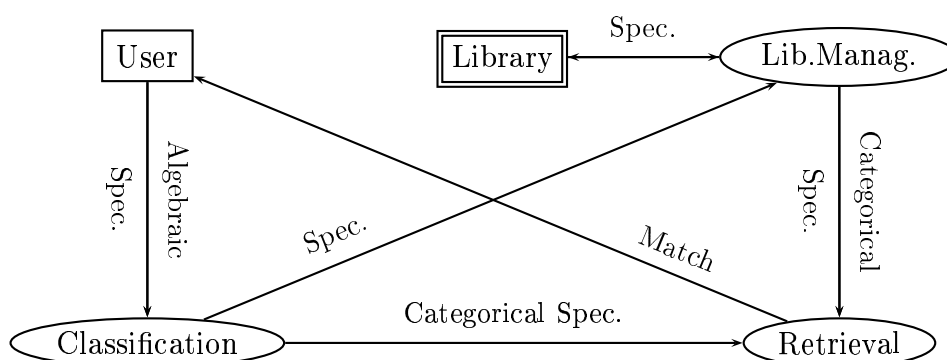# CATEGORY THEORY BASED IDENTIFICATION OF REUSABLE COMPONENTS THROUGH FORMAL SPECIFICATIONS

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Software reuse can only be implemented in an efficient way if it is practised systematically. Our purpose is the development of a computer application that automates the process of software reuse through formal specifications.

The component functionality is expressed through single-sort algebraic specifications, which later are translated, automatically by the application, to categorical specifications. Categorical specifications were selected as a new way of reducing the matching methods complexity. The application makes the selection of reusable components from a library through isomorphic and compositional matching of the categorical specifications.

We also made a complexity analysis of the methods implemented. This way, it was possible to show their feasibility when applied to large amounts of information.