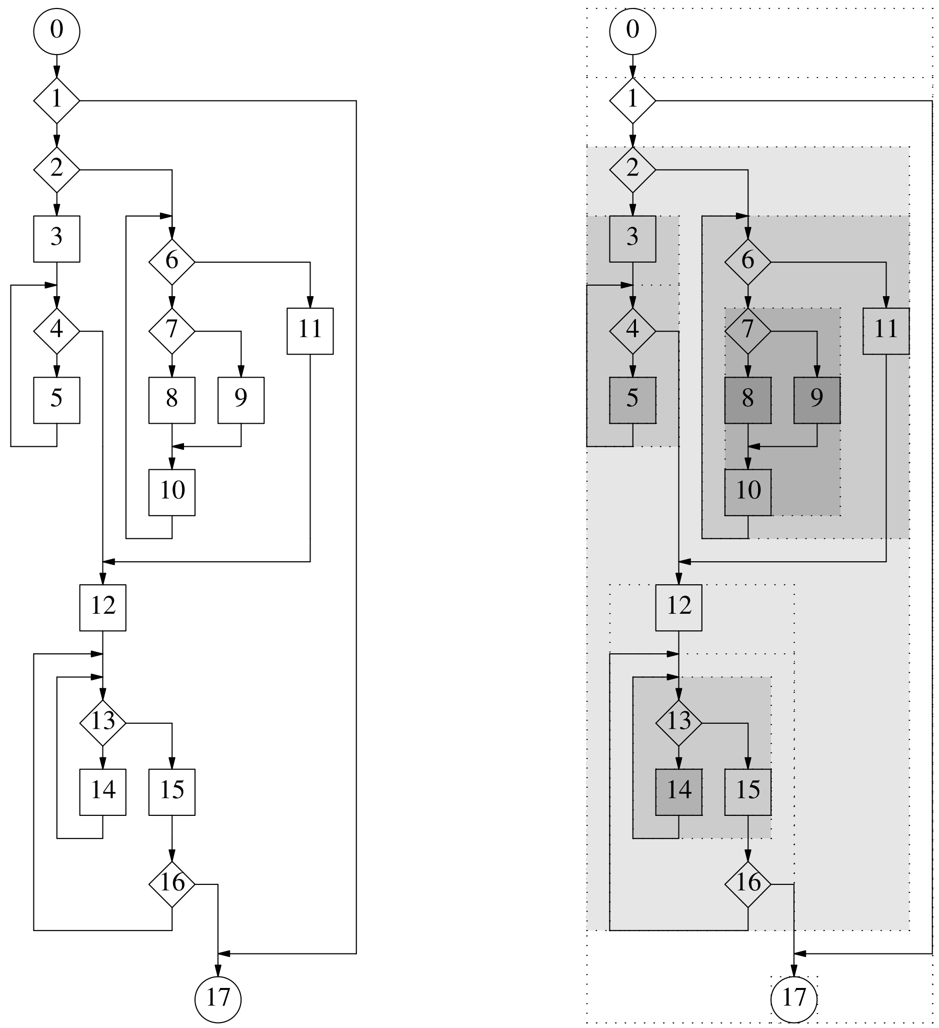
A FLOWCHART DRAWING SOFTWARE

Shown below is an example of the kinds of diagrams that are created by a UNIX-based software that we have developed recently. The flowchart may have arbitrary nesting of loops and if-then/if-then-elses, but need to be semi-structured, i.e., structured except for the break/continue/returns-constructs as in C. The latter nodes, if present, are indicated by special markes, and the arcs from them are not shown explicitly since they are determined from their control-flow meanings (in order to maintain the planarity of the digraph). The input to the drawing program is simply the adjacencies among the nodes. There is no restriction on the labeling of the nodes or the order of items in the adjacency-lists. The time taken to draw the flowchart-diagram is linear in the number of nodes in the flowchart.



(i) A simple view: the case of a structured flowchart.

(ii) A detailed view of nesting levels; the loop-test node 6 and its exit-node 11 have the same level.

The detailed view shows the nesting-levels by different levels of shading, where the then-part and else-part of an if-node are one level deeper than the if-node itself, and a loop-body is one level deeper than the associated loop-test node. The dotted lines show the boundary of the various "boxes", one for each node, which can be collapsed (this variation is under development) to a single node to reduce a large flowchart-diagram. Another feature to be included is the highlighting the branches covered by one or more test-paths.