Code-Checker using ATP

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1 Abstract

The most common setback faced by beginners in programming is the need to check whether the code will run robustly, given any form of input. Even software written by professionals needs to undergo stress testing to ensure its smooth field performance. This project, therefore, aims to provide a mechanism to verify the given code using Automatic Theorem Prover(ATP).

The user, i.e. a programmer, can give his/her code as an input. This input code(source code) is assumed to be syntactically correct. With this, the Code Checker will determine the inputs being taken by the source code. Once this information is gathered, the code is checked again for common logical errors. For example, if there are any blocks of code that are unreachable, Code Checker will detect it and display a warning notification to the user. The user can then modify his/her program accordingly.

Apart from the above example, Code Checker can identify other common errors such as infinite loop conditions, possible infinite recursions, return value mismatch etc. Other than the precise notification, nothing else is printed on the user interface, keeping it clean and clutter-free. Also, in this manner, a beginner coder can learn in an iterative fashion.