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No-Test Classes in C through Restricted Types

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Abstract: Object-oriented programming (OOP) languages allow for rich creation of new types through, for example, the *class* mechanism found in C++ and Python (among others).

These techniques, while certainly rich in the functionality they provide, addtionally require users to develop and test new types; while resulting software can be elegant and easy to understand (and indeed those are some of the hopes behind the OOP paradigm), there is a cost associated to the addition of the new code required to implement such new types. Such a cost will typically be at least linear in the number of new types introduced.

One potential alternative to the creation of new types through *extension* is the creation of new types through *restriction*; in appropriate circumstances, such types can provide the same elegance and ease of understanding, but without a corresponding linear development and maintenance cost.

Keywords: compiler, plug-in, verification