

Layered Recasting of Algorithms for Modularity: A KWIC Implementation

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Using Parnas' well-known KWIC system design as a comparison, we provide an abstract implementation that recasts the KWIC algorithm as a modular black-box component called KWIC_Machine. Our implementation for KWIC_Machine is designed from off-the-shelf components available through the RESOLVE component catalog, including a similarly recast algorithm, Sorting_Machine. Additional features often required for KWIC algorithms are mentioned: the elimination of noise words, restriction of duplicates, and case-sensitivity. We are able to find simple solutions to each of these feature requests and adapt them to our design without needing to rewrite the algorithm. Finally, UML diagrams are used to illustrate that no dependencies exist between concrete components in our design.