



VS-Code Plugin for a Temporal Specification Language

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Motivation

Formal specifications are used to define how a program is supposed to behave. They can then be used together with a verifier to check if a given program behaves correctly according to the specification. One can even use the specification to automatically synthesis a program satisfying the specification.

However, someone still has to write these specifications and they will make mistakes when doing so. The goal of this project is to develop a plugin for Visual-Studio Code that helps users to write specification in a temporal specification language. This should include a parser and type checker that can provide helpful error messages. The plugin can be further extended by auto complete or semantic analysis techniques.

Goals and Tasks

- > Understand the temporal stream logic (TSL-T) format.
- > Implement a parser and type checker for TSL-T.
- > Build a VS-Code plugin for TSL-T.
- > Integrate the parser into an existing synthesis tool.



Literature

- > [S. Jacobs, G. A. Pérez, and P. Schlehuber-Caissier](#)
The Temporal Logic Synthesis Format
TLSF v1.2
[arXiv 2023](#)
- > [B. Maderbacher and R. Bloem](#)
Reactive Synthesis Modulo Theories
using Abstraction Refinement
[FMCAD 2022](#)

Courses & Deliverables

- Introduction to Scientific Working**
Short report on background
Short presentation
- Bachelor Project**
Project code and documentation
- Bachelor's Thesis**
Project code
Thesis
Final presentation

Recommended if you're studying

- CS
- ICE
- SEM

Prerequisites

- > Interest in logic and programming languages.

Advisor Contact

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