## NAME

tred – transitive reduction filter for directed graphs

## SYNOPSIS

**tred** [ **–ovr?** ] [ *files* ]

## DESCRIPTION

**tred** computes the transitive reduction of directed graphs, and prints the resulting graphs to a file or standard output. This removes edges implied by transitivity. Nodes and subgraphs are not otherwise affected. The "meaning" and validity of the reduced graphs is application dependent. **tred** is particularly useful as a preprocessor to *dot* to reduce clutter in dense layouts.

Undirected graphs are silently ignored.

## OPTIONS

The following options are supported:

**–o FILE**
: Redirect output to the given file. By default, output goes to stdout.

**–v**
: Verbose output to stderr.

**–r**
: Print information of removed edges to stderr.

**–?**
: Print usage information.

## OPERANDS

The following operand is supported:

*files*
: Names of files containing 1 or more graphs in dot format. If no *files* operand is specified, the standard input will be used.

## BUGS

Using bitmaps internally would substantially decrease running time.

## DIAGNOSTICS

If a graph has cycles, its transitive reduction is not uniquely defined. In this case *tred* emits a warning.

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## SEE ALSO

gc(1), dot(1), acyclic(1), gvpr(1), gvcolor(1), ccomps(1), sccmap(1), libgraph(3)