

Focusing on the core.

Personal Information:

Author: Rupesh Nasre.

Affiliation: Indian Institute of Science.

Address: Department of Computer Science and Automation, Indian Institute of Science, Bangalore, India – 560012.

Telephone: +91-80-22932468 extension 103.

Email: nasre@csa.iisc.ernet.in

Idea:

“I kept the bowl in the refrigerator.”.

After reading the above sentence, did you worry about whether I opened or closed the refrigerator door?

Major part of a programmer's time is spent in worrying about meeting the prerequisites and handling the end conditions. As a simple example, reading a file requires the programmer to remember opening and closing it. Executing an SQL query requires remembering to open a connection. Running *uniq* requires *sort*, and so on. More examples exist.

Perhaps it is due to an ugly design of the underlying library/class that one uses, but the reality is, it exists, and is painful. Analyses have succeeded in warning the programmer if a file is read before opening. Why not go a step further? Why not open the file automatically!

The idea is to design a language that provides a facility to mention a set of prerequisites and aftereffects for a public function in a library/class to be supplied by the library/class implementer. The library users would worry about using only the core of the functionality. The compiler makes use of the prerequisite and aftereffect functions to bring the state to a desired consistent state.

Prerequisites and aftereffects are mostly the common-sense, routine tasks that the library implementer is expected to know. In order that the tasks are not executed twice (once by the library user and once automatically), another set of functions that check whether the tasks are executed or not is required.

This pushes down the burden more on the library implementer and eases the end programmers. Assuming the library would be used by many programmers, overall it should be useful.

Focusing on the core makes sure we worry about the bowl being kept in the refrigerator and not about the opening/closing of the door.