



CoJaC COBOL to Java Converter

- **CoJaC** is our tool to convert historical COBOL applications into modern Java solutions.
- **CoJaC** is part of pecBOX (pro et con – Toolbox for Software Migration), which is a toolbox including all aspects of software migration.
- **CoJaC** generates maintainable and high-performance Java code which is semantically equivalent to the COBOL code.
- **CoJaC** reaches during conversion a degree of automation up to 95 %.
- **CoJaC** combines scientific know-how in compiler construction with the core competency resulting from successful migration projects.

Migration Paths between the Legacy and Target System

Legacy system	Target system
Masks (IFG, SCREEN COBOL, CICS, ...)	Web interface
COBOL (COBOL85, IBM, MFC, ...)	Java
Middleware (Tuxedo, Pathway, CICS, ...)	Java web services, application server (Tomcat, Spring, ...), MidaS
Files	Relational database
Embedded SQL (Oracle, Db2, ...)	Dynamic SQL (Oracle, Db2, Microsoft SQL Server, ...)

Instead of a 1:1 program transformation an architecture migration is realised:

- Online programs (server) as web services are provided in the Java target system.
- COBOL batch programs were transformed into autonomous Java programs.
- COBOL data files were migrated into database tables.
- Embedded static SQL statements were converted into dynamic SQL statements.

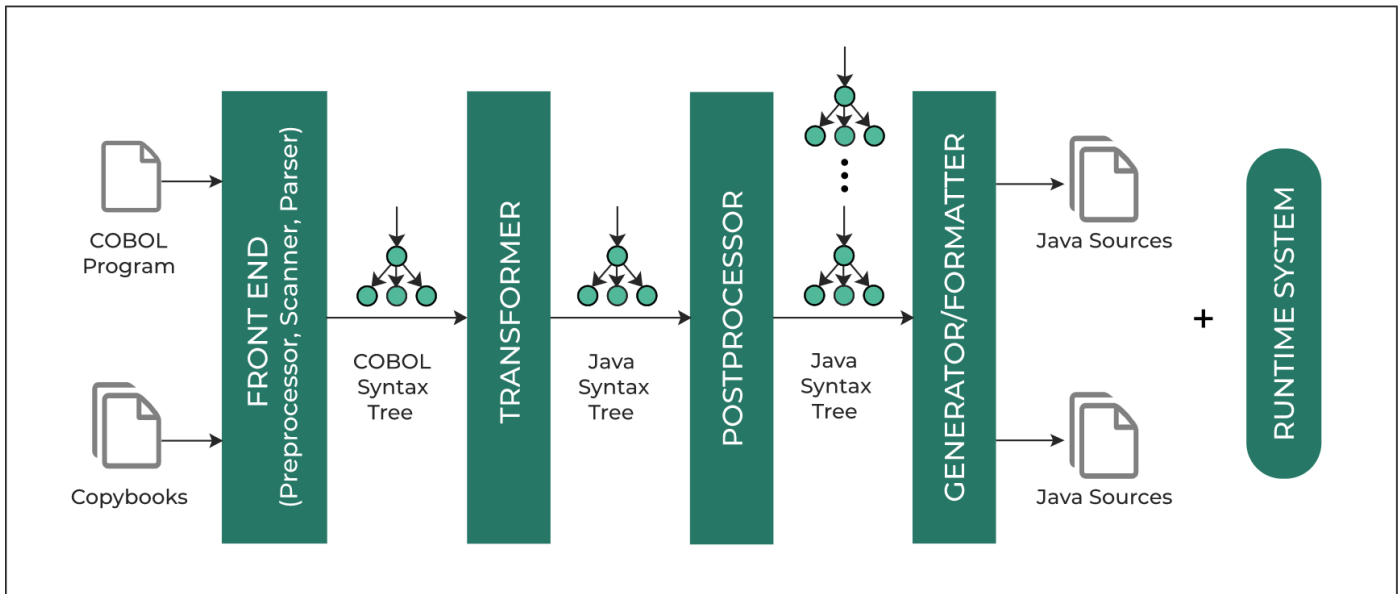
Features

- Integration of the source code comments into the target code
- Structuring of the target code into Java classes and packages by our tool JPackage according to customer specification
- User-specific formatting of the generated Java code
- Support of different COBOL dialects (IBM, HPE NonStop, BS2000)

CoJaC Technology

For complex translation processes, the use of specific conversion tools, so-called translators, is necessary. Translators work by analogy with a compiler which translates source programs into executable target code via different intermediate stages.

CoJaC is a translator to convert historical COBOL applications into modern Java solutions. For the requirements of language conversion, we have further developed the general compiler model into a translator model:



- **FRONT END:** A front end reads the COBOL program, including the corresponding copybooks, and generates an internal syntax tree which represents the complete COBOL program.
- **TRANSFORMER:** In the next step of conversion, the COBOL syntax tree is transformed into an equivalent Java syntax tree by a transformer. The real conversion is carried out on the basis of syntax trees and not on the basis of source code.
- **POSTPROCESSOR:** In the third step, the complex Java syntax tree is split by a postprocessor into individual syntax trees which represent the program structure of the subsequent Java program.
- **GENERATOR/FORMATTER:** The last conversion step is to generate Java classes and packages from individual Java syntax trees by a generator.
- **RUNTIME SYSTEM:** The runtime system allows the use of the COBOL data types and functionalities which do not exist in Java. The use of interfaces, which are based on the COBOL original, supports the original COBOL developers in understanding and maintaining of the migrated Java code.

CoJaC has been used successfully in several migration projects like ITZBund and SüdLeasing.

Please contact us!

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