

# How do

# SCRATCH



# programmers name

# variables and procedures?

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# HELLO

**my name is**







250,000 projects

Use variables or  
procedures

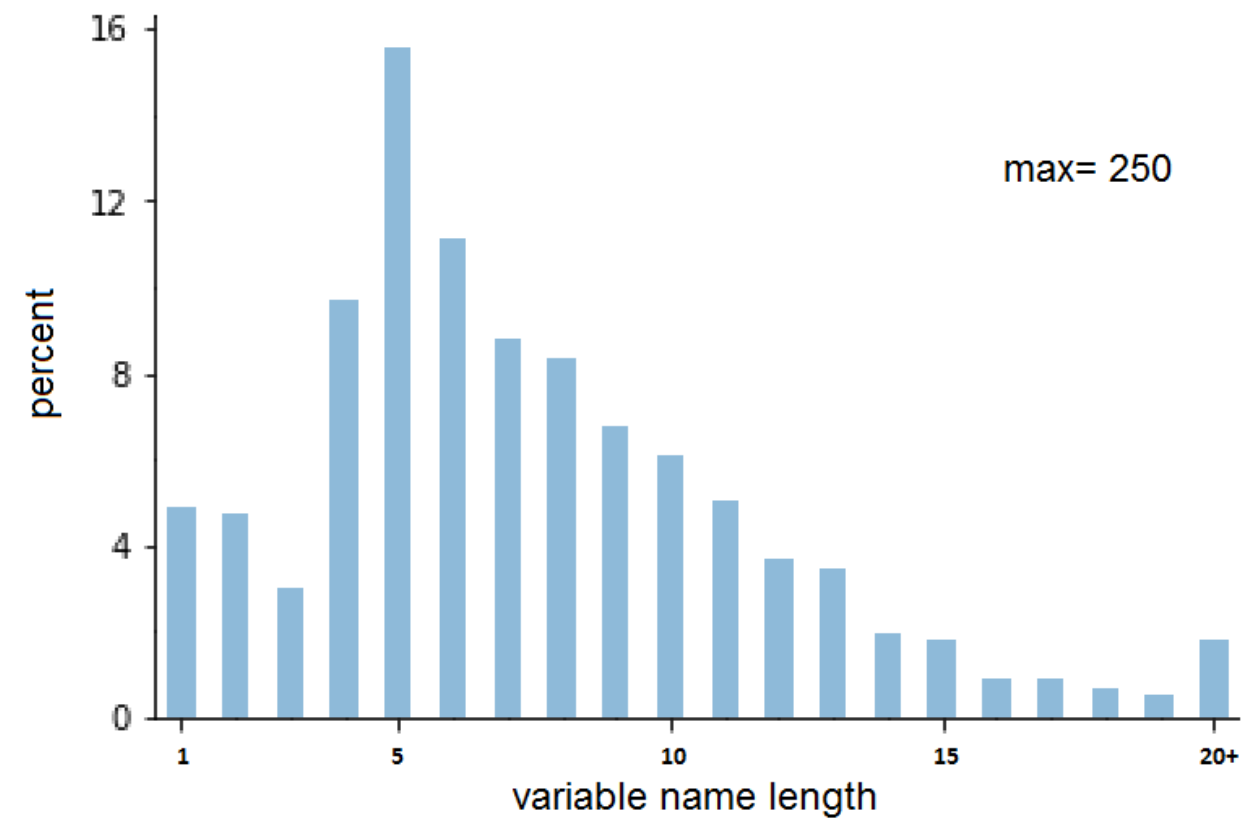
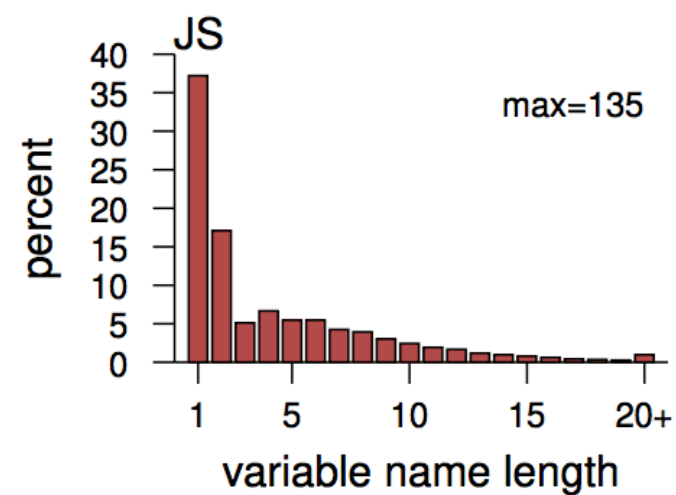
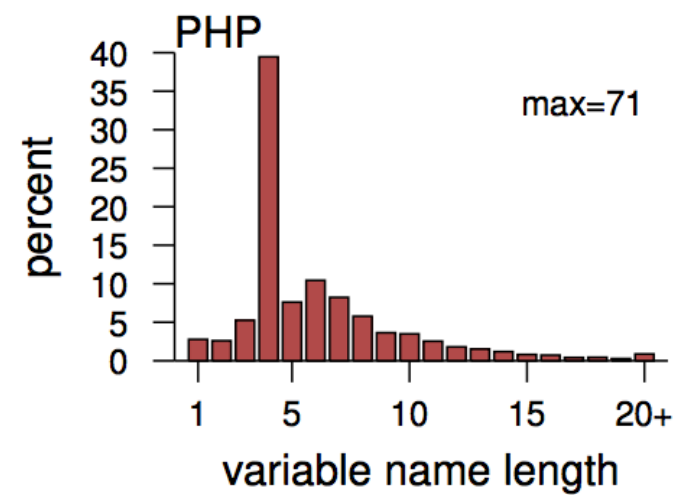
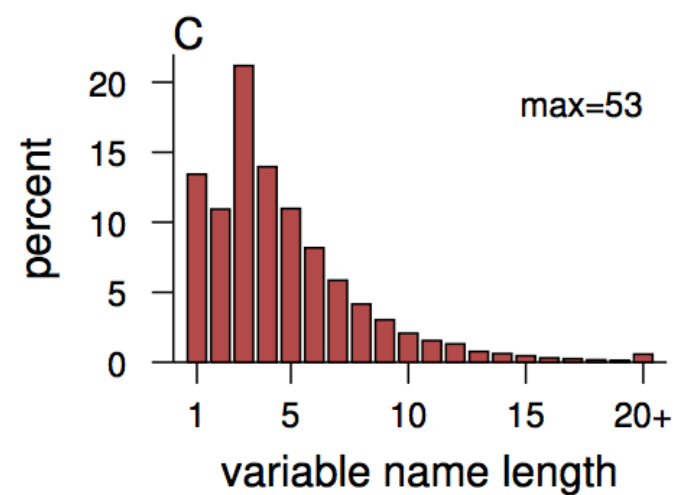
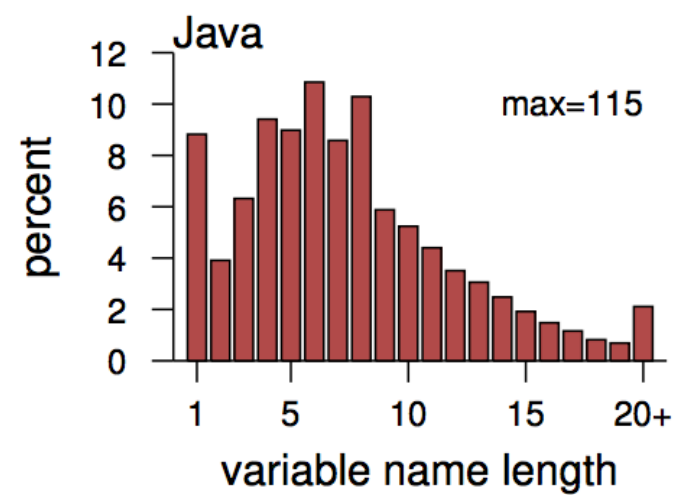
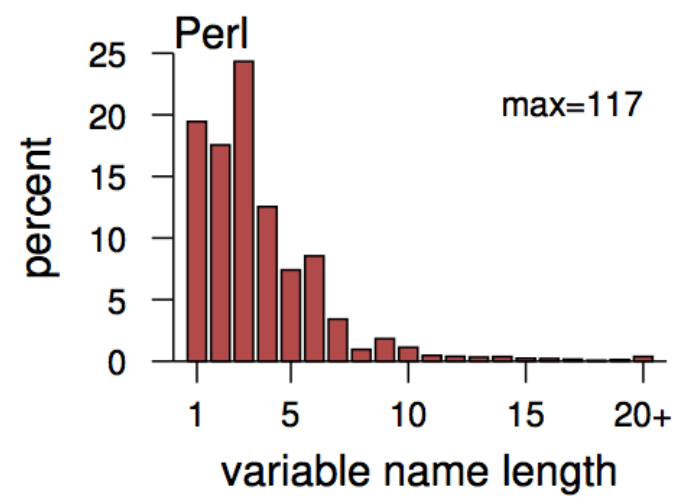
73,473 projects

Replication:

Comparison with traditional  
programming languages variables  
(**RQ1**), procedures (**RQ2**)

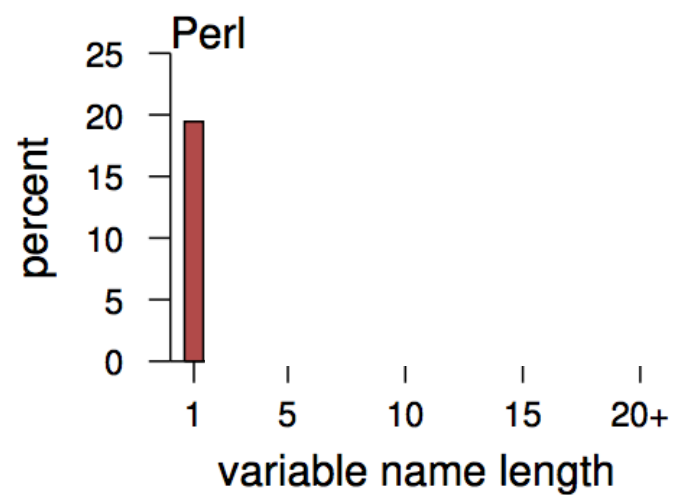
Scratch-specific  
features (**RQ3**)

G. Beniamini, S. Gingichashvili, A. Klein-Orbach, and D. G. Feitelson, “Meaningful identifier names: the case of single-letter variables,” in ICPC, 2017, pp. 45–54.

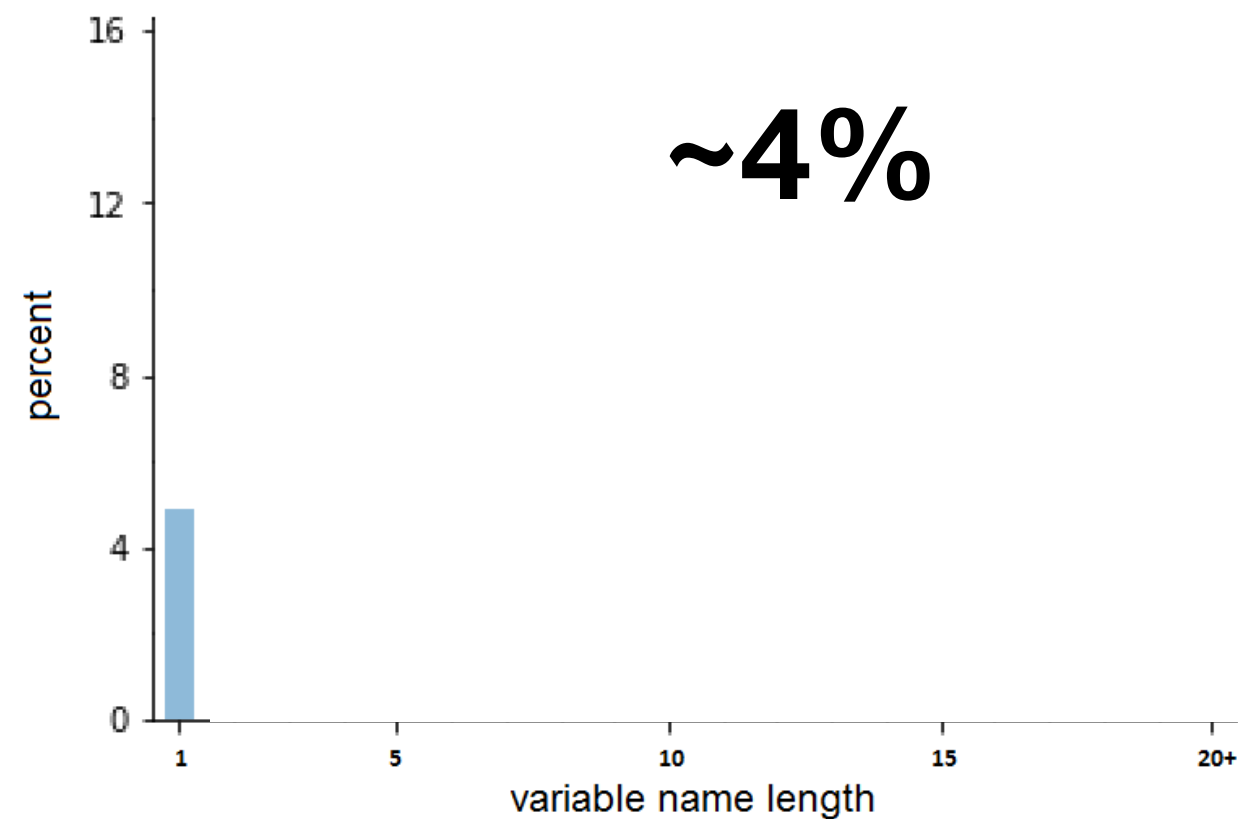
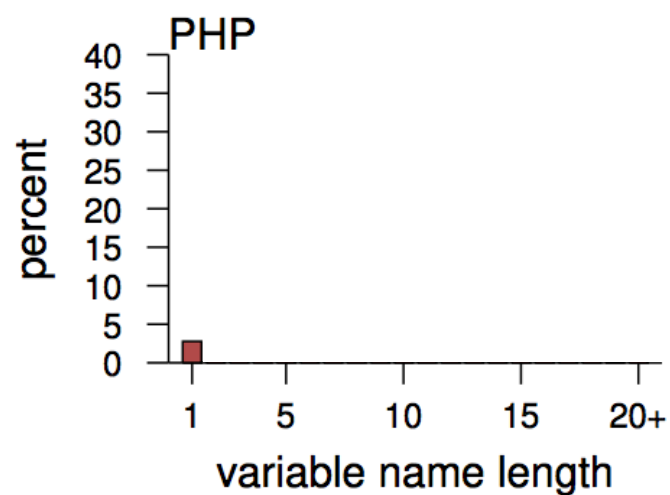
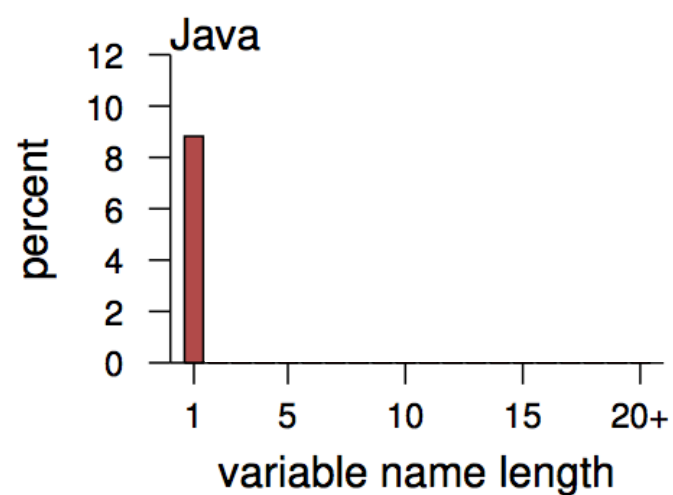


**Scratch variable  
names are longer**

Fig. 1. *Distributions of variable name lengths in different programming languages.*



9-20%



~4%

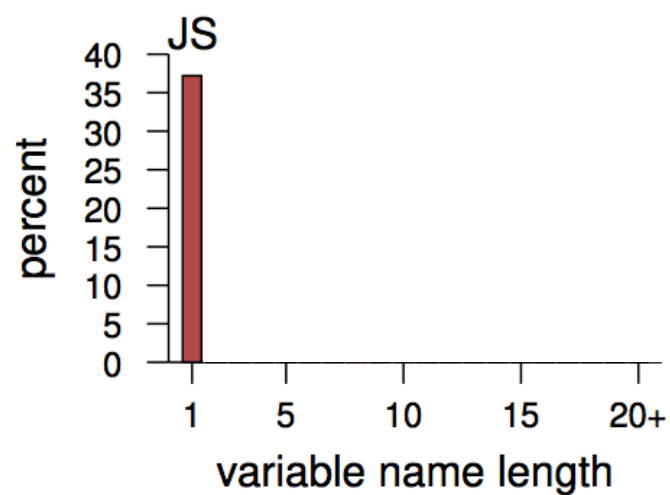
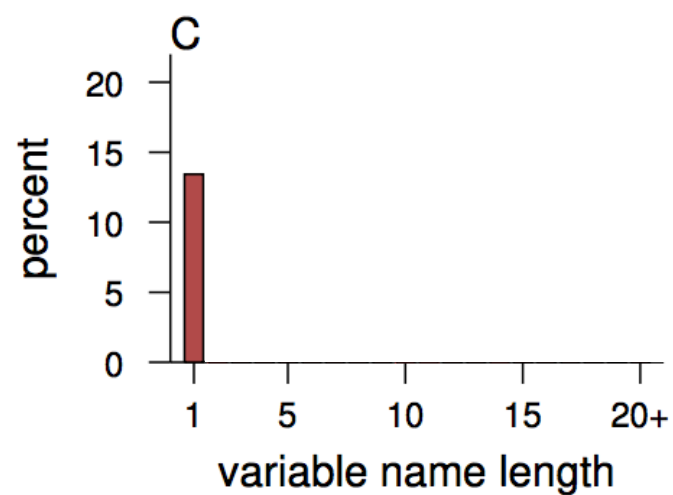


Fig. 1. *Distributions of variable name lengths in different programming languages.*

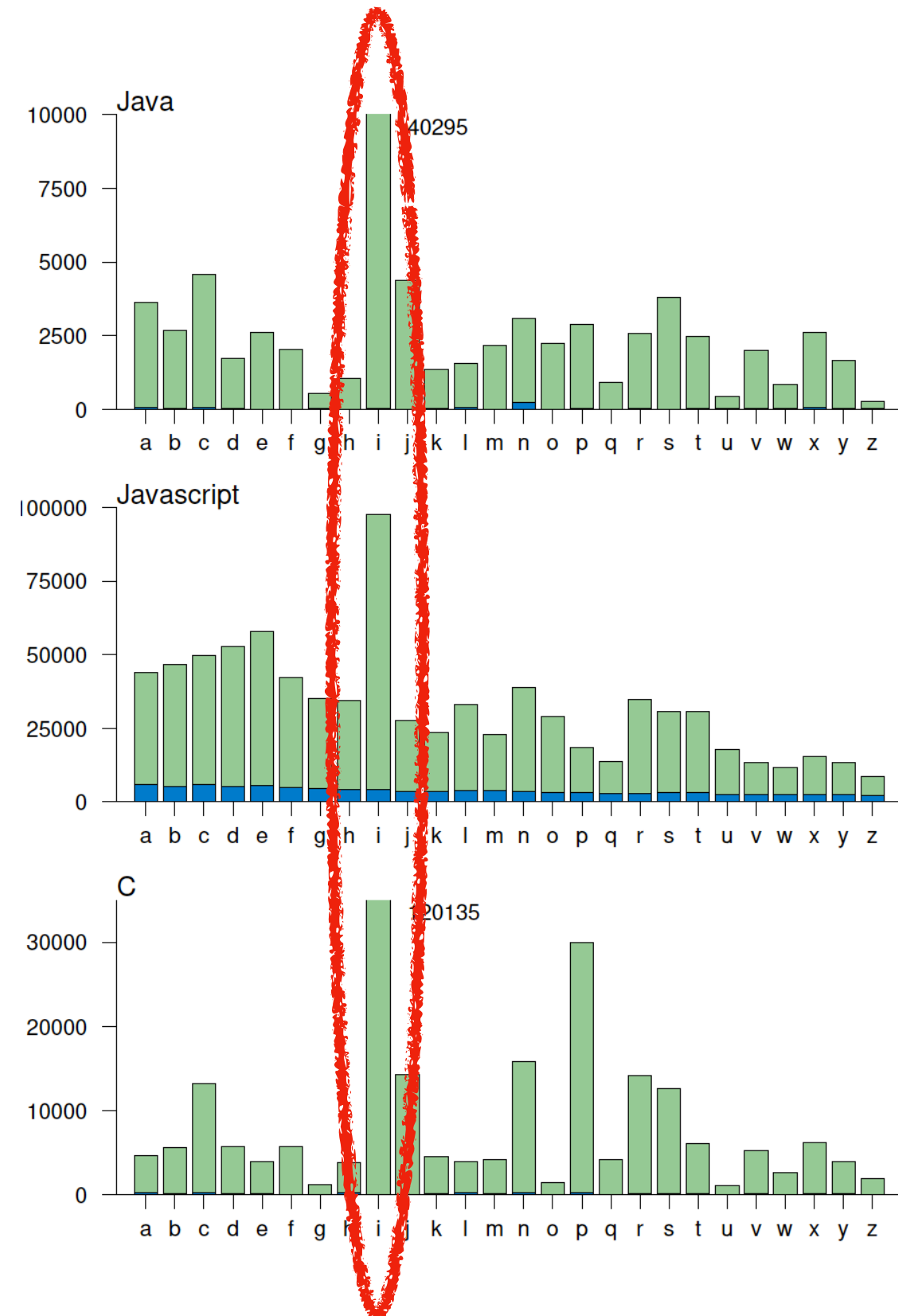


Fig. 2. Histograms of single letter names usage in different programming languages.

# RQ1

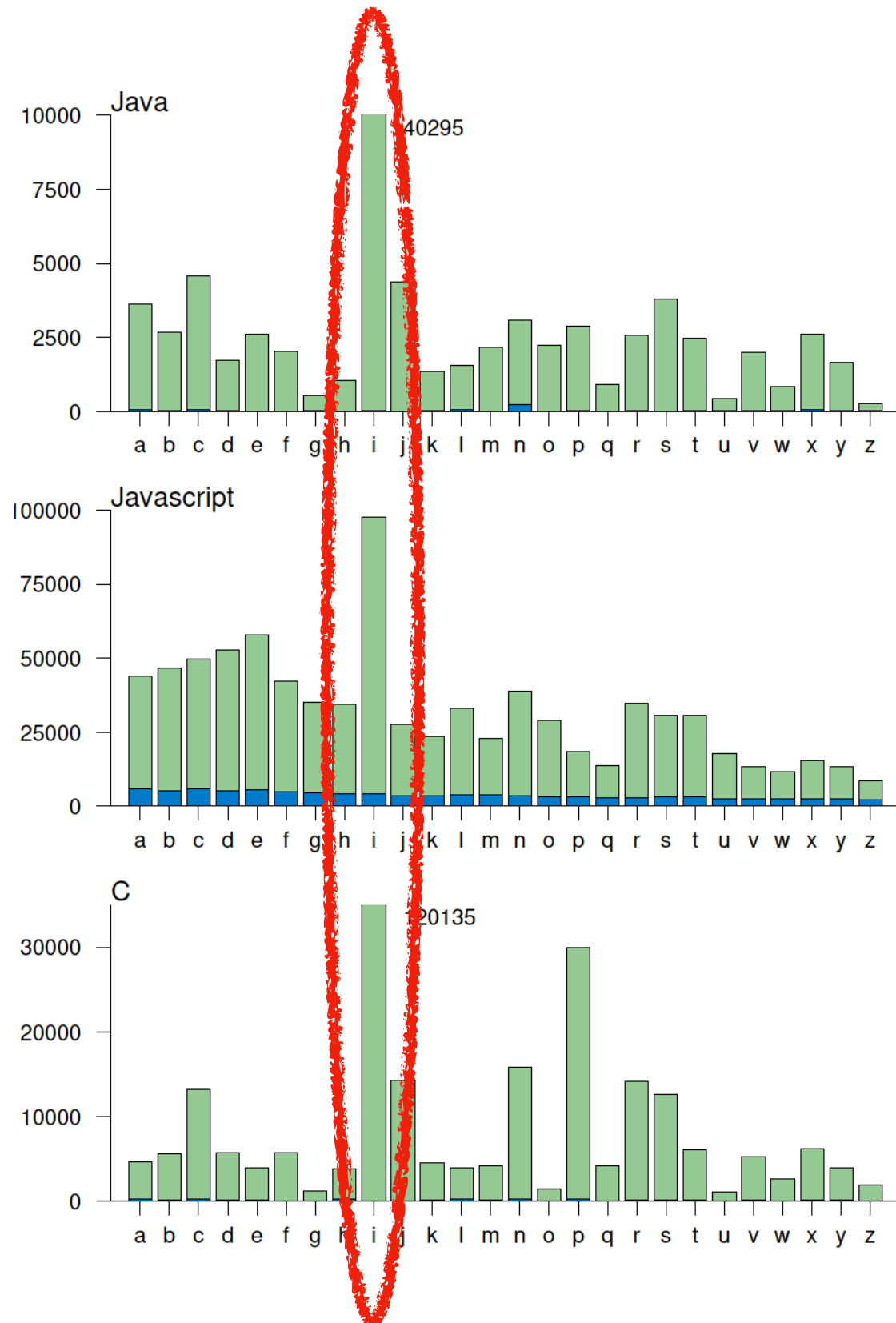


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# RQ1

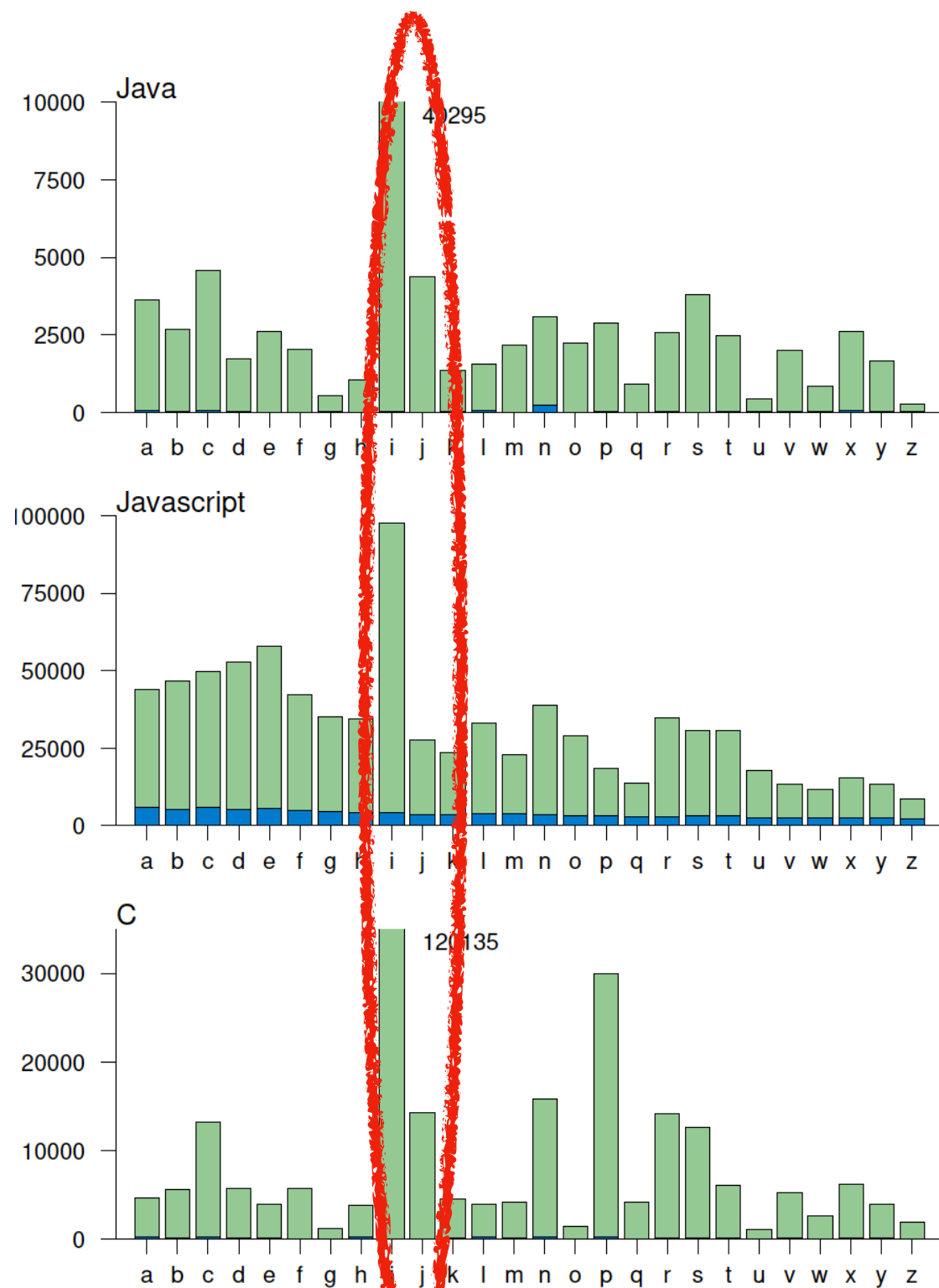
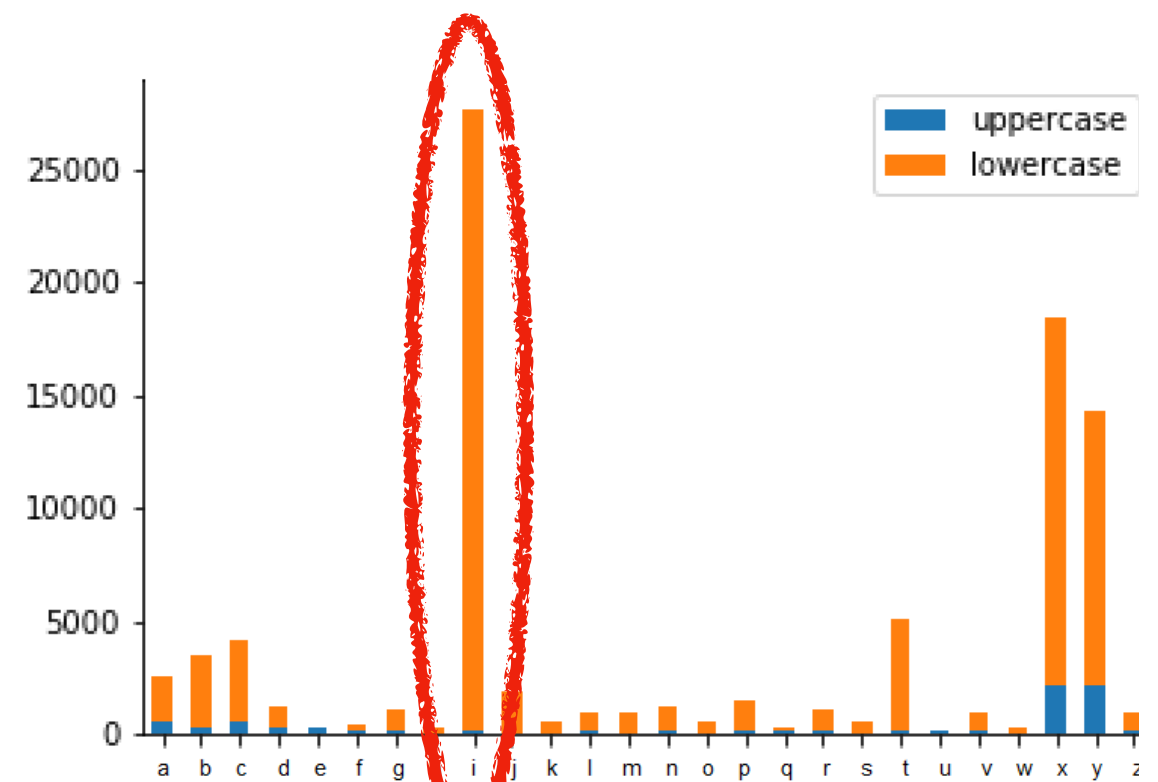


Fig. 2. Histograms of single letter names usage in different programming languages.



Still  
most  
popular

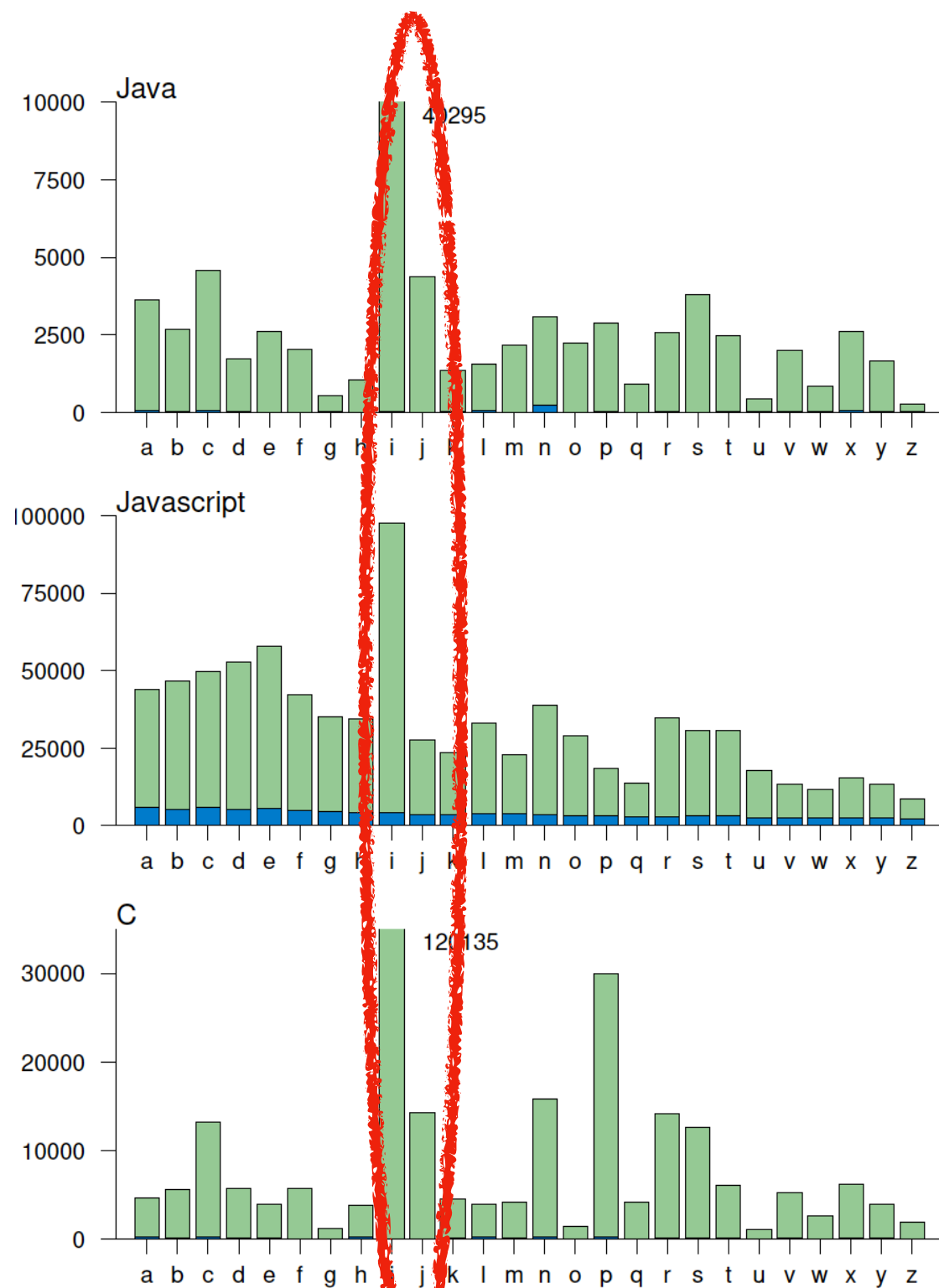
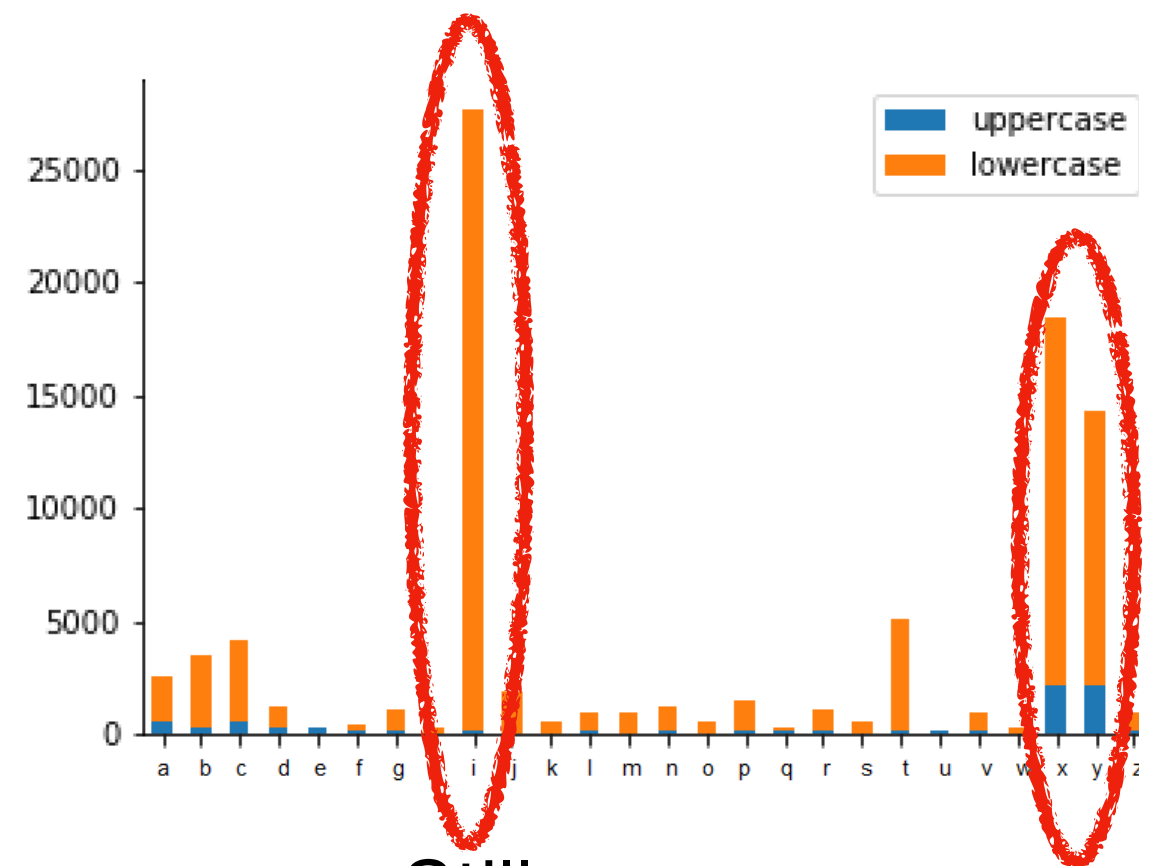


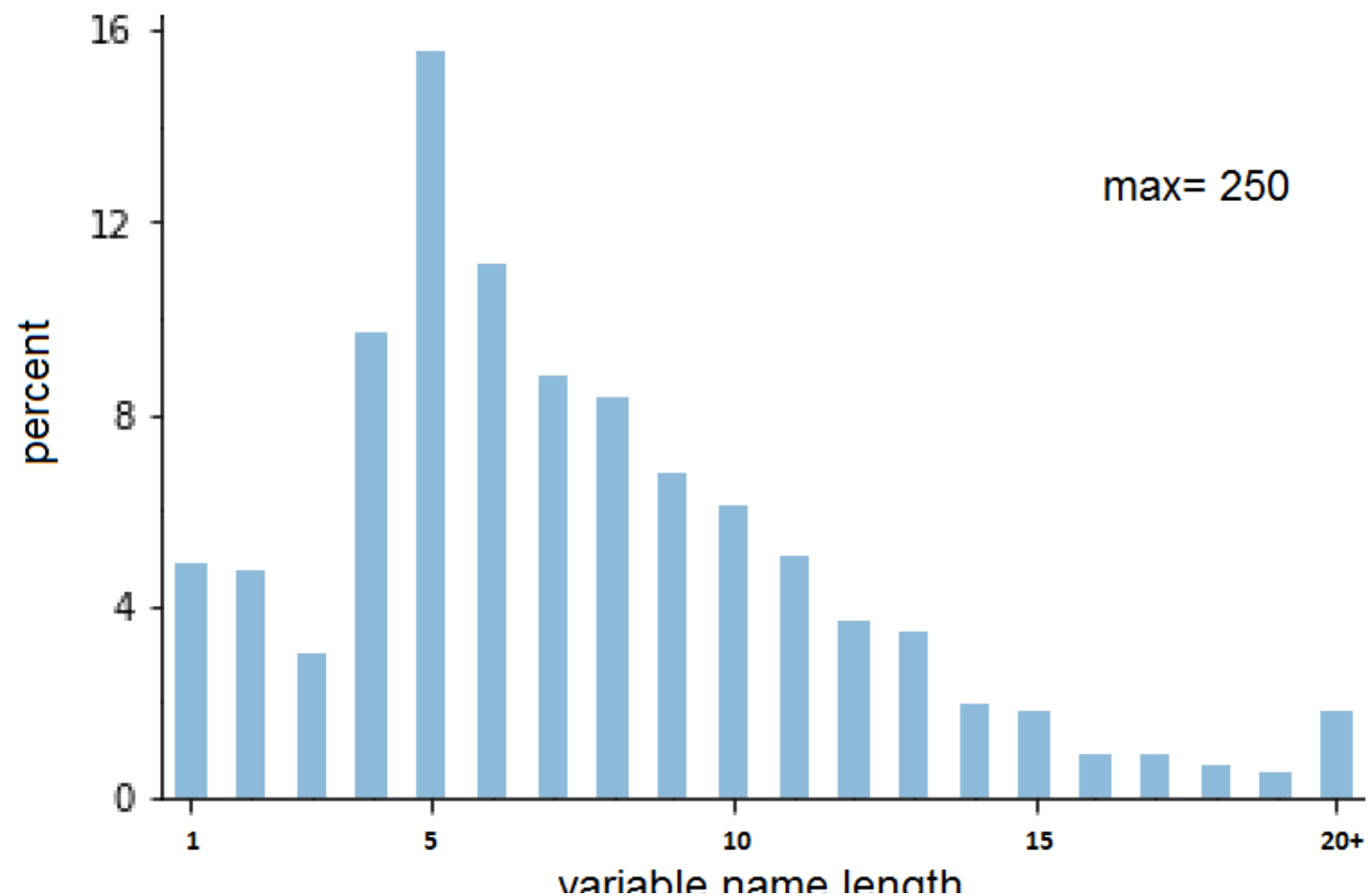
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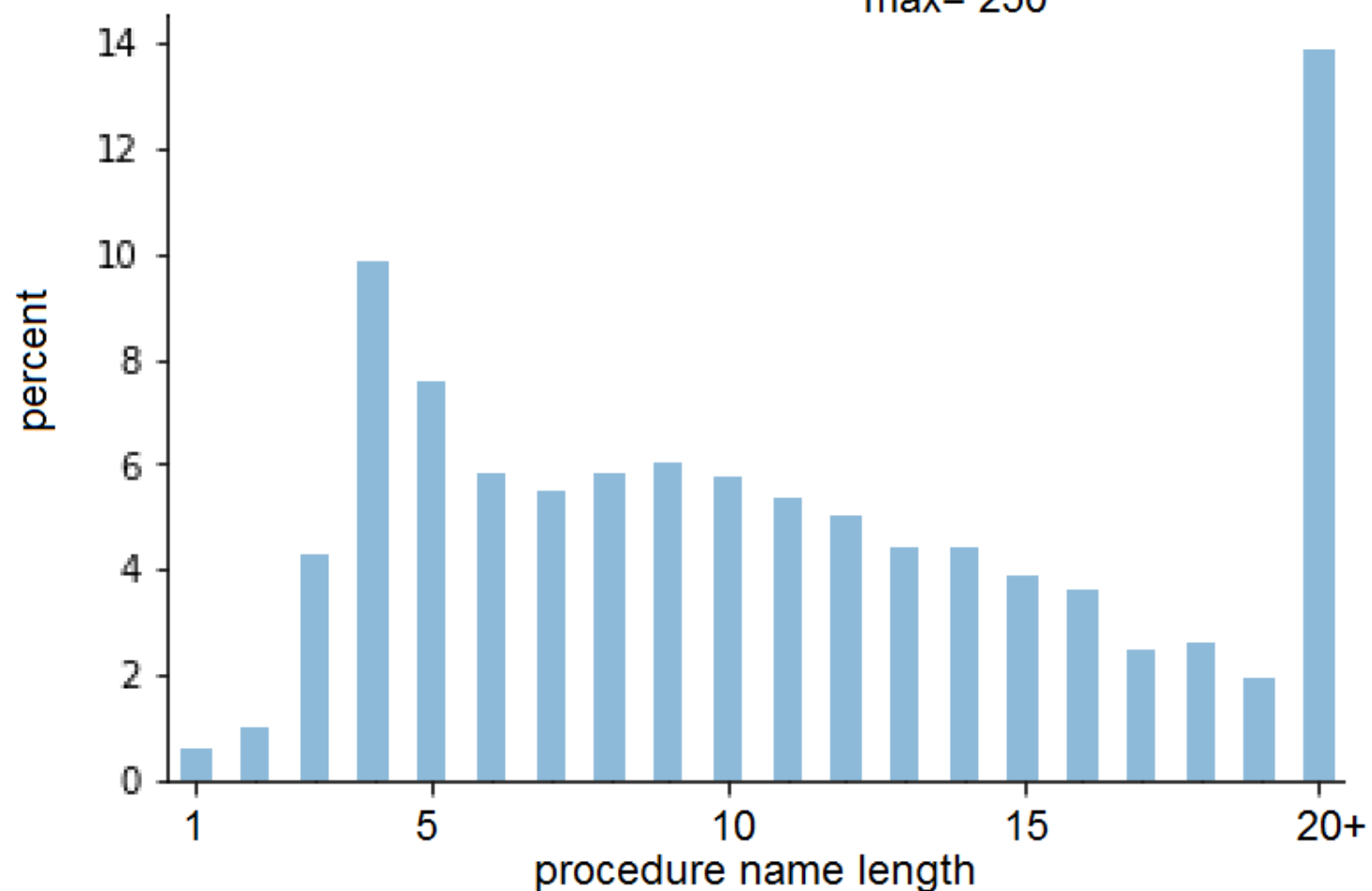
Still  
most  
popular

coordinates

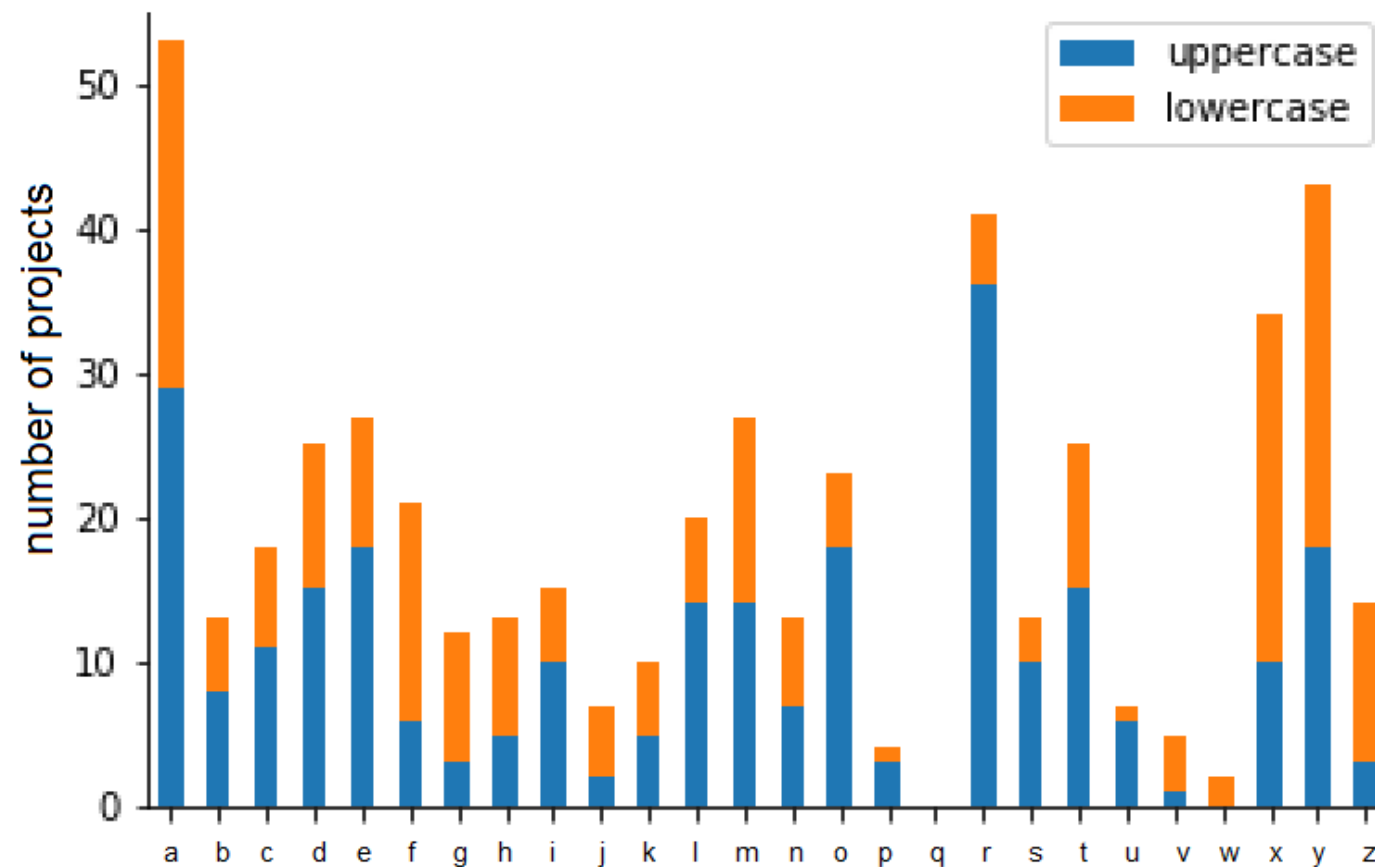
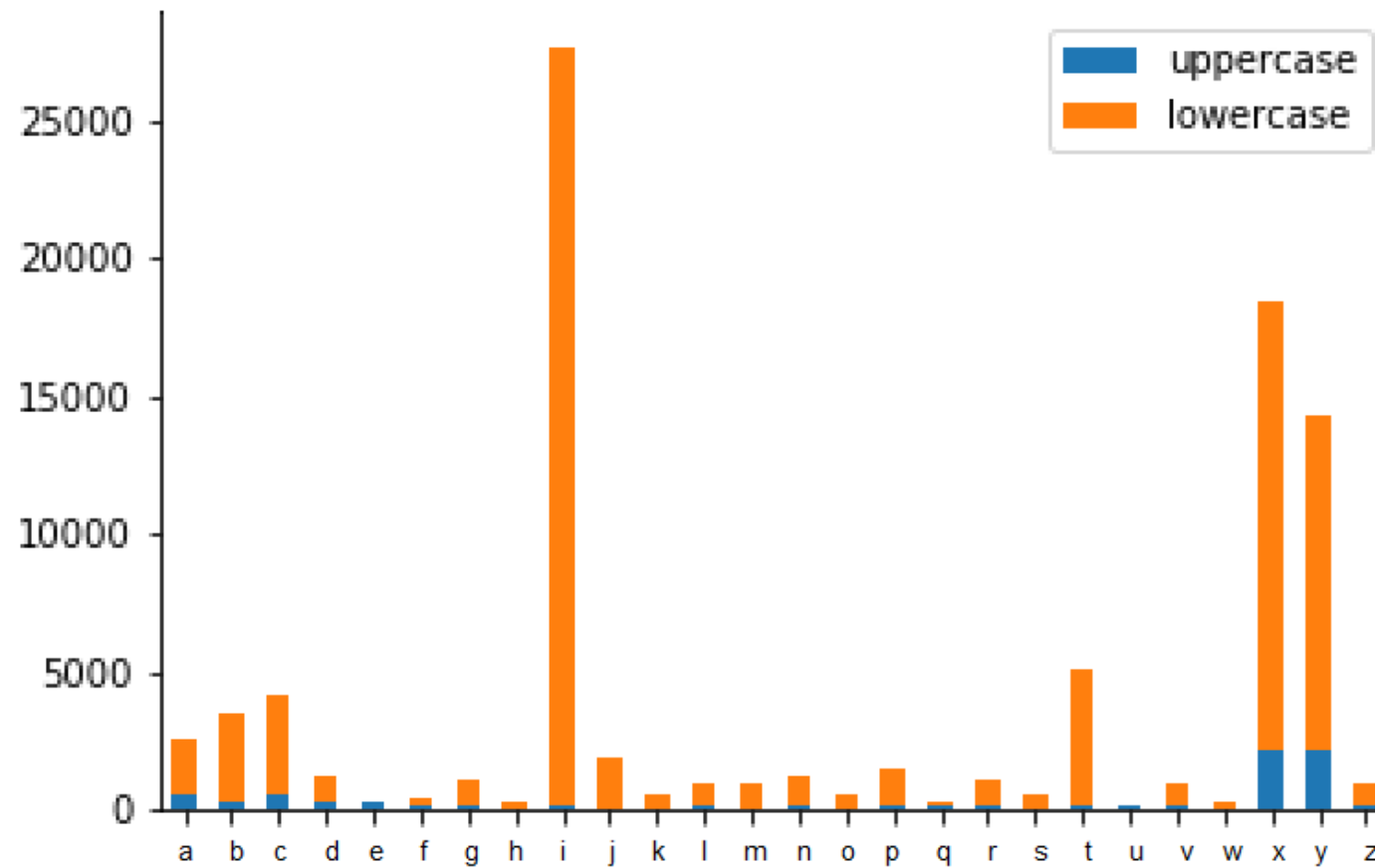
# RQ2



**Procedure  
names tend to  
be longer**



# RQ2



**Variables -  
lower case,  
procedures -  
upper case**



# RQ1

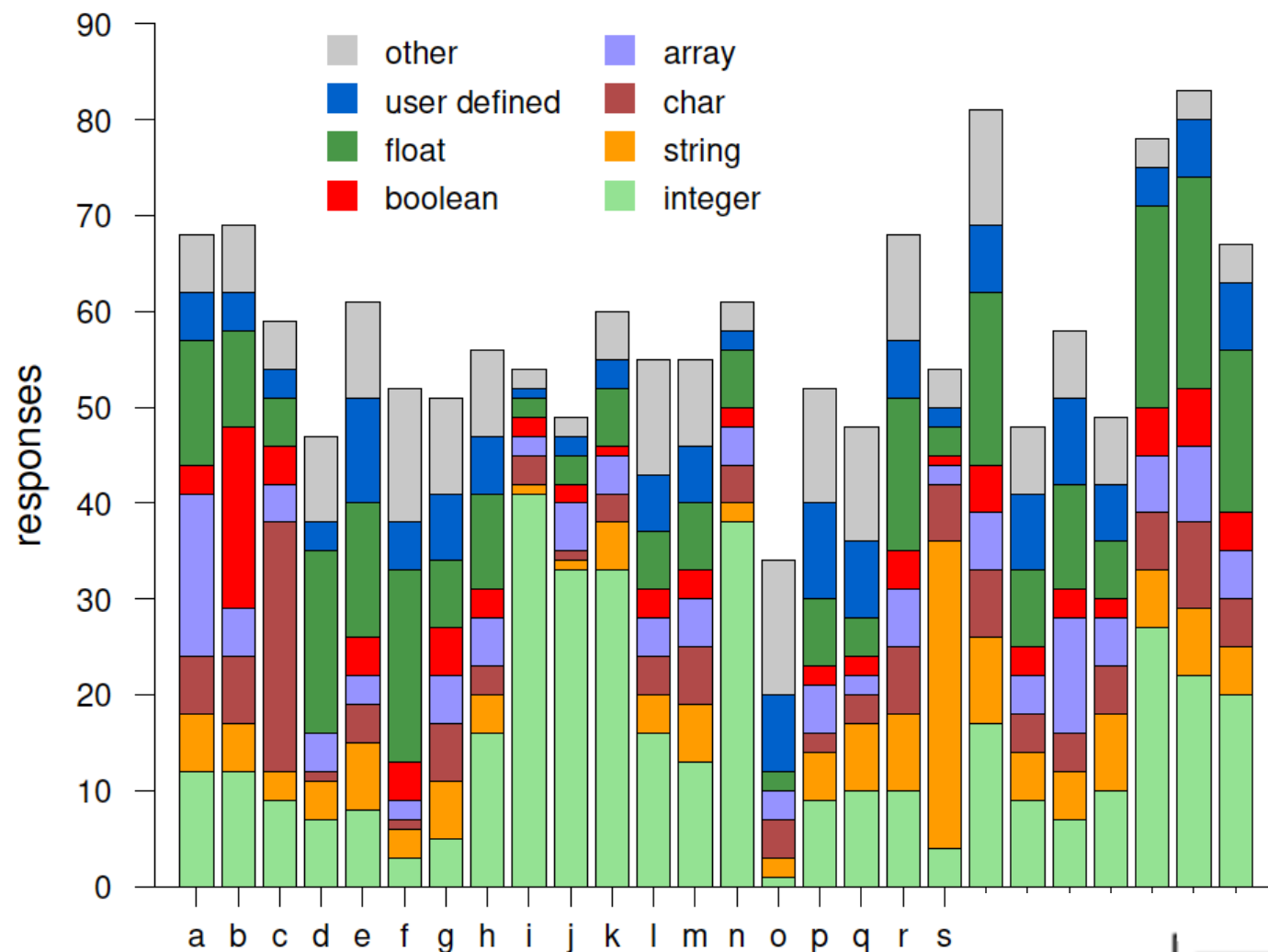
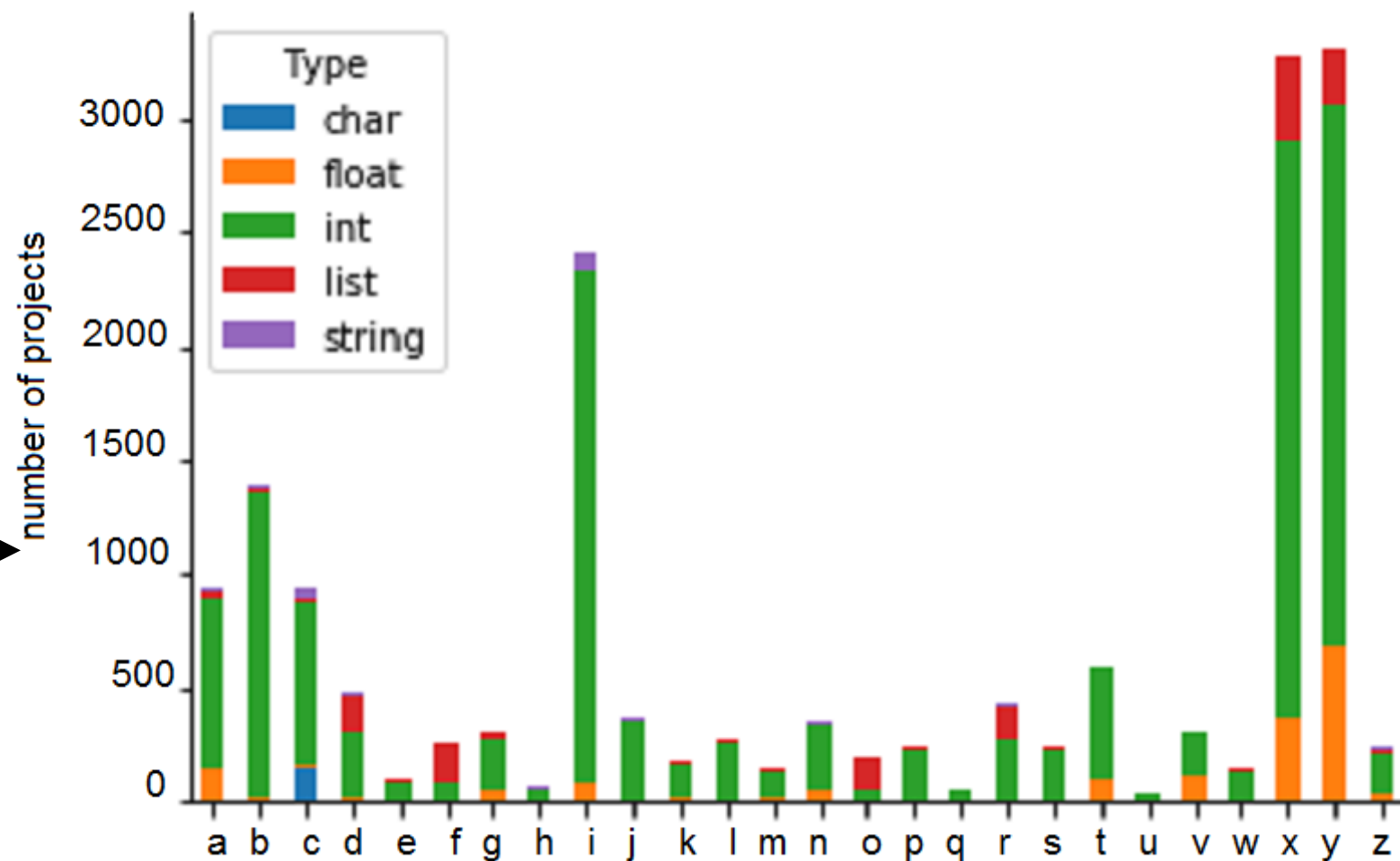
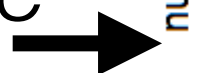


Fig. 4. Considered types for each letter of the English alphabet

Beniamini et al., survey:  
*What types would you consider naming a variable...?*



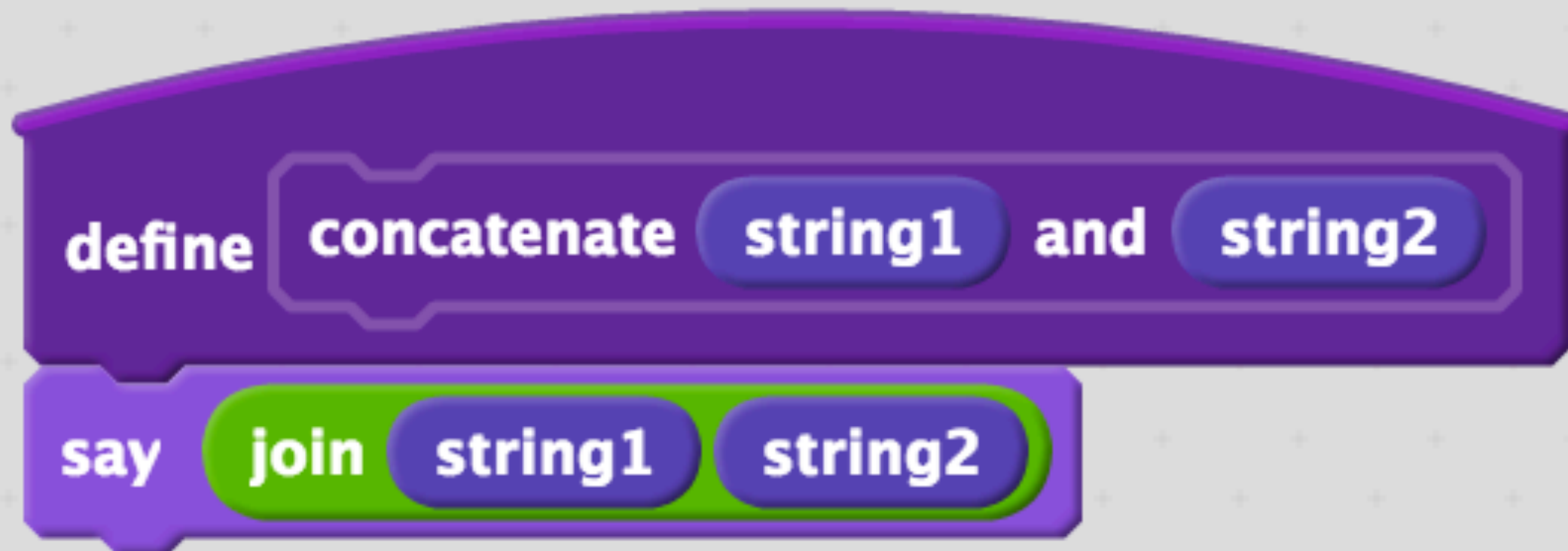
Our work, code analysis:  
*Values of what types are assigned to a variable named...?*



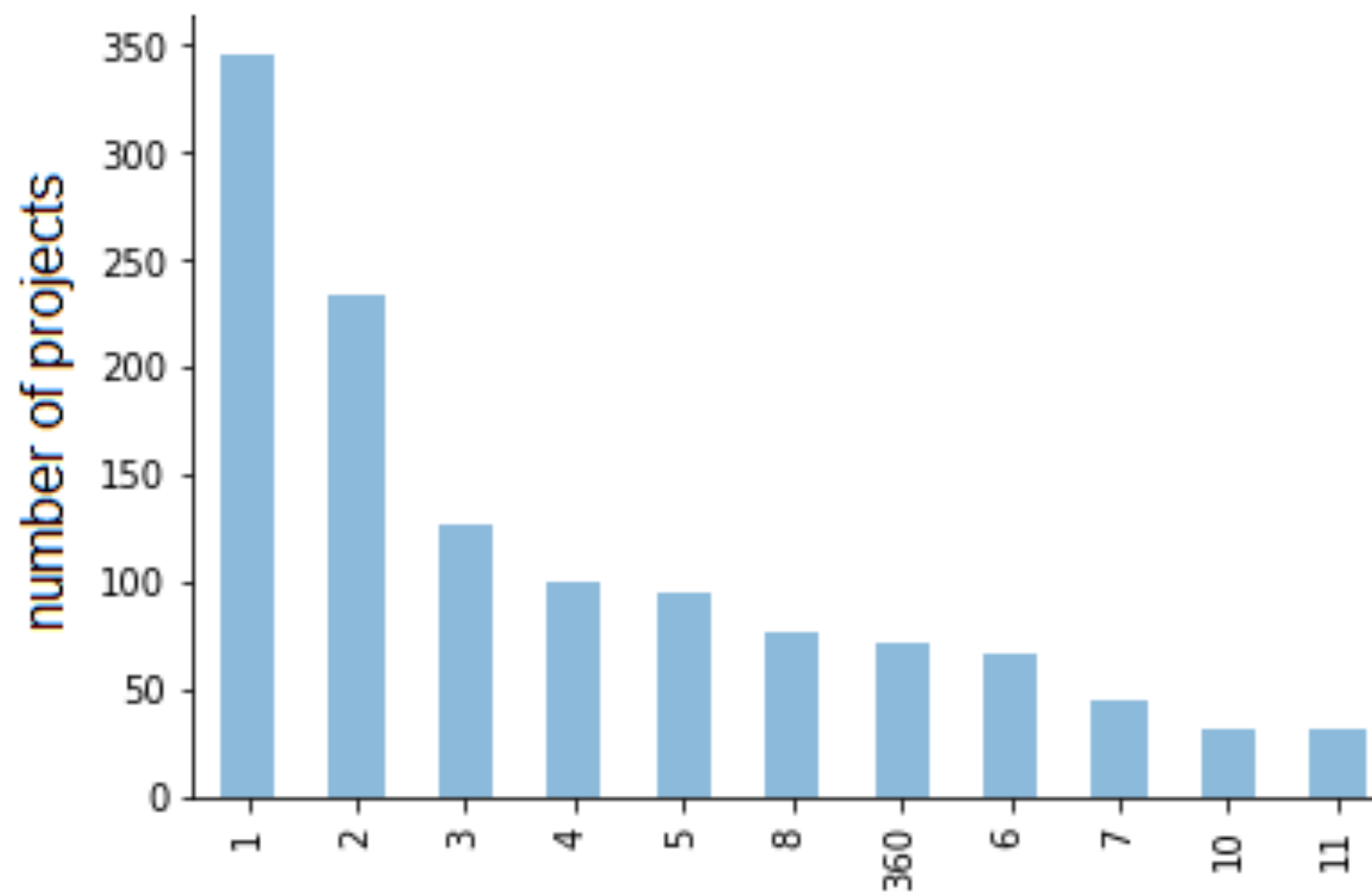
**What makes  
Scratch  
different?**



# RQ3

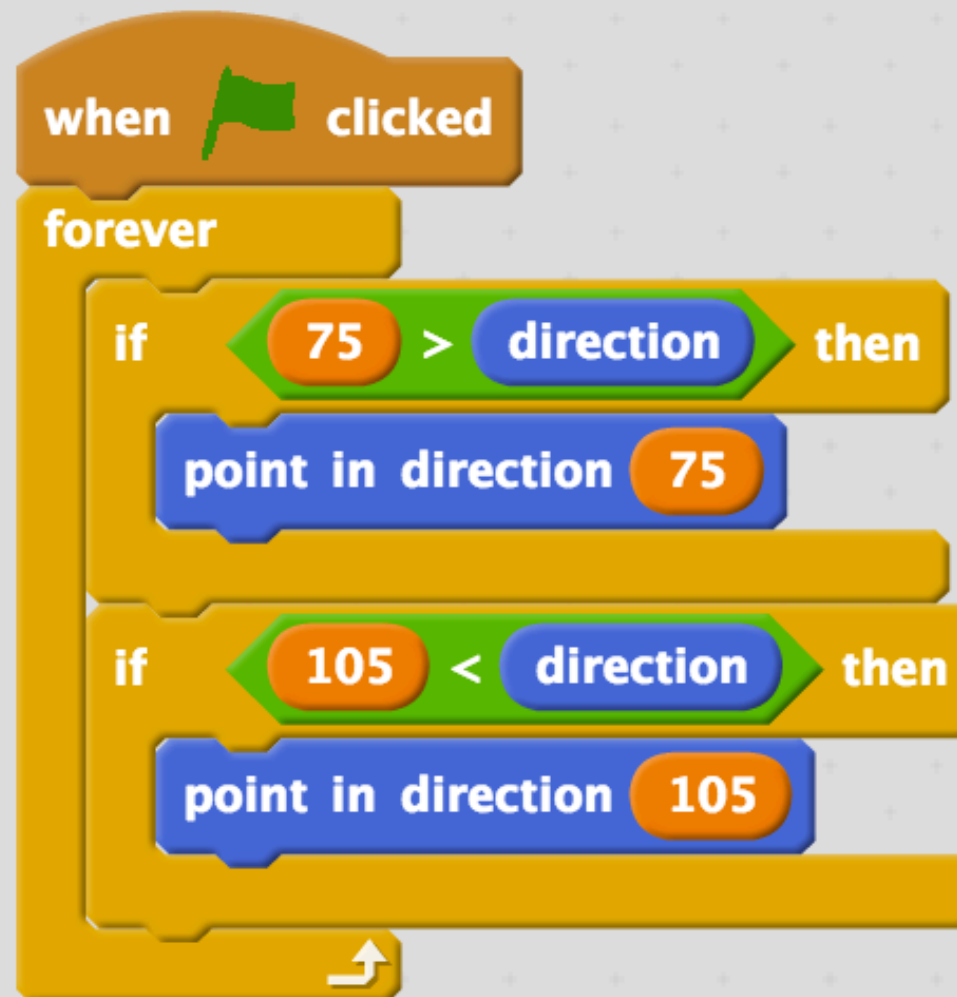


# RQ3

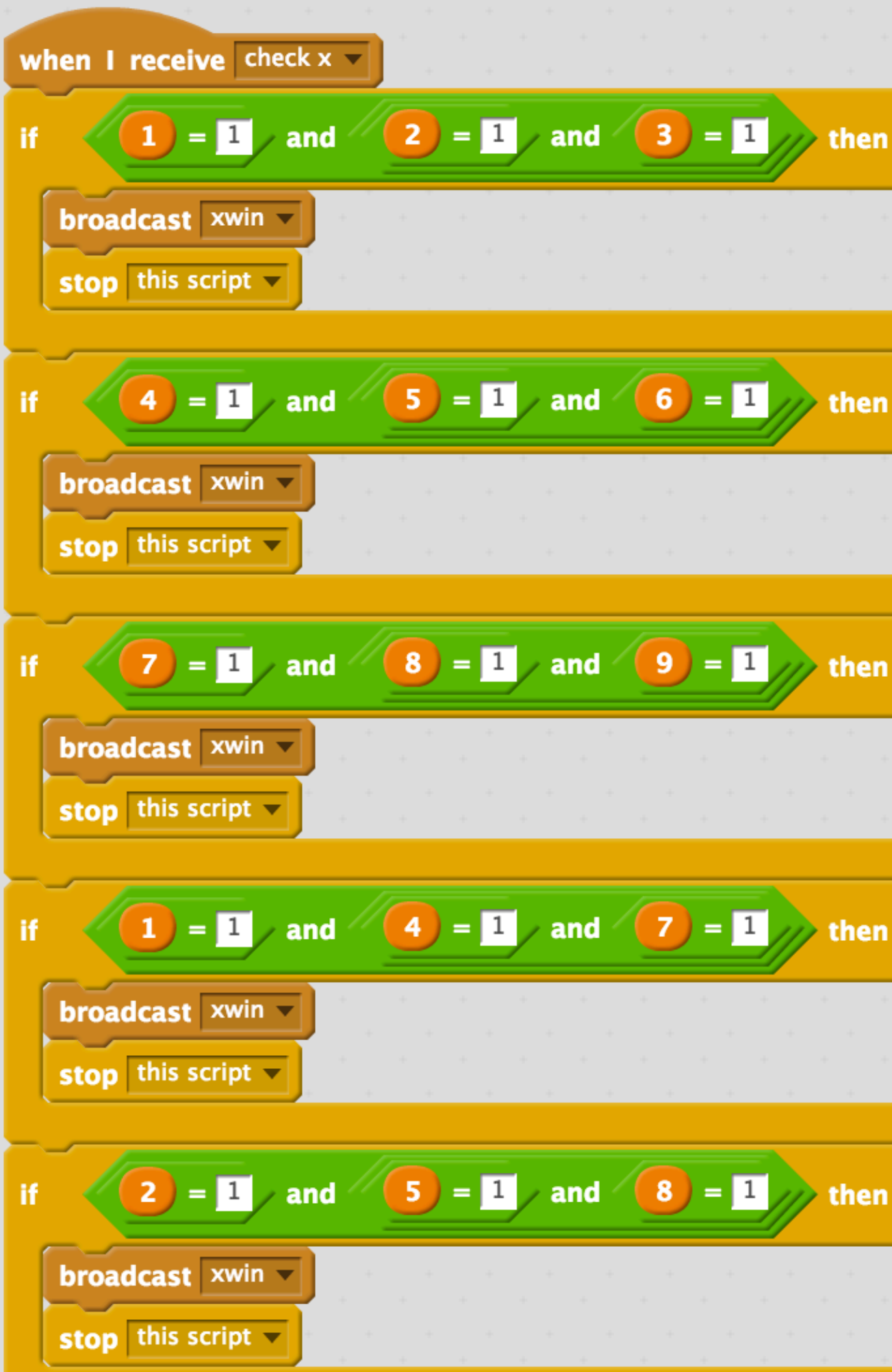


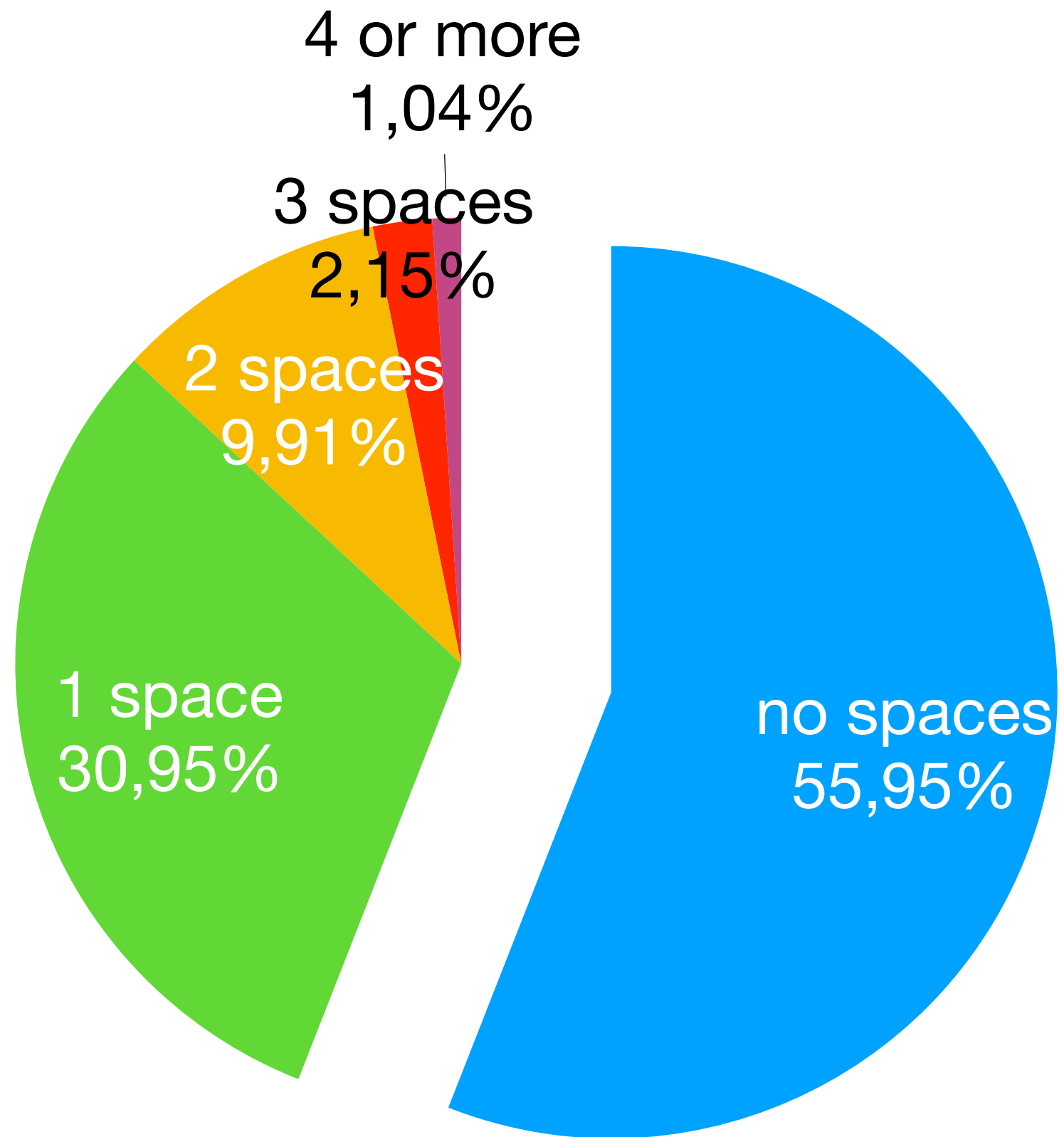


# RQ3



# RQ3



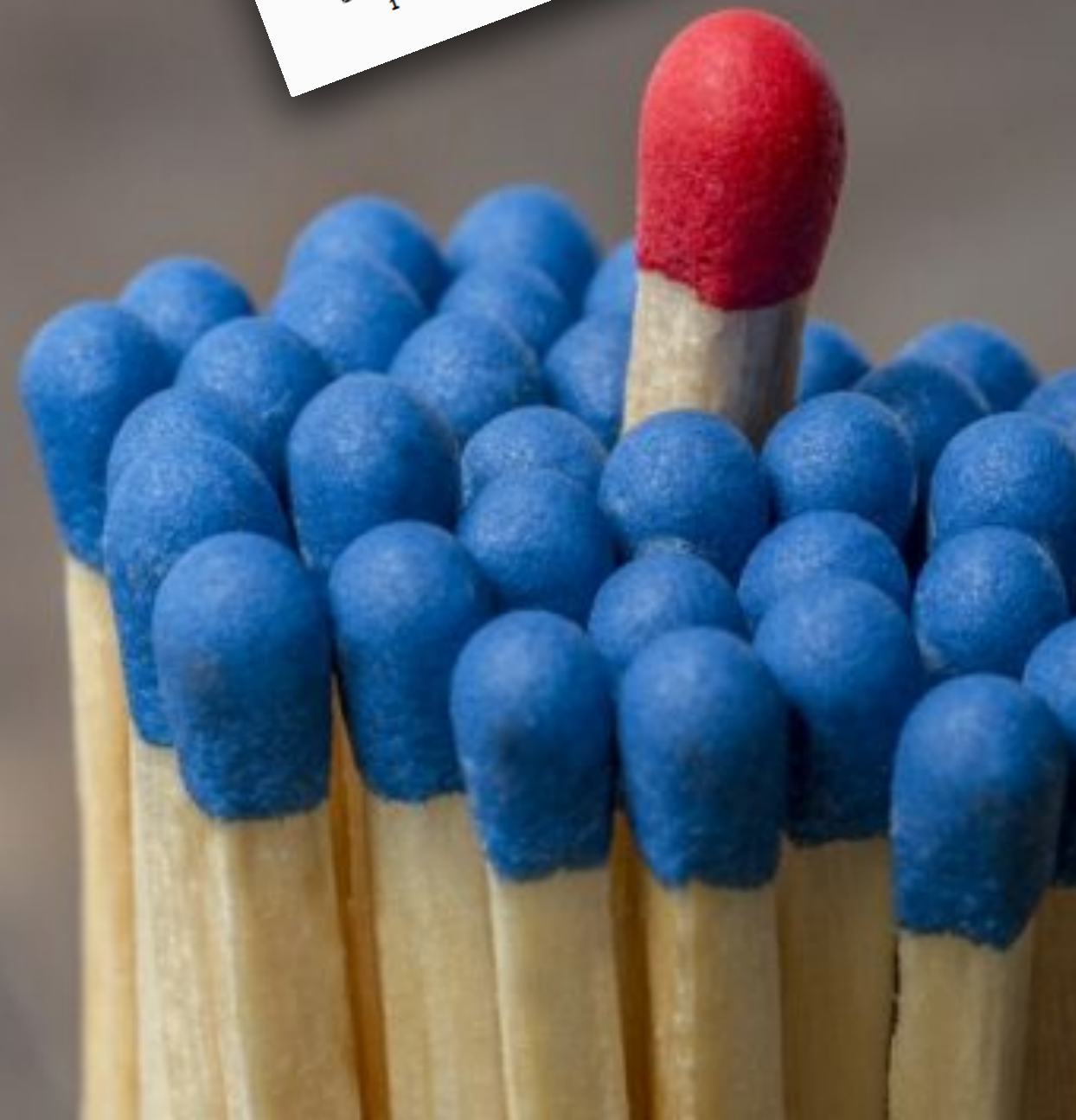


**Naming  
practices in  
Scratch are  
different  
from  
mainstream  
languages**





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C  
Language



perl

