

A Contextualized Vocabulary Model for Identifying Technical Debt in Code Comments.

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Agenda.

- Introduction
 - Motivation
- A Contextualized Vocabulary Model for Identifying Technical Debt (CVM-TD)
- Exploratory Study
- Conclusion and Future Works

Motivation.

- Different indicators have been used by automated approaches to identify TD[2];
 - These indicators use software metrics.
- The problem with these approaches...
- In order to complement these quantitative analyses, we developed the CVM-TD

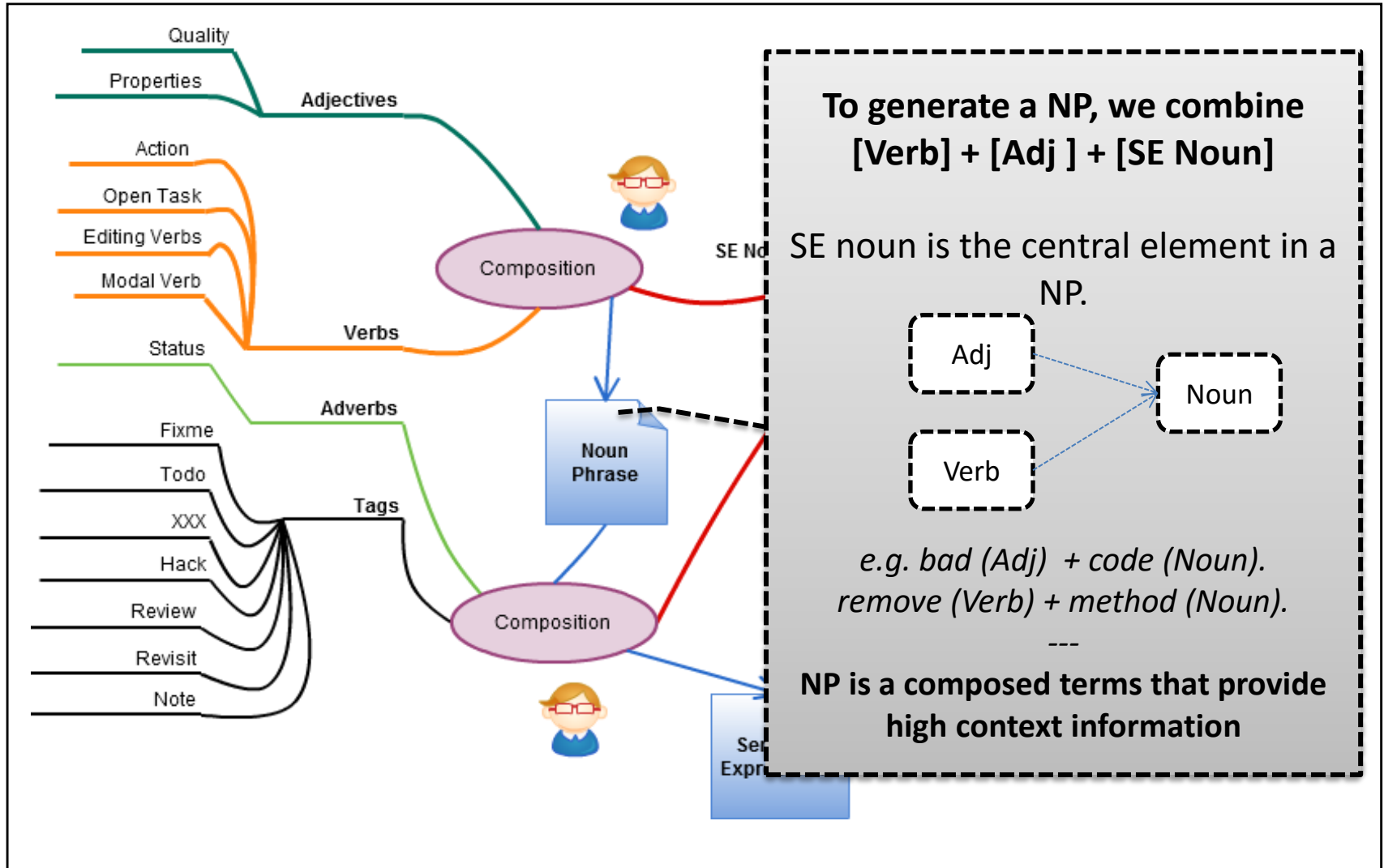
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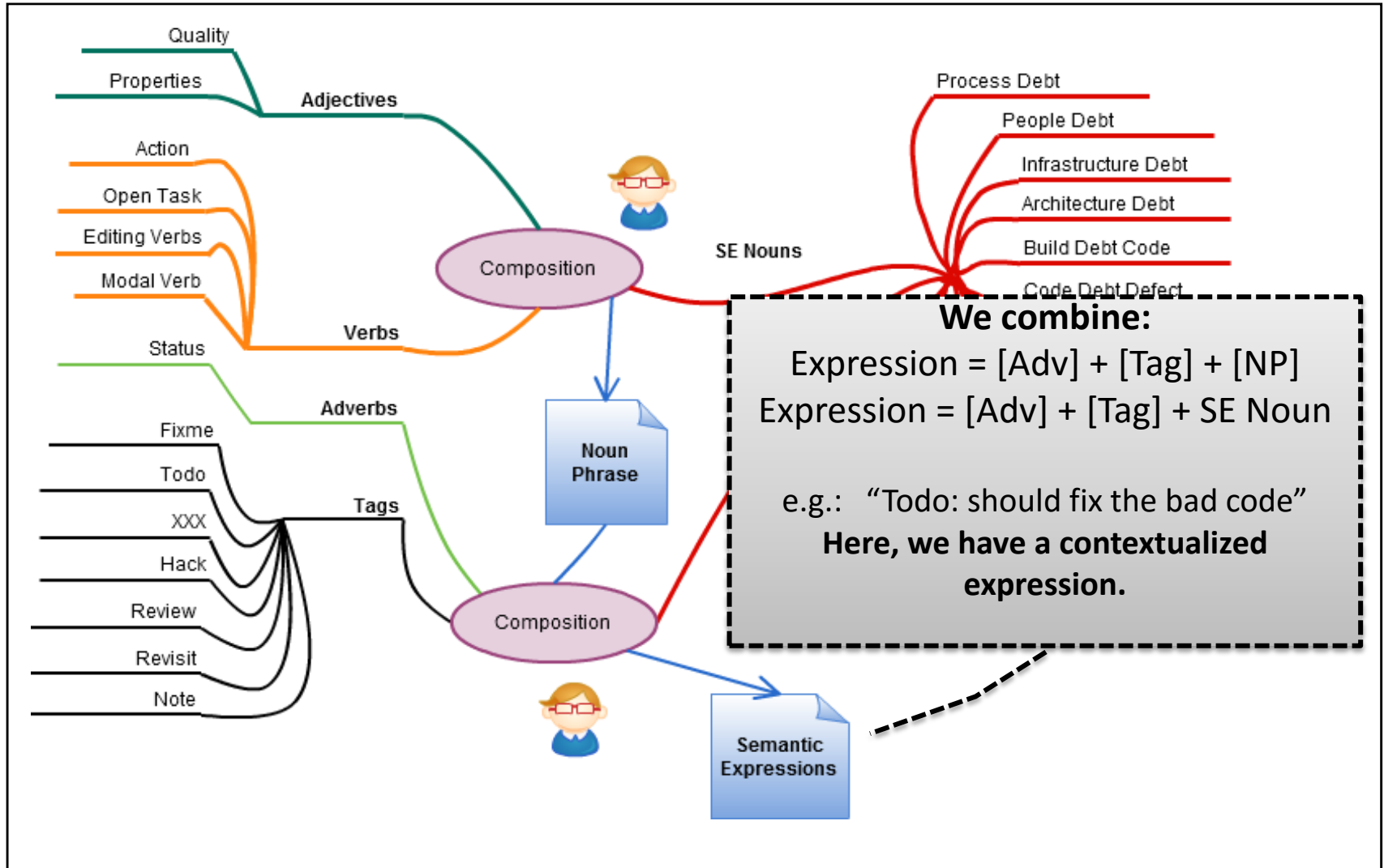
CVM-TD

- CVM-TD is a contextualized collection of terms that focuses on using **word classes** and **code tags**.

CVM-TD



CVM-TD



CVM-TD.

- CVM-TD provides a set of TD vocabulary that may be used to filter comments that need more attention because they may indicate a TD.
- The contextualized vocabulary can be used to support TD identification

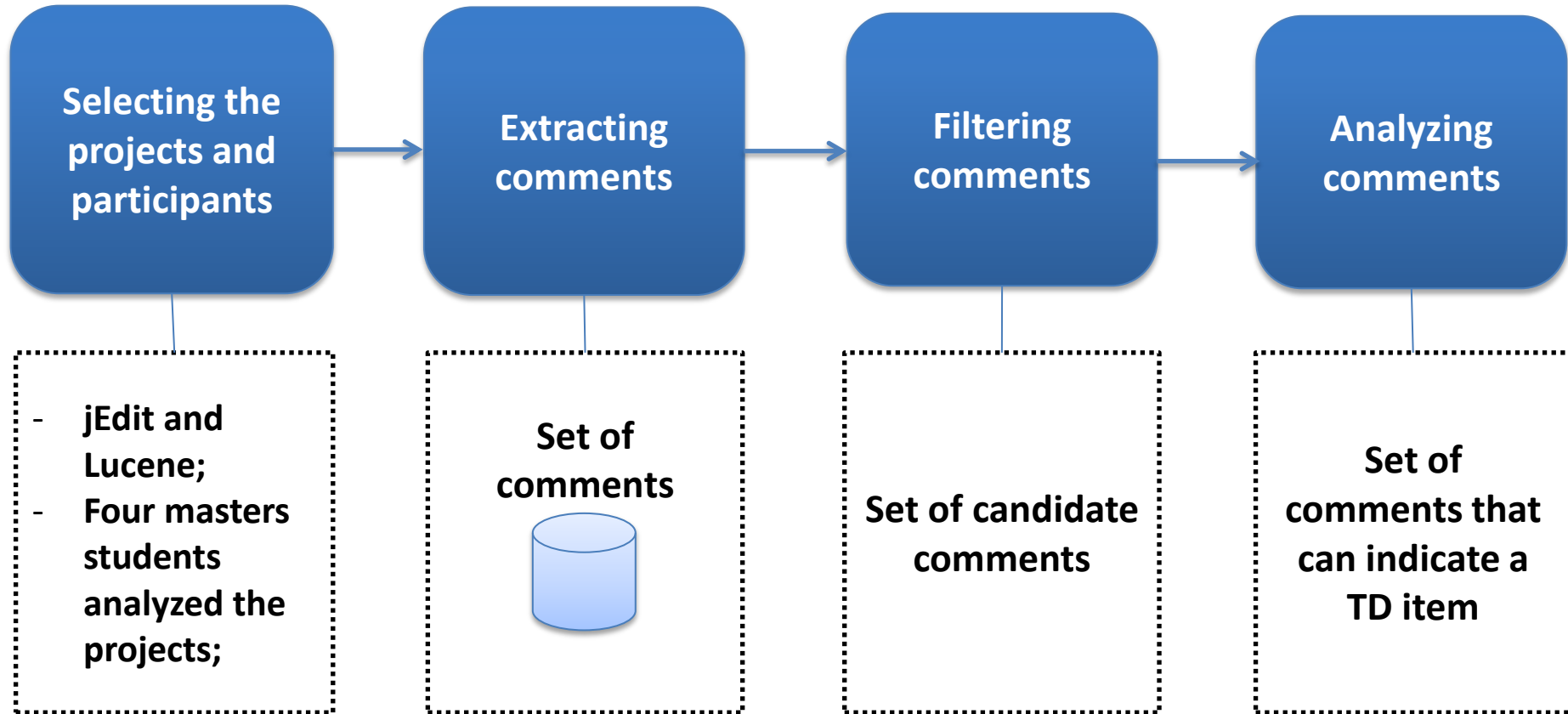
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Exploratory Study

- We performed an exploratory study to analyze the viability of the proposed model to support comments analysis for TD identification

Exploratory Study.



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Contributions of work

- Our findings show that:
 - (i) the **dimensions** considered by the model are used by **developers** when writing comments,
 - (ii) **CVM-TD** provides a **vocabulary** which may be used to detect **TD**, and
 - (iii) In spite of our outcomes being promising, the proposed model needs to be **improved** and **evaluated** with other projects.

Future works.

- Identify points that may **improve CVM-TD**;
- Implement CVM-TD model and **integrate** it with a comment analysis tool;
- **Evaluate** the use of CVM-TD in **other software projects**.

References

- [1] C. Izurieta, A. Vetrò, N. Zazworka, Y. Cai, C. Seaman, and F. Shull, "Organizing the technical debt landscape", 3rd Int. Work. Manag. Tech. Debt, MTD 2012 - Proc., pp. 23–26, 2012.
- [2] N. S. R. Alves, L. F. Ribeiro, V. Caires, T. S. Mendes, and R. O. Spínola, "Towards an Ontology of Terms on Technical Debt". In Proceedings of the Sixth International Workshop on Managing Technical Debt (MTD). IEEE Computer Society, Washington, DC, 2014.
- [3] P. Wongthongtham, E. Chang, T. Dillon, and I. Sommerville, "Development of a software engineering ontology for multisite software development," IEEE Trans. Knowl. Data Eng., vol. 21, no. 8, pp. 1205–1217, 2009.
- [4] M. Colaço, M. Mendonça, M. A. F. Farias, and P. Henrique, "A Neurolinguistic-based Methodology for Identifying OSS Developers Context-Specific Preferred Representational Systems," ICSEA, 2012

Questions



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