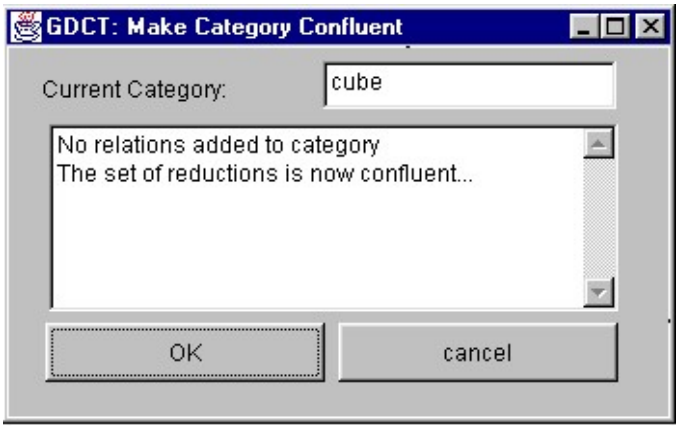
Make Confluent

Select Tools | Make Confluent. This command applies the Knuth-Bendix algorithm to the currently displayed category with arrows ordered in their storage order.

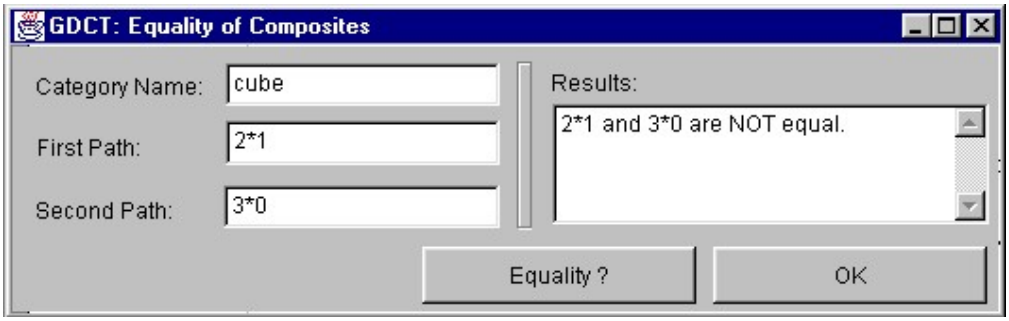


Relations which are added to the current category are reported. To add these relations to the current category click "Ok", or click "Cancel" to keep the category in its current from.

NOTE: Most of the other category tools in GDCT require confluent categories in order to function correctly. Make sure to use the "Make Confluent" tool whenever you plan to use other category tools.

Equality of Composites

To test two (possibly composite) arrows for equality in the current category select Tools | Equality of Composites. A dialogue allows entry of two paths.



WARNING: The category must be confluent for valid results. Domains and codomains must match.

Make Dual Category

This tool will create the opposite category of the currently displayed category. Select Tools | Make Dual. A dialogue window opens prompting for the name of the dual. After the user provides the name the dual category is displayed.

WARNING: The opposite category is NOT SAVED automatically when it is created; use File | Save Category if you wish to save the dual.

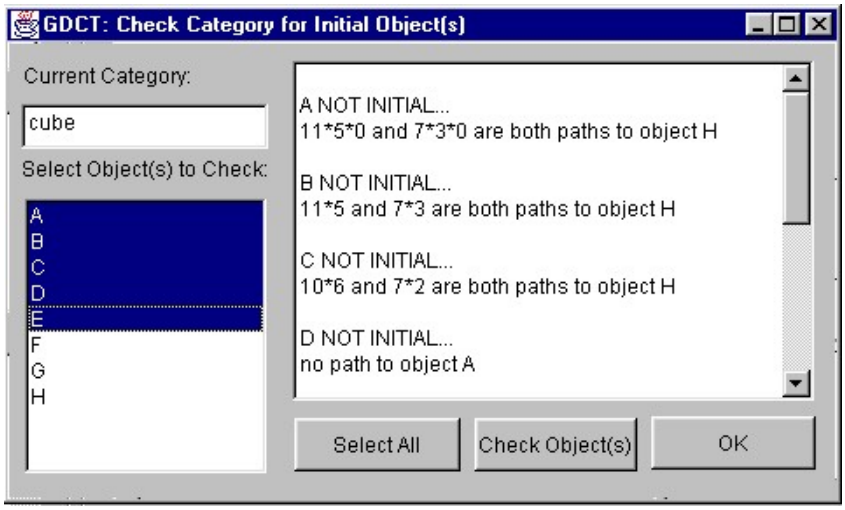
Isomorphism

Selecting Tools | Isomorphism? opens a dialogue window allowing the input of up to two paths to be checked for isomorphisms. The user can enter one path and have the program search for an inverse, or specify a second path to be checked as an inverse. Alternately, the user can select two objects to check for isomorphism and the tool will search through all paths between them to find inverses.

WARNING: The test is only valid on a confluent category. (If in doubt use the Make Confluent tool).

Initial Object

Select Tools | Initial Object?. This command tests objects of the current category (chosen by a dialogue) for initiality. For each selected object which is not initial a reason is given.



WARNING: The test is only valid on a confluent category. (If in doubt use the Make Confluent tool).

Epimorphism

Selecting Tools | Epimorphism? opens a dialogue window allowing input of a path to check as an epimorphism. Additionally, the "Check all paths" checkbox may be selected to check all paths in the current category.

WARNING: The test is only valid on a confluent category. (If in doubt use the Make Confluent tool).

Coequalizer

Selecting Tools | Coequalizer? opens a dialogue window allowing the specification of first and second paths, and input of a path to be tested as a coequalizer for the two paths. Additionally, the "Check all paths" checkbox may be checked allowing selection of a possible coequalizer object in the current category from a drop-down list. All paths to this object will then be tested as coequalizers.

WARNING: The domain of each path and the codomain of each path must be the same. The codomain of the two paths must be the same as the domain of the coequalizer path. The test is only valid on a confluent category. (If in doubt use the Make Confluent tool).

Sum

Selecting Tools | Sum? opens a dialogue window allowing selection of a possible sum object from the current category from a drop-down list and specification of (possibly composite) first and second injections, then testing the cospan for being a sum.

WARNING: The codomain of each injection must be the possible sum object. The test is only valid on a confluent category. (If in doubt use the Make Confluent tool).

Terminal Object

Select Tools | Terminal Object?. This command tests objects of the current category (chosen by a dialogue) for being terminal. For each selected object which is not terminal a reason is given.

WARNING: The test is only valid on a confluent category. (If in doubt use the Make Confluent tool).

Monomorphism

Selecting Tools | Monomorphism? opens a dialogue window allowing input of a path to check as a monomorphism. Additionally, the "Check all paths" checkbox may be selected to check all paths in the current category.

WARNING: The test is only valid on a confluent category. (If in doubt use the Make Confluent tool).

Equalizer

Selecting Tools | Equalizer? opens a dialogue window allowing the specification of first and second paths, and input of a path to be tested as an equalizer for the two paths. Additionally, the "Check all paths" checkbox may be checked allowing selection of a possible equalizer object in the current category from a drop-down list. All paths from this object will then be tested as equalizers.

WARNING: The domain of each path and the codomain of each path must be the same. The domain of the two paths must be the same as the codomain of the equalizer path. The test is only valid on a confluent category. (If in doubt use the Make Confluent tool).

Product

Selecting Tools | Product? opens a dialogue window allowing selection of a possible product object from the current category from a drop-down and specification of (possibly composite) first and second projections, then testing the span for being a product.

WARNING: The domain of each projection must be the possible product object. The test is only valid on a confluent category. (If in doubt use the Make Confluent tool).