

# Call Graph of FORTRAN Captured by GXL

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**Abstract:** The most traditional reverse engineering tools focus on an abstraction and an analysis of source code. An appropriate data structure is necessary for an analysing legacy source code and it enables transfer of useful information about reversing systems. This article aims to answer, how we can store a structure of legacy systems that can be used for an analysis. A structure of a program can be captured by a directed call graph. The author introduces a few existing approaches how to keep the graph in an appropriate data structure. Further, the author describes its use and its features and discusses issues. The structure of legacy FORTRAN programs is captured by this structure that is analysed and transformed into an object oriented form later. Among others the paper aims to create a metamodel of the FORTRAN language and to use GXL for its capturing. Further, the paper describes software for a work with reversing system and its graphic visualization. At the end, the author summarizes how a resultant structure can be used for an analysing of a legacy system.

**Keywords:** graph exchange language, reverse engineering, legacy software, FORTRAN, directed graph, visualization, call graph

**JEL Classificaton:** O33, C88, I29