FortranAnalyser: a software tool to access Fortran code quality

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Quality is one of the main concerns in the process of software development. In software engeneering, quality refers to the accomplishment of the initial design and functional requirements, and to the maintainability of the software.

Nowadays there are multiple tools that analyse static code in order to measure the quality of the software developed. However since IBM$^{®}$ developed the Fortran programming language in 1957 and to the date, there is no tool that performs a static code analysis to measure the quality of the code developed. For a study of computational reproducibility of CMIP5 models, we analyse the quality of the code, mainly developed in Fortran. For it we needed to develop a tool that performsa static analyse of all versions of Fortran and apply software quality metrics to detect potential improvements. Our software, FortranAnalyser, helps to improve Fortran codes finding common programming flaws on the source code. It is a multilanguage and multiplatform software and generates a PDF quality report.

FortranAnalyser has been tested with codes from different research fields and has now a community of users that have used the tool. We have seen great interest on the part of research centers from several countries and private sector companies. Also it has received an award to the best Free Software project at a regional level. Here we introduce FortranAnalyser, present some of their latest features, future ideas and expose some of their potential applications.