STACK OVERFLOW DEVELOPER SURVEY 2019 ANALYSIS

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OUTLINE

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- Methodology
- Results
  - Visualization – Charts
  - Dashboard
- Discussion
  - Findings & Implications
- Conclusion
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EXECUTIVE SUMMARY

- The most used programming languages, databases, platforms and web frames changes as the IT world continues to grow.

- Knowing the on demand technology is vital as more technologies emerge this modern day.

- There is still a gap in the gender aspect of IT professionals.

INTRODUCTION

- The world of IT continues to grow as more technologies are being developed to suit the needs of clientele.

- It is important as IT professionals to keep track of the current trend of technologies to ensure one has the right skillset.

- This presentation was made to know the most used technologies and what will be the next in demand technologies to encourage and help people know what they need.

- This presentation also shows the respondent demographics with regards to age, gender, location and education level.

METHODOLOGY

- A subset of 2019 Stack Overflow Developer Survey Results was used to know the current and future trends of technologies IT professionals use.

- The dataset used was wrangled to make it ready for analysis.

- After analyzing the cleaned dataset, different visualizations were made to be presented.

- Dashboard was created to identify key insights for data driven decisions.
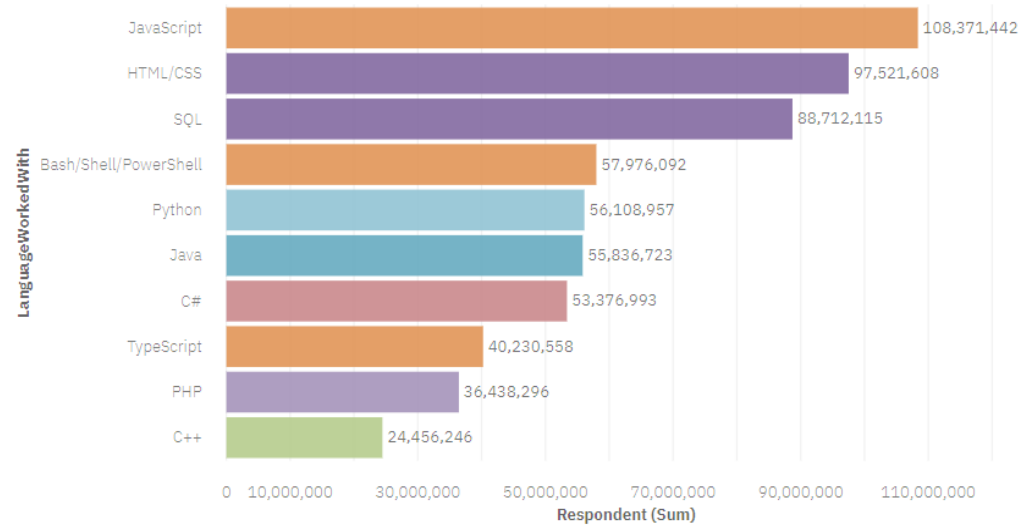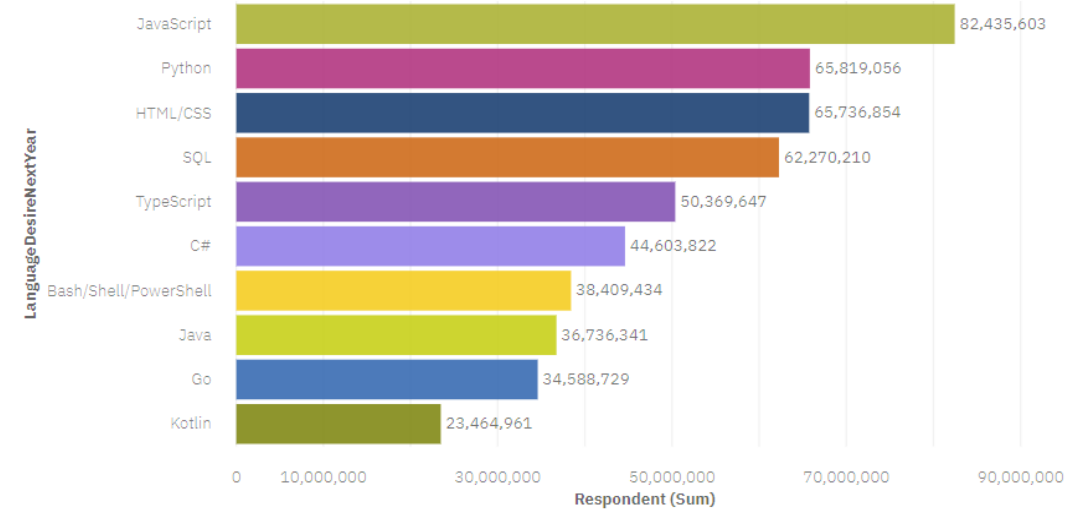
RESULTS

PROGRAMMING LANGUAGE TRENDS

Current Year

Next Year

Top 10 Language Worked With

Language	Respondent (Sum)
JavaScript	108,371,442
HTML/CSS	97,521,608
SQL	88,712,115
Bash/Shell/PowerShell	57,976,092
Python	56,108,957
Java	55,836,723
C#	53,376,993
TypeScript	40,230,558
PHP	36,438,296
C++	24,456,246

Top 10 Desired Languages To Learn Next Year

Language	Respondent (Sum)
JavaScript	82,435,603
Python	65,819,056
HTML/CSS	65,736,854
SQL	62,270,210
TypeScript	50,369,647
C#	44,603,822
Bash/Shell/PowerShell	38,409,434
Java	36,736,341
Go	34,588,729
Kotlin	23,464,961

PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript is the most used programming language and is currently what IT professionals will still use in 2020
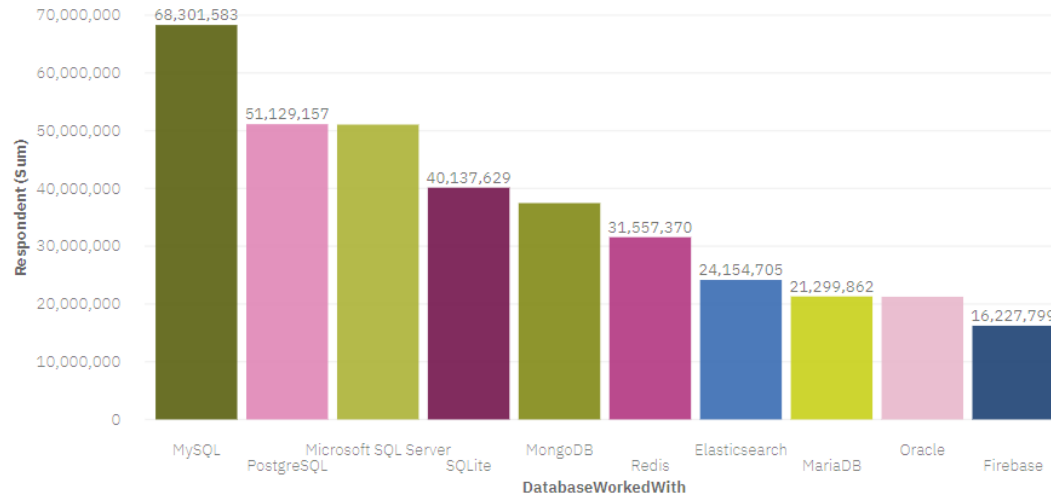
Implications

- Web Development languages(JavaScript, HTML/CSS) are still on trend by 2020 though Python has a big potential to dominate the other programming languages in the next years.
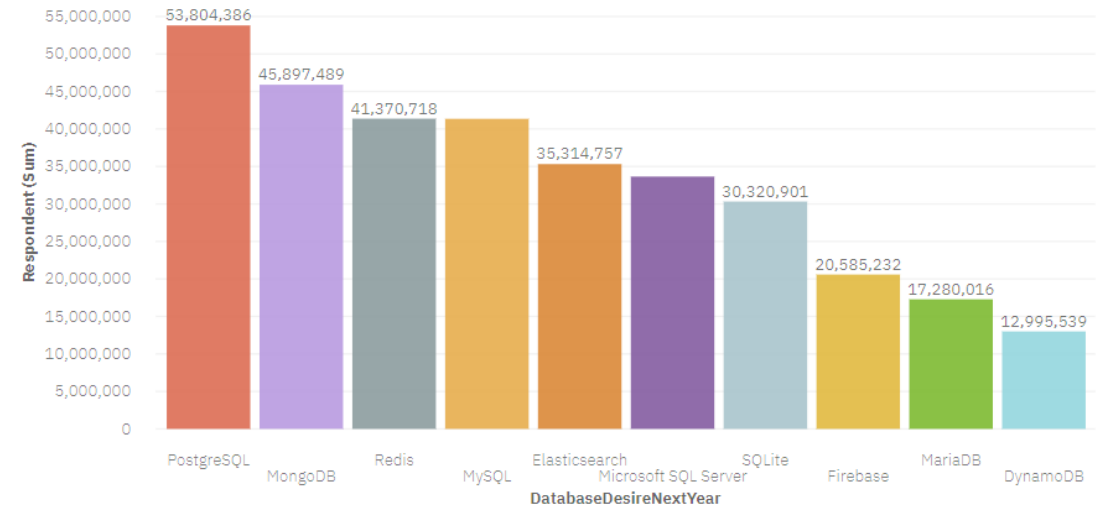
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DATABASE TRENDS

Current Year

Top 10 Databases Worked With

Next Year

Top 10 Desired Databases To Learn Next Year

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL is the most used database in 2019.

- PostgreSQL will be the database IT professionals would like to learn for 2020

Implications

- IT professionals prefer the flexibility and functionality of object-relational databases like PostgreSQL

- While PostgreSQL is more likely to be used in 2020, MongoDB takes second place due to the fact that it faster compared to other relational database. It is easier to access and more scalable.

DASHBOARD

This is a link to a dashboard built for IT professional to see the current technology usage, the future technology trends and the demographics of respondents who answered the survey.

https://jp-tok.dataplatform.cloud.ibm.com/dashboards/bc42c2c3-d25b-4762-8749-6025139e3eb0/view/7225f10b21b3029068e3e6e4079a2d017934770fe3bbd50a88817b4908647297f03d17c2c82f1e5fd9180c36f2ec410fcb
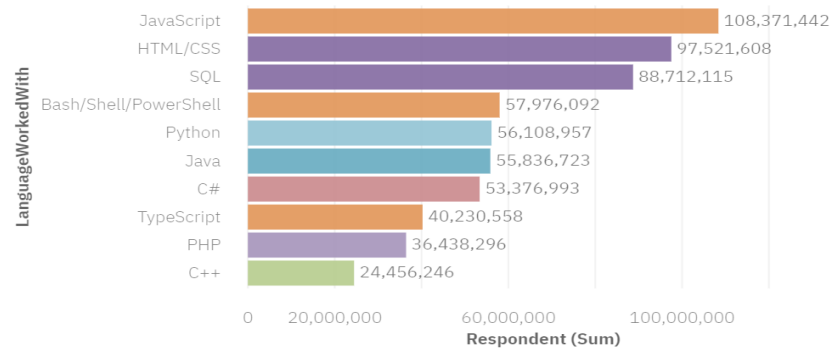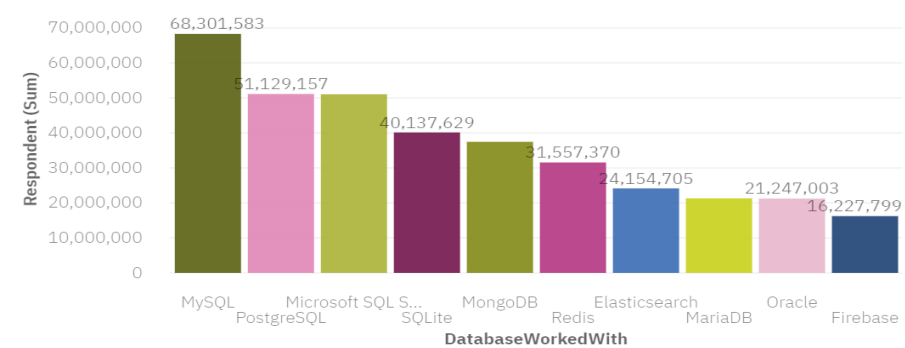
DASHBOARD TAB 1

Current Technology Usage   Future Technology Trends   Demographics
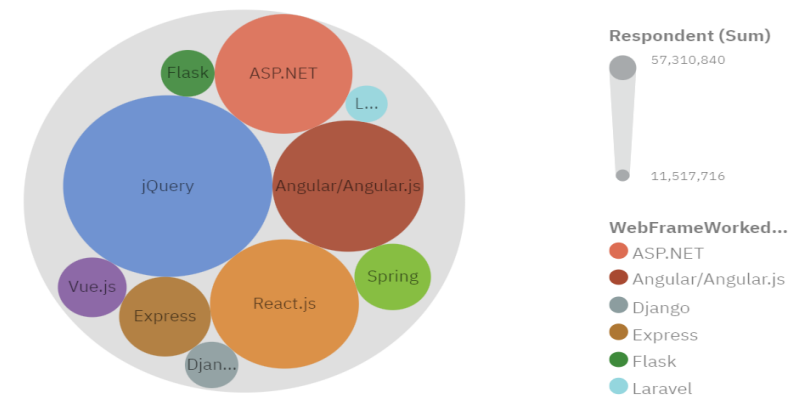
Top 10 Language Worked With

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Python	56,108,957
Java	55,836,723
C#	53,376,993
TypeScript	40,230,558
PHP	36,438,296
C++	24,456,246

Top 10 Databases Worked With

MySQL	68,301,583
PostgreSQL	51,129,157
Microsoft SQL S...	
SQLite	40,137,629
MongoDB	31,557,370
Redis	
Elasticsearch	24,154,705
MariaDB	
Oracle	21,247,003
Firebase	16,227,799

Platforms Worked With

AWS · Linux · Windows · Docker · Slack · Android · WordPress · Arduino · Heroku · IBM Cloud or Watson · Other(s) · Google Cloud Platform · Microsoft Azure · MacOS · Kubernetes · iOS · Raspberry Pi

Top 10 Web Frames Worked With

Flask · ASP.NET · L... · jQuery · Angular/Angular.js · Vue.js · Express · React.js · Spring · Djan...

Respondent (Sum)
57,310,840
11,517,716

WebFrameWorked...
- ASP.NET
- Angular/Angular.js
- Django
- Express
- Flask
- Laravel

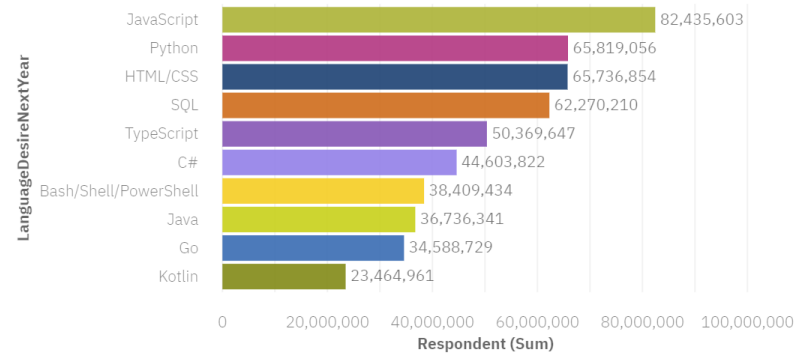IBM Developer   SKILLS NETWORK

DASHBOARD TAB 2

Current Technology Usage | **Future Technology Trends** | Demographics

Top 10 Desired Languages To Learn Next Year

- JavaScript: 82,435,603
- Python: 65,819,056
- HTML/CSS: 65,736,854
- SQL: 62,270,210
- TypeScript: 50,369,647
- C#: 44,603,822
- Bash/Shell/PowerShell: 38,409,434
- Java: 36,736,341
- Go: 34,588,729
- Kotlin: 23,464,961

LanguageDesireNextYear

Respondent (Sum): 0, 20,000,000, 40,000,000, 60,000,000, 80,000,000, 100,000,000

Top 10 Desired Databases To Learn Next Year

- PostgreSQL: 53,804,386
- MongoDB: 45,897,489
- Redis: 41,370,718
- MySQL: 35,314,757
- Elasticsearch: 30,320,901
- SQLite: 20,585,232
- Microsoft SQL S...
- Firebase
- MariaDB: 12,995,539
- DynamoDB

Respondent (Sum): 0 – 60,000,000

DatabaseDesireNextYear

Desired Platforms Next Year

Linux, AWS, Kubernetes, MacOS, Raspber..., Google ..., Windows, Docker, Slack, iOS, Heroku, Android, Microsoft Azure, Arduino, Wor..., I...

Top 10 Desired Web Frames To Learn Next Year

Respondent (Sum): 58,321,909 — 11,886,651

React.js, Vue.js, Angular/..., jQuery, Dj..., Exp..., ASP.N..., F..., S...

WebFrameDesireNex...
- ASP.NET
- Angular/Angular.js
- Django
- Express
- Flask
- React.is

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DASHBOARD TAB 3

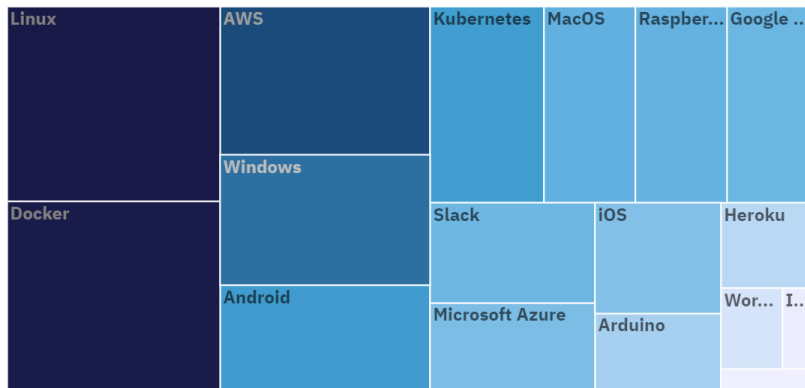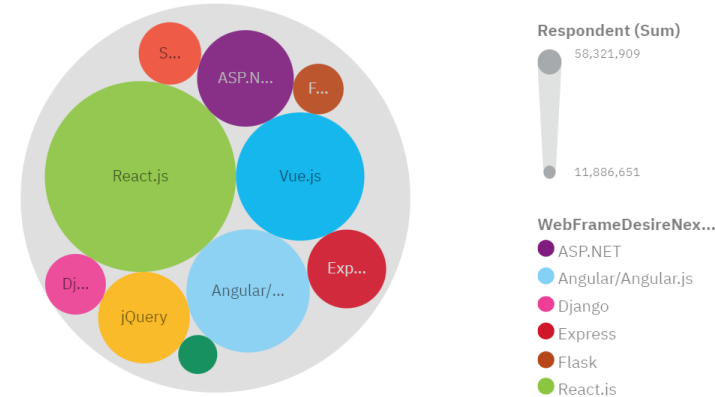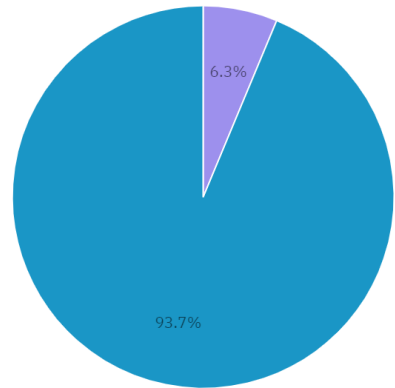Current Technology Usage   Future Technology Trends   **Demographics**
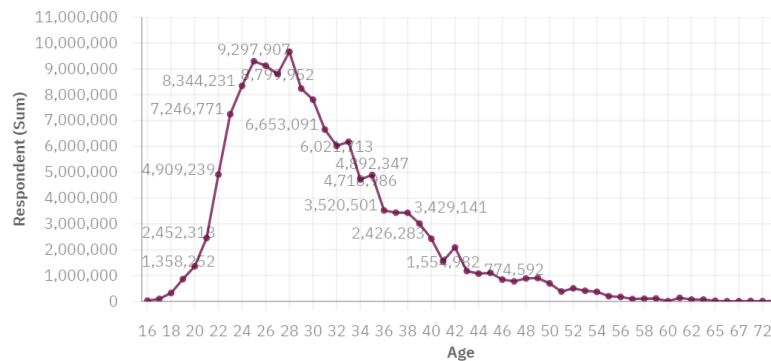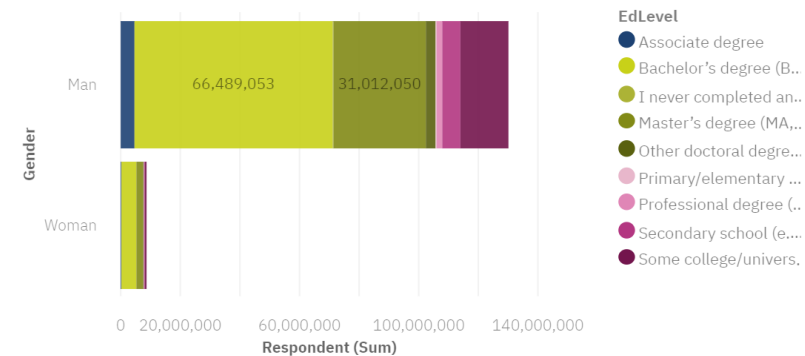
Respondent Count By Gender

Gender
- Woman
- Man

6.3%

93.7%

Respondent Count For Countries

Respondent (Su...
38,170,293

865

Respondent Count By Age

9,297,907
8,344,231 8,79?,?62
7,246,771
6,653,091
6,02?,?13
4,909,239   4,??2,347
4,71?,?86
3,520,501   3,429,141
2,452,31?   2,426,283
1,358,?52   1,55?,?2 ?74,592

Age: 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 65 67 72

Respondent (Sum): 0 – 11,000,000
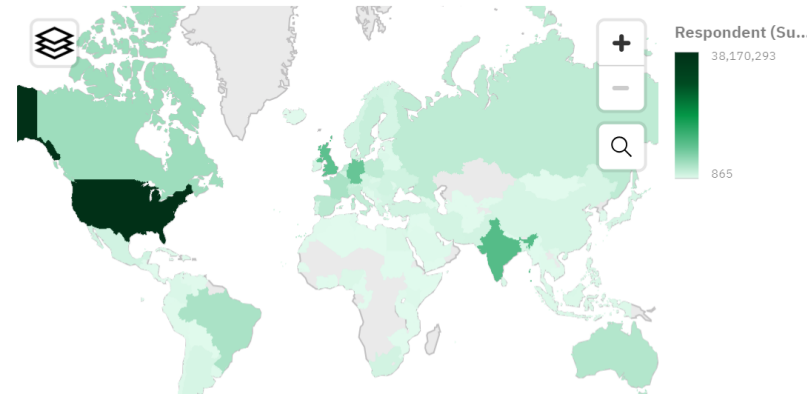
Respondent Count By Gender, Classified by Educational Level

EdLevel
- Associate degree
- Bachelor's degree (B...
- I never completed an...
- Master's degree (MA,...
- Other doctoral degre...
- Primary/elementary ...
- Professional degree (..
- Secondary school (e....
- Some college/univers.

Man: 66,489,053   31,012,050

Woman

Respondent (Sum): 0   20,000,000   60,000,000   100,000,000   140,000,000

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DISCUSSION

- There are a lot of young professionals practicing IT especially 20s and 30s in age.

- There is a huge gap between men and women who practice IT.

OVERALL FINDINGS & IMPLICATIONS

Findings

- JavaScript is the most commonly used programming language with Python coming in next.

- Easy-to-use databases such as PostgreSQL and MongoDB are on trend and will be used in the next few years.

- While there are many new emerging platforms, Linux and Windows are still the more widely used.

- There are many young IT professionals ranging from 20 years old to 30 years old.

- Mostly, the IT world is dominated by male professionals.

Implications

- JavaScript is still needed but learning Python in the next few years will help IT professionals be on demand with the changing times.

- Proficiency in other languages, databases, platforms and web frames make IT professionals more likely to be hired due to their flexibility to handle more than one skill.
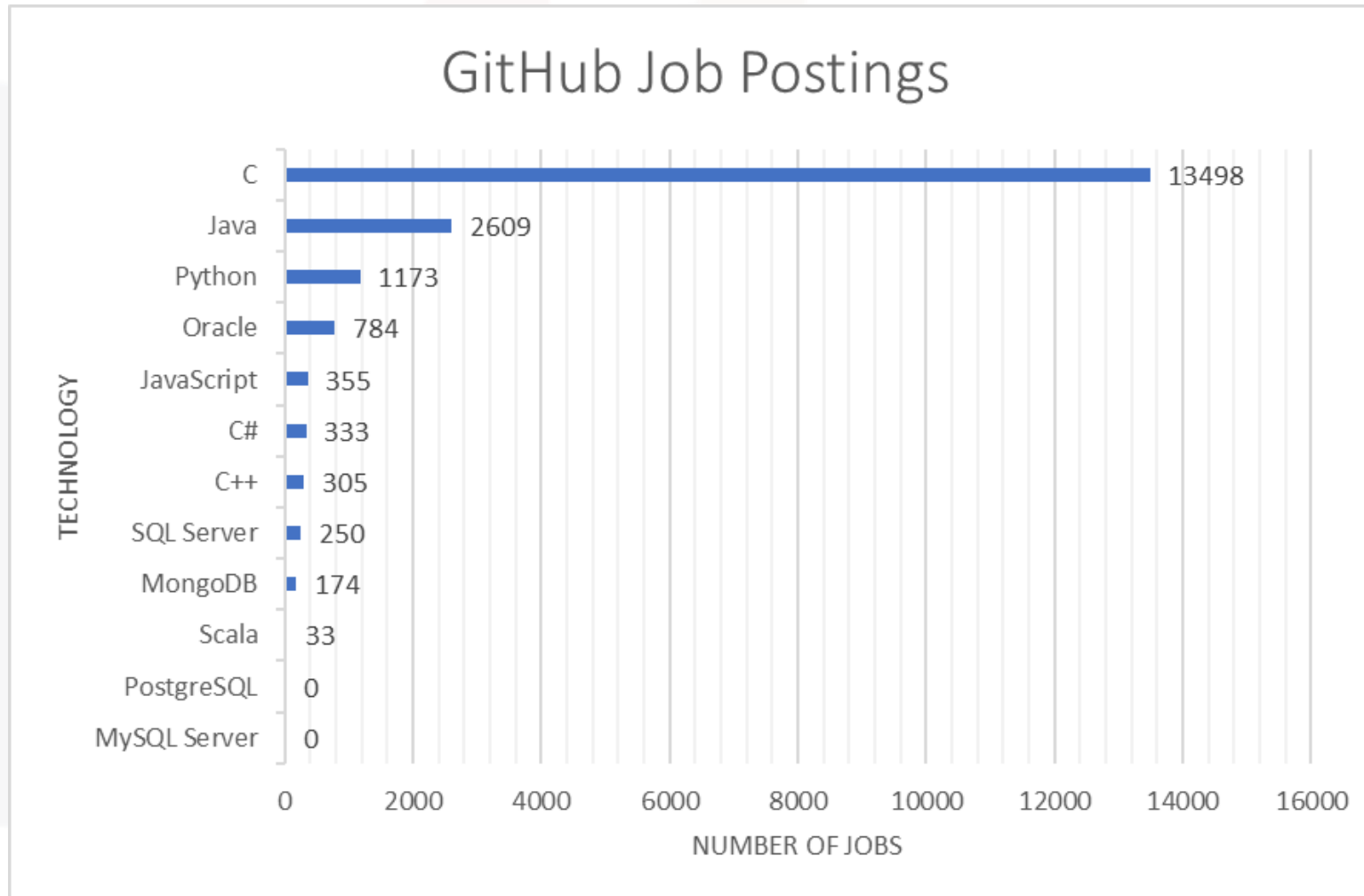
CONCLUSION

- To be in demand, IT professionals need to learn more than one programming language, web frame, database or platform as new technologies emerge.

- Easy to learn programming languages and more flexible databases will be the trend for the next coming years.

- Men are more inclined to technology compare to women.

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APPENDIX

JOB POSTINGS

GitHub Job Postings

TECHNOLOGY	NUMBER OF JOBS
C	13498
Java	2609
Python	1173
Oracle	784
JavaScript	355
C#	333
C++	305
SQL Server	250
MongoDB	174
Scala	33
PostgreSQL	0
MySQL Server	0

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POPULAR LANGUAGES

POPULAR LANGUAGES

Languages	Annual Average Salary
SWIFT	$130,801
PYTHON	$114,383
C++	$113,865
JAVASCRIPT	$110,981
JAVA	$101,013
GO	$94,082
R	$92,037
C#	$88,726
SQL	$84,793
PHP	$84,727

$0 $20,000 $40,000 $60,000 $80,000 $100,000 $120,000 $140,000

Annual Average Salary

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