

How do

SCRATCH



programmers name

variables and procedures?

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HELLO

my name is



250,000 projects

Use variables or
procedures

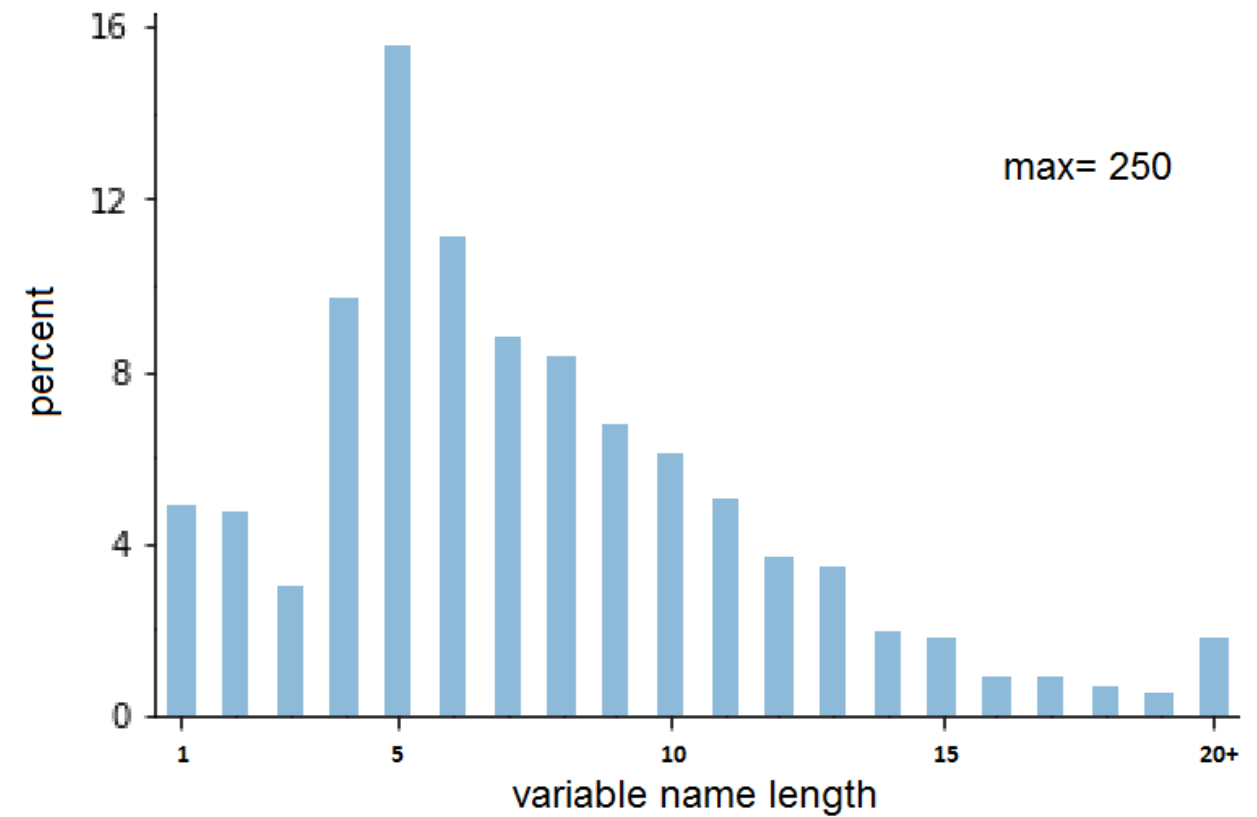
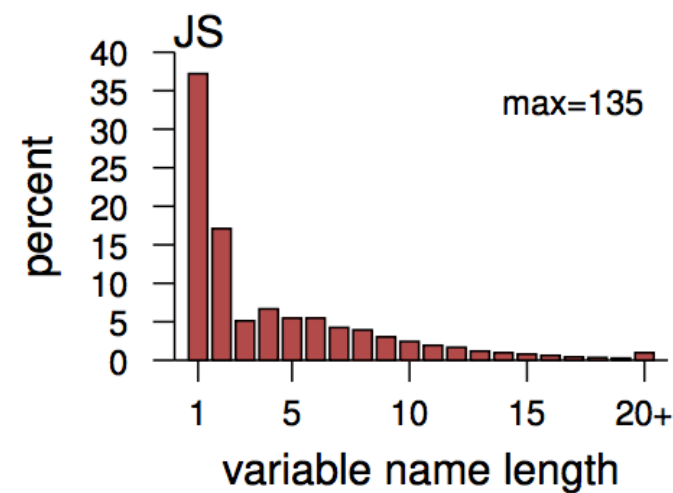
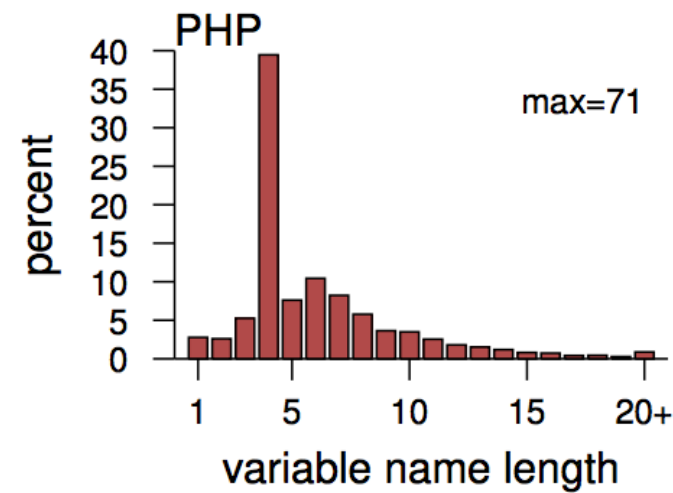
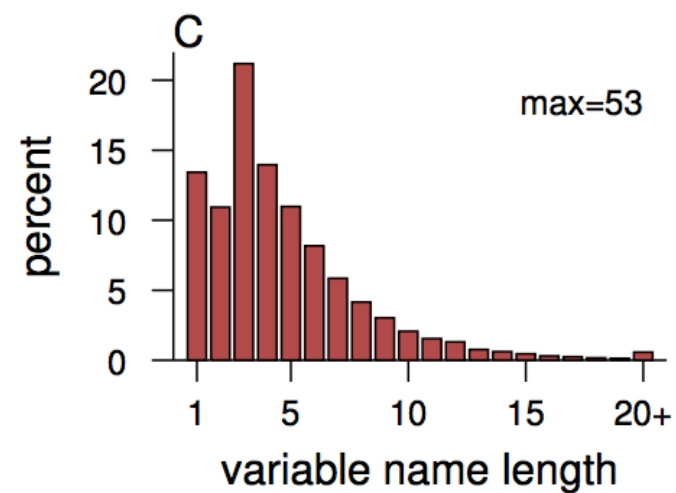
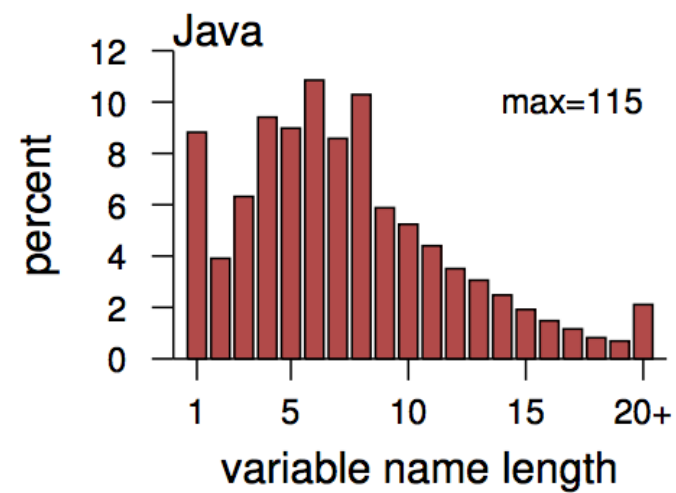
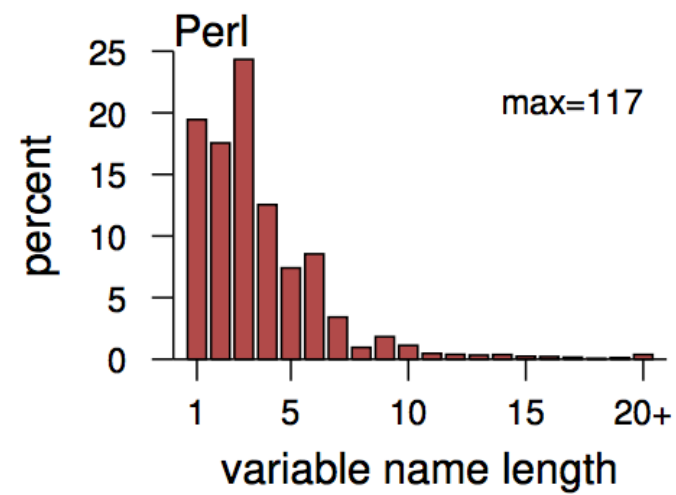
73,473 projects

Replication:

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

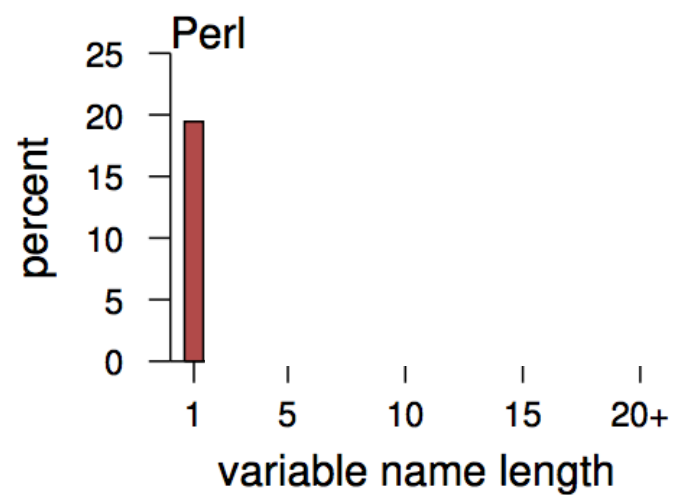
Scratch-specific
features (**RQ3**)

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.

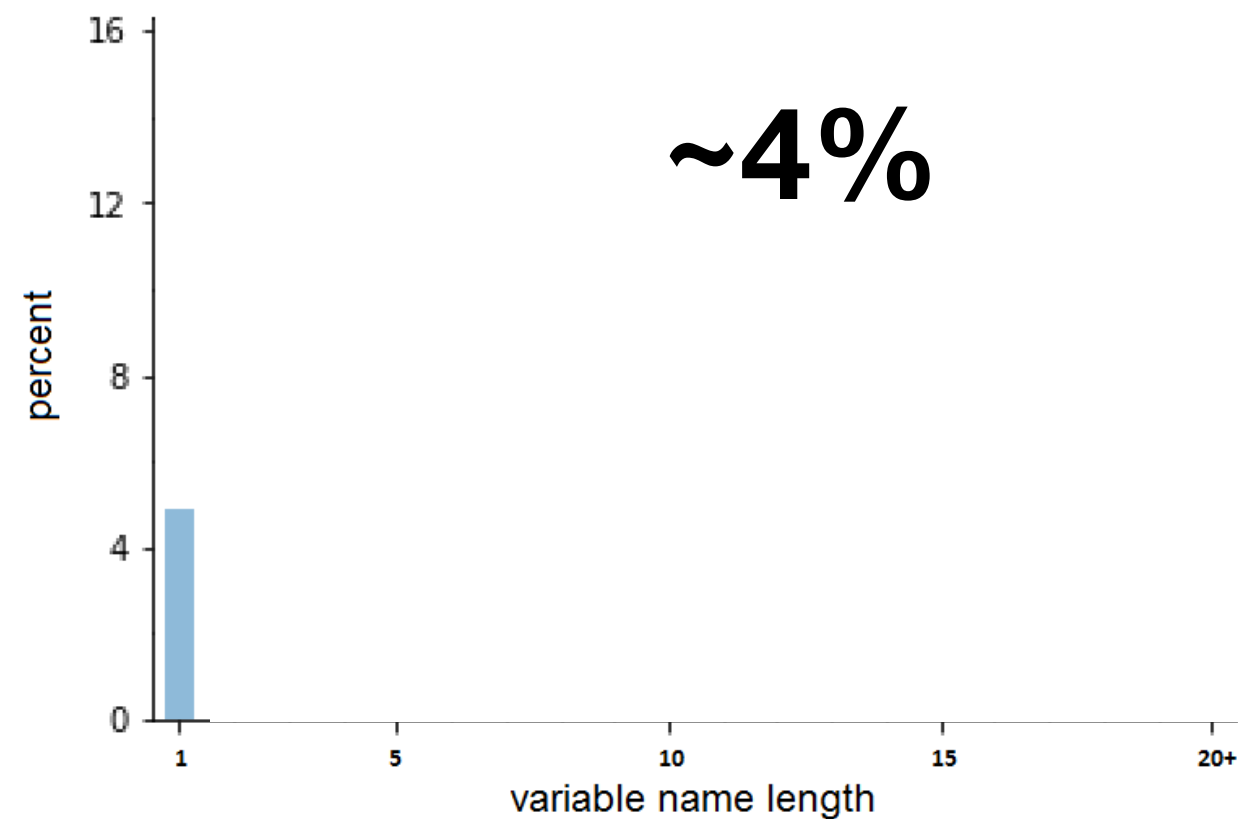
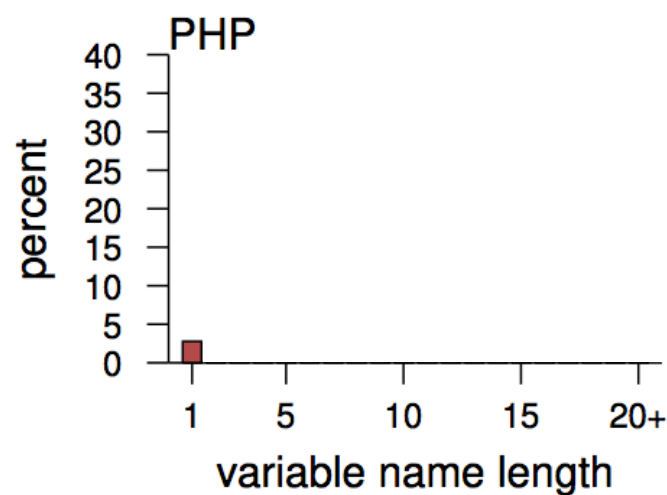
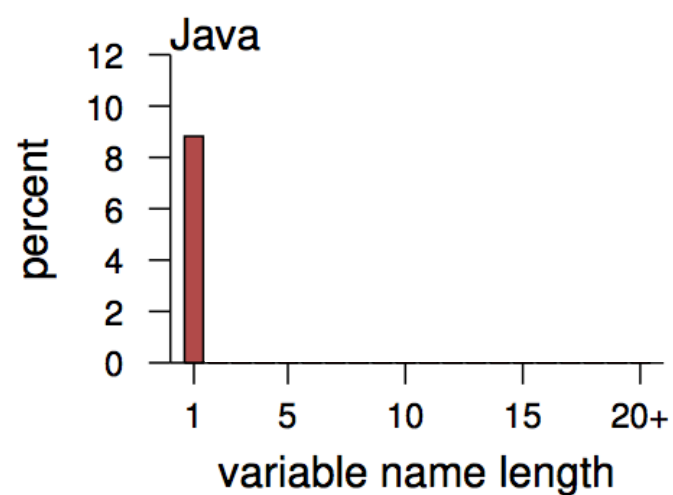


**Scratch variable
names are longer**

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



9-20%



~4%

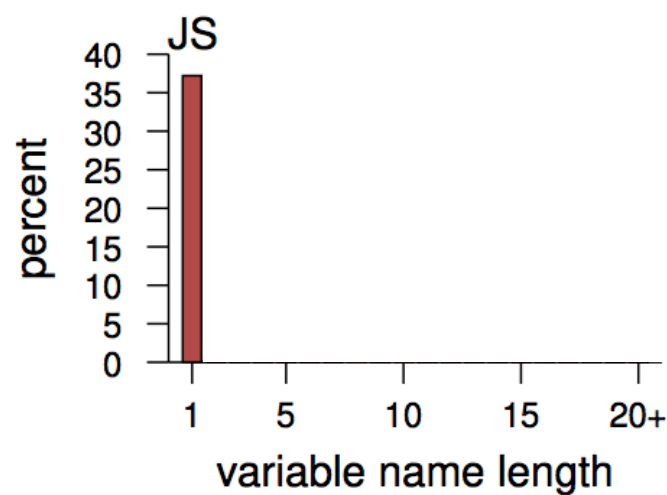
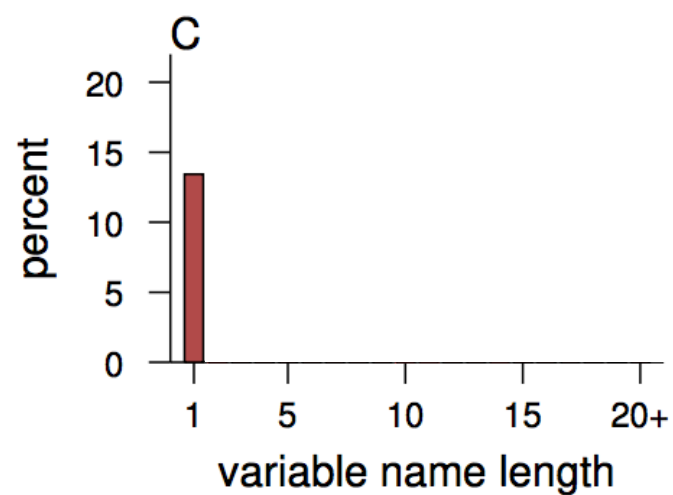


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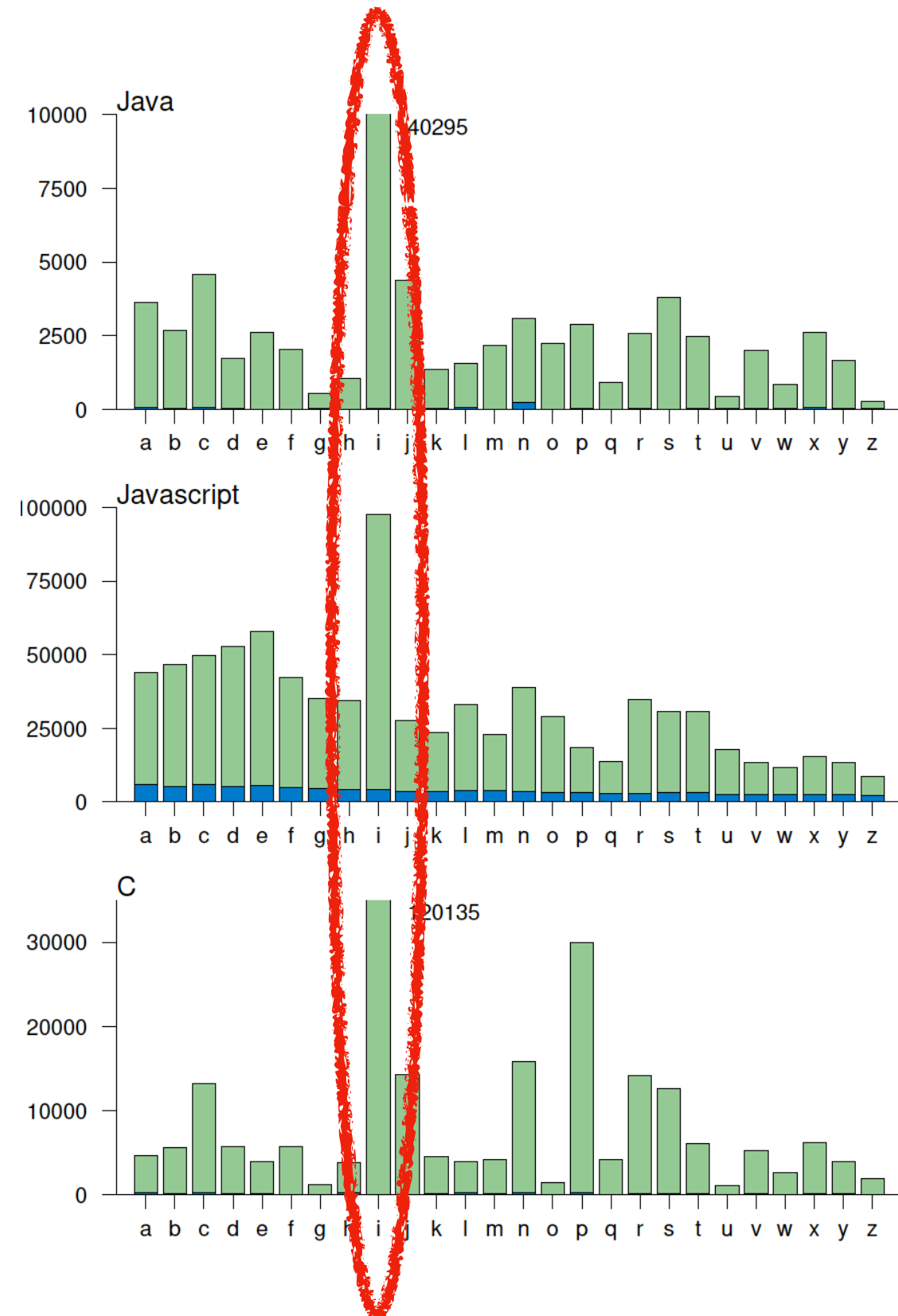


Fig. 2. Histograms of single letter names usage in different programming languages.

RQ1

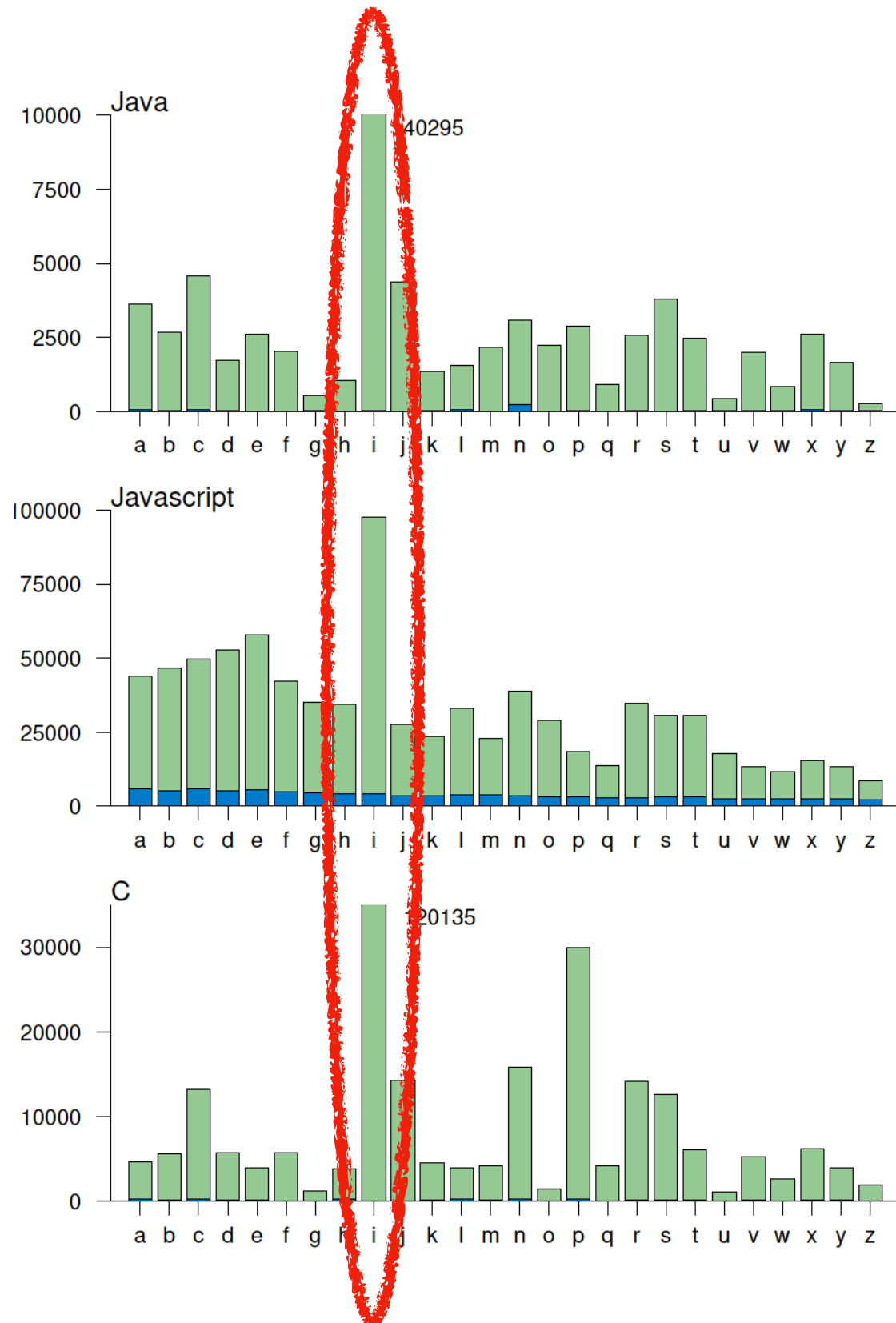


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RQ1

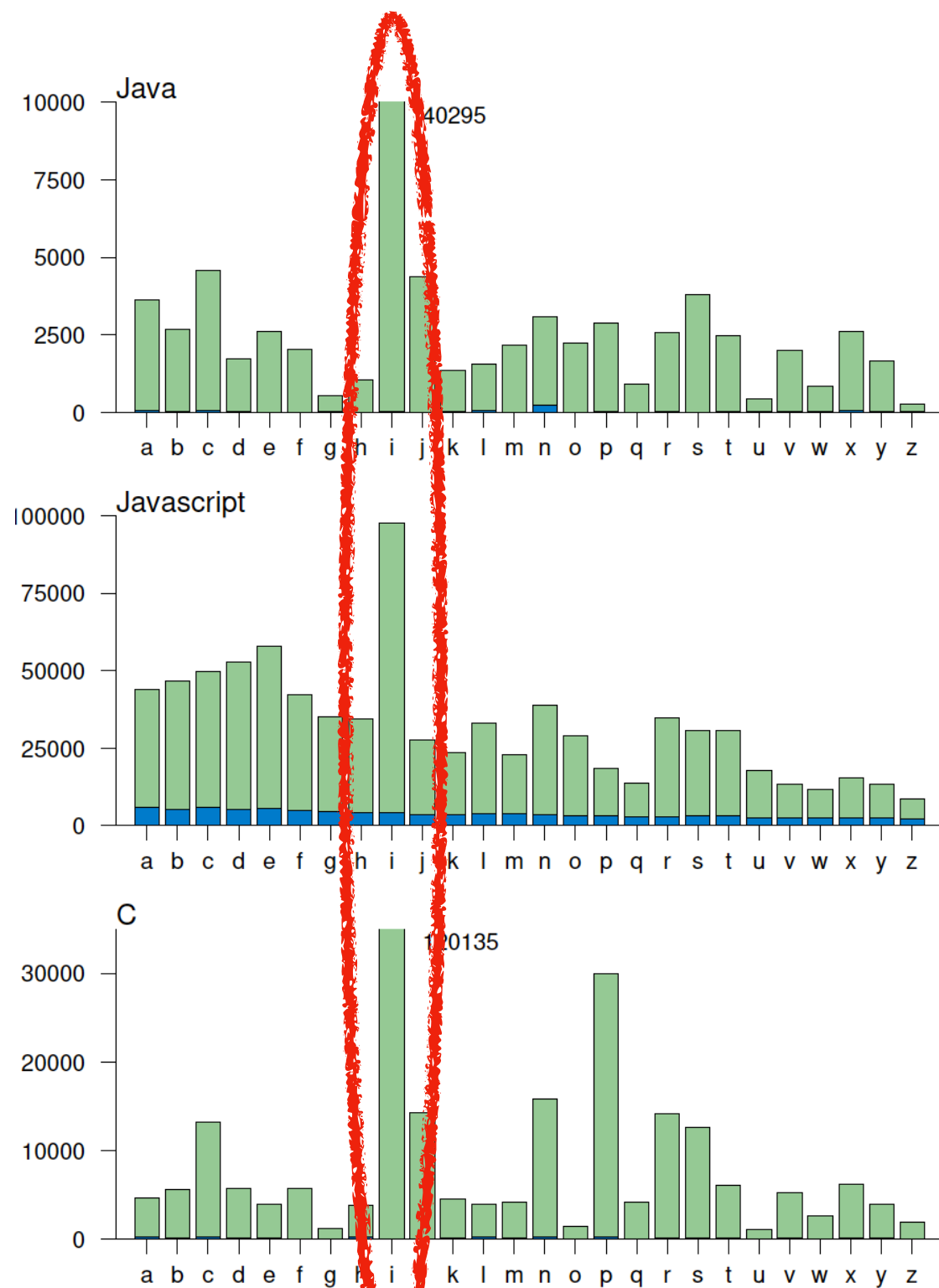
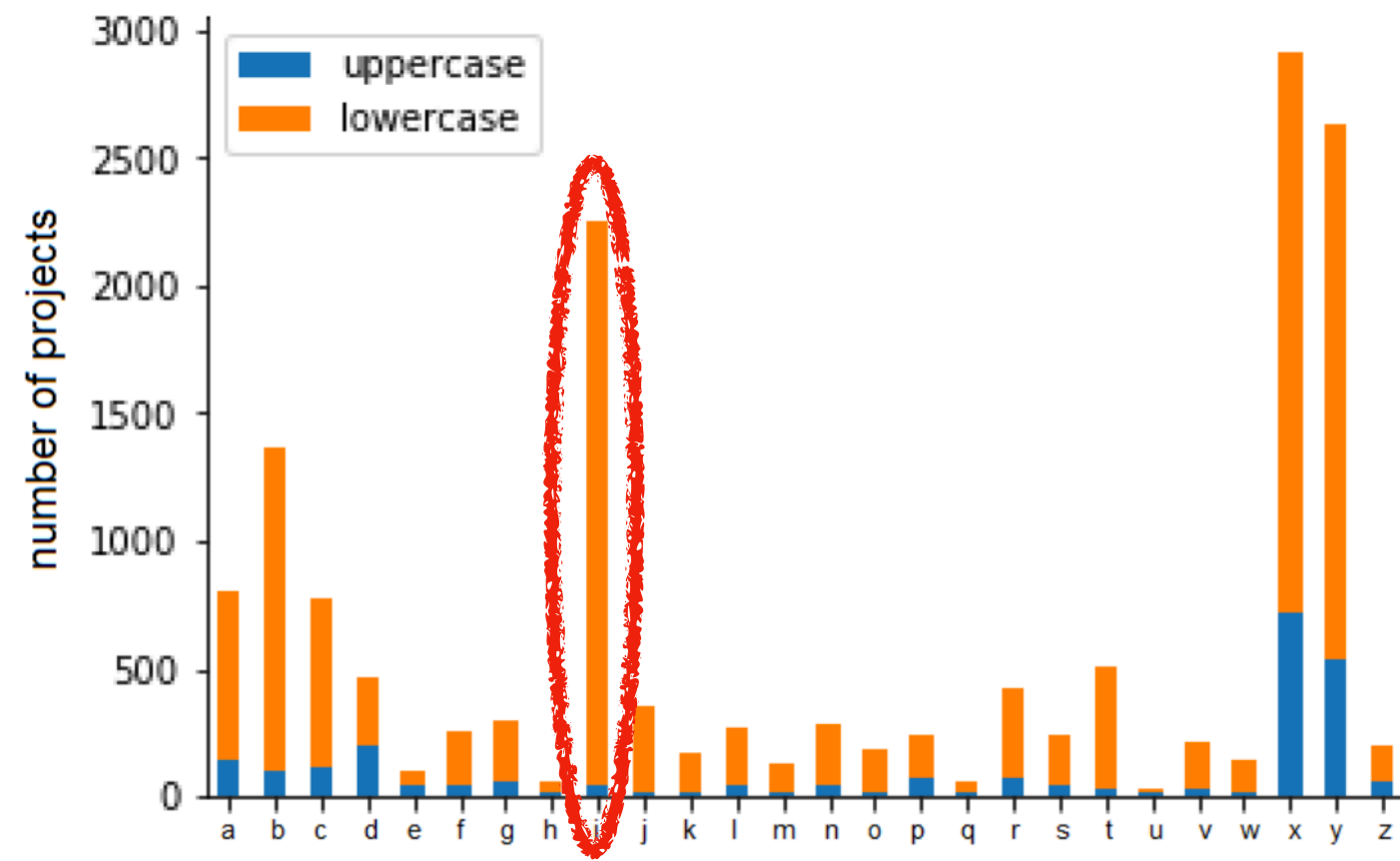


Fig. 2. Histograms of single letter names usage in different programming languages.



Still
popular

RQ1

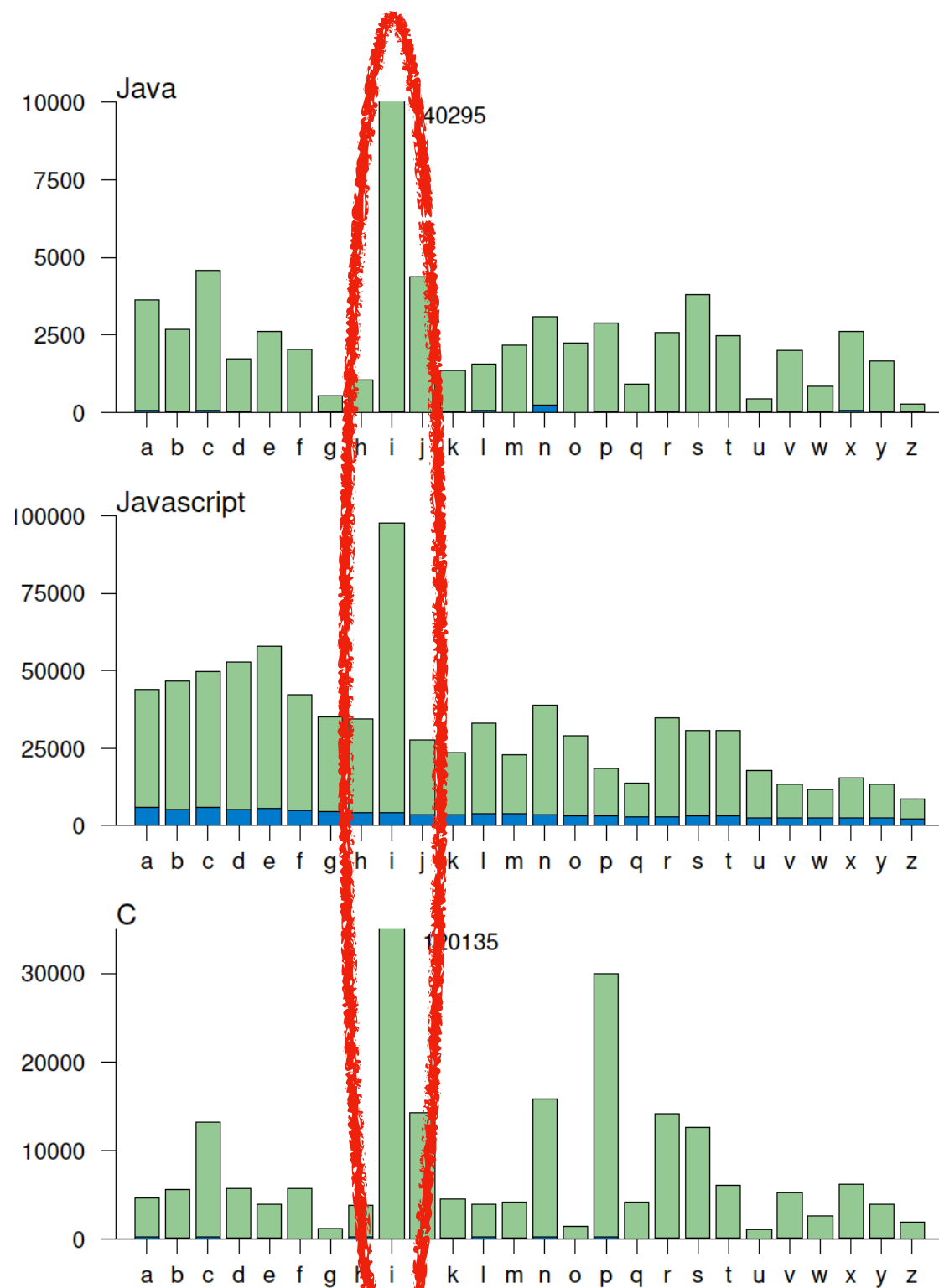
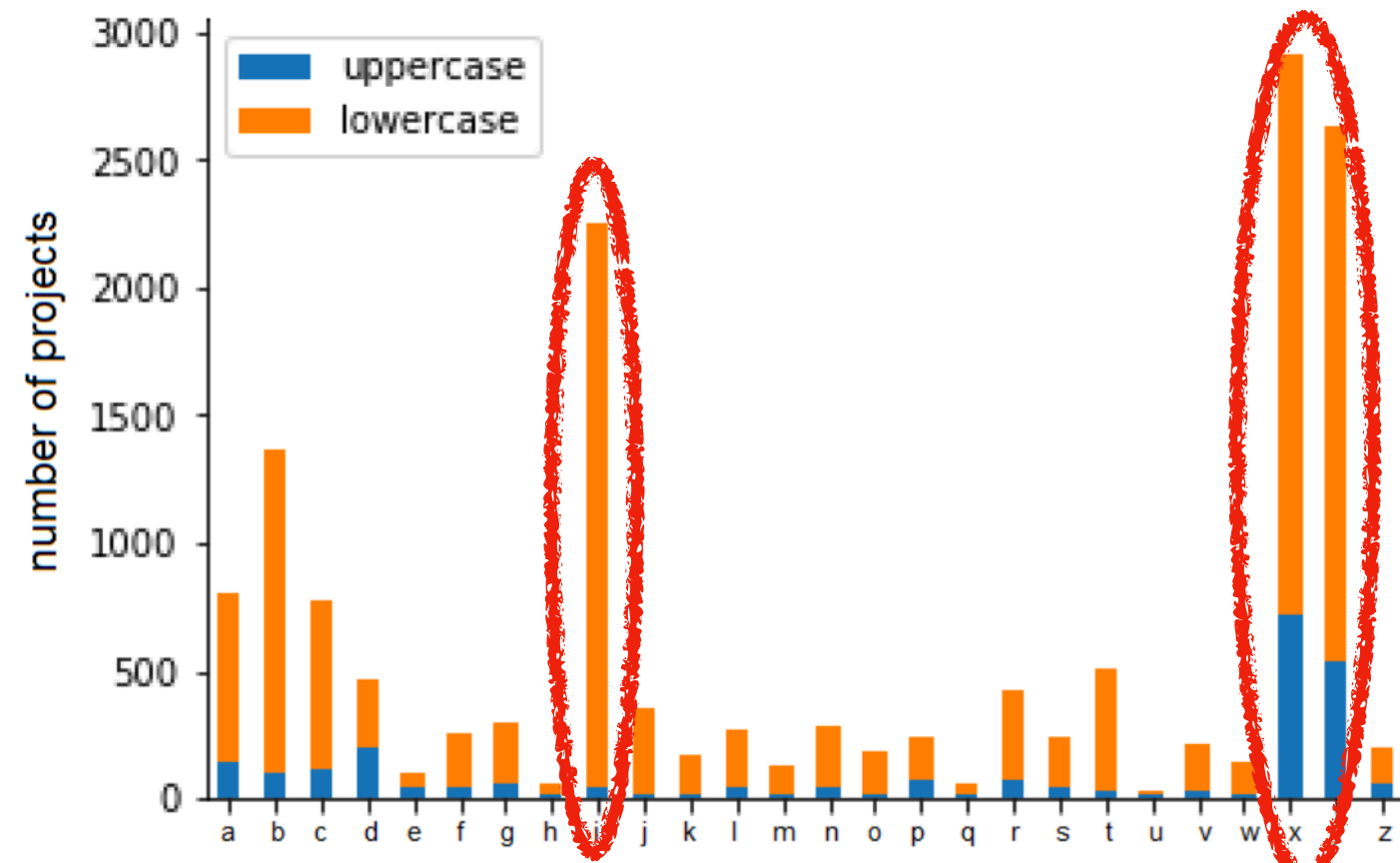
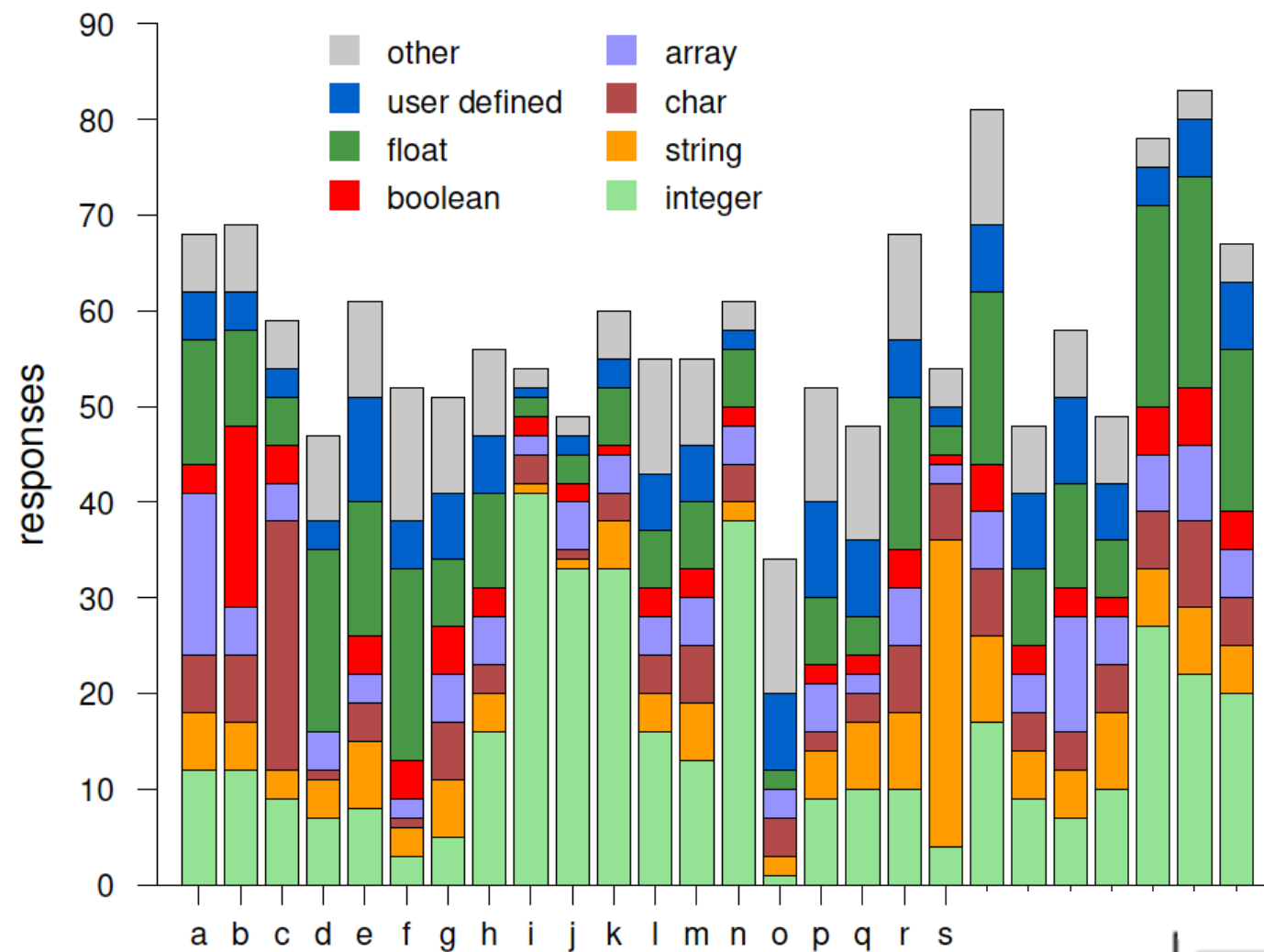


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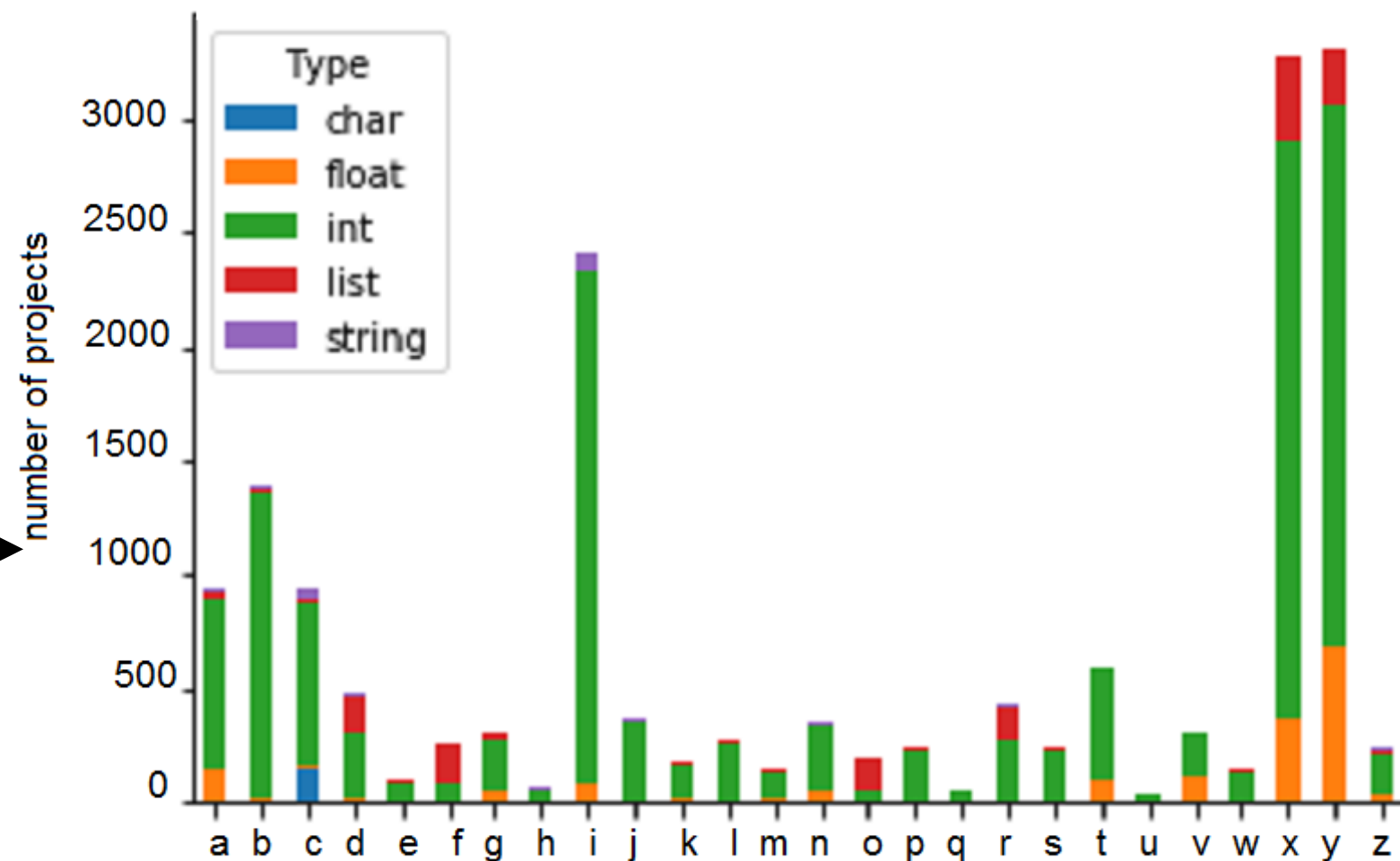
RQ1



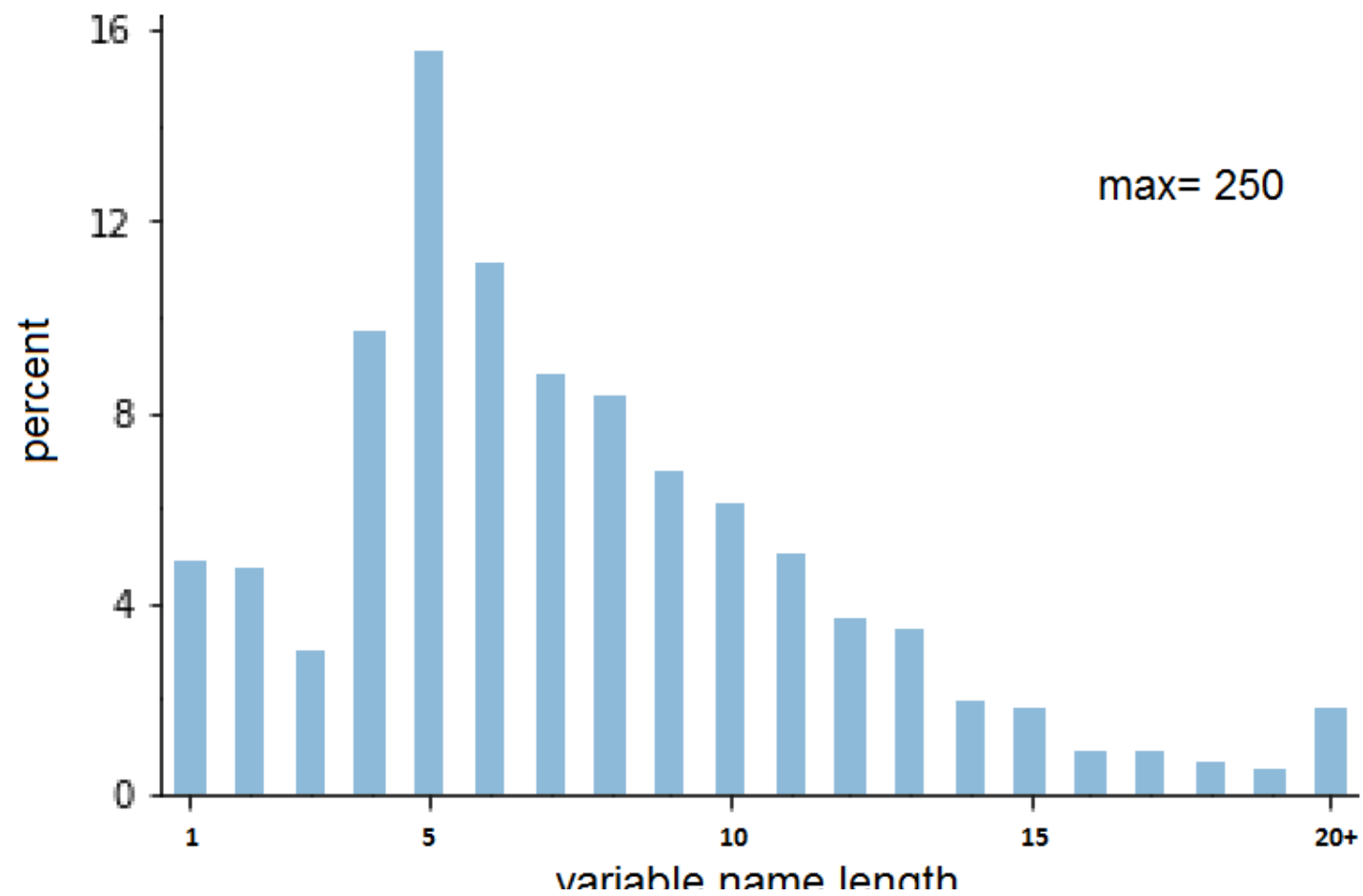
Beniamini et al., survey:
*What types would you
 consider naming a
 variable...?*

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

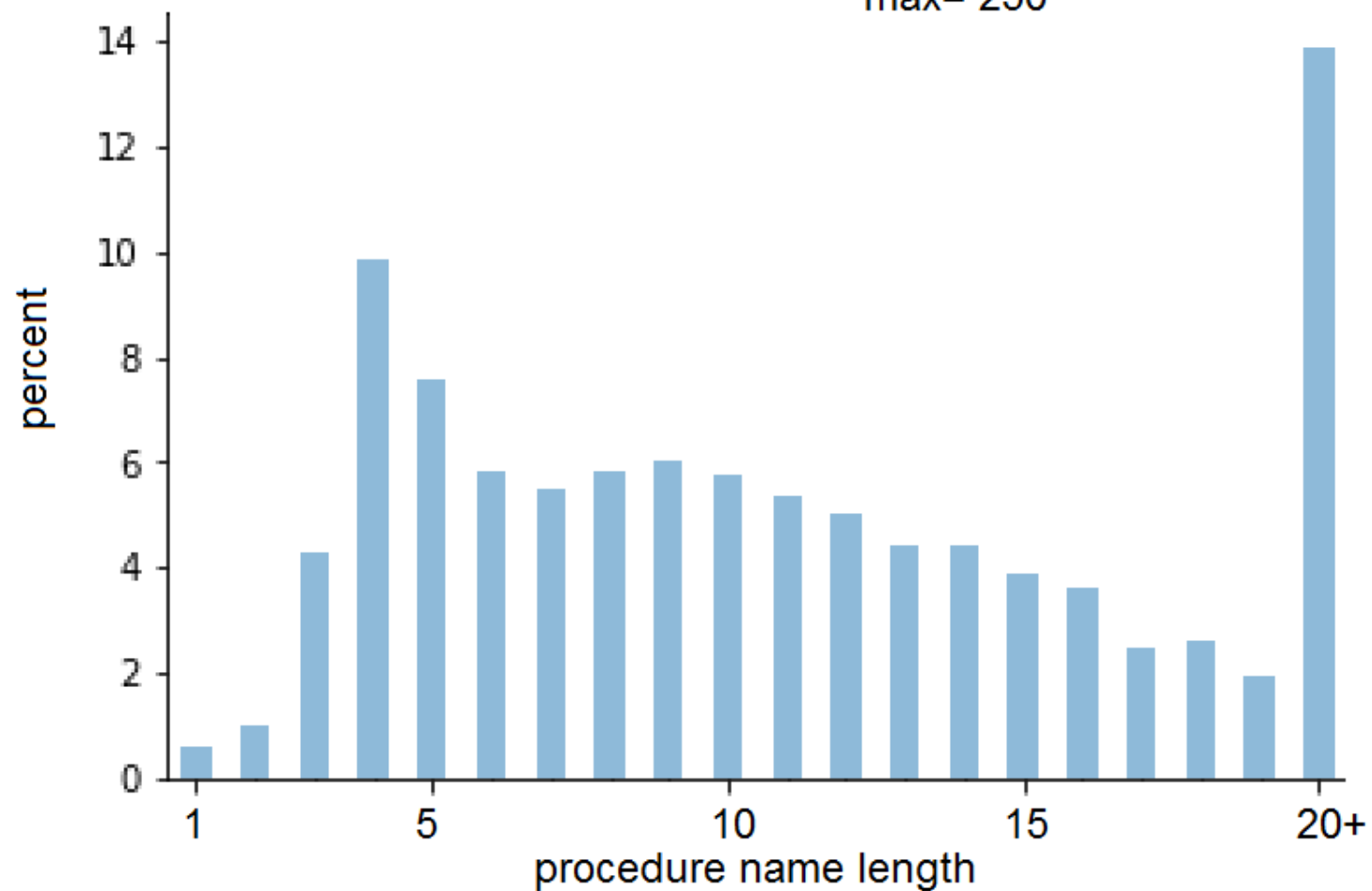
Our work, code analysis:
*Values of what types are
 assigned to a variable
 named...?*



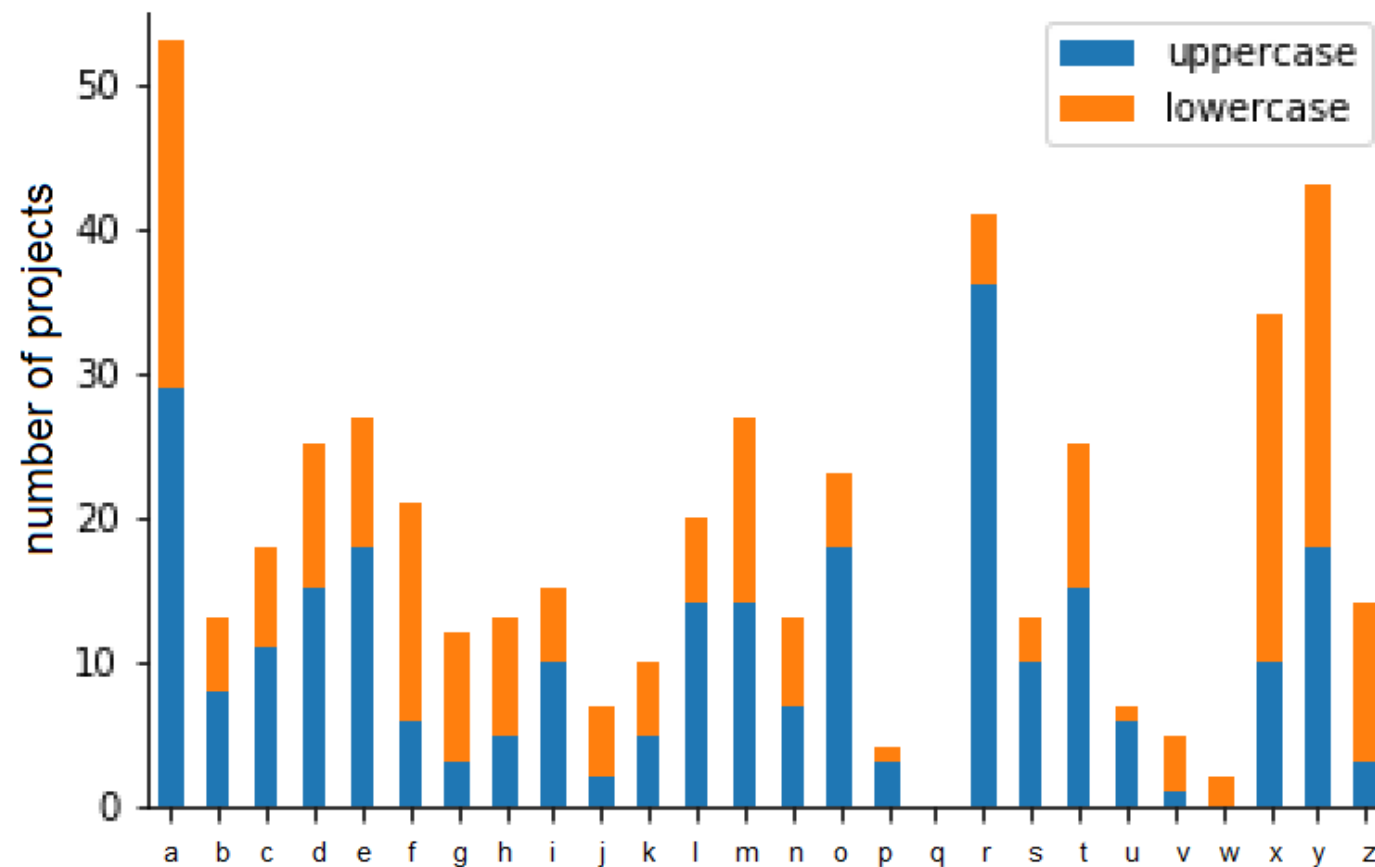
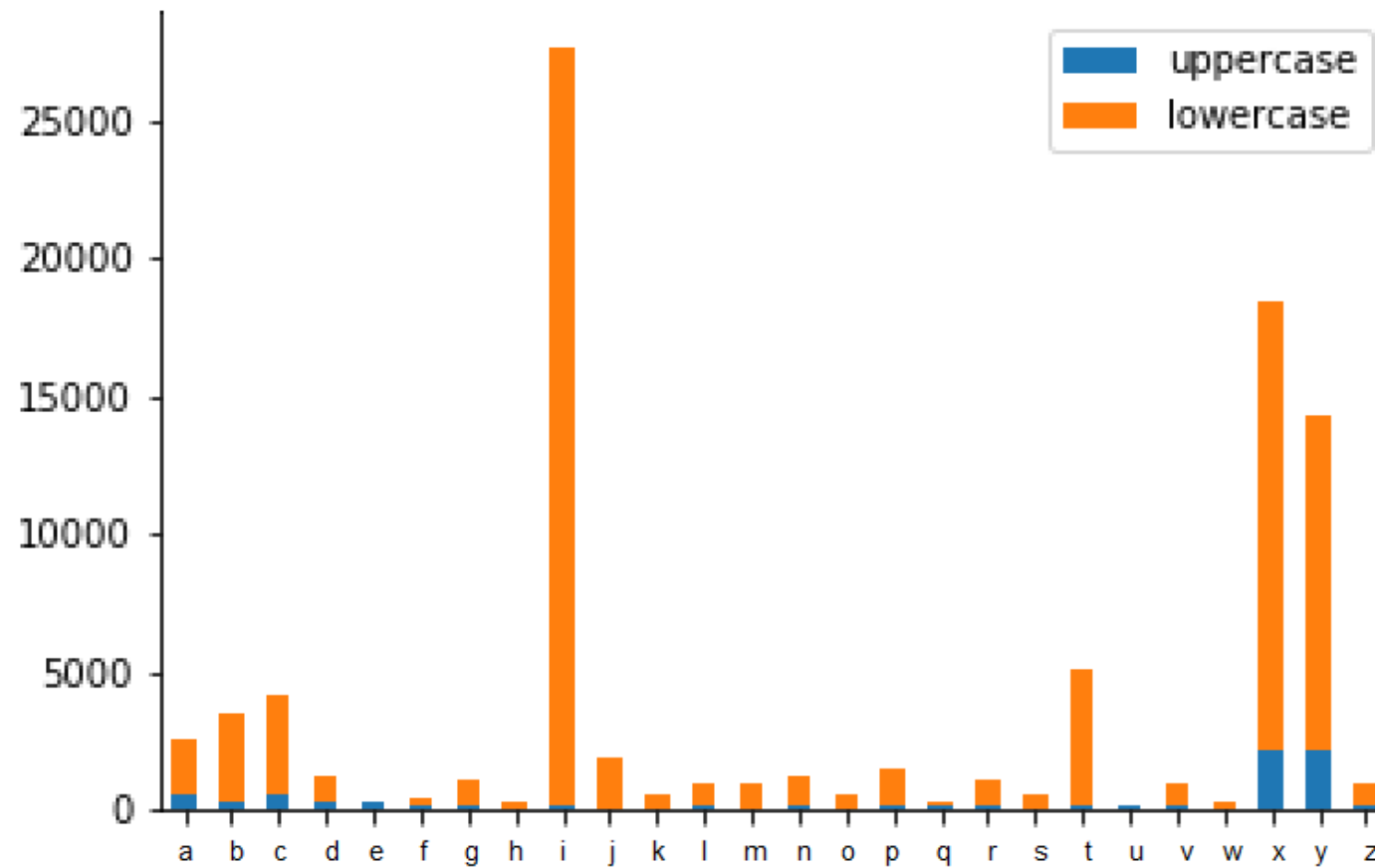
RQ2



**Procedure
names tend to
be longer**



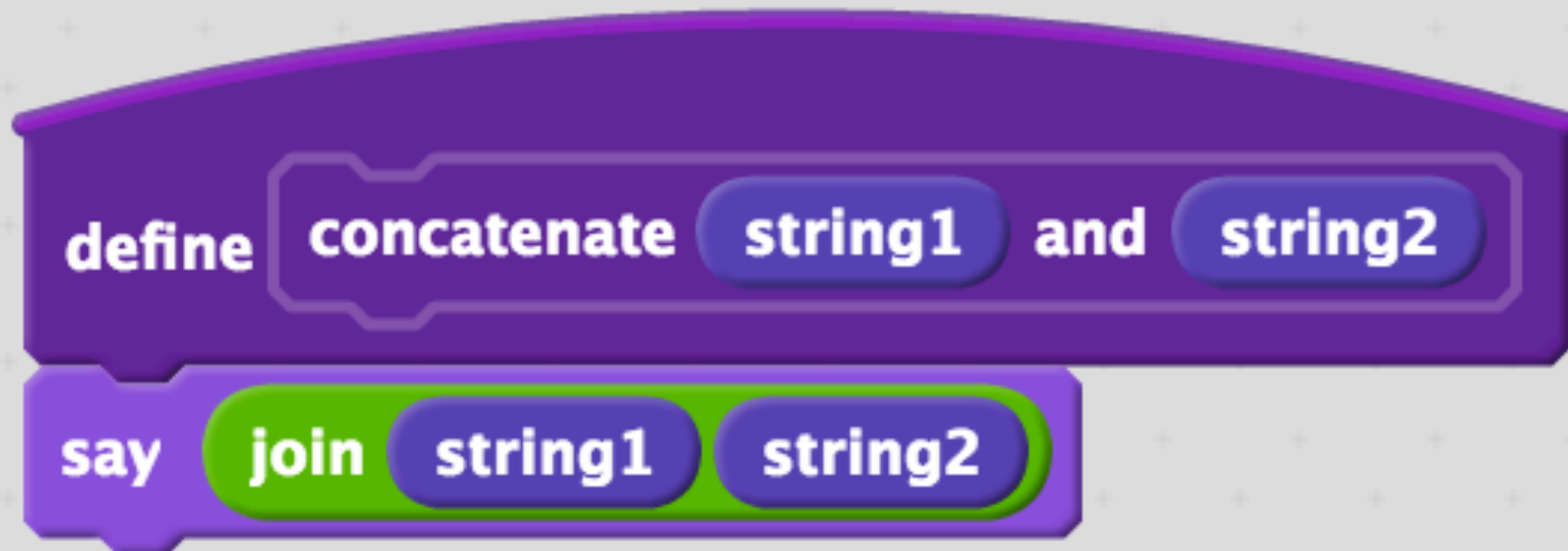
RQ2

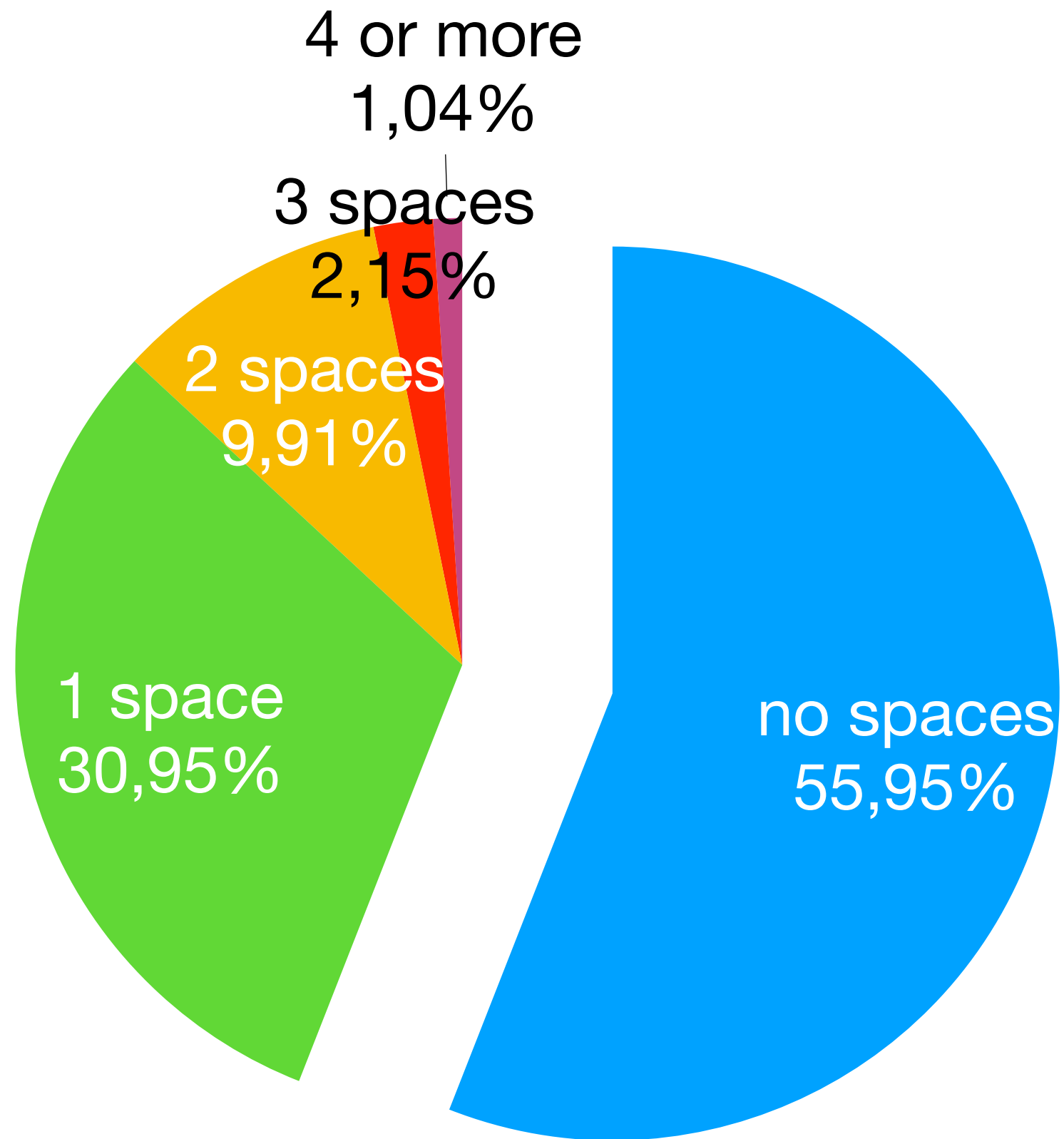


**Variables -
lower case,
procedures -
upper case**

**What makes
Scratch
different?**

RQ3





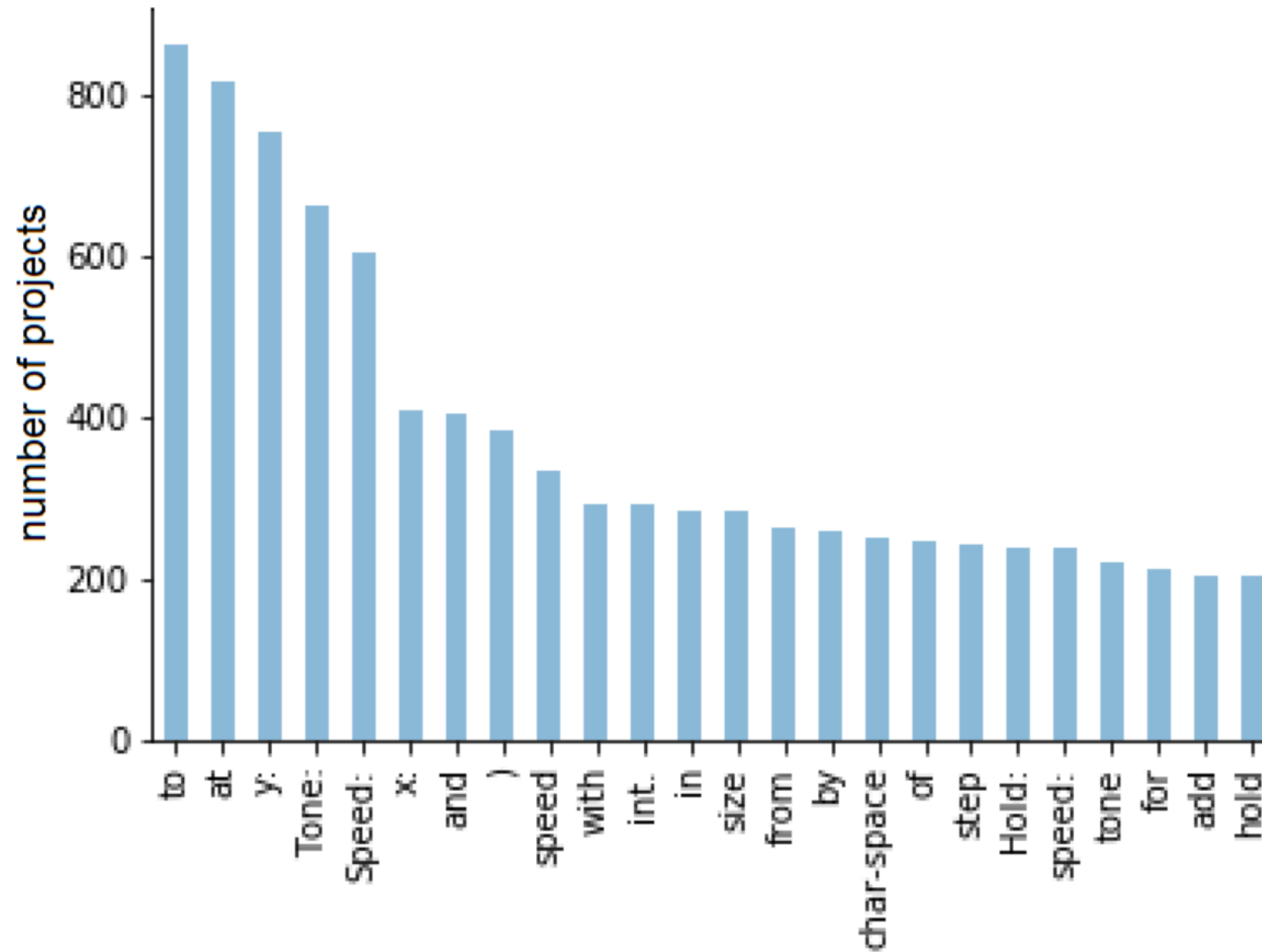


Fig. 17: The most used textual labels in between parameters of procedures

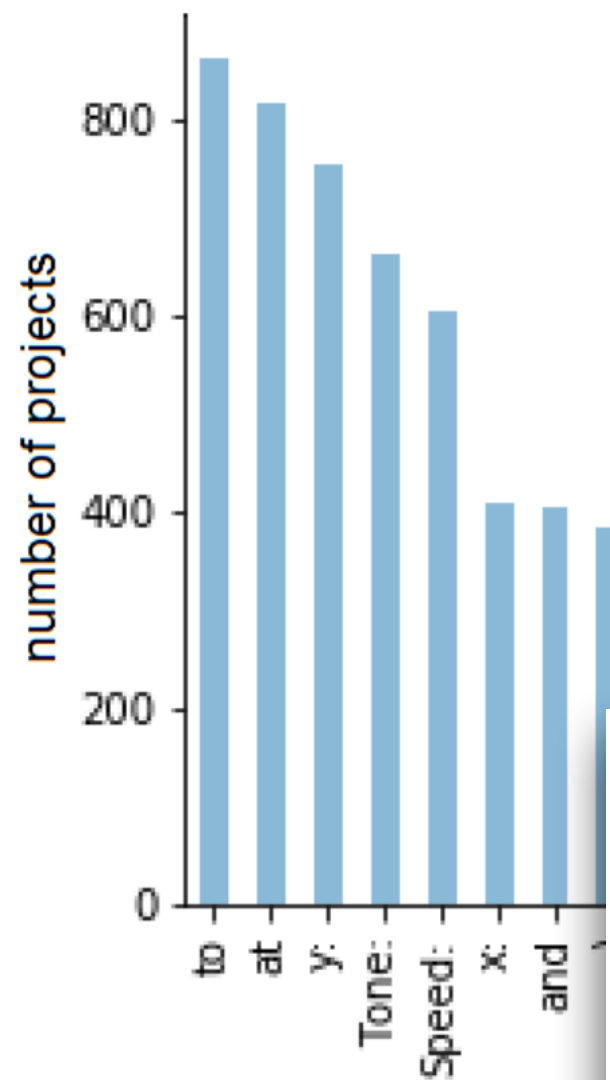


Fig. 17: The most used of procedures

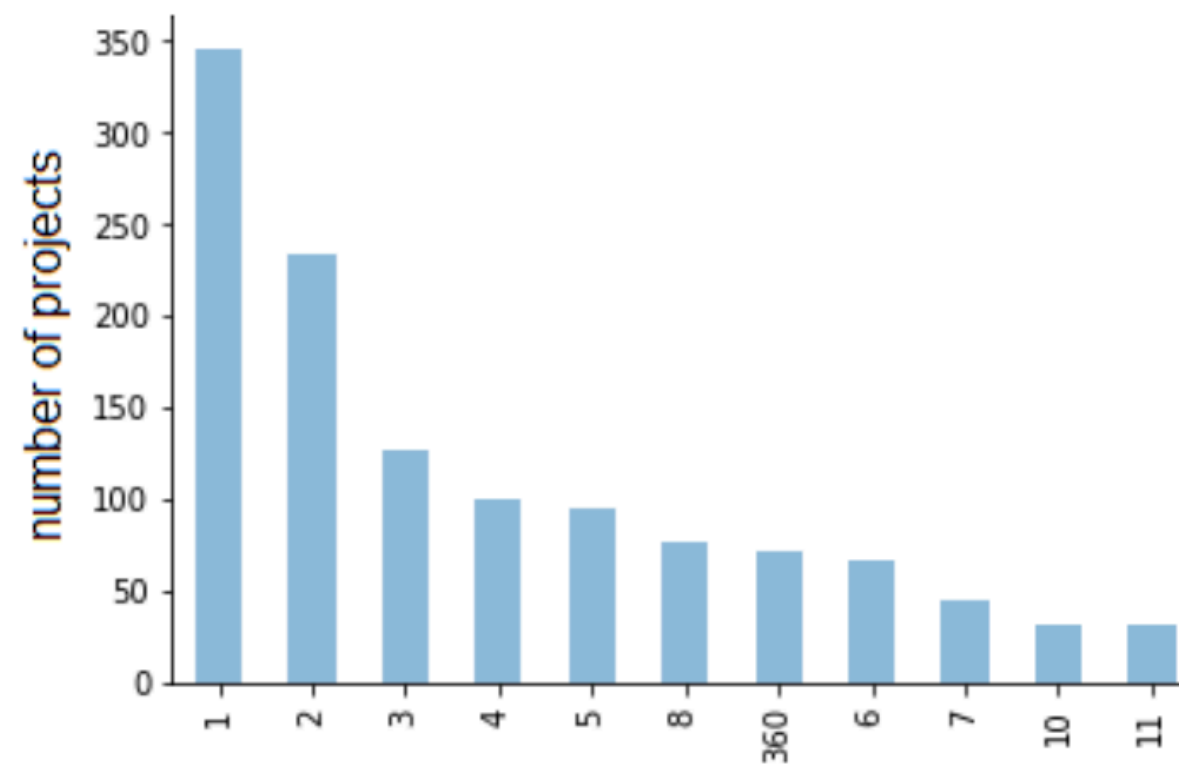
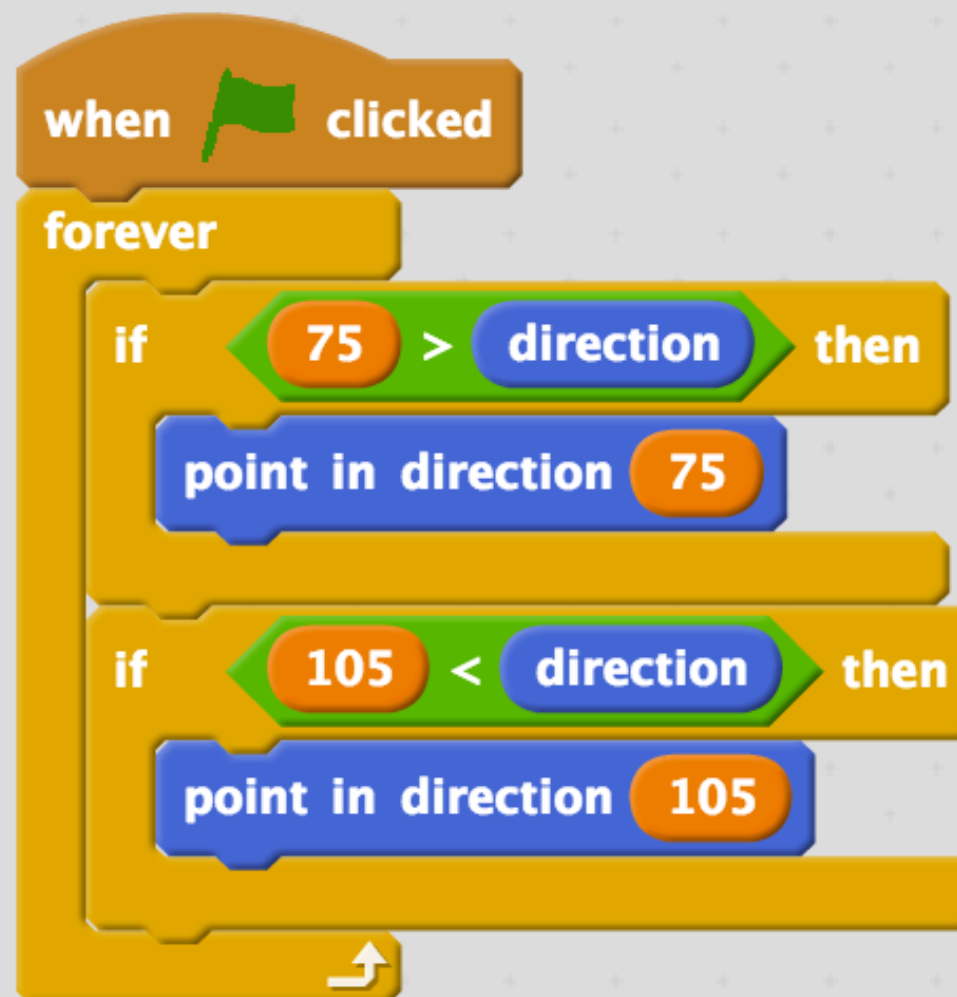
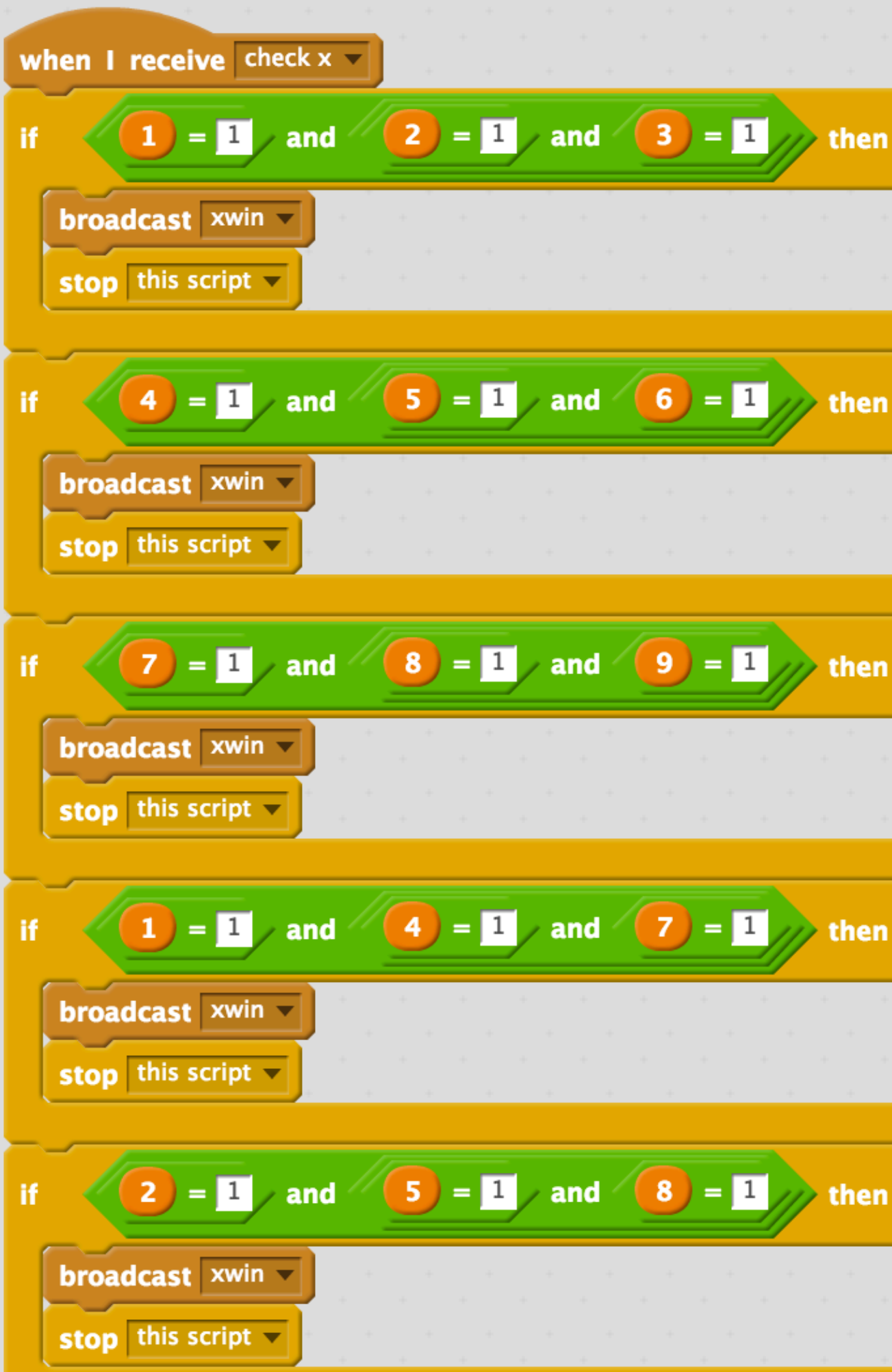


Fig. 16: The most popular numeric values used as variables

RQ3



RQ3



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



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C
Language



JS
perl

