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# **JBOORET: an Automated Tool to Recover OO Design and Source Models**

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# Outline

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- **Tool Design Principles**
- **Tool Architecture**
  - Data Extractor
  - Knowledge Manager
  - Information Presenter
- **Recovered Model Examples**
- **Conclusions**

# **Design Principles of JBOORET**

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## **Jade Bird Object-Oriented Reverse Engineering Tool (JBOORET)**

### **Recovered Models:**

- Having different granularities**
- Easily being manipulated by users**
- Directly being used in forward engineering**
- Whose correctness and completeness are ensured**

# **Design Principles of JBOORET (Cont.)**

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- **Data Analysis**

- **Light-weight Lexical vs. Heavy-weight Parser-based**
- **Incremental analysis**

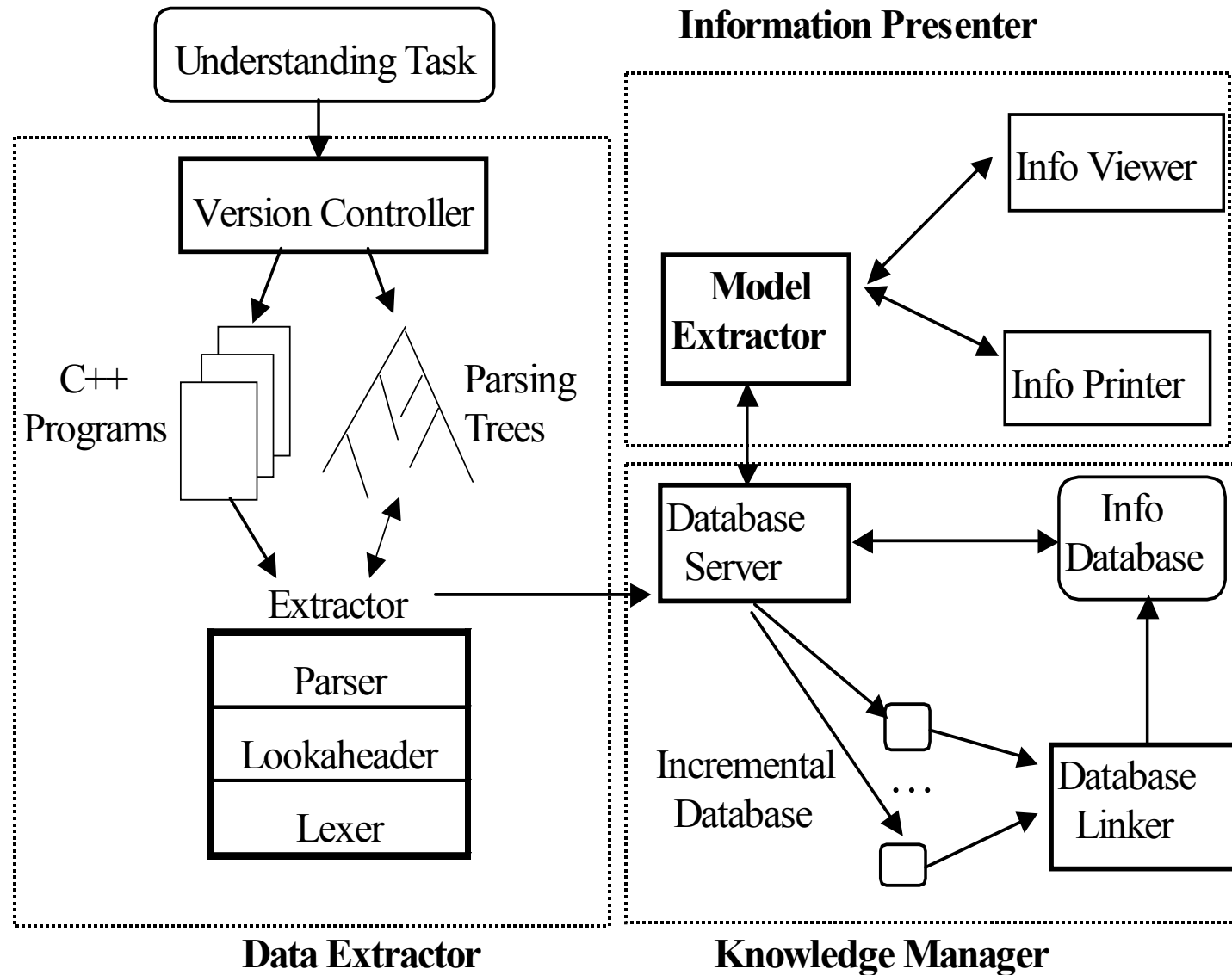
- **Knowledge Organization**

- **Low-level conceptual model (Stored in advance)**
- **High-level design and source models (On demand)**

- **Information Presentation**

- **Different levels or perspectives of models**
- **Manipulability of entities in models**

# JBOORET Architecture Overview

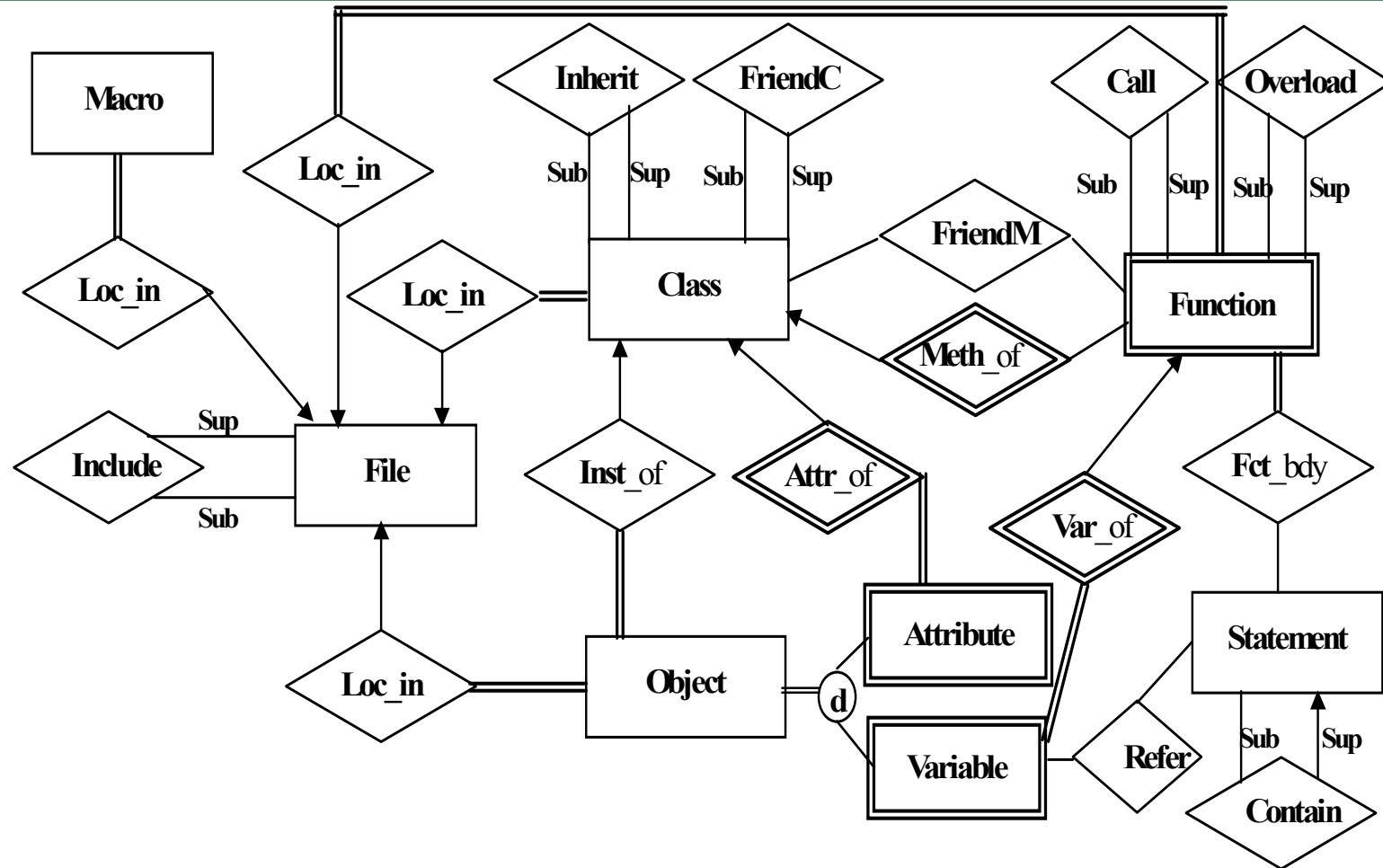


# Data Extractor

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- **Customized Lexer (Lexical analyzer)**
  - **Comment extraction**
  - **Physical location association for entities**
- **Parser based on YACC**
  - **Token lookahead technique**
- **Incremental parsing**
  - **Link incremental databases for each file**

# Knowledge Manager



JBOORET Conceptual Model

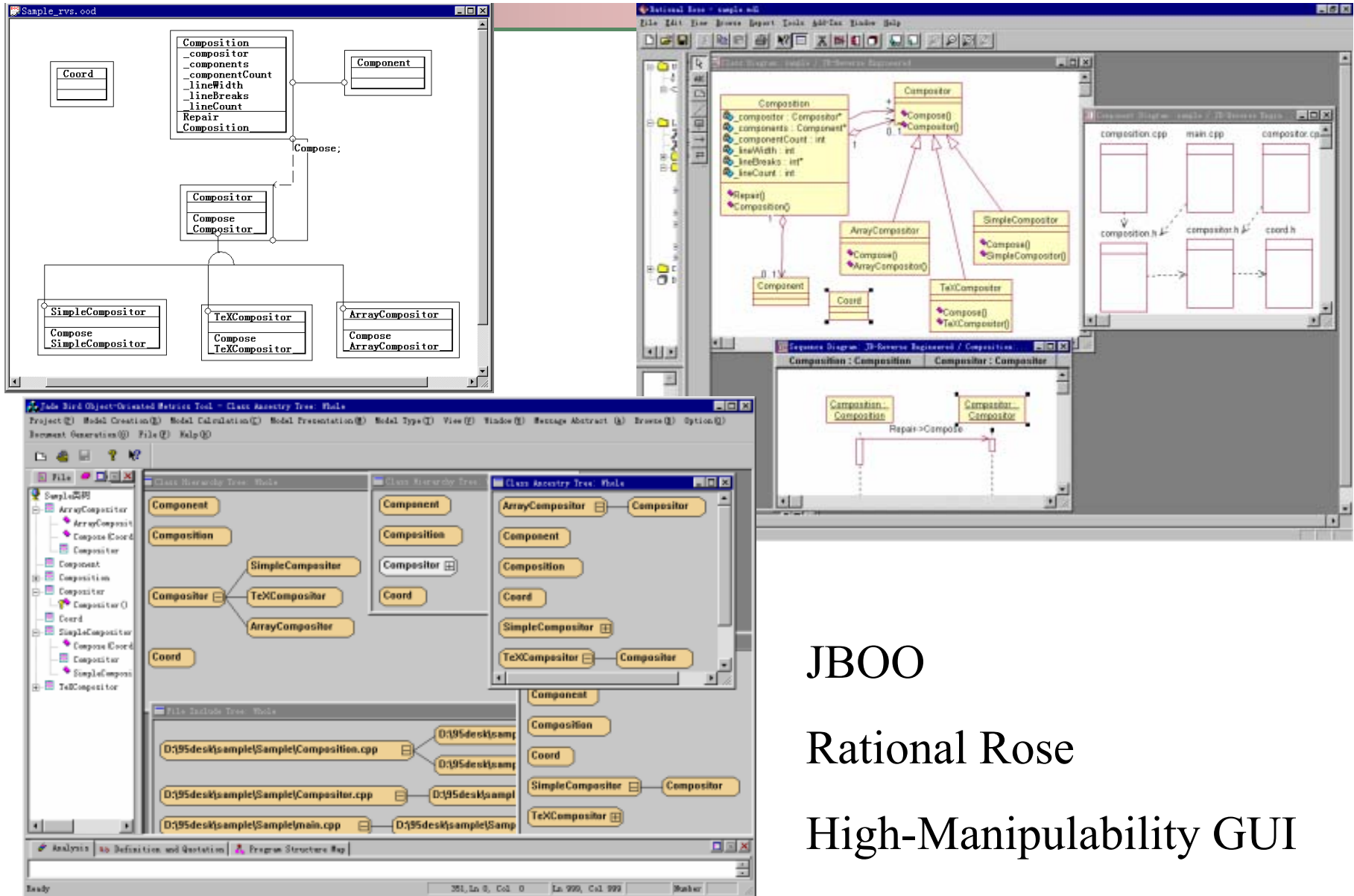
# Information Presenter

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- **Frequently used information**
  - **Basic symbol information table (Hash table)**
  - **Loaded in memory in advance**
- **Complementary infrequently used information**
  - **A circular cache**
  - **Loaded on user's demand**
- **Export the models to the OO Development Tool (Rational Rose & JBOO)**
- **Complementary GUI to manipulate the models**



# Multi-perspective views of recovered models



JBOO

Rational Rose

High-Manipulability GUI

# Conclusions

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- **Model-based (Comprehensive Conceptual model)**
- **Parser-based (Rather accurate and complete)**
- **Forward-engineering support**  
(Export to Rose & JBOO)
- **Multi-perspective models**  
(Class diagrams + other models)
- **High-Manipulability Model Entities**
  - **Search, filter and select**
  - **Compress or expand**