NoSQL key-value data store used as a database, cache, and message broker.
- **Elasticsearch** is on the rise being an NoSQL database that stores data in indexes and supports powerful searching capabilities

# DASHBOARD



Click the link to access the dashboard on  
[IBM Cloud Pak for Data:](https://dataplatform.cloud.ibm.com/dashboards/52a2ddec-d4f9-4249-bb66-918b390ced6a/view/4018ab7a308b1fec7cc0f2e407cd2d077c3e765bbbbbb810385d77b495d602397a86b4793c827190e8f430535a1bf1050ca)

<https://dataplatform.cloud.ibm.com/dashboards/52a2ddec-d4f9-4249-bb66-918b390ced6a/view/4018ab7a308b1fec7cc0f2e407cd2d077c3e765bbbbbb810385d77b495d602397a86b4793c827190e8f430535a1bf1050ca>

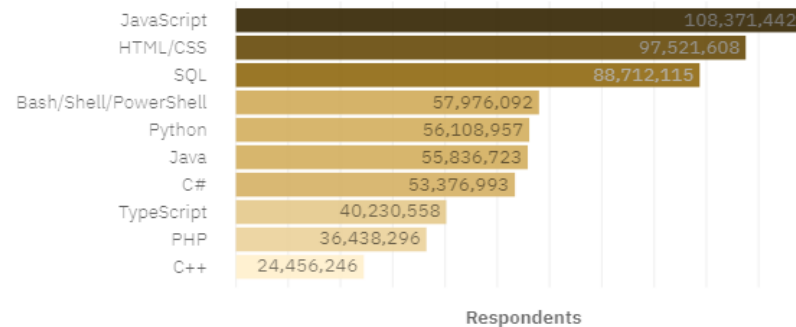
# DASHBOARD: Current Technology Usage

## Current Technology Usage

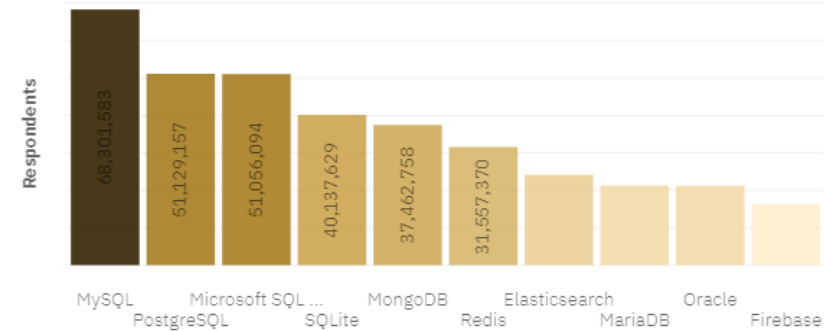
## Future Technology Trend

## Demographics

### Top 10 Programming Languages



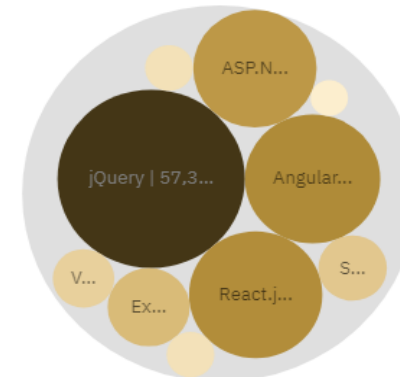
### Top 10 Database



### Platforms



### Top 10 Web Framework



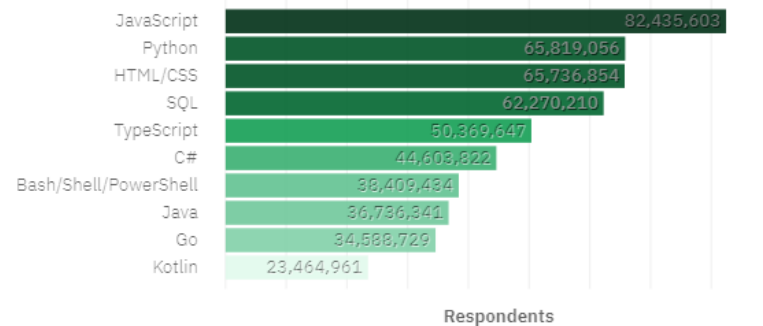
# DASHBOARD: Future Technology Trend

Current Technology Usage

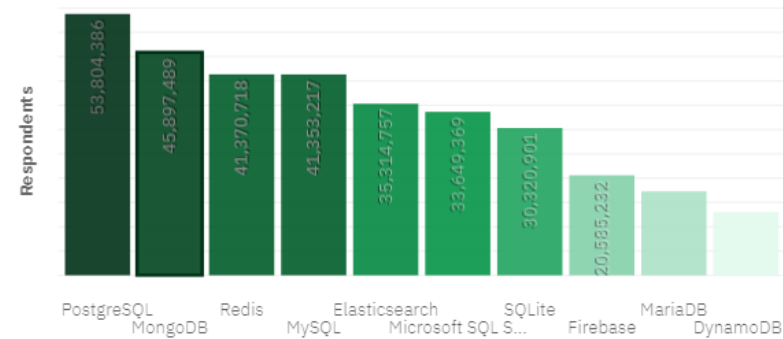
Future Technology Trend

Demographics

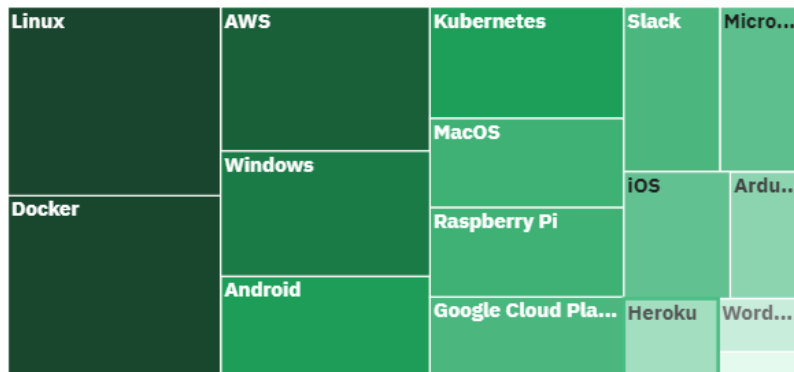
Top 10 Language Desire for Next Year



Top 10 Database Desire for Next Year



Platform Desire for Next Year



Top 10 Web Framework Desire for Next Year



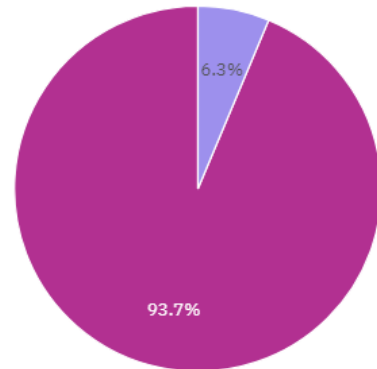
# DASHBOARD: Demographics

Current Technology Usage

Future Technology Trend

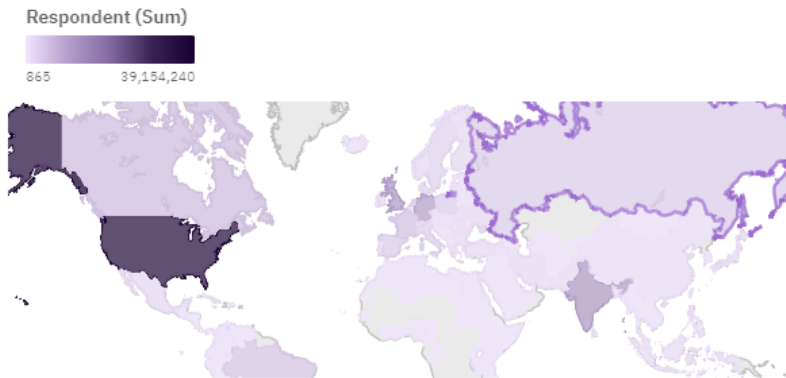
Demographics

Respondent classified by Gender

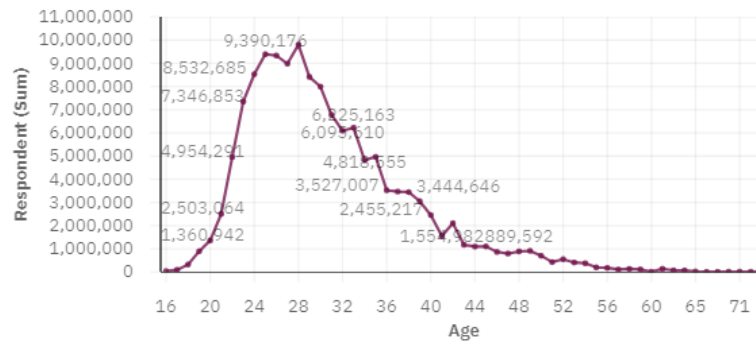


Woman  
Man

Respondent Count for Countries



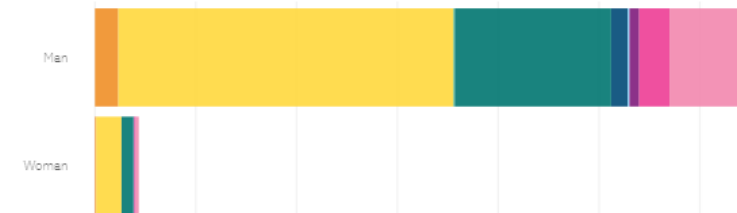
Respondent Count by Age



Respondent Count by Gender

classified by Formal Education Level

Associate degree Bachelor's degree (BA, BS, B.E...  
I never completed any formal ... Master's degree (MA, MS, M.E...  
Other doctoral degree (Ph.D, E... Primary/elementary school





# MOST IN-DEMAND TECH JOBS FOR 2021 <sup>[1]</sup>

	JOB	TECHNOLOGIES
1	Security professional (information, systems, network, data, cloud)	Python, JavaScript, Java, SQL, PowerShell, PHP, etc. [2]
2	Cloud architect	Python, JavaScript, Java, PHP, NET, etc. [3]
3	Database administrator	Python, SQL, C#, R, PHP [4]
4	Programmer analyst	JavaScript, C#, SQL (MySQL), NET [5]
5	Systems analyst	SQL, Oracle, C++, Java, UML [6]



# DISCUSSION



- On the table **Most In-Demand Tech Jobs**, most of the need technical skills on JavaScript, Python, SQL, and Java.
- This table gives additional verification why the Top Trending Technologies on Programming Language are JavaScript, Python, and SQL.

# OVERALL FINDINGS & IMPLICATIONS

## Findings

- Technology keeps developing and creating new ones
- Technology trends can change drastically every year
- Top technologies are used by a lot of people on the tech industry
- The Top technologies are must have skills on in-demand tech jobs

## Implications

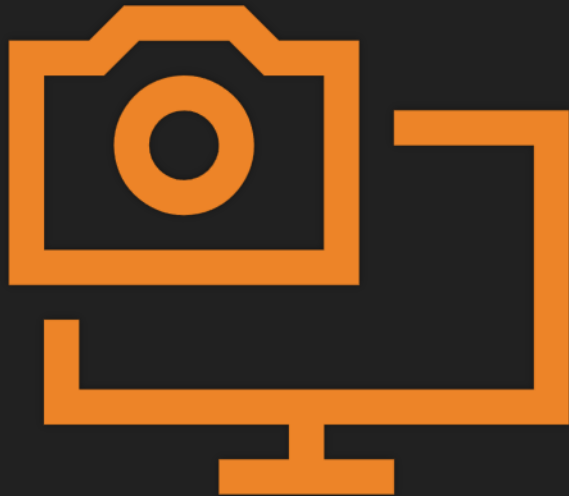
- As technology changes, the trends change
- Top new technologies becomes faster, simpler and versatile than old techs
- Trends should be checked regularly due to fast dynamics of tech industry
- Fresh graduate should develop their skills on these technologies

# CONCLUSION



- Technology trends changes faster because of new and better technologies
- However, some old technologies such as JavaScript, Python, and SQL are still used by tech people since it is the foundation of most
- The Top Trending Technologies are popular due to being an in-demand skills on Tech Jobs
- Fresh Graduates should develop their skills on JavaScript, Python, and SQL
  - To help them achieve any Tech Job they want to take
  - To be a versatile engineers and developers

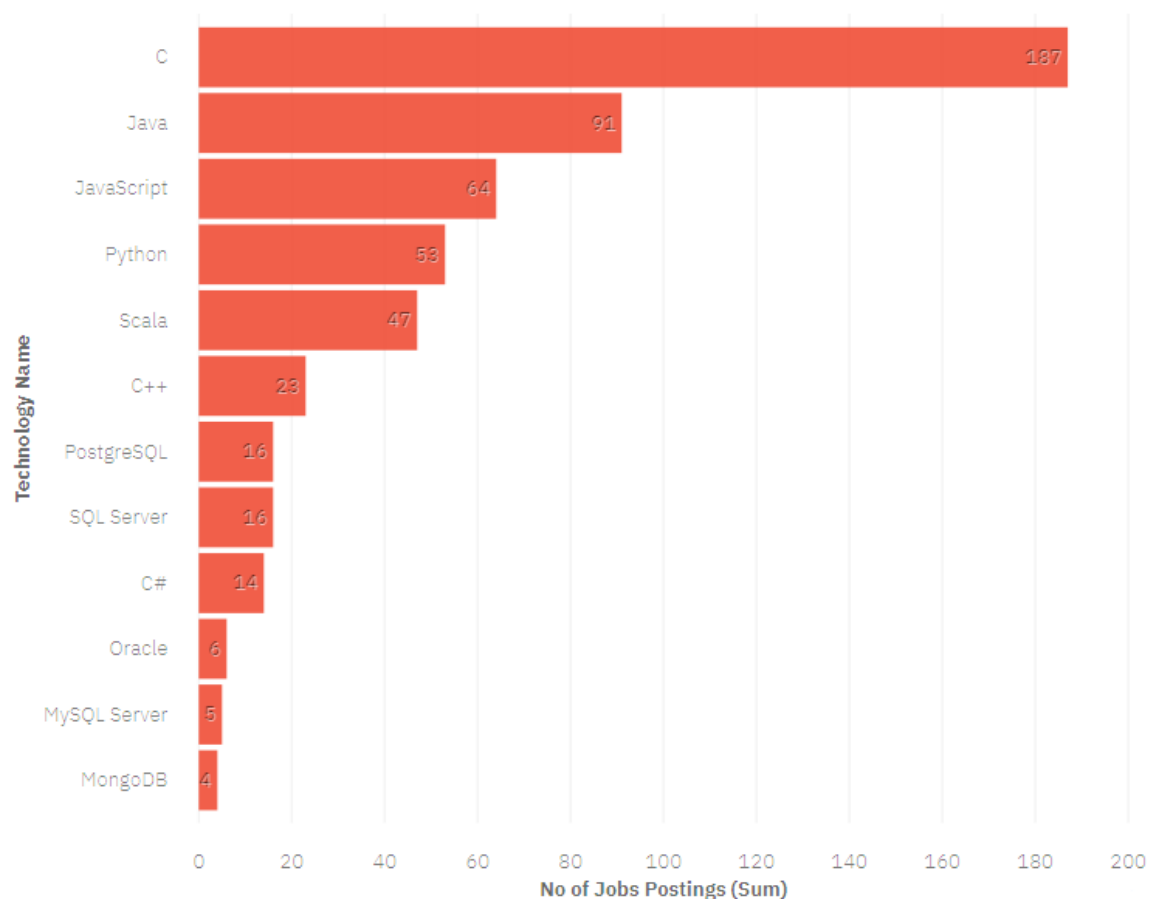
# APPENDIX



- [1] The 10 most in-demand tech jobs for 2021 — and how to hire for them (<https://www.cio.com/article/3235944/hiring-the-most-in-demand-tech-jobs-for-2021.html>)
- [2] The Best Programming Languages for Cybersecurity in 2021 (<https://flatironschool.com/blog/best-programming-languages-cyber-security>)
- [3] The Best Programming Languages for Cloud Computing (<https://digitalcloud.training/the-best-programming-languages-for-cloud-computing/>)
- [4] 5 programming languages database administrators should learn (<https://www.techrepublic.com/article/5-best-programming-languages-for-database-administrators-to-learn/>)
- [5] Analyst Programmer job profile (<https://www.talentlyft.com/en/resources/analyst-programmer-job-description>)
- [6] Systems analyst (<https://www.prospects.ac.uk/job-profiles/systems-analyst>)

# GITHUB JOB POSTINGS

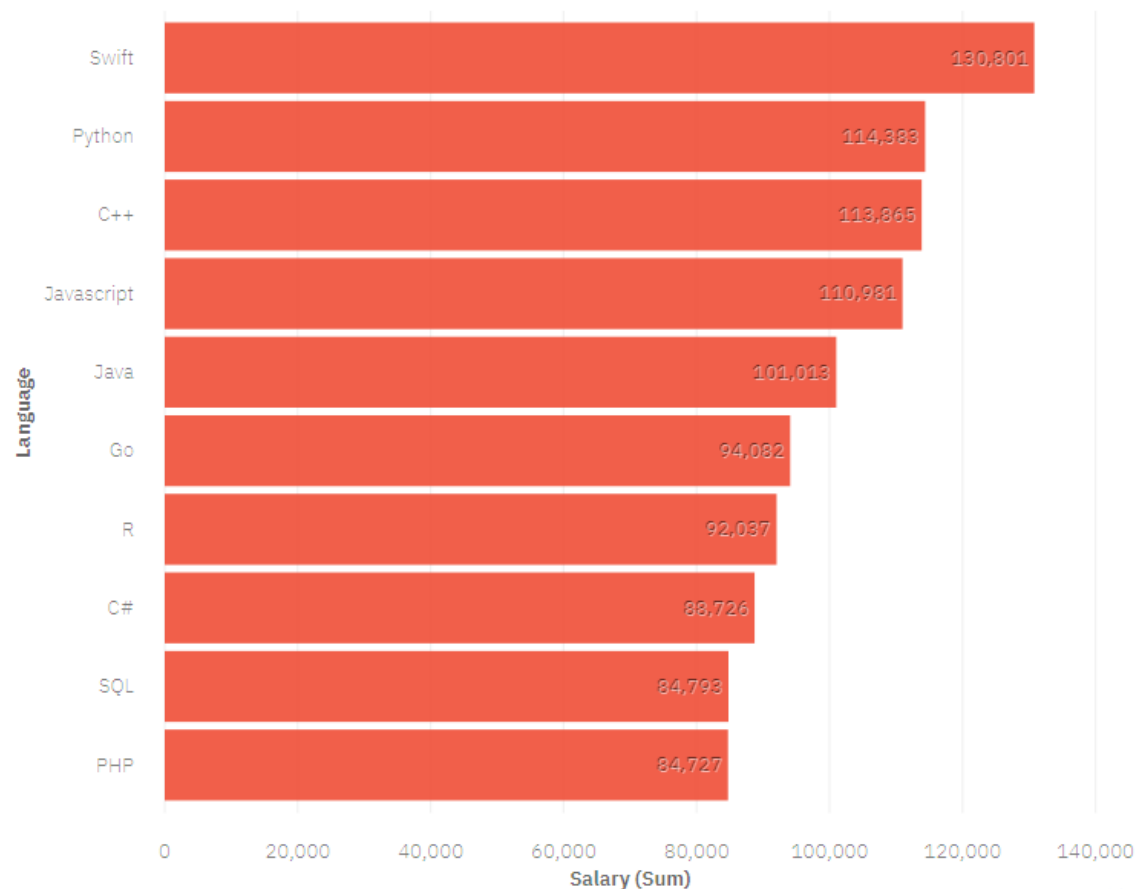
GITHUB JOB POSTINGS



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

# POPULAR LANGUAGES

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.