Report on Stack Overflow Survey 2021

MAY 9

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REPORT

SUMMARY

The data used in this report was obtained from the Stack Overflow's 2021 Annual Developers Survey. For the past ten years, Stack Overflow conducts this annual survey to examine all aspects of developer experience from the respondent's preferred programming language, operating system, their user experience on Stack Overflow's platforms, frequency of visits and engagements and crucially some key demographic features of its users.
The 2021 survey had over 80,000 participants spanning across 180 countries and territories. The aim of this report is to highlight some key demographics of the platform's users, their user experience and sentiments about Stack Overflow's services and community. In the process I employ Tableau software to highlight these factors.
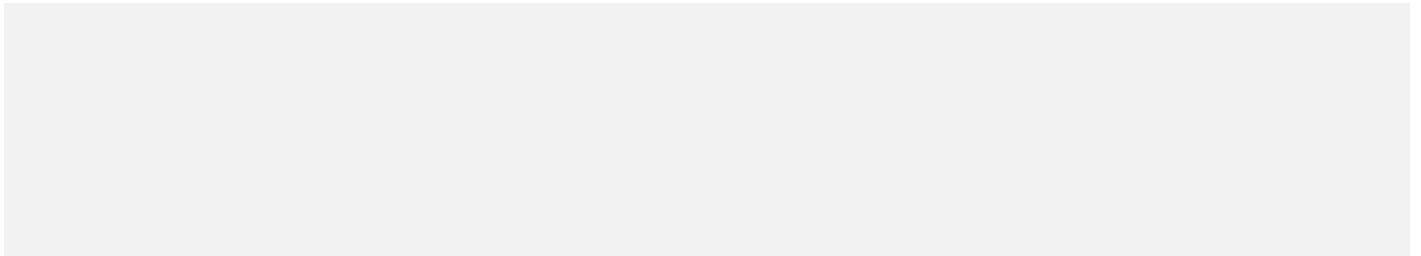
PROCEDURE

The survey was conducted by Stack Overflow[1] using Qualtrics' Survey Software and like most survey data needed some treatment before any analysis can be made. Using Microsoft Excel's Power Query, I subdivided the raw data into parts relating to Demographics, Questions and Responses. The sub divided sections were later loaded into the Tableau software to generate the needed charts and dashboards. Much emphasis is placed on highlighting the key demographic divides that exists among the Stack Overflow community across the world as well as show the sentiments of the platform's users.

FINDINGS

Firstly, the geographic distribution of respondents is highlighted. As much as 45% of all respondents came from the top five countries (United States, India, Germany, United Kingdom and Canada), leaving the remaining 175 countries to share the remainder. This may be indicative of the platform's commercial presence in these countries. Crucially, the platforms reach in Europe seem to be lackluster. This may be due to platform's slow transition into using their native European languages rather than English. The fact that 4 out of the top 5 countries are predominantly English speaking supports this assertion. The same reason can be attributed to the low turnout of respondents from populous (yet non-English speaking) countries like China and Brazil.

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[1] **Stack Overflow is a question and answer platform and community where professionals and tech enthusiast ask questions they face and the question may get answered by members.**
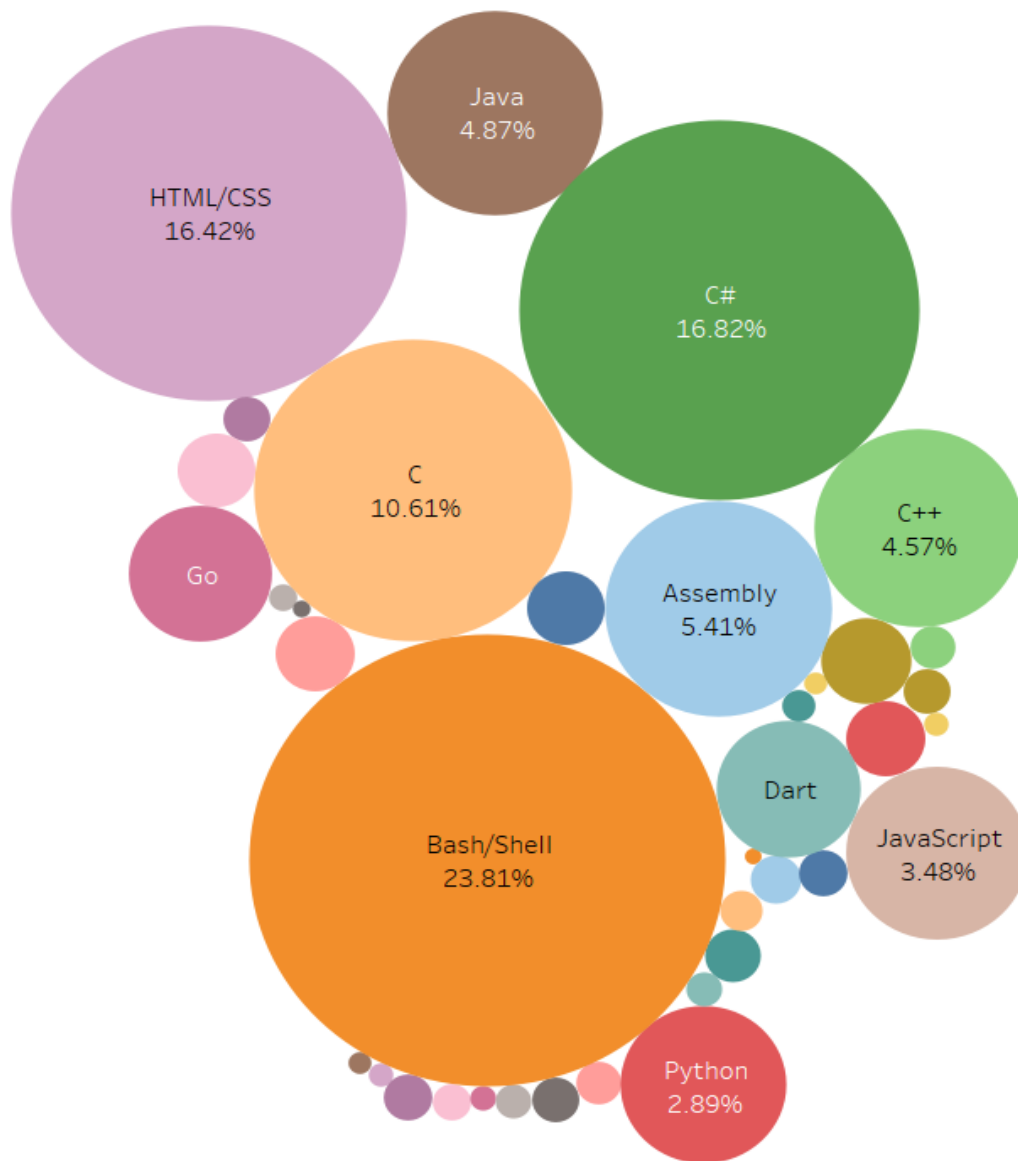
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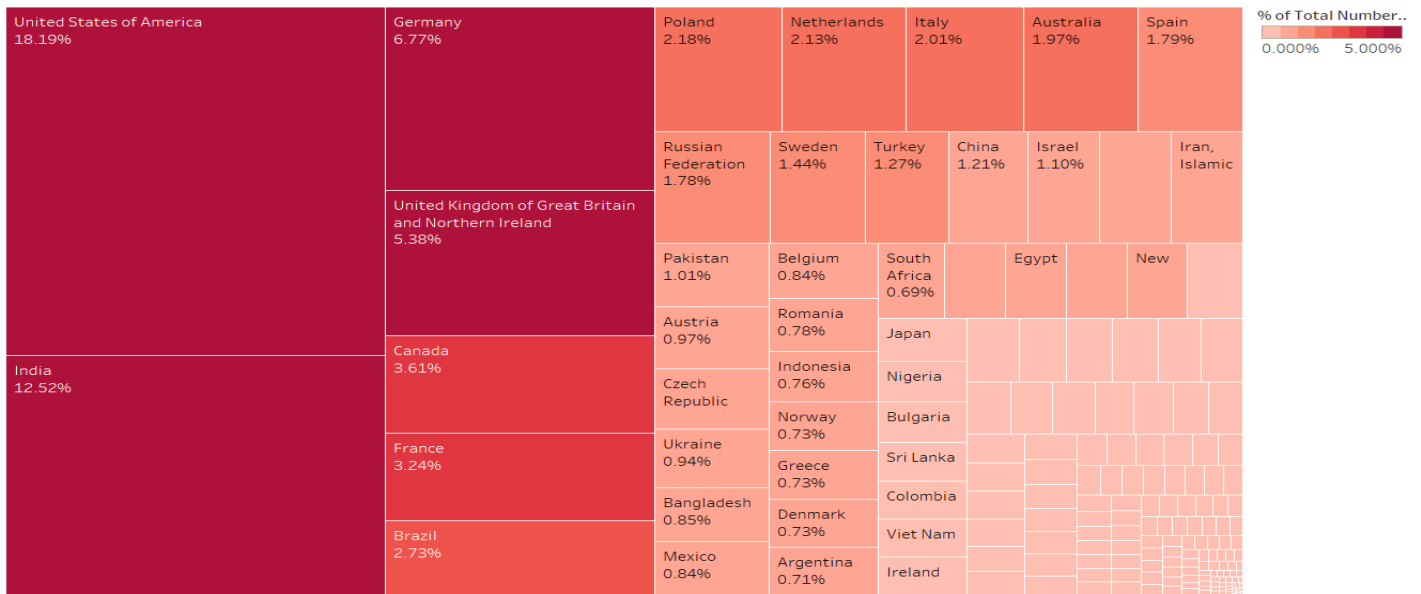
Unsurprisingly, the age distribution is overwhelmingly young and extremely male dominated. More than 80% of respondents fall within the brackets of 18-24, 25-34 and 35-34 years. With 25-34 years being the most dominant group. The sexual dimension to this distribution is also highlighted. The case does not seem to differ for all sexes. However, one noteworthy observation is how much the female distribution is highly skewed towards the 25–34 year group. This may highlight the point that participation rates among "very young" women especially for the ages 18-24 was much lower than other sexual groups. Crucially, it may be indicative of the fact that very few "young women" are getting into the tech industry hence their low representation.

Age Distribution among various sexes
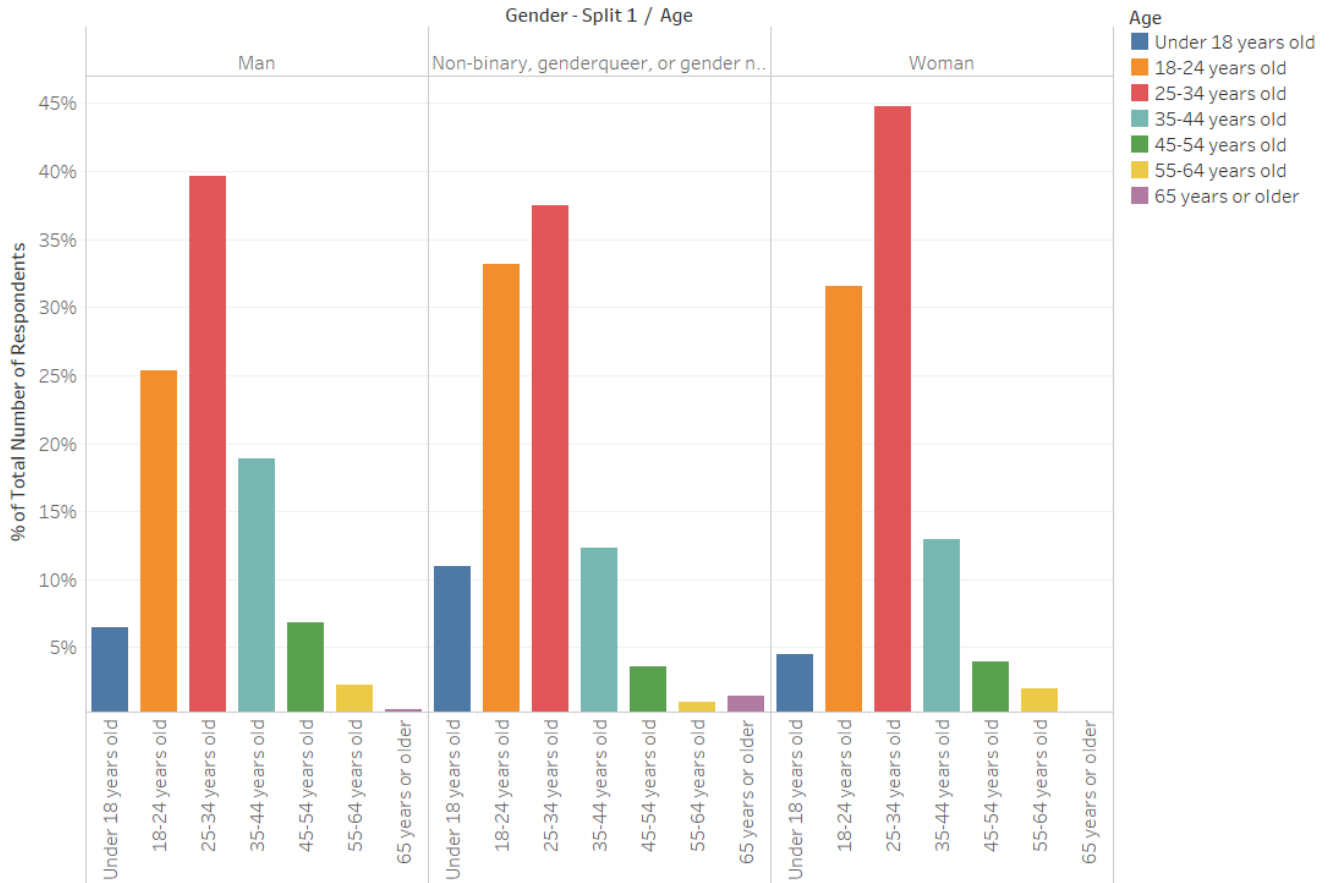
In terms of educational backgrounds, 42% of all respondents have at least a bachelor's degree with a further 21% having a master's degree. This is also not surprising. The report also highlights the proficiency of respondents in various programming languages as well as their preferred choice of Operating System Software. For all groups Bash/Shell seem to be the most preferred Language followed by HTML/CSS. For the female sub group, it was HTML/CSS that came on top.

Programming Language Proficiency

Circles labeled: HTML/CSS 16.42%, Java 4.87%, C# 16.82%, C 10.61%, C++ 4.57%, Go, Assembly 5.41%, Bash/Shell 23.81%, Dart, JavaScript 3.48%, Python 2.89%
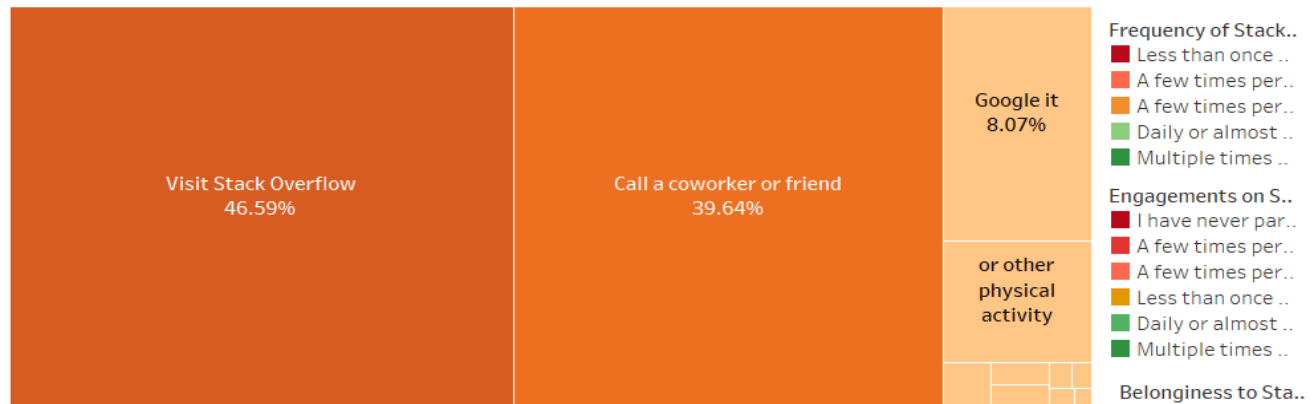
USER EXPERIENCE AND SENTIMENTS

It is the aim of this report to highlight the experience and sentiments of users of the Stack Overflow.

When asked how respondents react when facing a tech challenge, majority of respondents (47%) would rather visit Stack Overflow's platforms. Surprisingly, Googling it was the third

best option at 8%. This may be perhaps the strongest indicator of the positive sentiments users of the platform have towards Stack Overflow. For females the figure is higher at 49%. In terms of visits to the platform, as much as 54% of respondents visit daily. Even though this may be a positive sign, it is somewhat bleaked by the level of engagements of visitors. 5% of respondents only engaged on the platform. This implied that even though the general sentiment towards the platform is positive, most of the visits are to seek solutions to their tech issues rather than engage or provide solutions. This point is also supported by the fact that only 44% of respondents felt any sense of belonginess to the Stack Overflow community.

RECOMMENDATIONS

The following suggestions are recommended based on deductions on the 2021 Annual Developers Survey data.

- To increase Stack Overflow's appeal in some key regions and countries, the platform should be made accessible to speakers of other languages apart from English. Huge and commercially attractive countries like China, Brazil, Indonesia among others are markets that can be looked at as they present huge opportunities for growth in revenue and market size.

- The platform should be made more attractive to women and other sexual groups. Rather unfortunately over 80% of respondents identified as male. Even though the tech sector is mainly male dominated, the share of females and other sexual groups can be improved. The first step is by ensuring that HTML/CSS resources which was hugely favored by females is made readily available on the platform. Rather surprisingly, the females on the platform felt more belonginess to the community than the males and other groups, this should be a marker that when more females are brought in the fold, community engagements will grow.

- Lastly, much focus should be put on increasing user engagements. As it stands very few highly engaged users feed and overwhelming majority of solution seekers and this may not be sustainable.

REFERENCES

Data Source: https://insights.stackoverflow.com/survey