

1.OBJECTIVE

- Common types of Haskell bugs
- Limitations of existing taxonomies in Haskell bugs
- Bugs in the Haskell wild

WHAT ABOUT HASKELL BUGS ?

Adapting existing bug taxonomies to Haskell's features and community



AUTHOR

Razvan Nistor
r.i.nistor@student.tudelft.nl

SUPERVISORS

Jesper Cockx
Leonhard Applis

2.METHODOLOGY

- 10 open source Haskell repositories
- 142 bugs
- 2 taxonomies:
 - by Catolino et al. [1]
 - by Seaman et al. [2]
- 4 interviews with Haskell developers

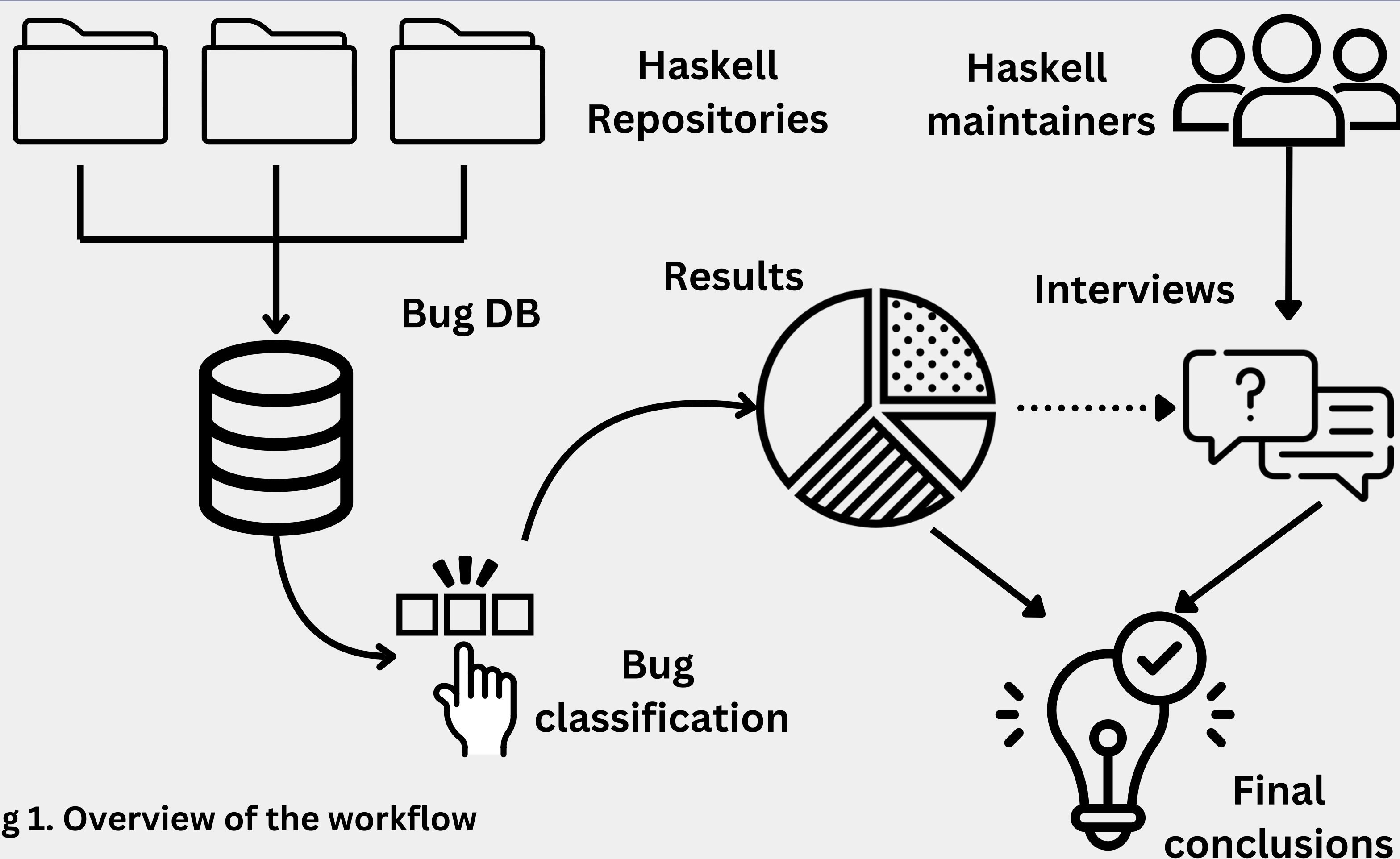


Fig 1. Overview of the workflow

3.RESULTS

Fig 2. Classification according to taxonomy by Catolino et al.[1]

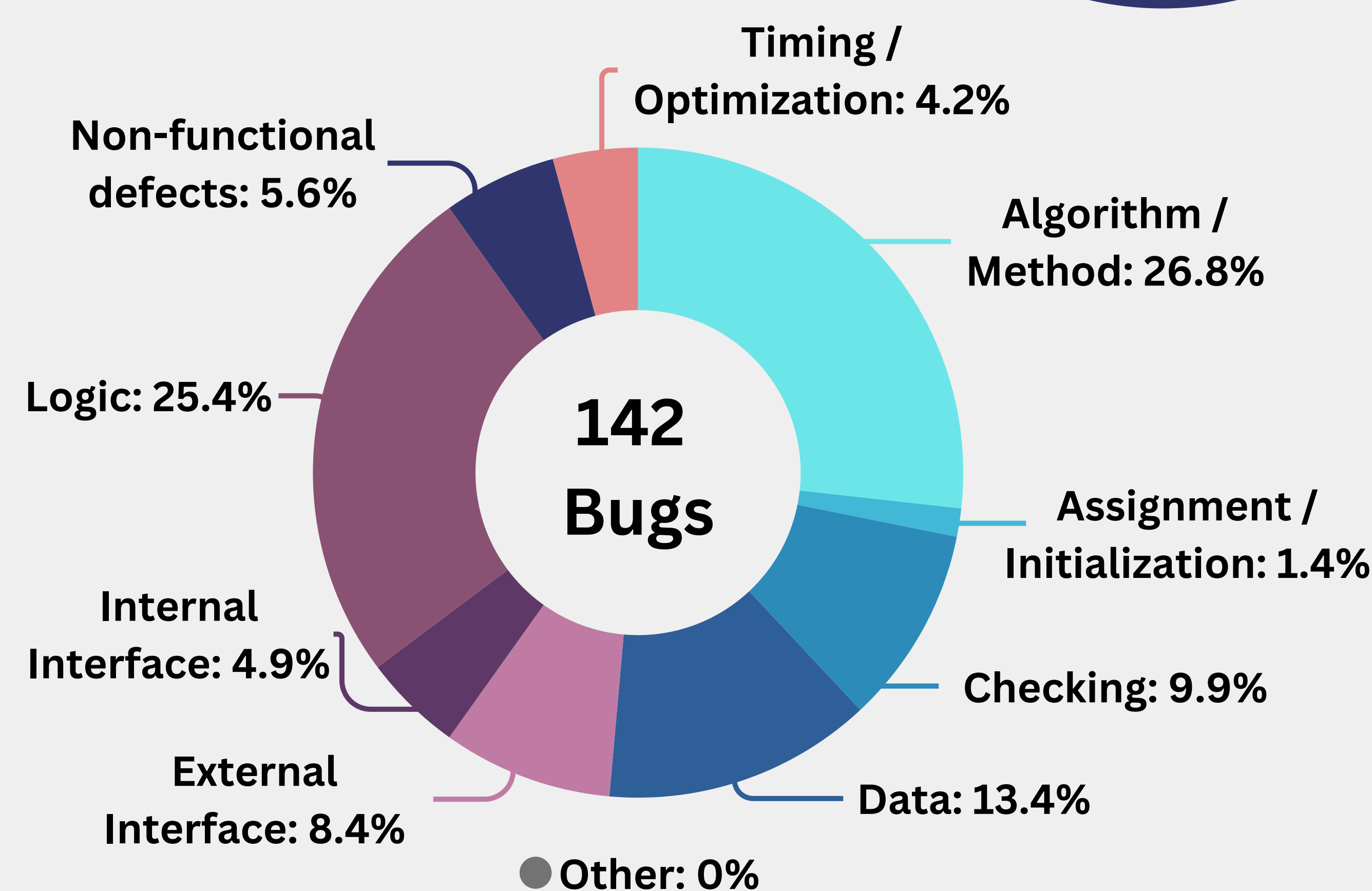
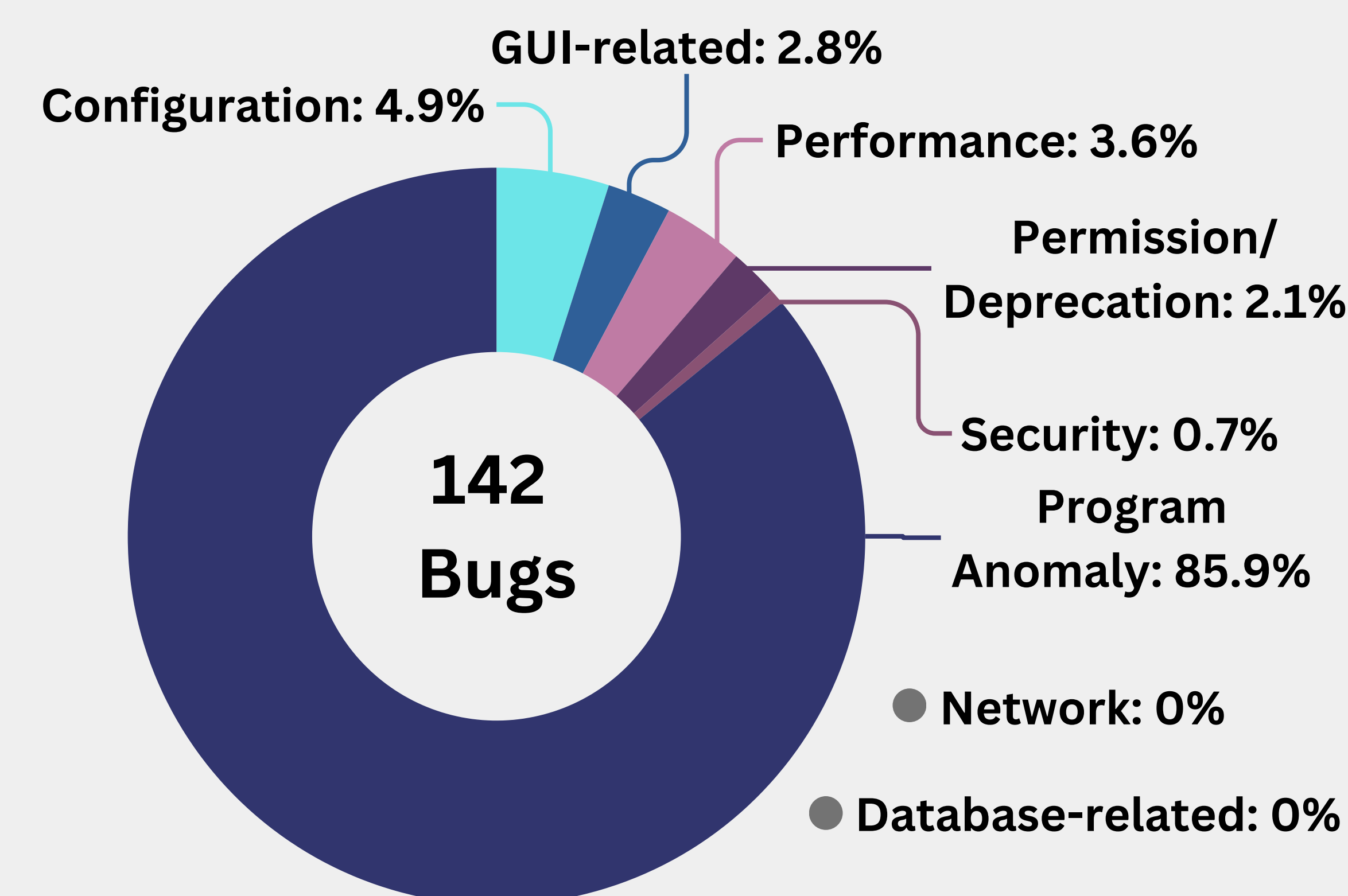


Fig 3. Classification according to taxonomy by Seaman et al.[2]

4.LIMITATIONS

Repository choice

Subjective classification

Small dataset

Limited perspectives

5.CONCLUSIONS

Taxonomy adapted to developer's needs

Taxonomy by Seaman et al.[2] Taxonomy by Catolino et al.[1]

6.FUTURE WORK

- Larger classification:
- More repositories
 - More people
 - Extend to other stages of development
- Larger interviews:
- More developers
 - Understand debugging techniques
 - Improve debugging tools



Fig 4. Word cloud depicting the types of bugs and classification criteria mentioned by the developers

REFERENCES

[1] Gemma Catolino, Fabio Palomba, Andy Zaidman, and Filomena Ferrucci. Not all bugs are the same: Understanding, characterizing, and classifying bug types. *Journal of Systems and Software*, 152:165–181, June 2019.

[2] Carolyn B. Seaman, Forrest Shull, Myrna Regardie, Denis Elbert, Raimund L. Feldmann, Yuepu Guo, and Sally Godfrey. Defect categorization: making use of a decade of widely varying historical data. In *Proceedings of the Second ACM-IEEE international symposium on Empirical software engineering and measurement*, pages 149157, Kaiserslautern Germany, October 2008. ACM.