

# Development of research software at DLR

## Role and status in practice

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#deRSE19

Potsdam, 06.06.2019

A large, curved image of the Earth from space occupies the bottom right portion of the slide. It shows a view of the planet's surface with blue oceans, green landmasses, and white clouds. The curve of the horizon is visible at the top of the image.

Wissen für Morgen

# DLR

## Numbers

- More than 8000 employees
- ~20% of DLR employees involved in software development

## Some Characteristics

- Variety of
  - Fields
  - Maturity
  - Software technologies
  - Team sizes
  - Backgrounds



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We want FACTS





# Survey about Research Software at DLR

- Overview of the current role and practice of research software development at DLR
- Identification of potential for improvement

<b>Umfragename:</b>	Survey about research software at DLR
<b>Umfragebeschreibung:</b>	Software is an important innovation factor and an integral part of modern research. Besides the usage of software, the development of scripts, tools and even larger software packages becomes increasingly the norm in research. But how can we understand and even reproduce scientific results based on this research software? By participating in this survey you help us to find out more about the current role and practice of research software development at DLR. On this basis, we want to improve the environment and existing support activities for research software developers at DLR. Who conducts this survey? The software engineering group of the DLR department SC-IVS conducts this survey. Since 2005, we are contributing to the DLR-wide improvement and knowledge exchange in context of software development. The group established and heads the DLR software engineering network. If you have any questions about this survey, please contact Tobias Schlauch. How long will it take? There are 19 questions in this survey. It takes about 10 minutes to answer them. How long will the survey run? We expect to run the survey until end of January 2019. Where is the survey data stored? The survey data is stored on the survey team site of the DLR software engineering network on DLR-internal servers. What will happen to the results of this survey? We will publish an internal report about the results. We want to use it to improve the environment and existing support activities for research software developers at DLR. In addition, the publication of a scientific publication is planned to contribute to the general discussion of software development practice in research. We anonymize the data upon data collection and make sure that the published reports do not allow cross identification.
<b>Erstellt:</b>	27.11.2018 10:35
<b>Anzahl Antworten:</b>	773

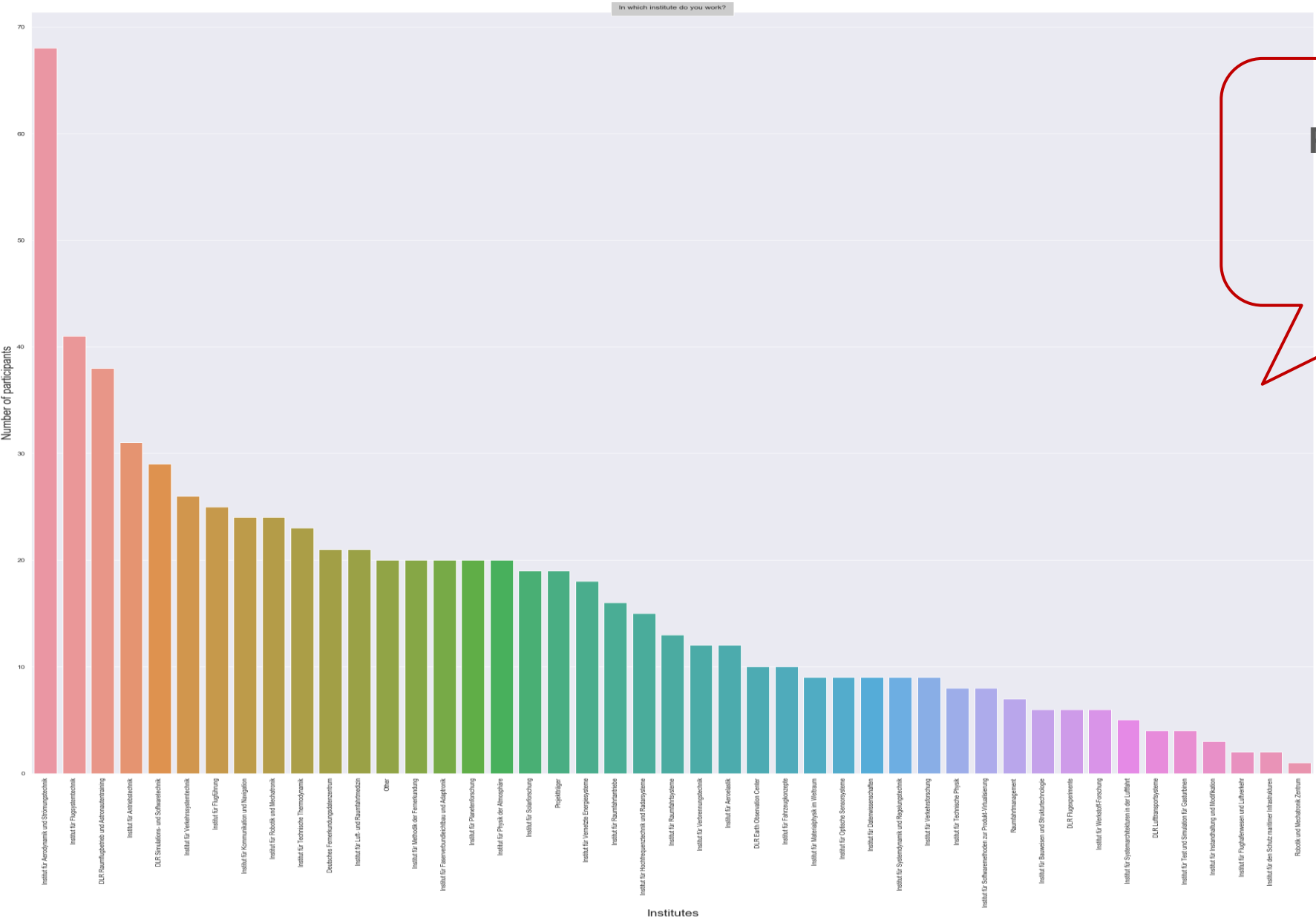


In which Institute do you work?



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Participation of all institutes and promoters ...

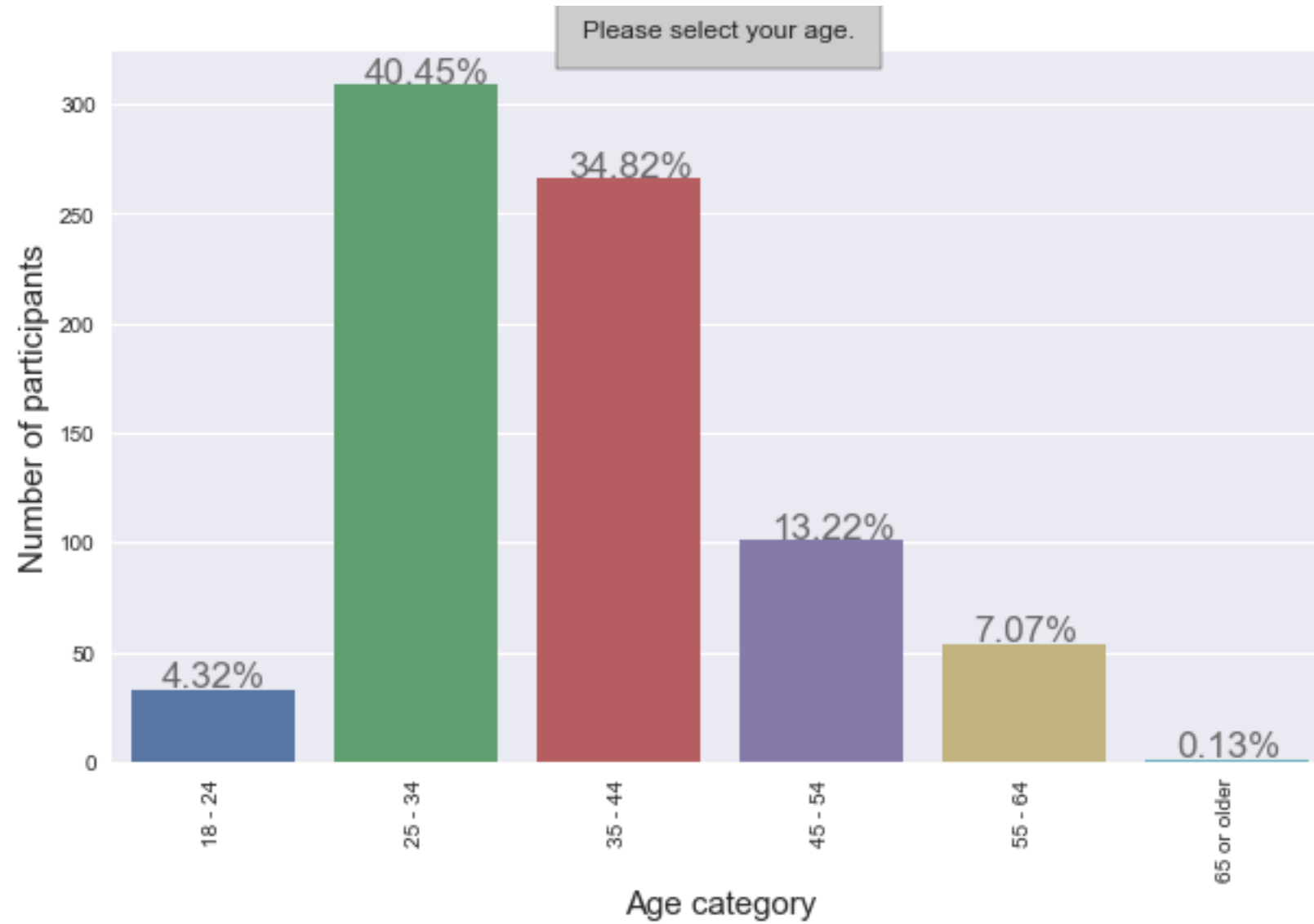


Please select your age



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... and all ages



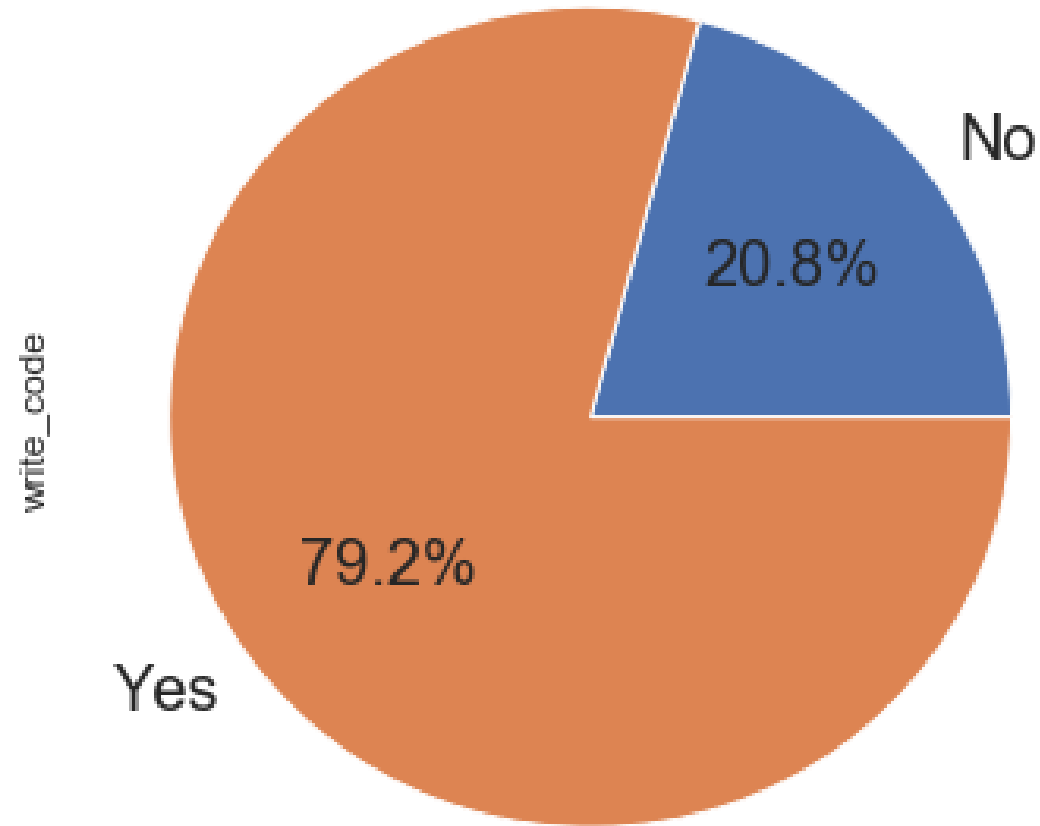
Do you write code as part of your job?



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Do you write code as part of your job?



	Write code
Yes	612
No	161

## Developer Overview

Data from participants who do NOT code during their work at DLR were NOT included in the further evaluation.



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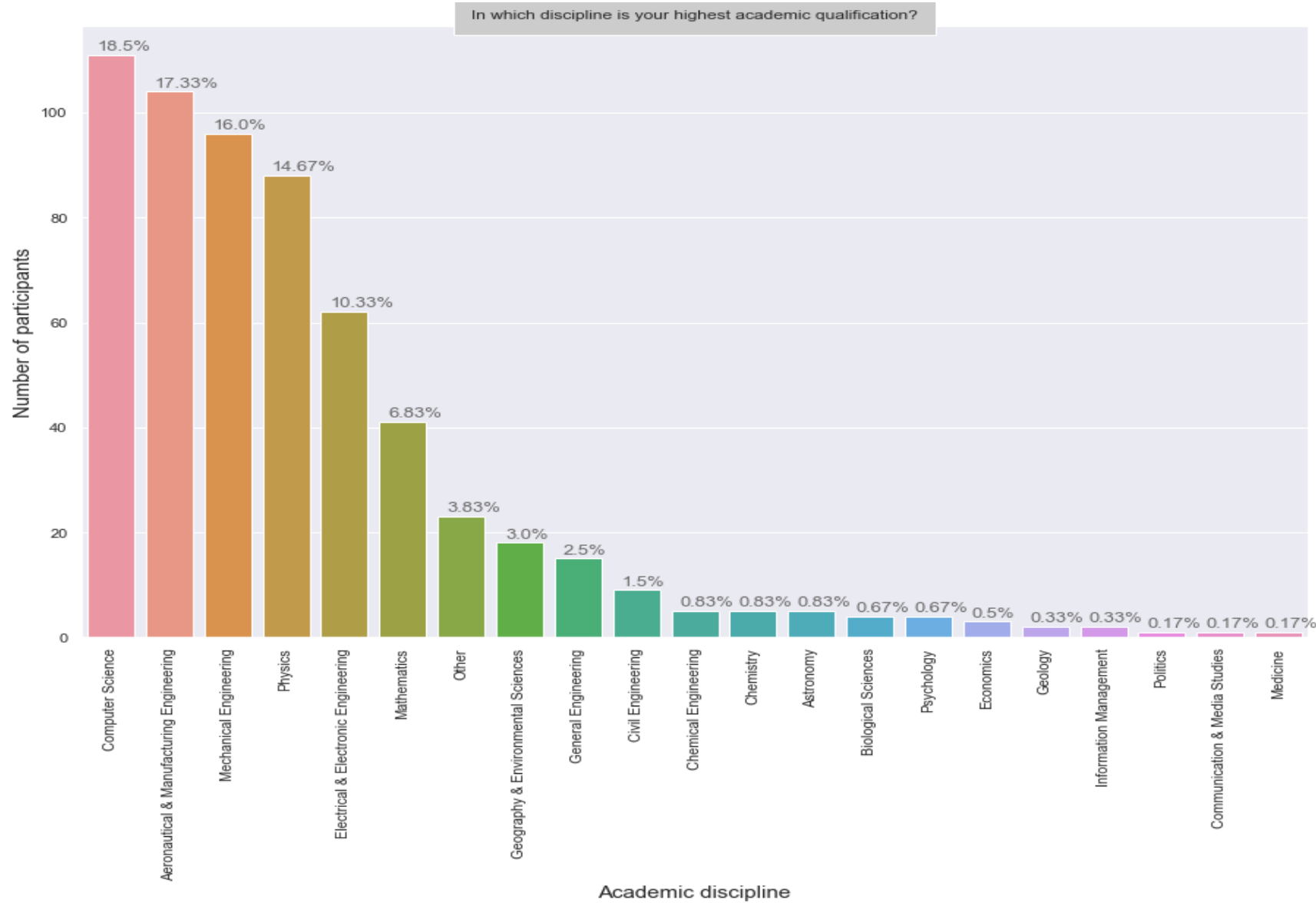
**In which discipline is your highest academic qualification?**



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Academic qualification	
Computer Science	111
Aeronautical & Manufacturing Engineering	104
Mechanical Engineering	96
Physics	88



In an average month, how much time do you spend on...

versus

In an average month, how much time would you like to spend on...



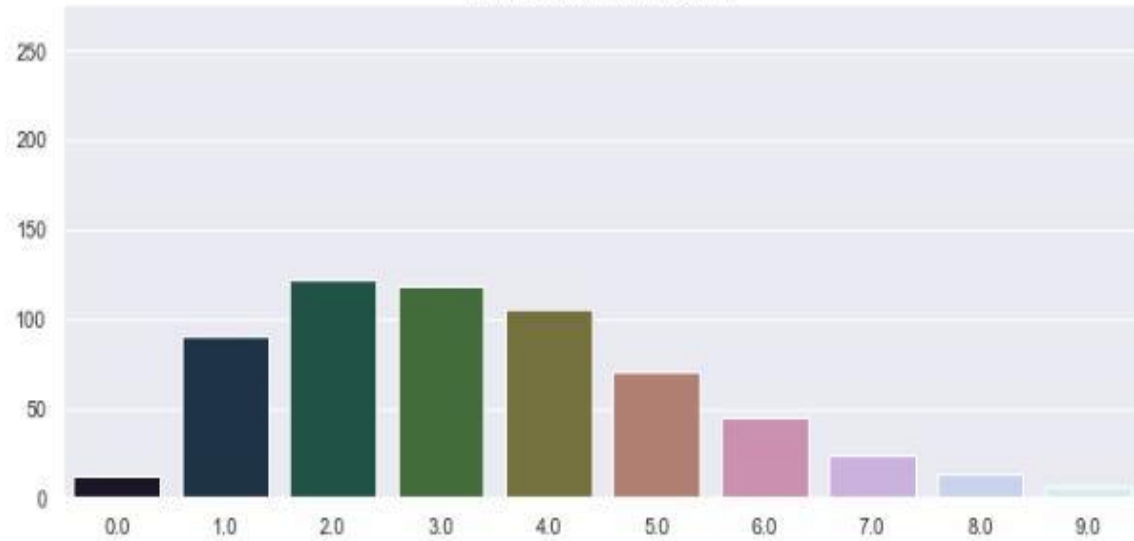
Wissen für Morgen



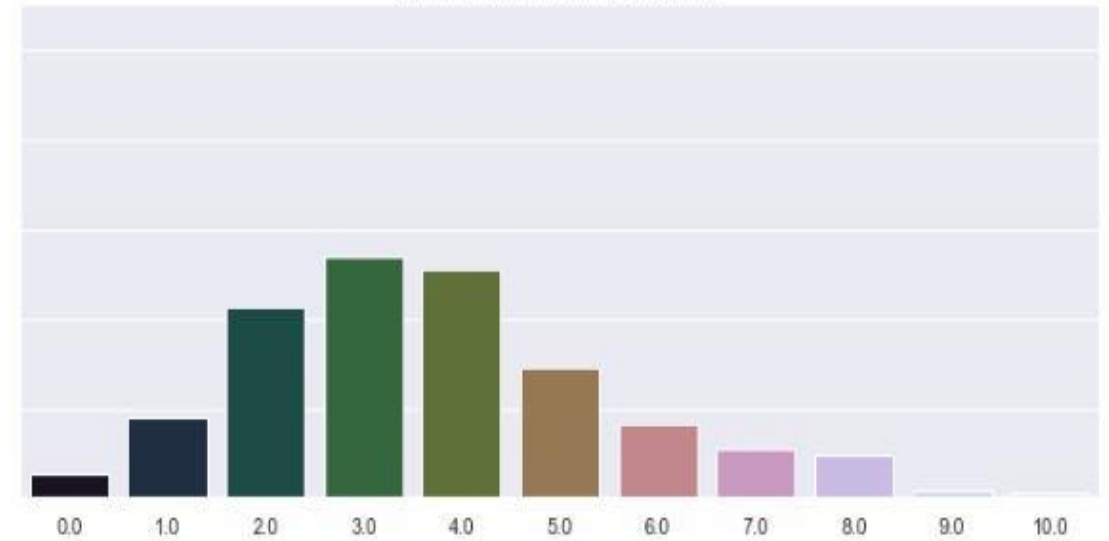
## ... software development

**Significant shift to  
RIGHT**

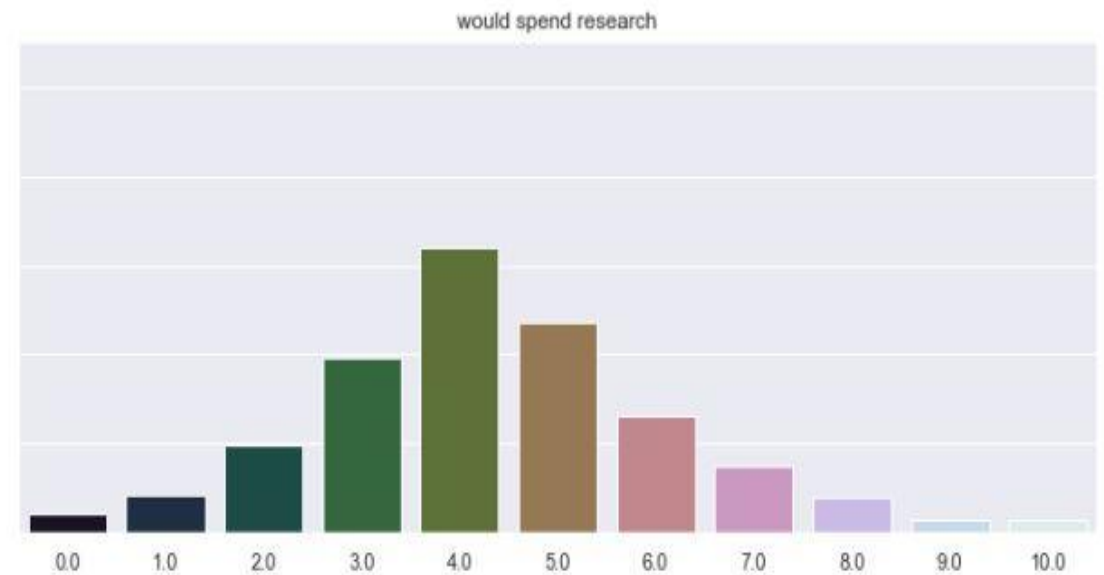
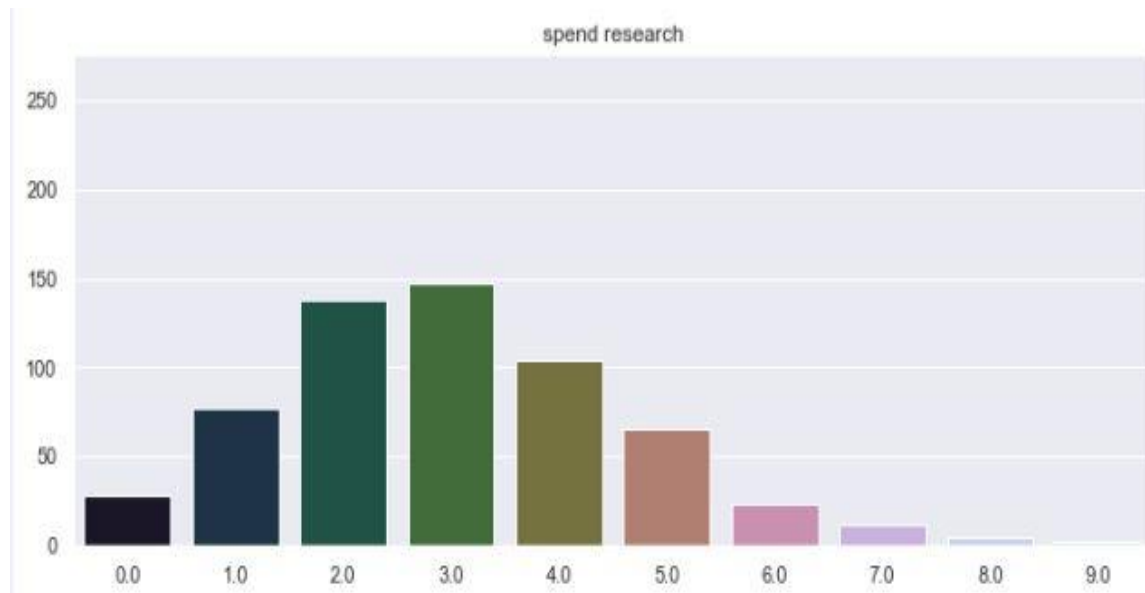
spend software development



would spend software development



## ... research

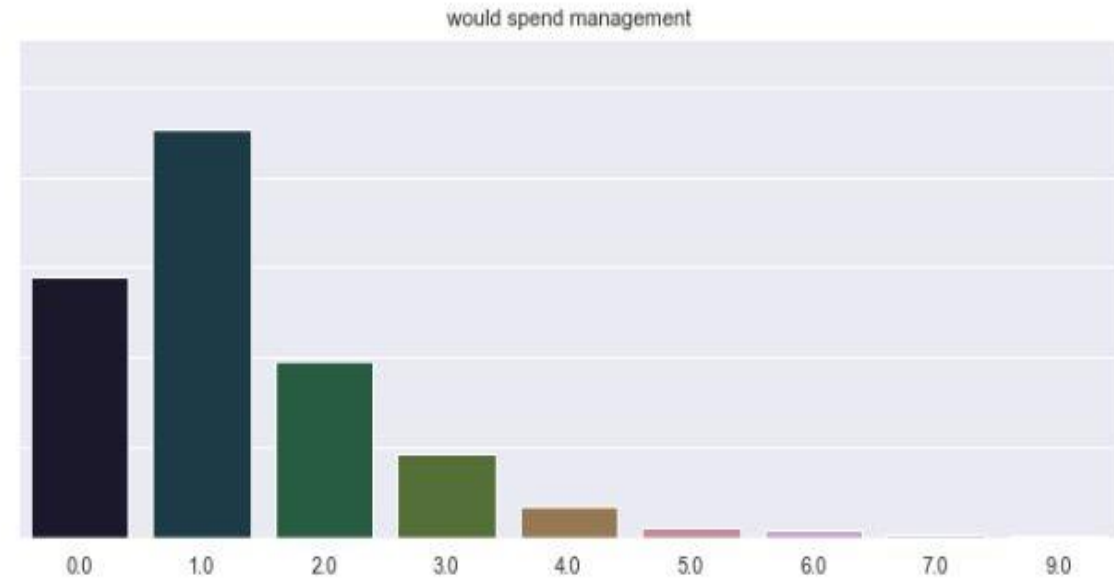
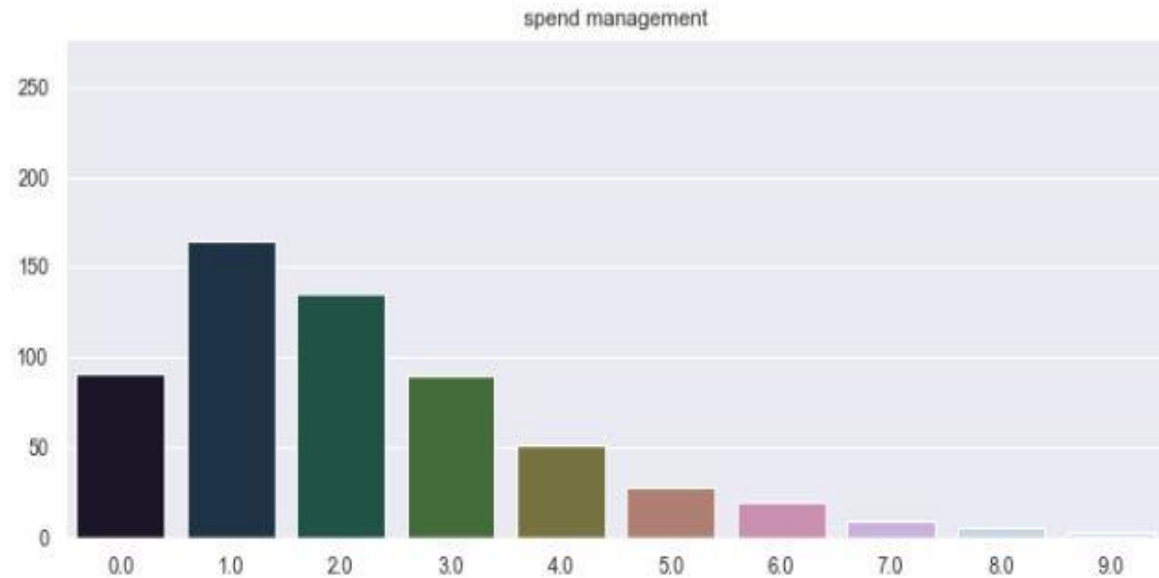


**Significant shift to  
RIGHT**





## ... management

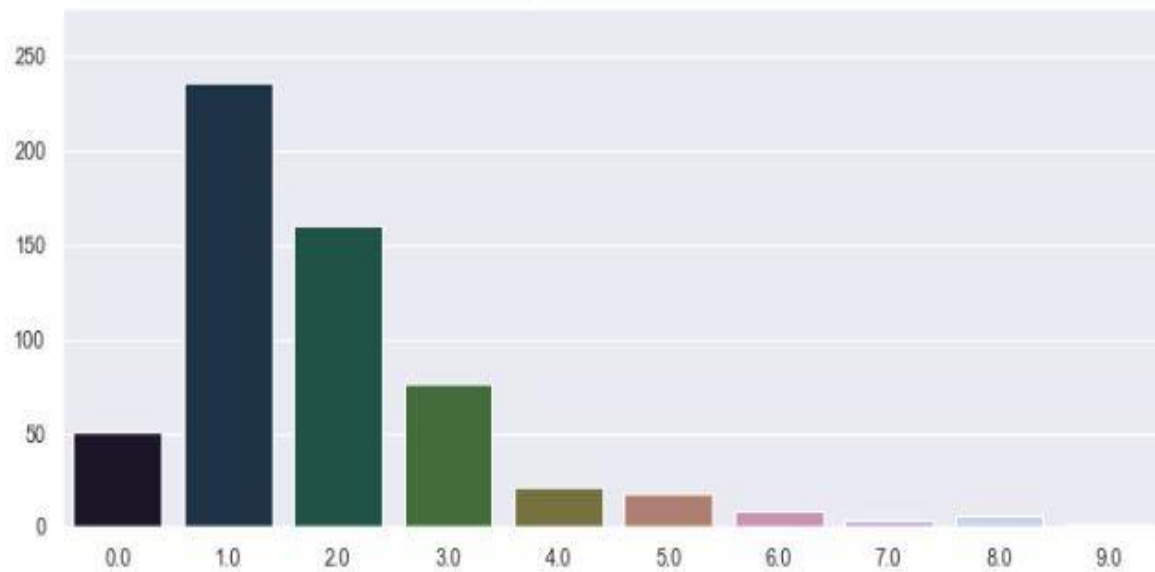


**Significant shift to  
LEFT**



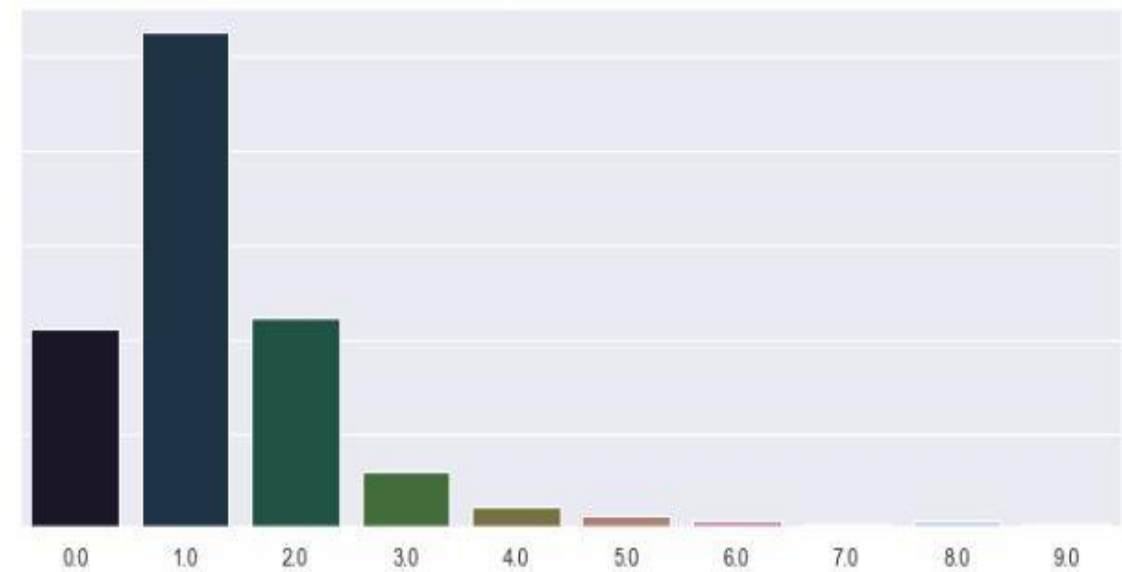
## ... other activities

spend other activities



**Significant shift to  
LEFT**

would spend other activities

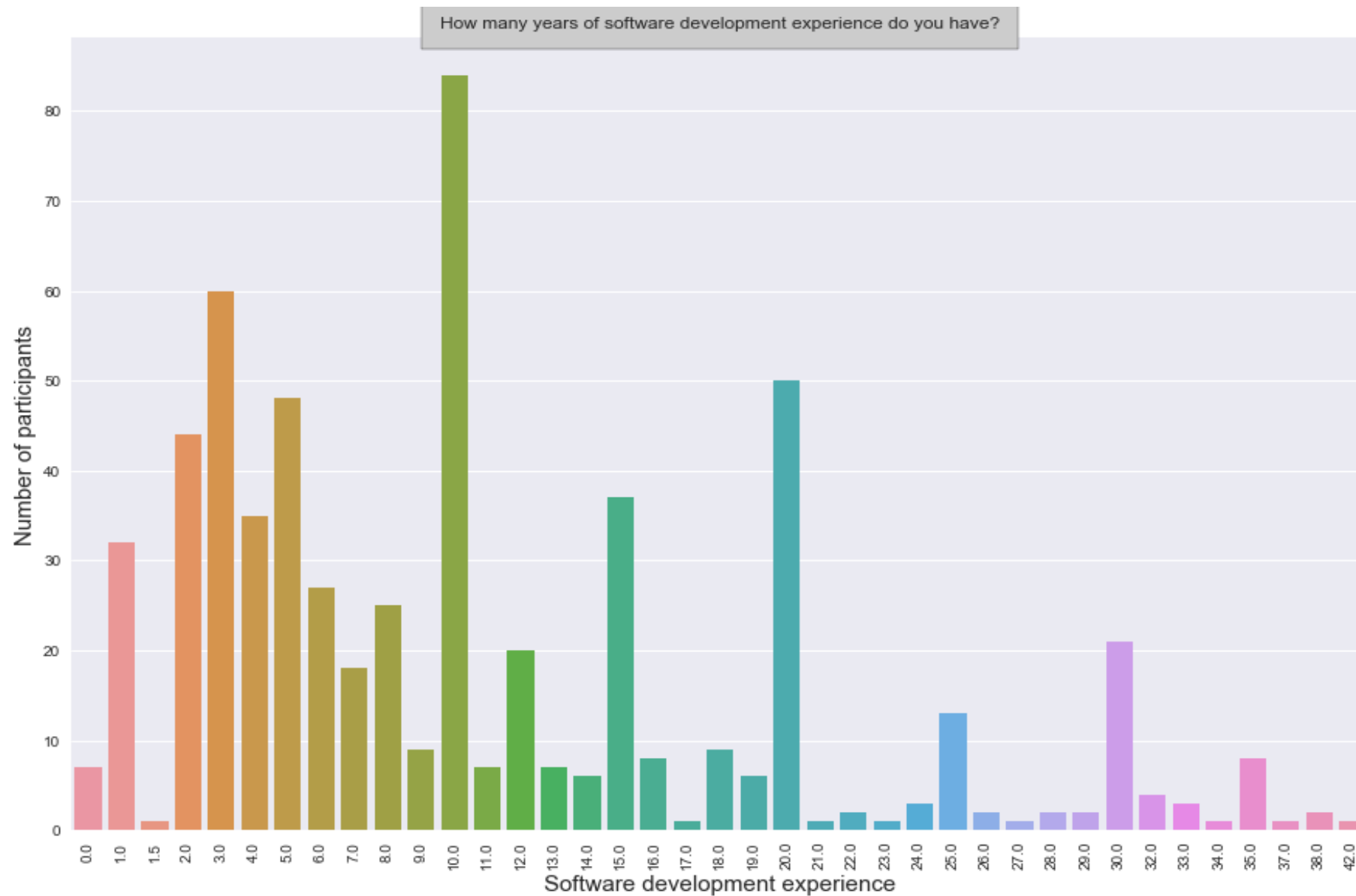


How many years of software development experience do you have?



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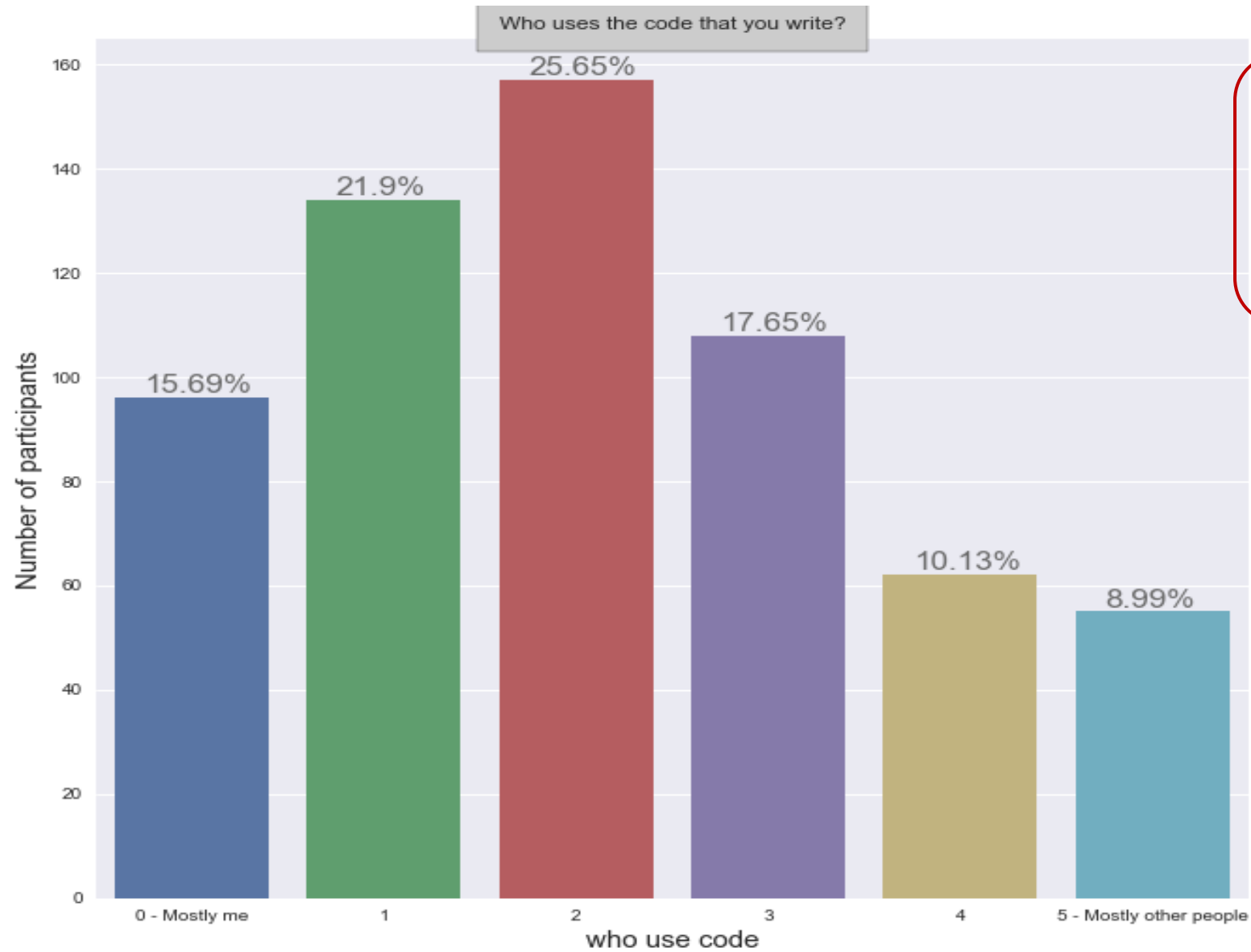
Average is 9 years

Who uses the code that you write?



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Clear tendency to  
`Mostly me`



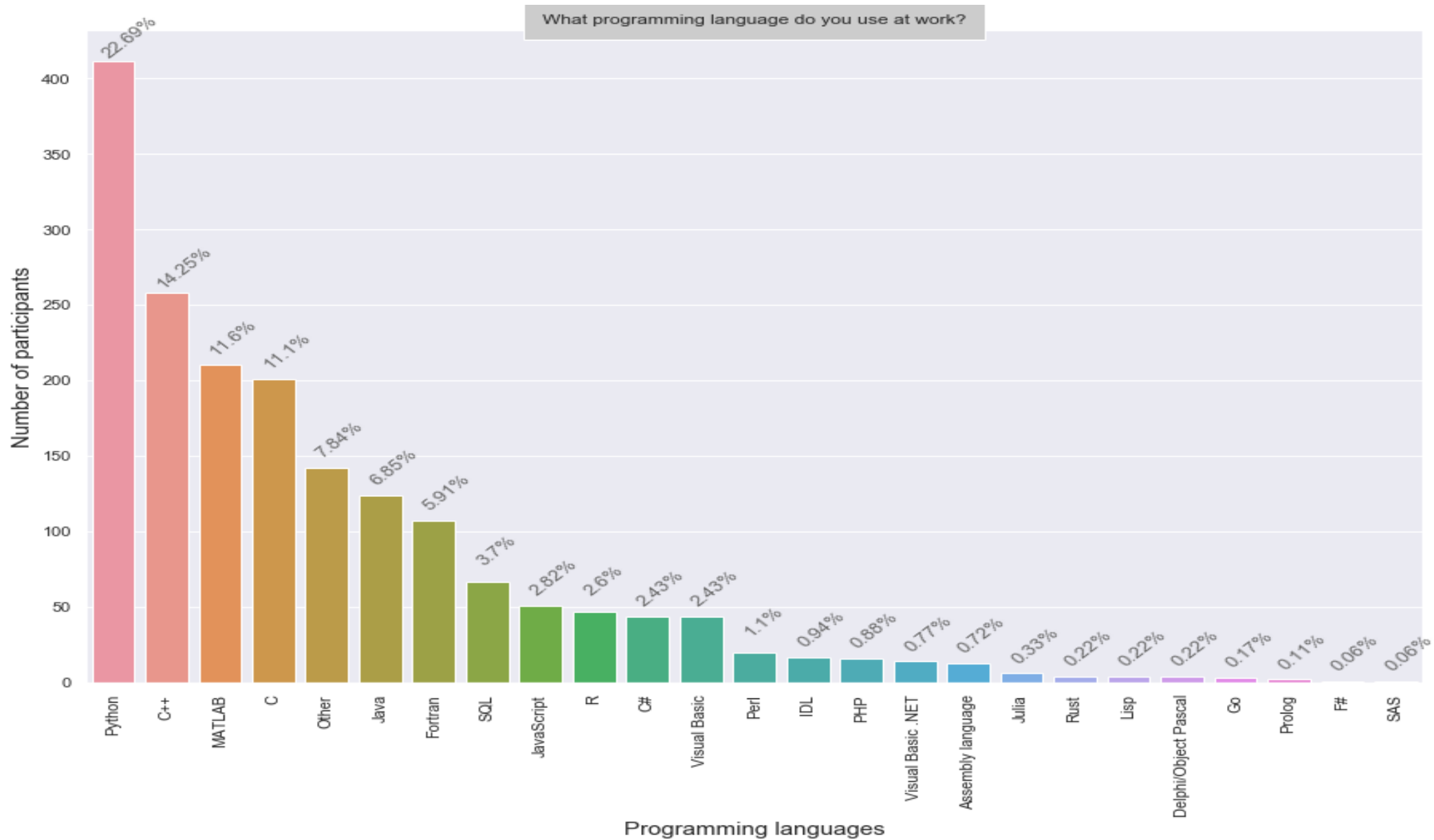
**What programming language do you use at work?**



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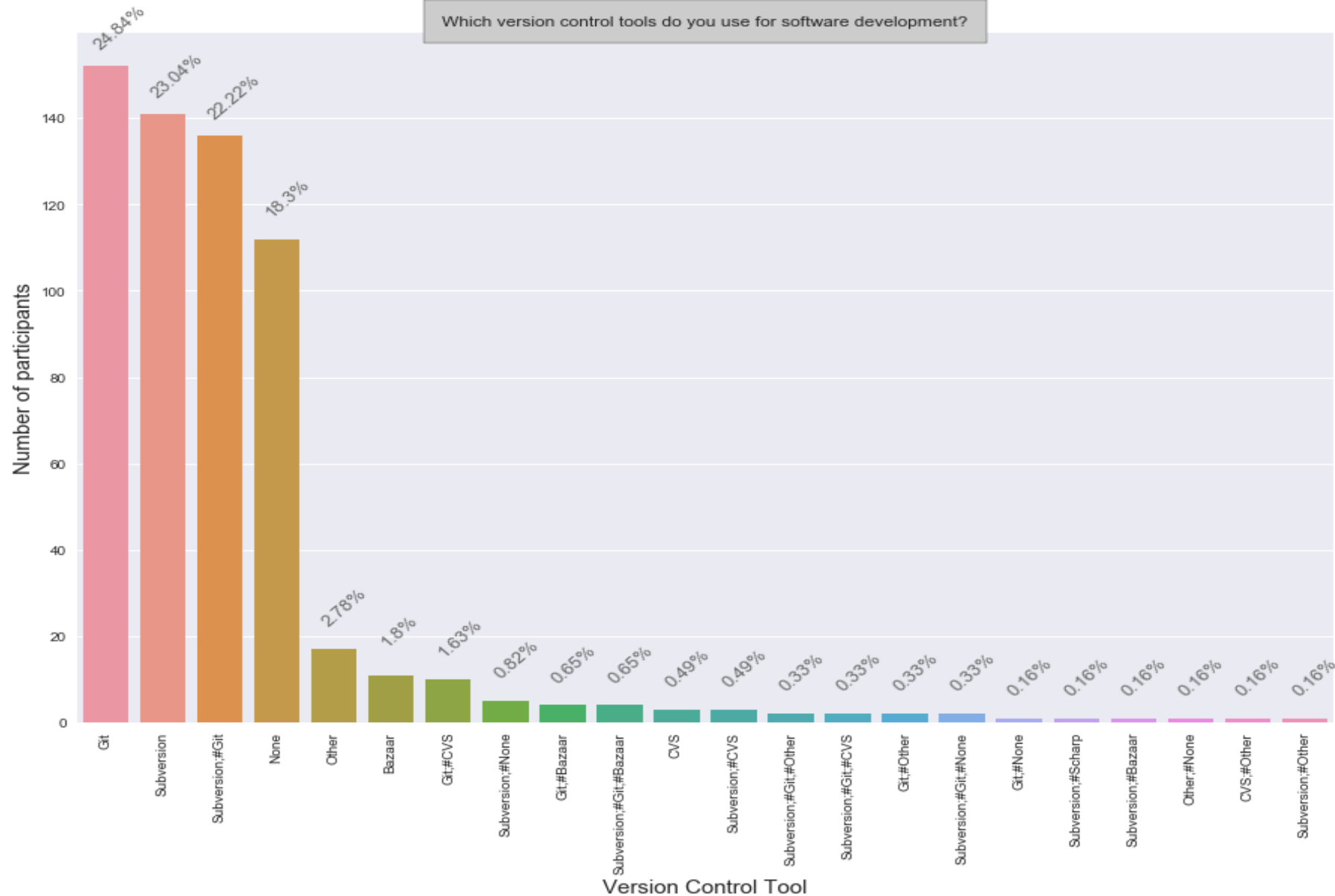


**Which version control tools do you use for software development?**



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Which version control tools do you use for software development?



112 participants NOT use version control



# Documentation



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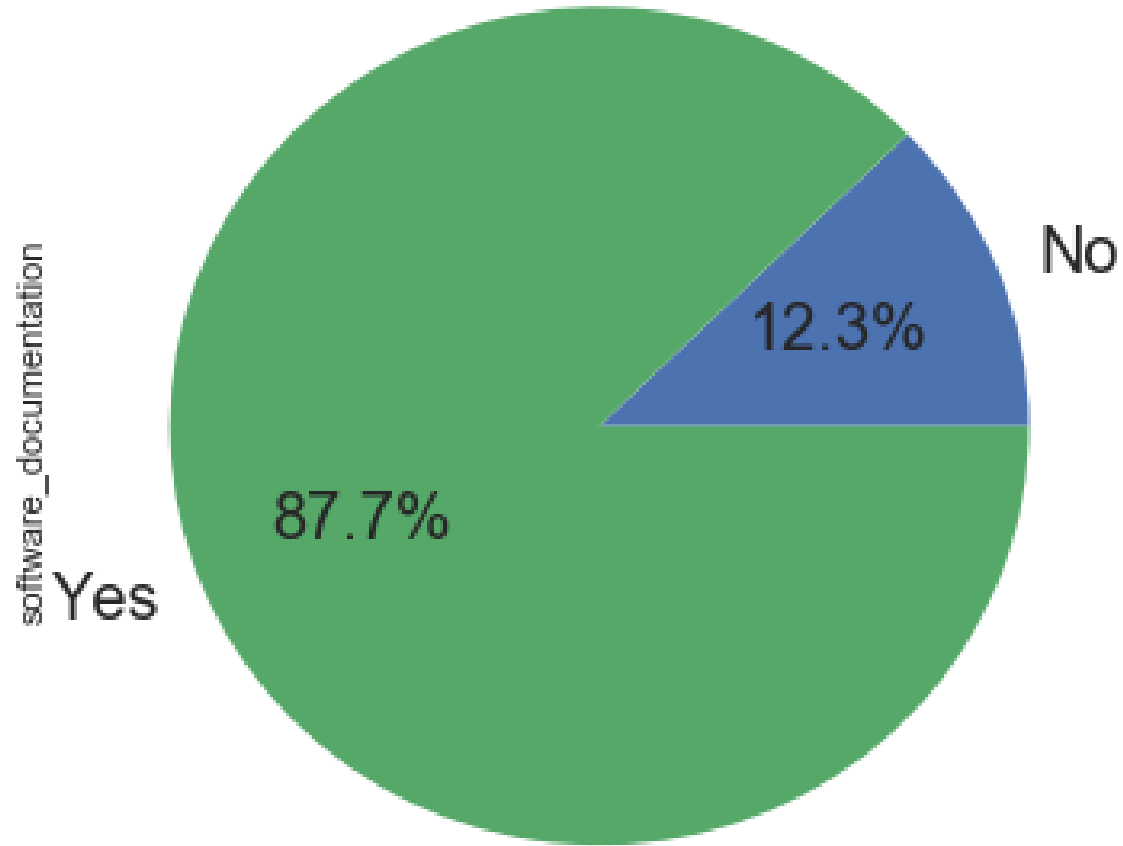


Are you documenting your software?



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Are you documenting your software?



	Software documentation
Yes	537
No	75

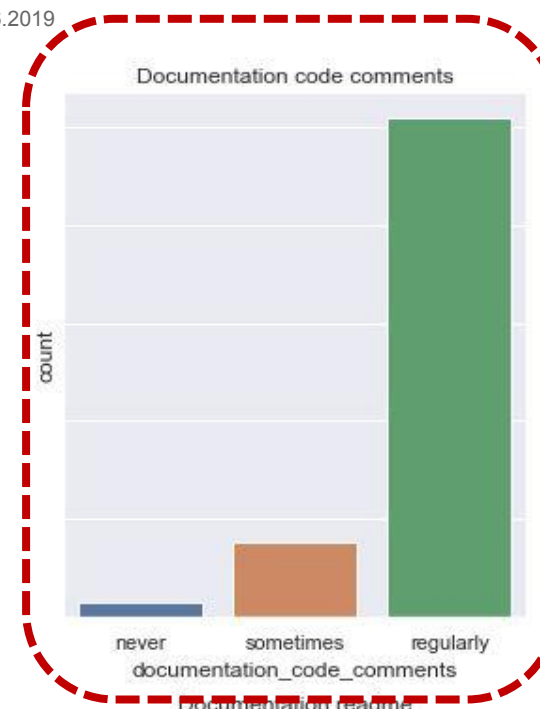
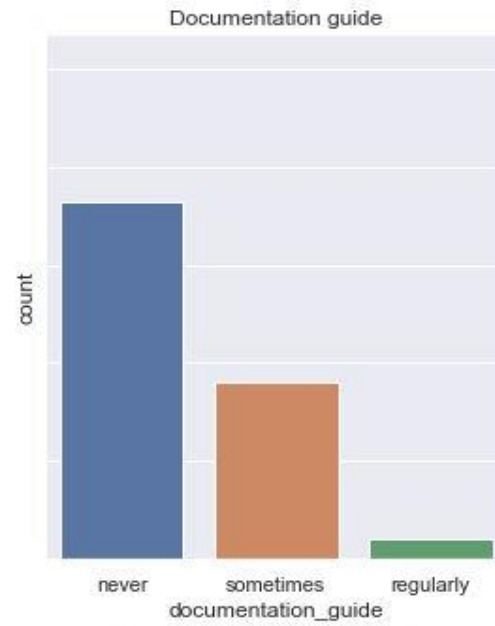
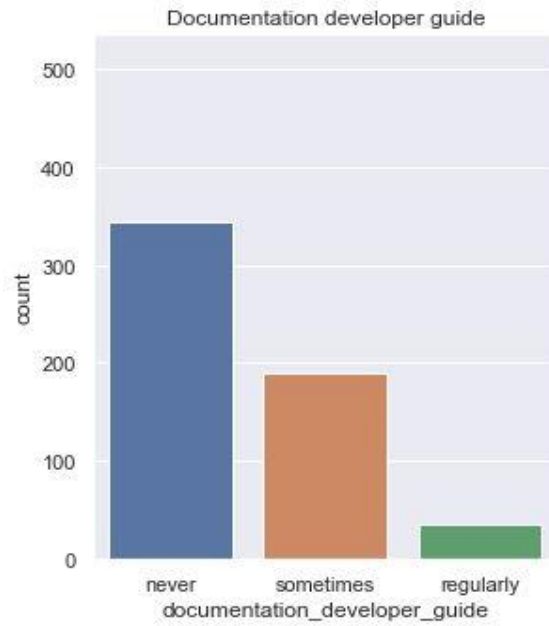


What kind of documentation do you write?

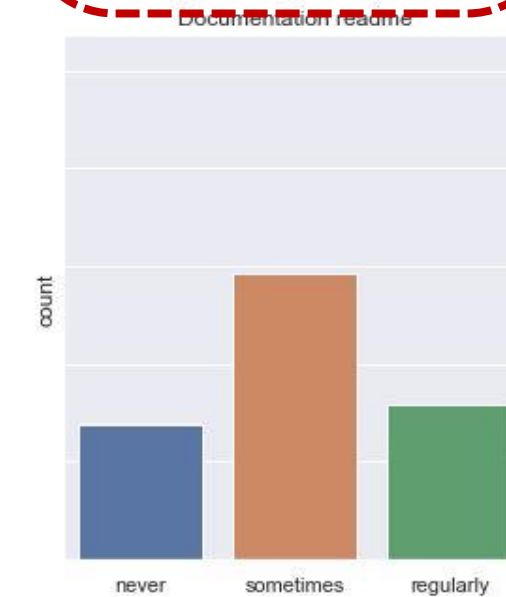
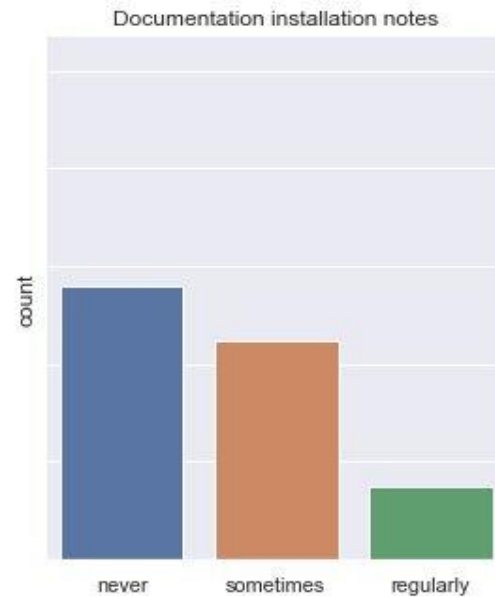
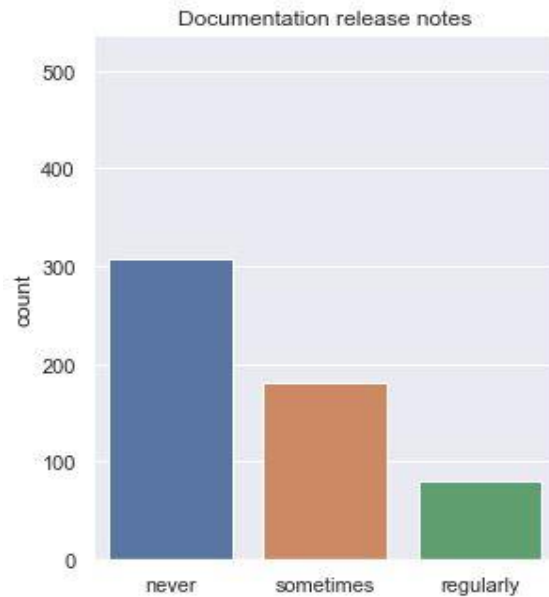


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**Mainly code  
comments written as  
documentation**





# Testing



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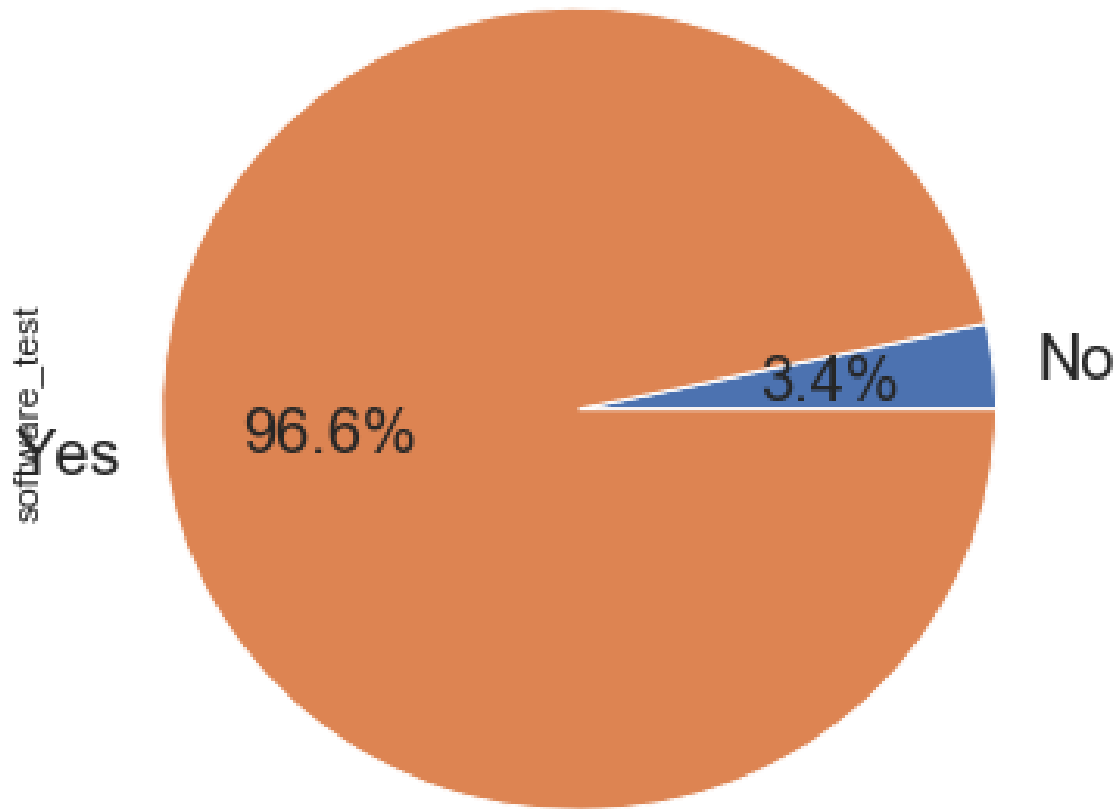
**Are you testing your software?**



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Are you testing your software?



Yes	591
No	21





**When do you test your software?**

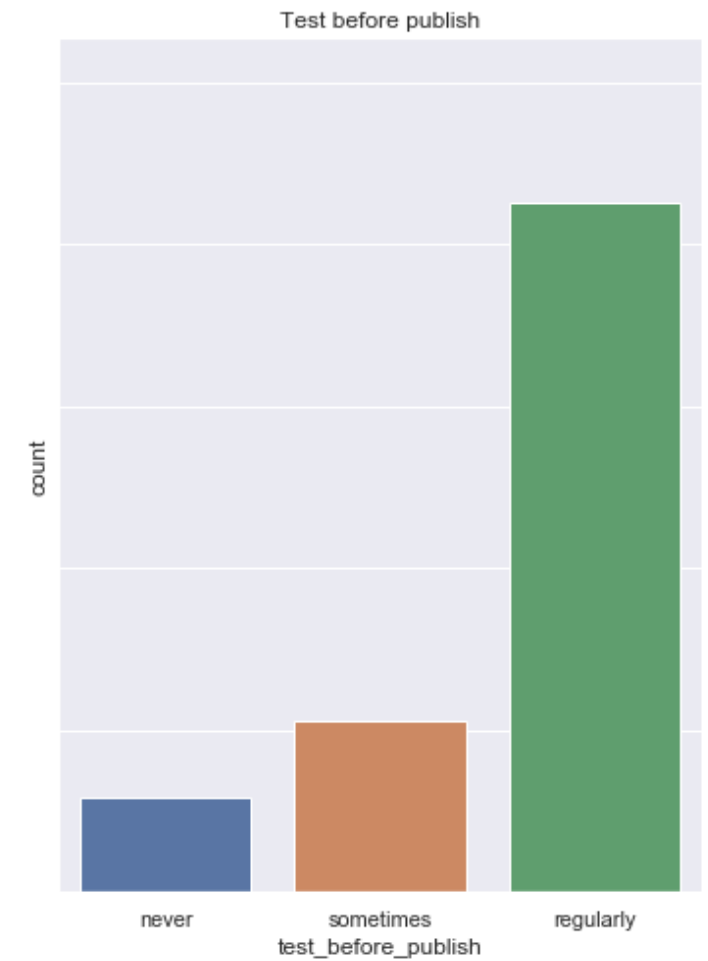
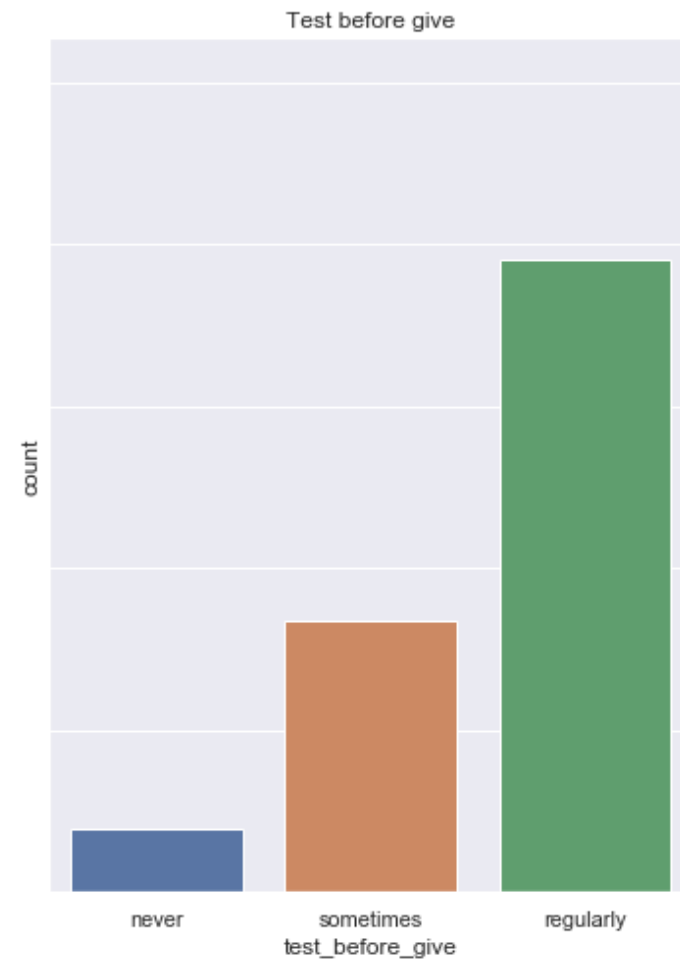
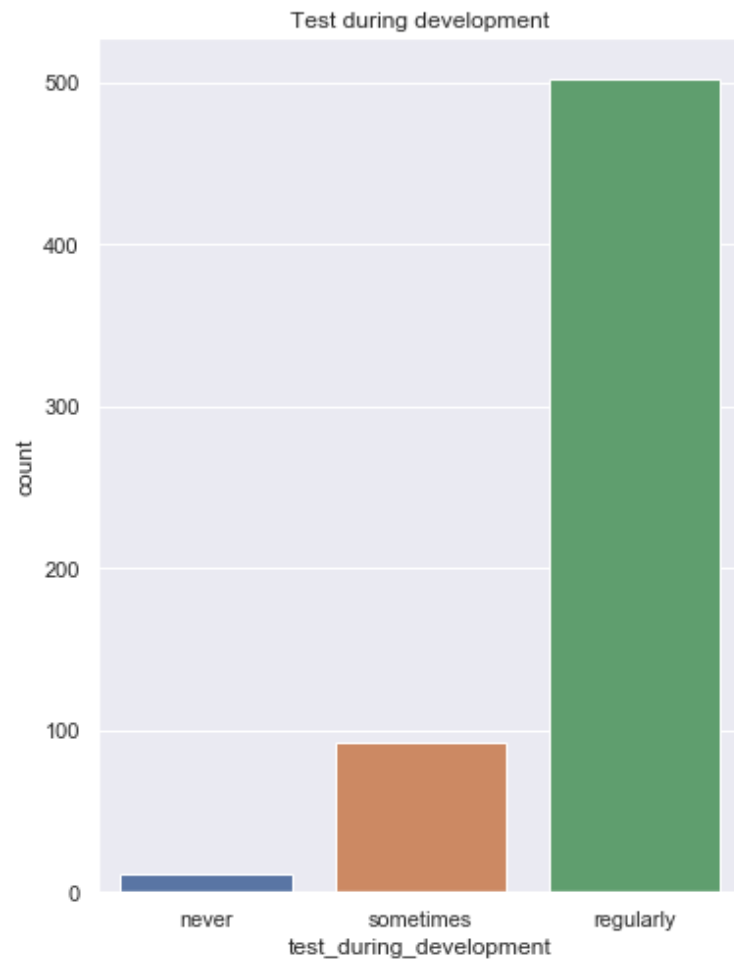


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### When do you test your software?

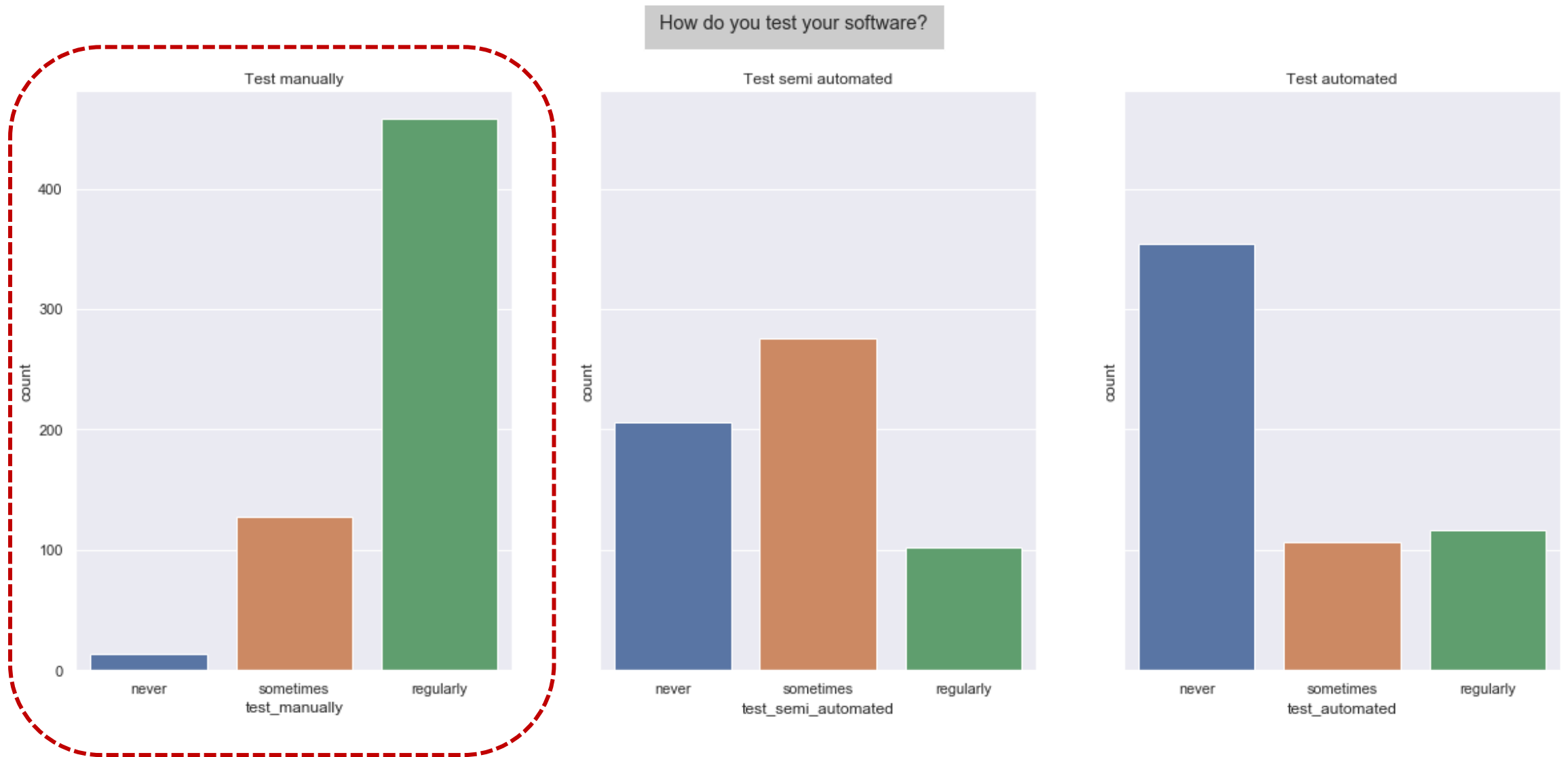


How do you test your software?



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Reference / Citable



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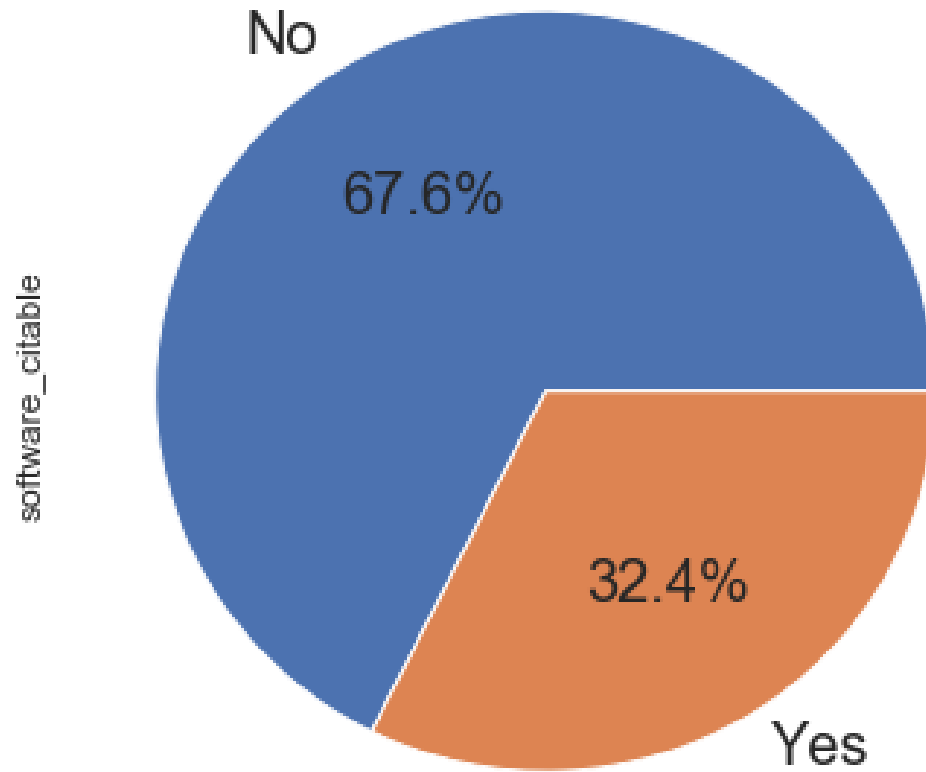
**Do you care for making your software citable?**



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Do you care for making your software citable?



Yes	414
No	198



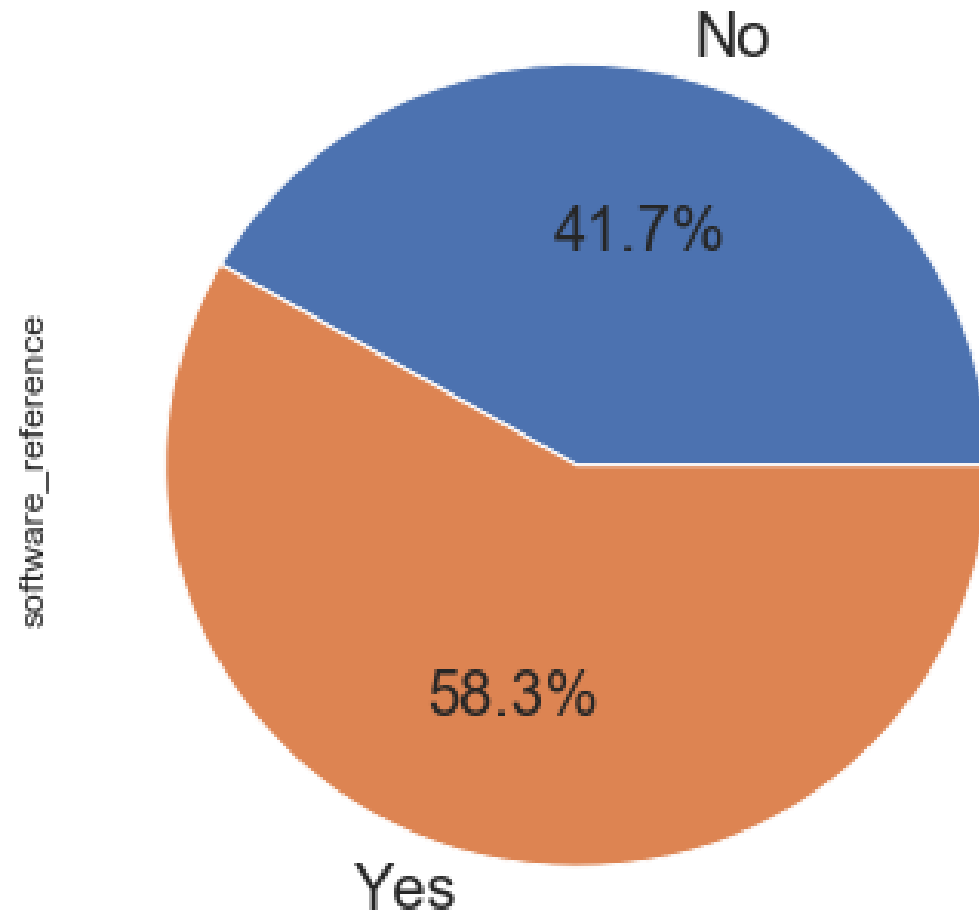
**Did you ever reference or acknowledge software in a publication?**



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Did you ever reference or acknowledge software in a publication?



Yes	357
No	255

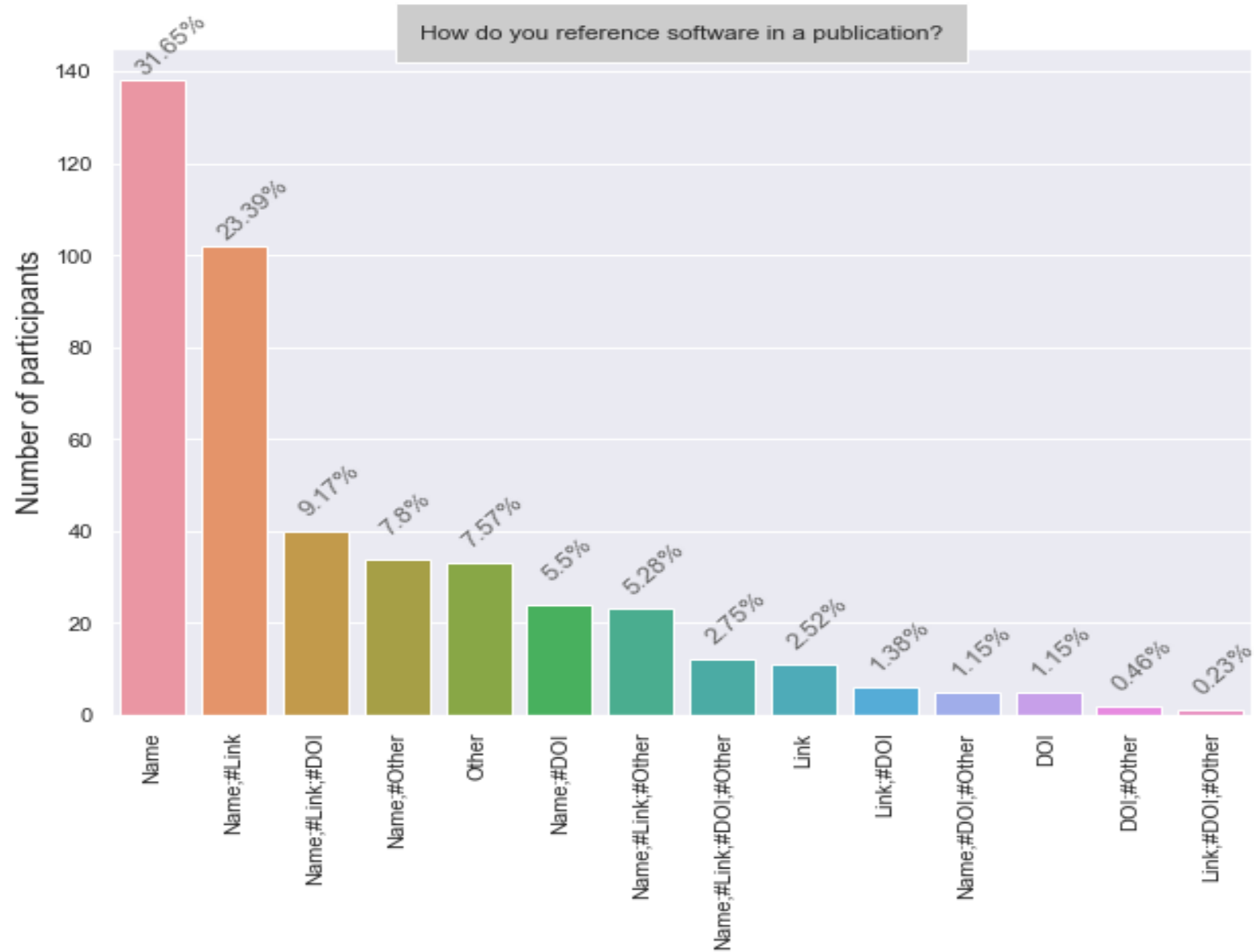




How do you reference software in a publication?



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**Thanks for your Attention!**  
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