



Stack Overflow Developer Survey

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OUTLINE



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EXECUTIVE SUMMARY



- In the industry, salary and age are highly positively correlated
 - i.e. the more ages / experienced, the higher the income
- The industry has seen the trend of remote working for long
- Popular programming languages remain popular
- Widely used databases are facing challenges posed by new alternatives, which are prominently popular
- The industry is still heavily male-dominant, with little female workforce

INTRODUCTION



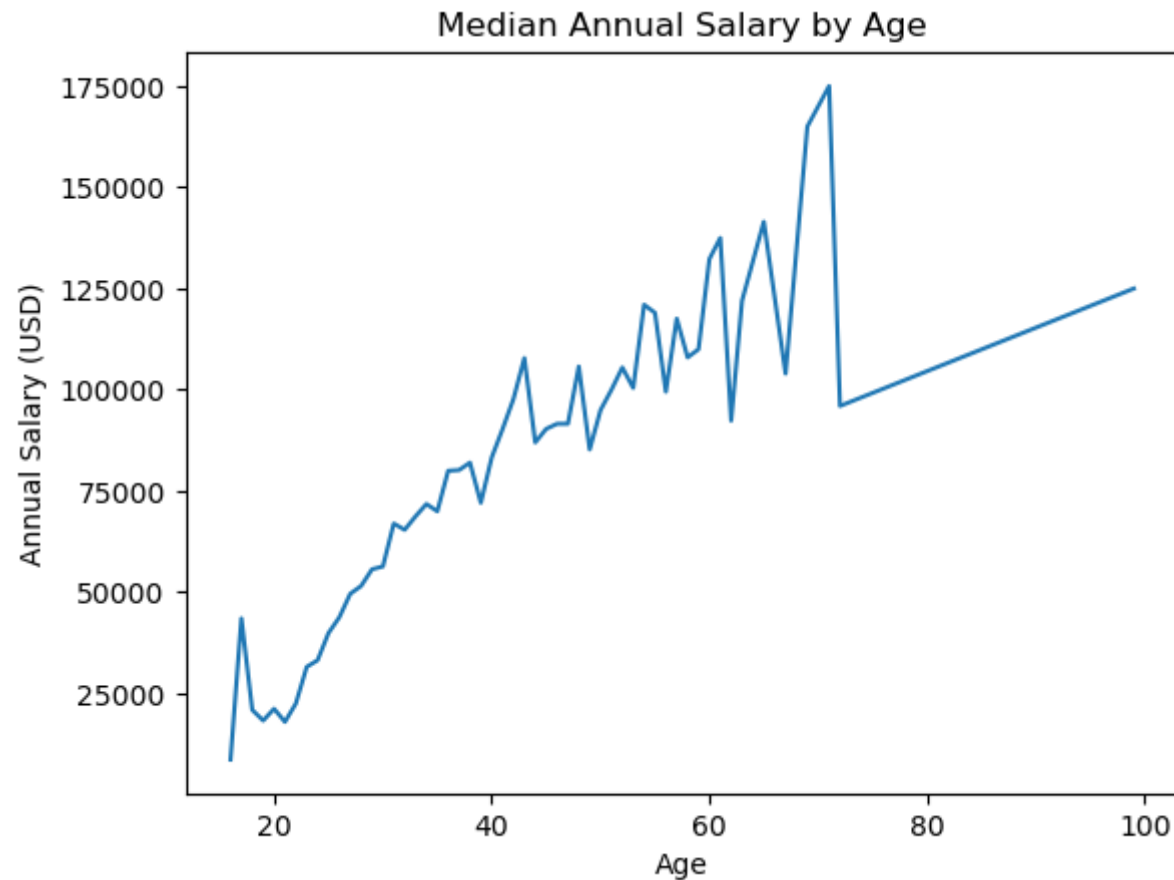
- Each year, Stack Overflow fields a survey covering everything from developers' favourite technologies to their job preferences
- Its annual survey is the largest and most comprehensive survey of people who code around the world.
- Major questions:
 - Which languages and databases are the most widely used?
 - What would be the most popular in the future?
 - How are the working conditions of developers?
- However, the results **DON'T** represent everyone in the developer community evenly. They are for reference only.

METHODOLOGY



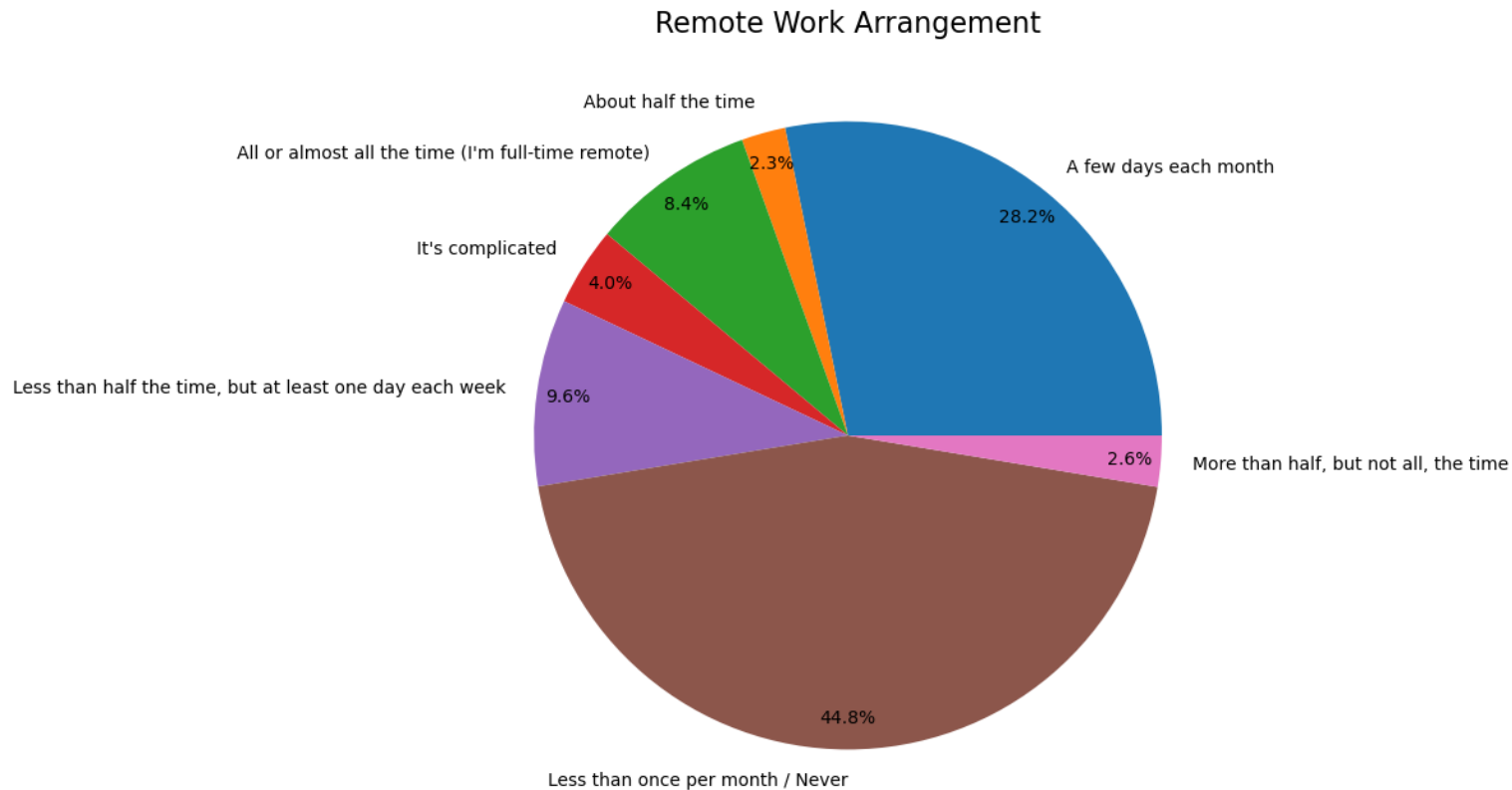
- Fielded a 20-minute survey from 23 Jan to 14 Feb
- Received responses from 88,883 software developers from 179 countries, primarily through channels owned by Stack Overflow
- Inaccessible to countries blocked by third-party survey software due to US sanctions
- Blocks of questions and most answers were randomized in order.
- Many questions were only shown to respondents based on their previous answers.

RESULTS



- Annual remuneration grouped by age shows a positive correlation
 - i.e. the more aged / experienced, the higher the income

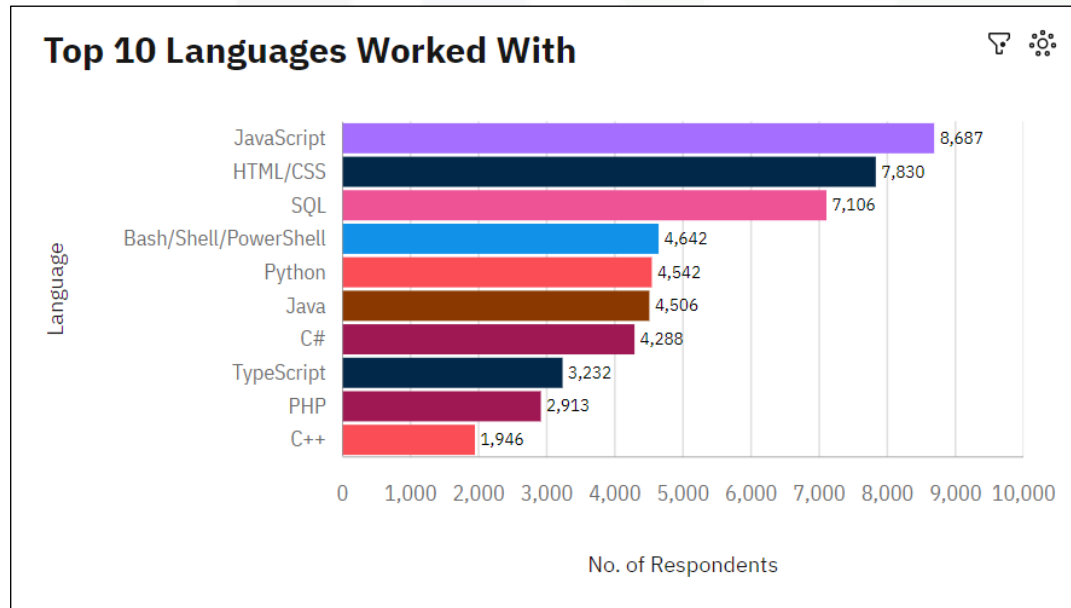
RESULTS



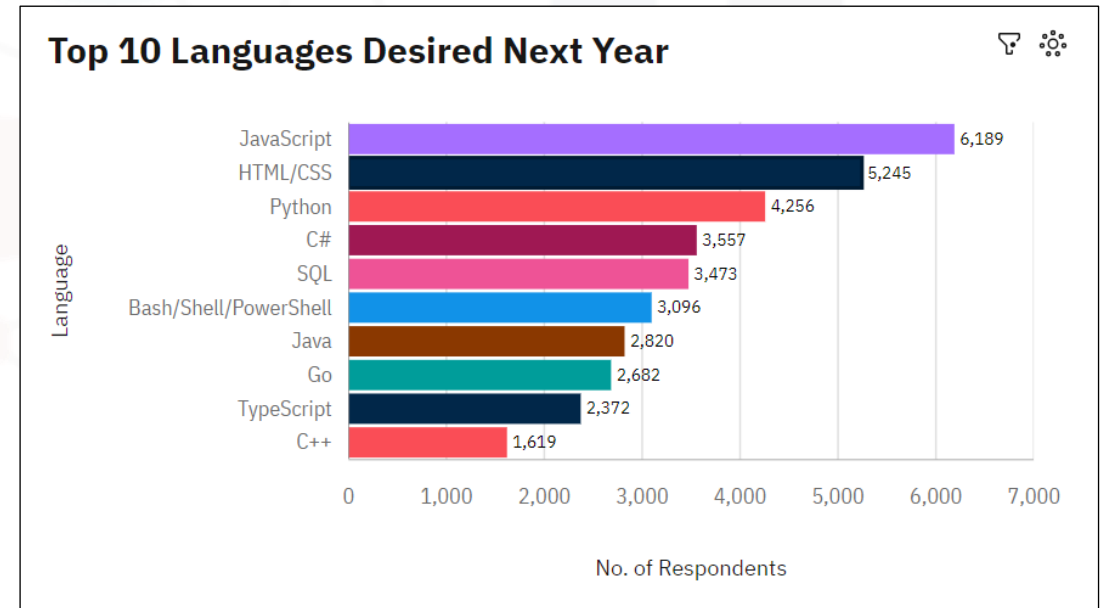
- Before COVID-19, remote working was not as common among developers, but almost half had already enjoyed the option at least once a month.

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS – FINDINGS & IMPLICATIONS

Findings

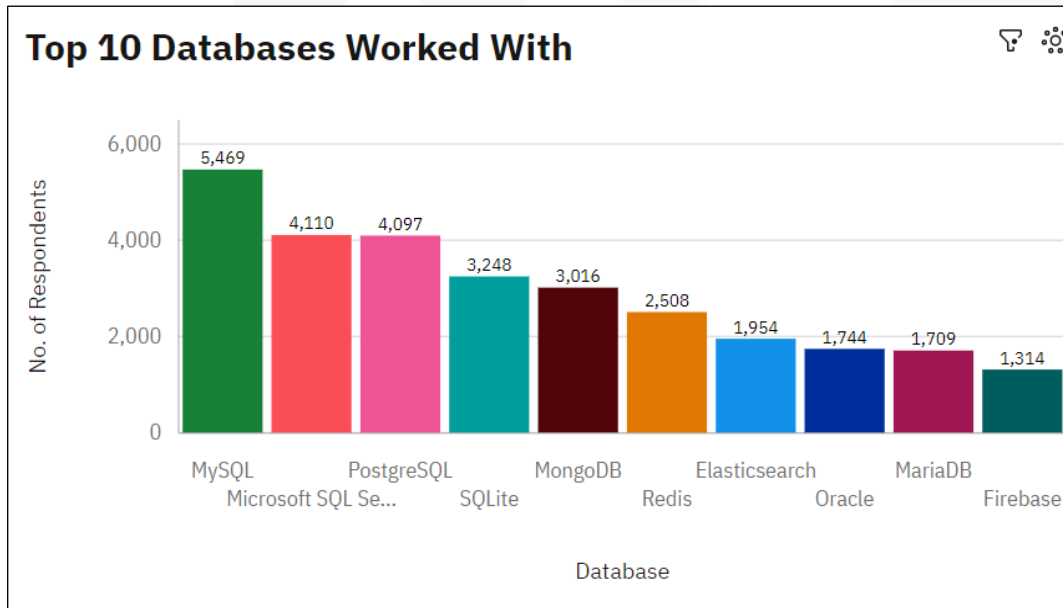
- **JavaScript** and HTML/CSS are both
 - currently the most widely used
 - the most desired next year
- **Python** and **C#** are
 - significantly used now
 - moderately popular among new learners
- **PHP** is the **ONLY** one in the current top 10 that falls out of the future list, replaced by **Go**

Implications

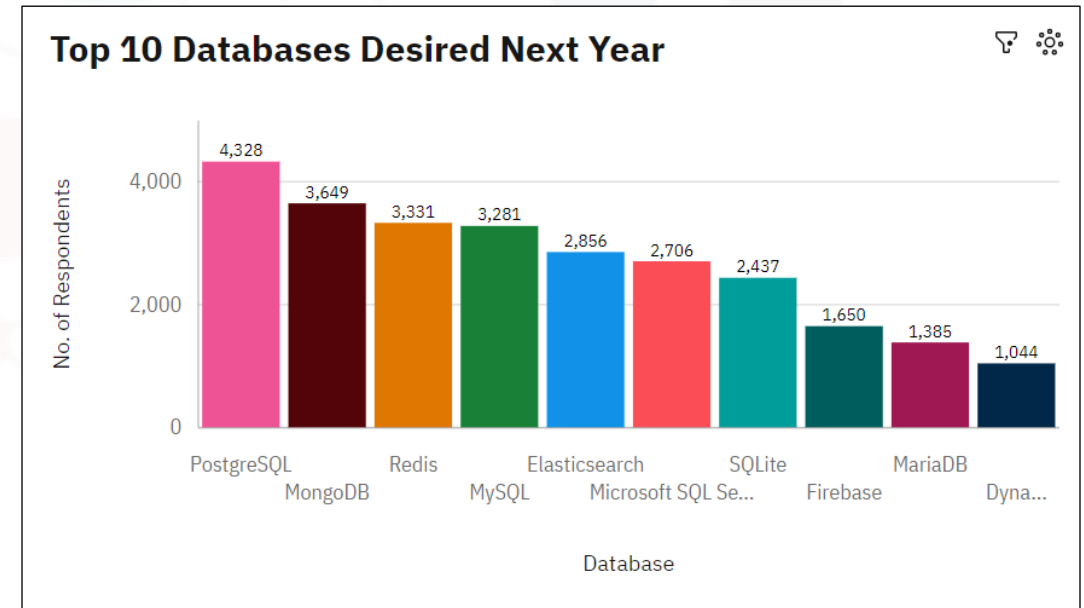
- The coding world likely remains dominated by **JavaScript** and HTML/CSS.
- **Python** and **C#** are catching up to join the few most popular languages.
- Though **PHP** is still in the current top 10 list, it is likely to lose significance in the industry.

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS – FINDINGS & IMPLICATIONS

Findings

- **MySQL** and **Microsoft SQL Server** are currently most widely used but not as much desired by developers.
- **PostgreSQL** and **MongoDB** are now moderately popular and even more strongly desired in the future.
- Oracle is the **ONLY** one in the current top 10 that falls out of the future list, replaced by DynamoDB.

Implications

- The database landscape may see a significant change, where **PostgreSQL** and **MongoDB** compete against **MySQL** and **Microsoft SQL Server** for the leading positions.
- Though Oracle is still popular in the industry, it is likely to lose significance gradually.

DASHBOARD

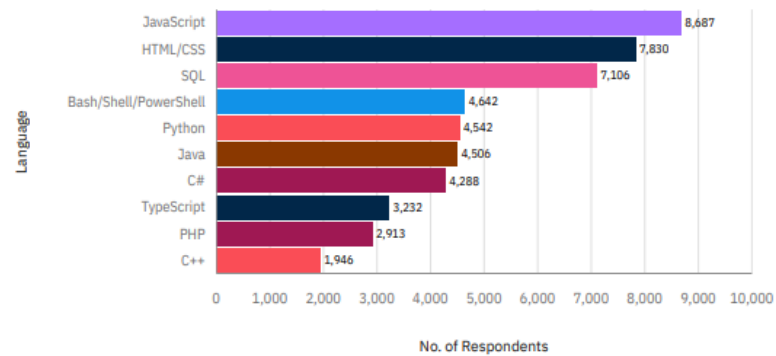


[<https://github.com/addisoncwt/Coursera_Capstone/blob/main/New%20dashboard_12%20Mar.pdf>](https://github.com/addisoncwt/Coursera_Capstone/blob/main/New%20dashboard_12%20Mar.pdf)

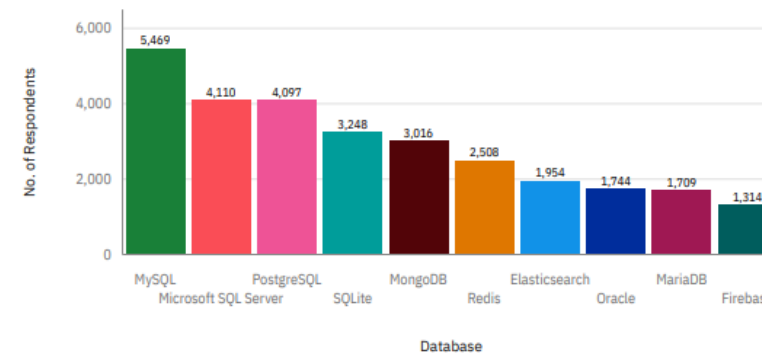
DASHBOARD TAB 1

Current Technology Usage

Top 10 Languages Worked With



Top 10 Databases Worked With



Platforms Worked With



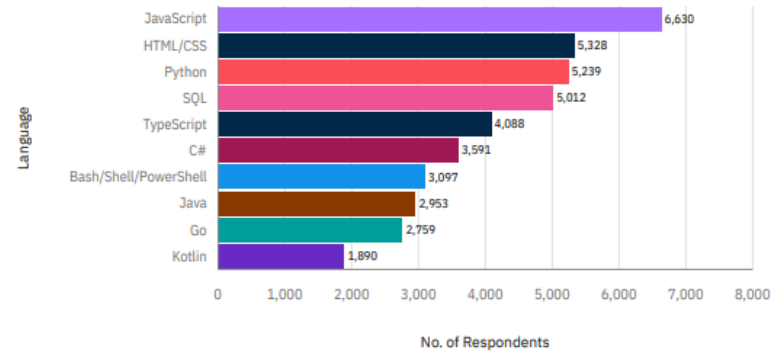
Top 10 Web Frames Worked With



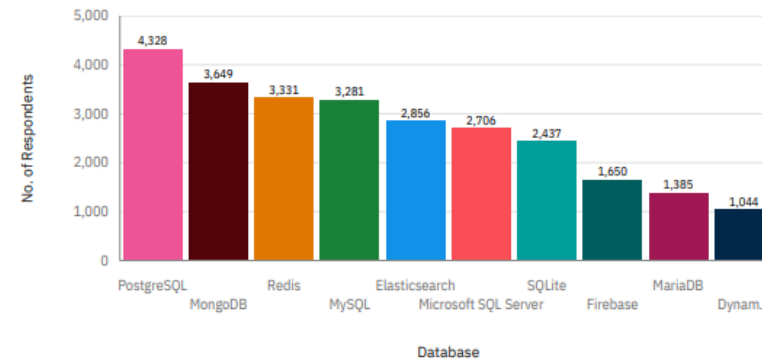
DASHBOARD TAB 2

Future Technology Trend

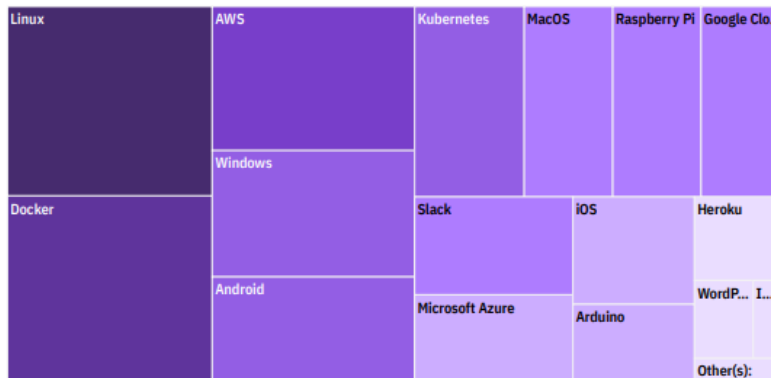
Top 10 Languages Desired Next Year



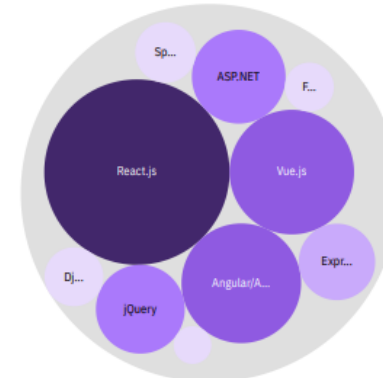
Top 10 Databases Desired Next Year



Platforms Desired Next Year



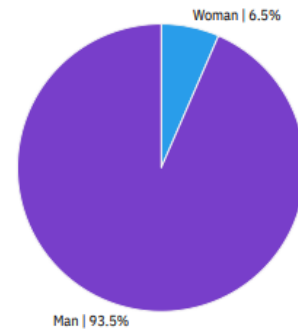
Top 10 Web Frames Desired Next Year



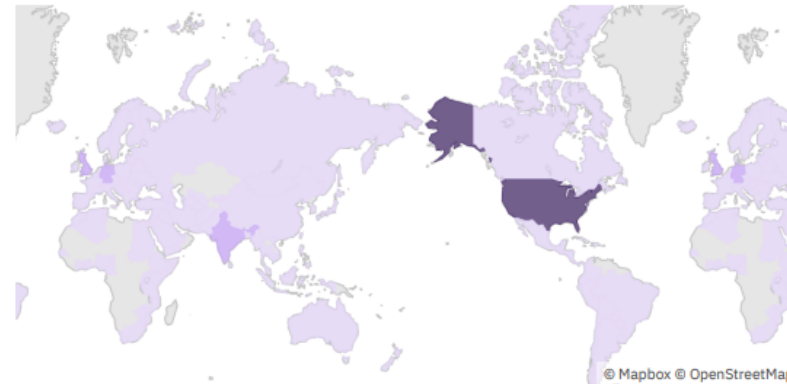
DASHBOARD TAB 3

Demographics

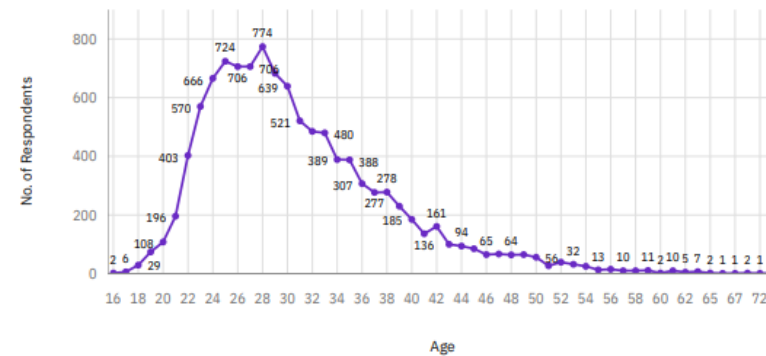
Respondents by Gender



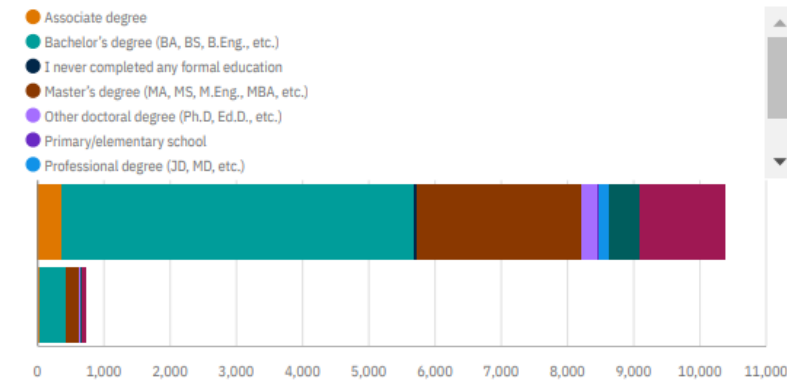
Respondents by Country



Respondents by Age



Respondents by Gender and EdLevel



DISCUSSION



- Are developers supposed to be specialised or capable of various sorts of languages and platforms? How to?
- The industry still seems male-dominated. Does it have anything to do with education, or is it merely a natural pattern?

OVERALL FINDINGS & IMPLICATIONS

Findings

- In general, developers at higher ages earn more than those younger
- Remote working was already seen in the industry before COVID-19
- Most popular programming languages are still strongly desired, despite minor ranking changes
- Currently popular databases are not as popular among developers as other new options
- So far, most developers are young males, most of which have received formal tertiary education

Implications

- In the industry, salary and age are highly positively correlated
- In this new-era industry, developers had already been enjoying the benefit of remote working for long, though probably not as common as after COVID-19
- The landscape databases is expected to see major changes due to developers' eagerness for alternatives
- Pioneering as it may seem, the industry is still heavily male-dominant

CONCLUSION



- Though young talents are the largest manpower contributor, it is still the **cumulative knowledge and experience** that brings the highest value
- It would be advantageous to **master more than 1 or 2 databases**, as the landscape is going to rapidly change.
- Though the reason for the male dominance is unknown, the **lack of female developers** is still a concern, which may need the market's actions

APPENDIX



- Data science job postings in different US cities
- Average annual income for popular programming languages

JOB POSTINGS



POPULAR LANGUAGES

