

Examples: Version 5.0

This is a collection of diagrams the author has had occasion to produce using m4 circuit macros and others, and gpic or dpic. In some cases, there are other or better m4 or pic constructs for producing the same drawings, but for reference the names of the source files are shown.

For some more examples in the context of a textbook, see J. Dwight Aplevich, *The Essentials of Linear State-Space Systems*, New York, John Wiley & Sons Inc., 2000.

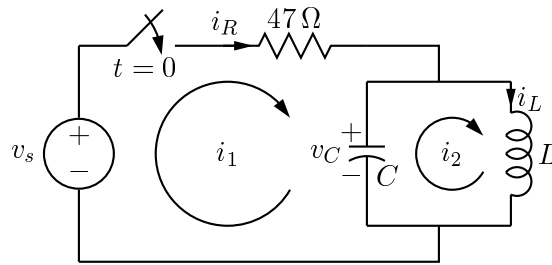


Figure 1: A simple labeled circuit, drawn using relative positions in contrast with `quick.m4` which uses absolute positions `[ex01.m4]`.

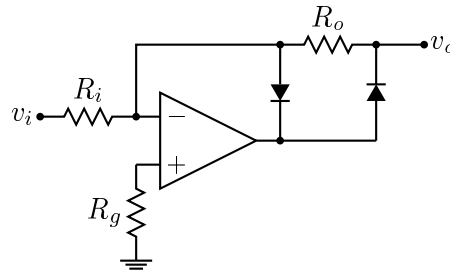


Figure 2: Precision half-wave rectifier (illustrating op-amp and diodes) `[ex3_5.m4]`.

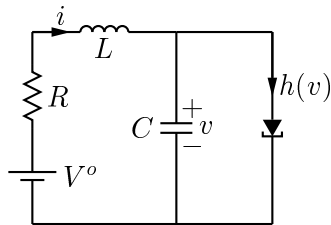


Figure 3: Tunnel diode circuit `[ex3_6.m4]`.

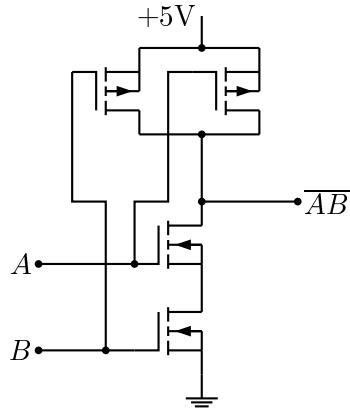


Figure 4: CMOS NAND gate [ex12.m4].

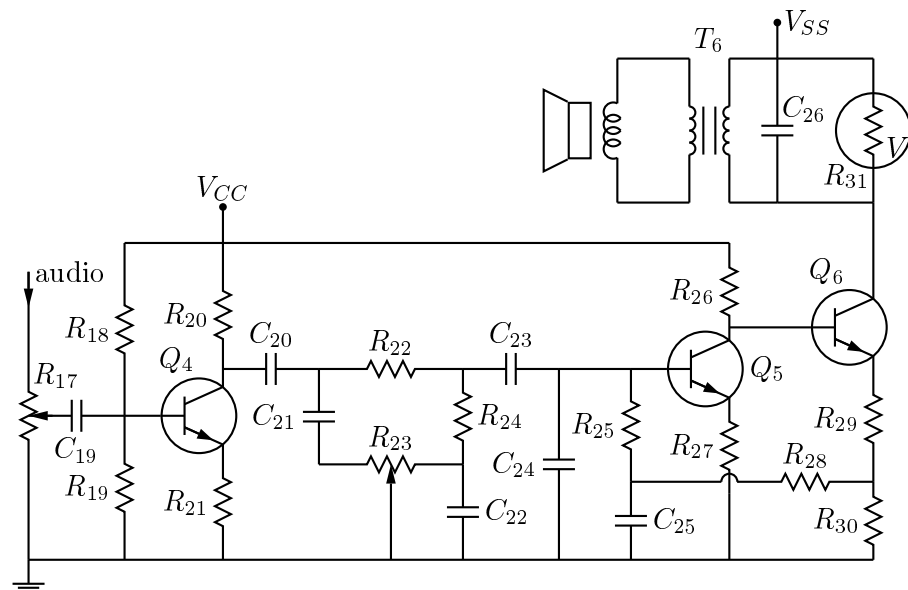
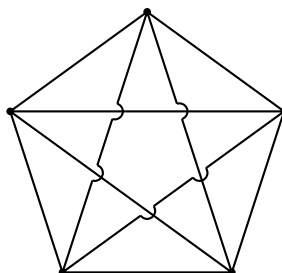


Figure 5: Transistor radio audio chain (a modest circuit with a few custom elements) [ex11.m4].



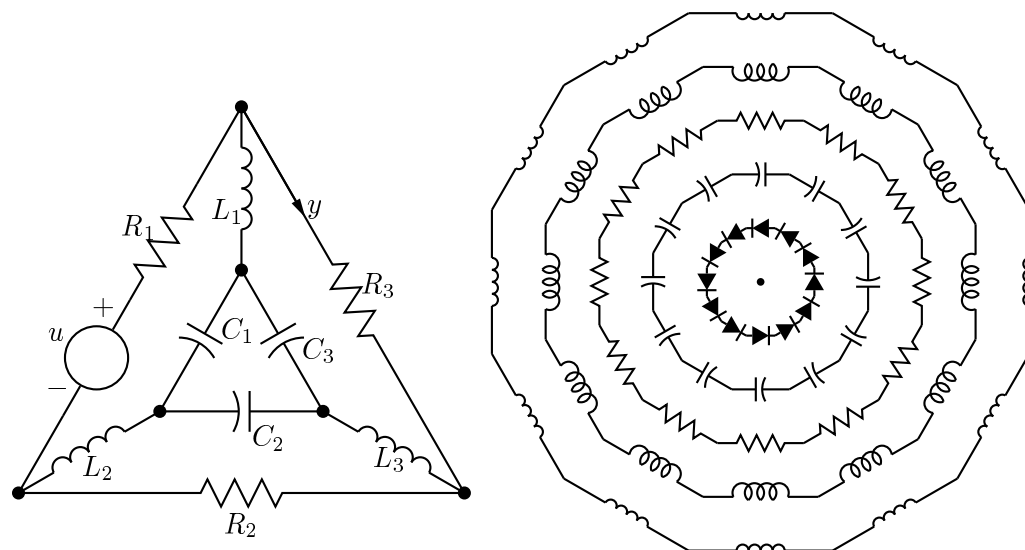


Figure 7: Elements at obtuse angles [ex13.m4].

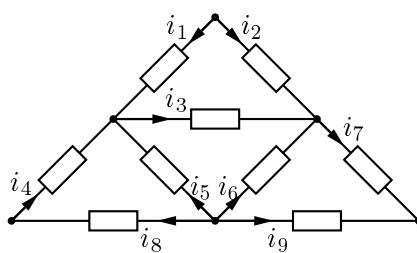
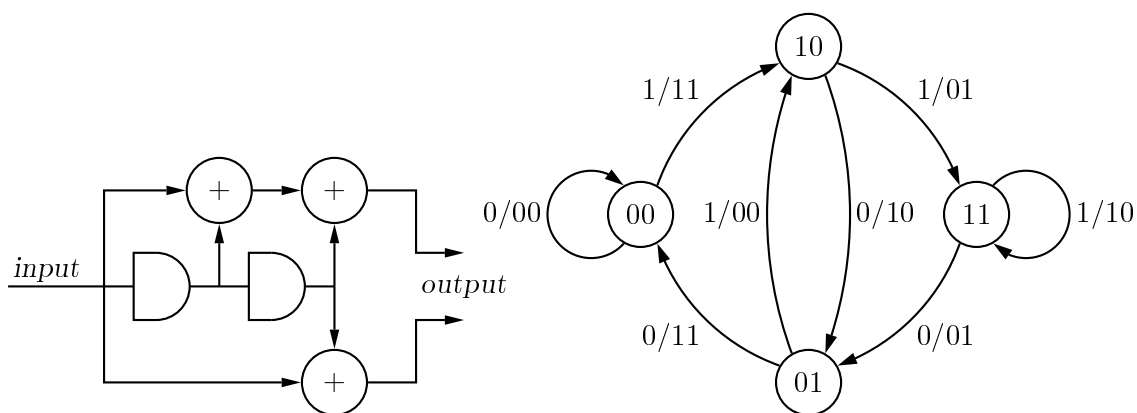


Figure 8: Labels on non-manhattan elements [ex04.m4].



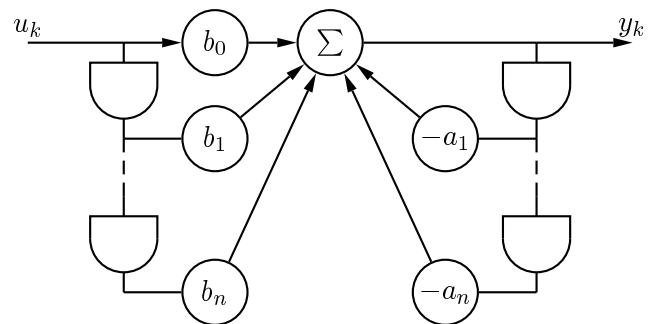


Figure 10: Digital filter [ex03.m4].

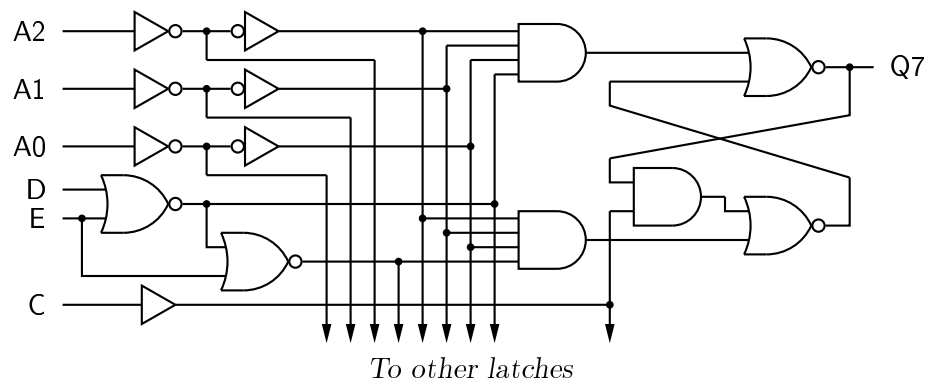


Figure 11: A small logic circuit [ex08.m4].

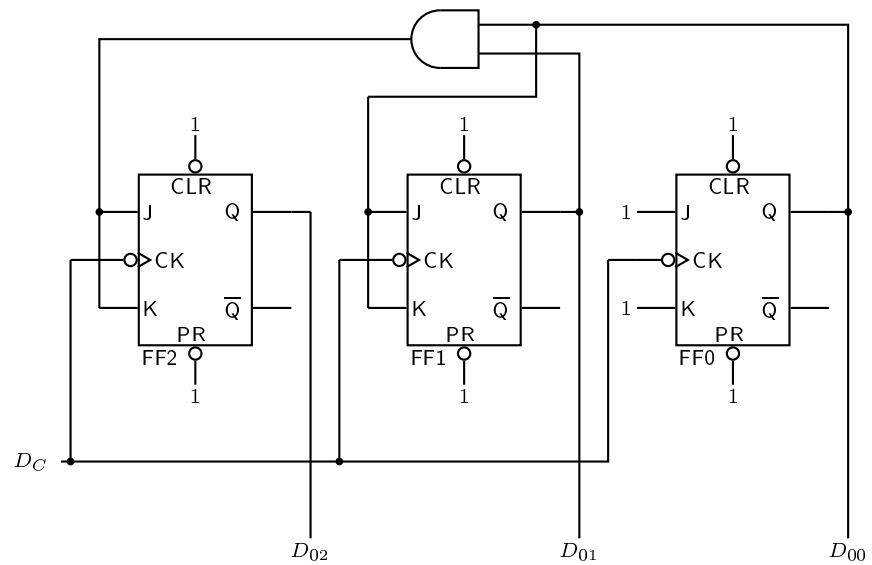
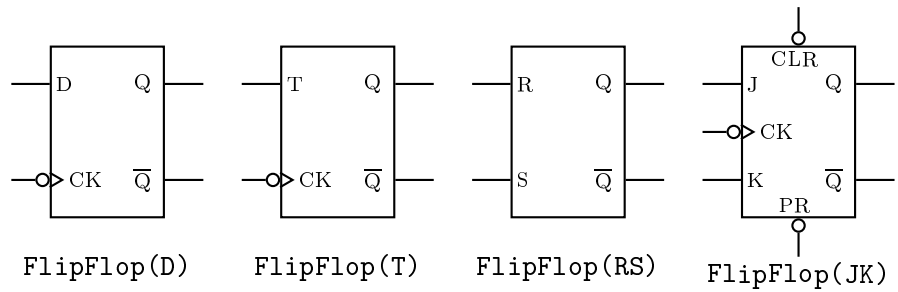


Figure 12: Experimental flip-flops [ex21.m4].

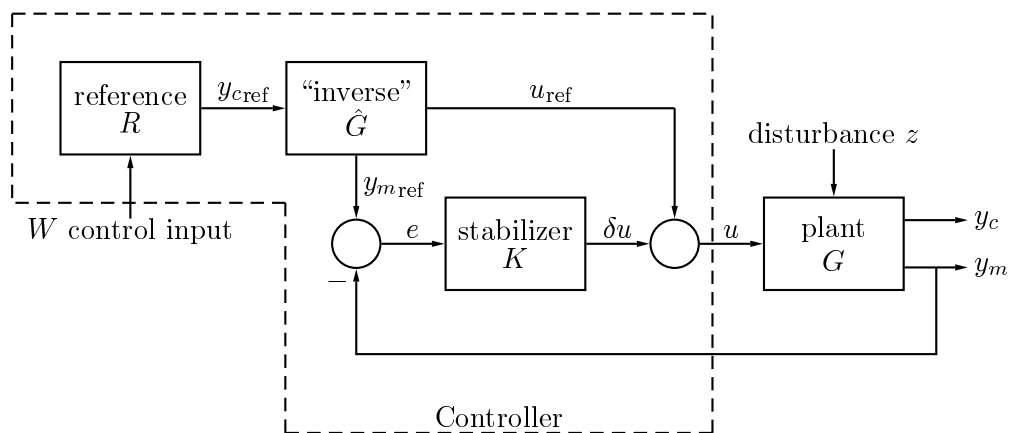


Figure 13: Control system diagram: nonlinear feedforward (for performance) and small-signal feedback (for stability) [control.m4].

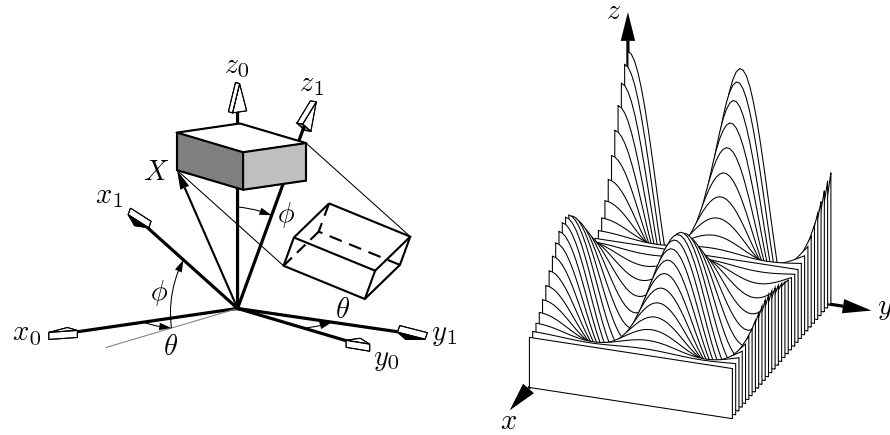


Figure 14: Test of `project` and other `lib3D` macros, showing the projection of a solid onto the y_1, z_1 plane by sighting along the x_1 axis. This technique has been used to produce the surface illustrated on the right. [`exp.m4`].

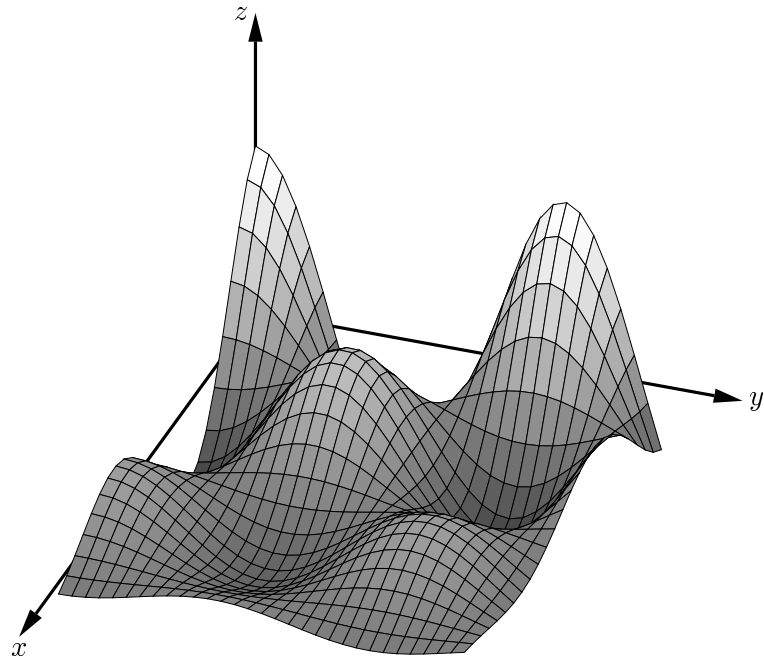


Figure 15: Plotting a surface using a gray scale [`graysurf.m4`].

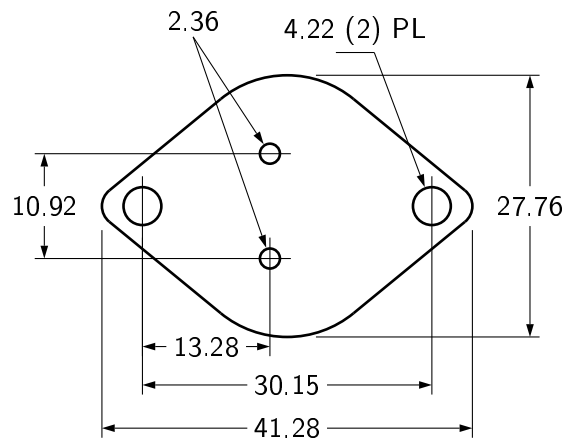


Figure 16: Illustrating dimension_ [ex09.m4].

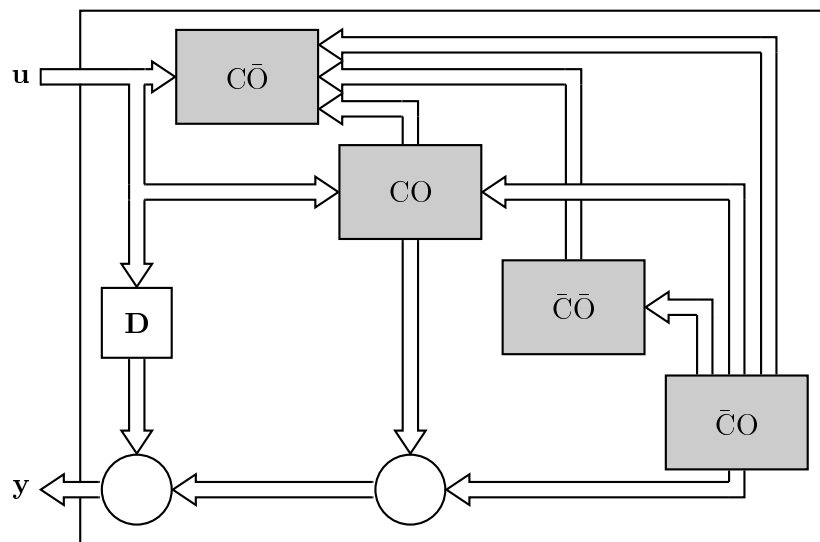


Figure 17: Use of darrow [ex05.m4].

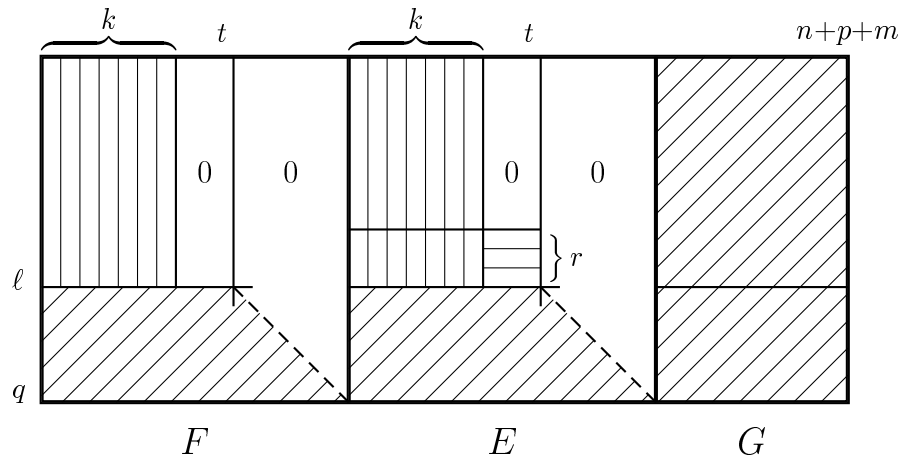


Figure 18: Crosshatching by `for` loops [ex06.m4].

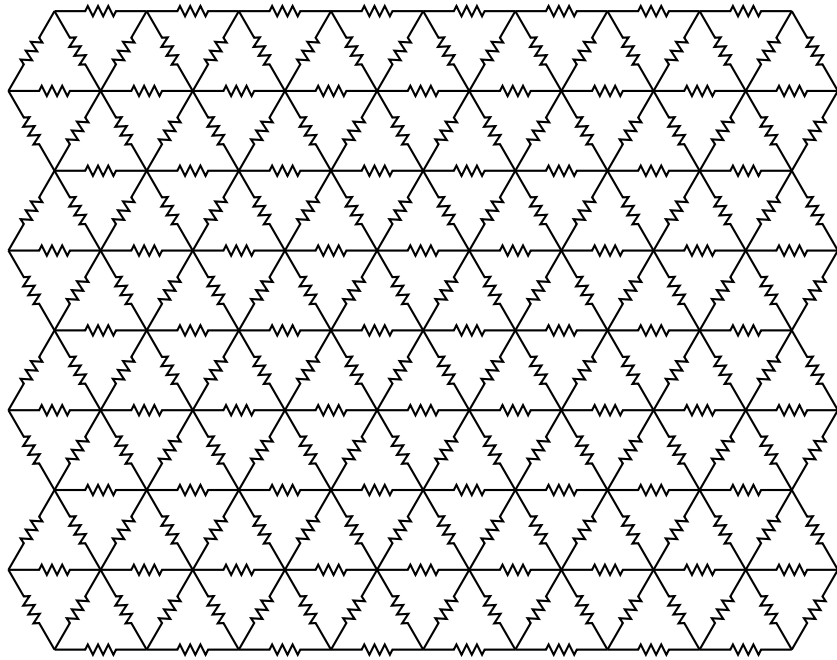


Figure 19: Repetitive network created by Pic looping [ex1_1.m4].

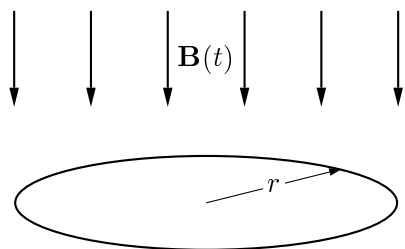


Figure 20: Magnetic field [ex00.m4].

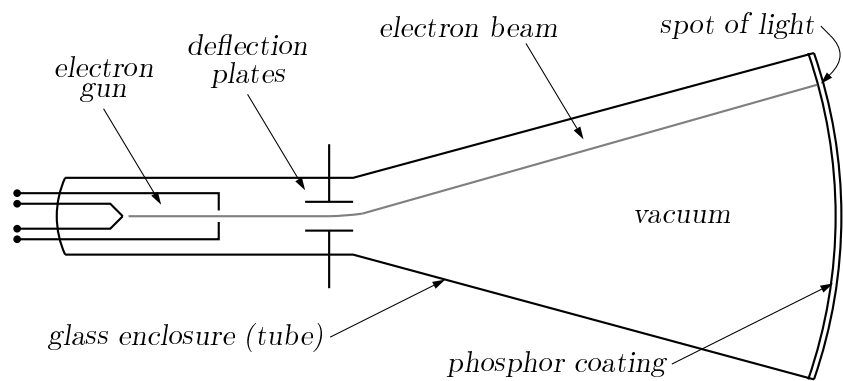


Figure 21: A line diagram [ex07.m4].

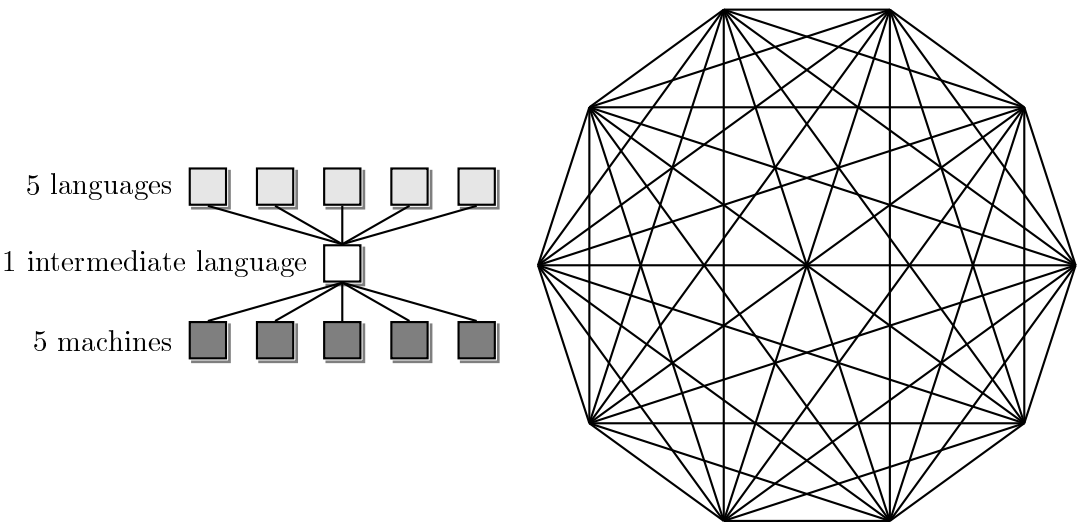
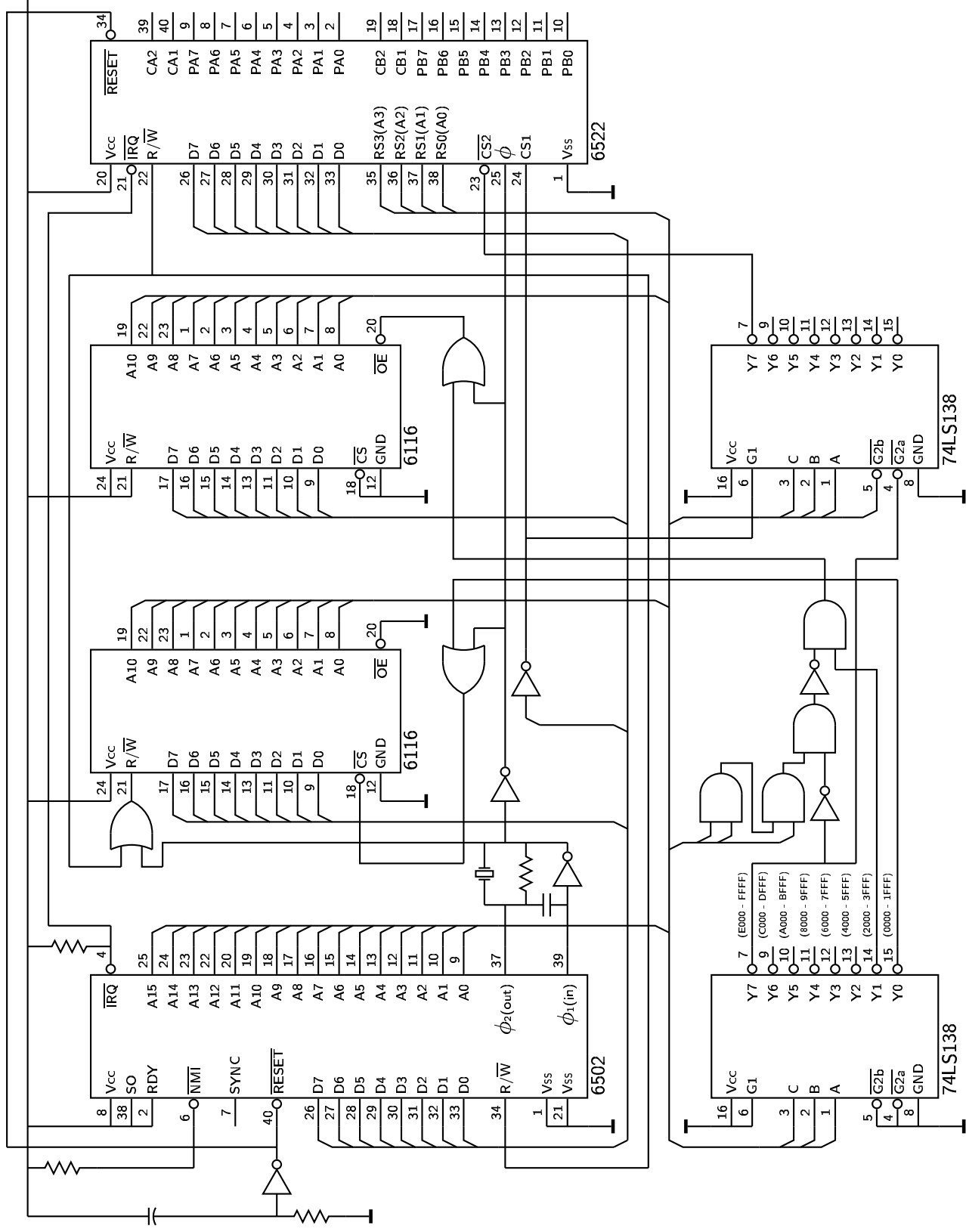


Figure 22: Simple diagram with a complex sub-diagram [ex45.m4].



3: A digital circuit of moderate size, redrawn from M. P. Maclean and G. M. Burns, "An Approach to Drawing Circuit Diagrams for Text Tugboat (12)1, March 1991, pp. 66-69 [ics/cct.m4].



Figure 24: Conestoga Sailing Club (illustrating the filling of arbitrary shapes) [csc.m4].

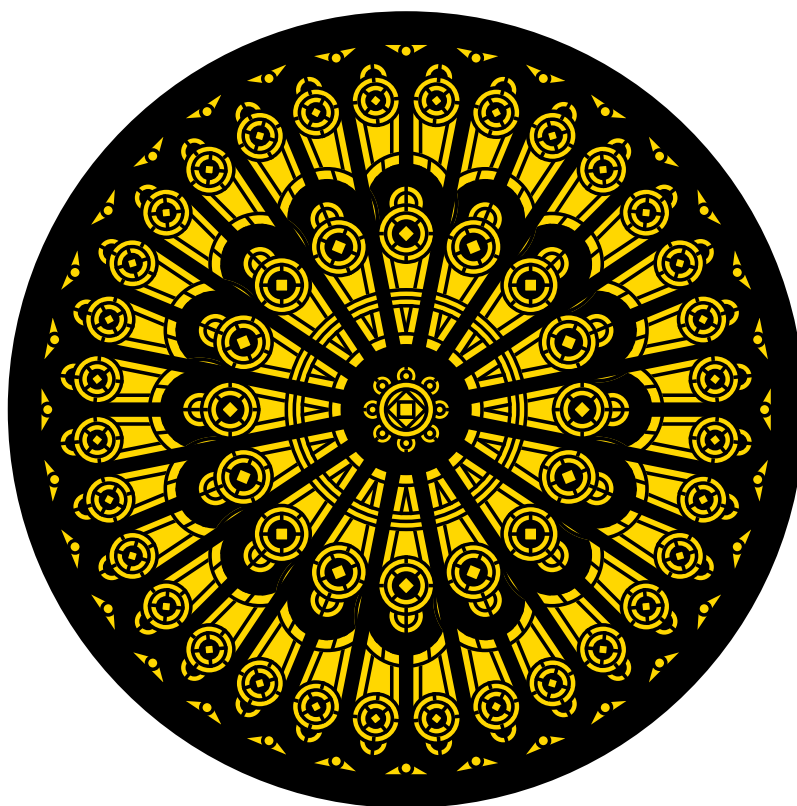


Figure 25: Redrawn from a detail of the set design for the musical *Dracula*, used for testing

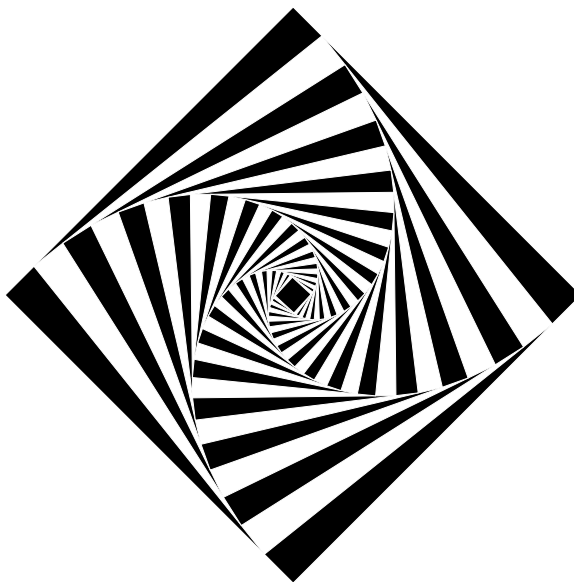


Figure 26: See M. Goossens, S. Rahtz, and F. Mittelbach, *The L^AT_EX Graphics Companion*, Addison-Wesley 1997, pp. 57-58 [diamond.m4].

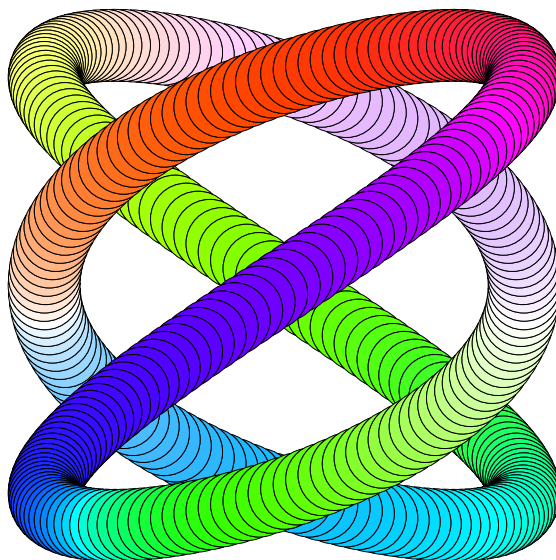


Figure 27: An exercise in calculating RGB colours [worm.m4].

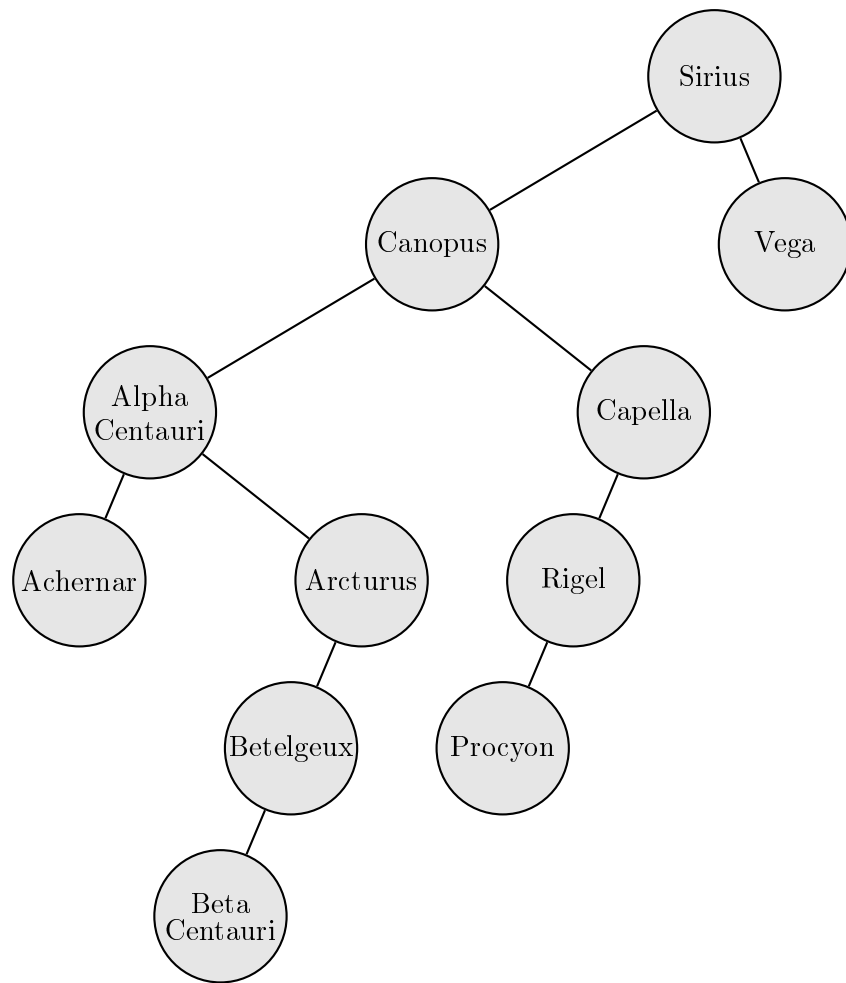


Figure 28: A binary tree [Btree.m4].

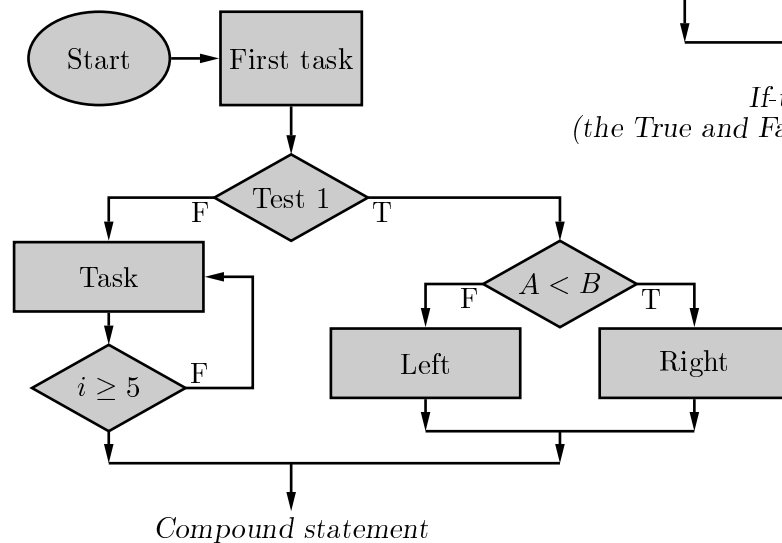
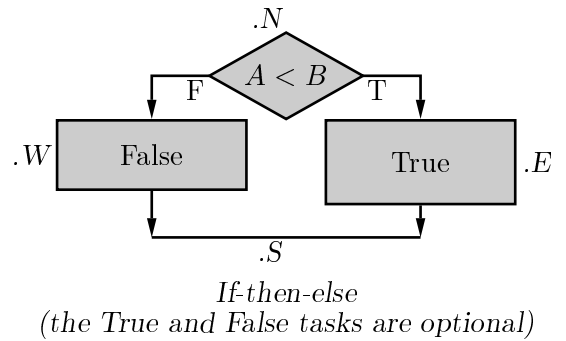
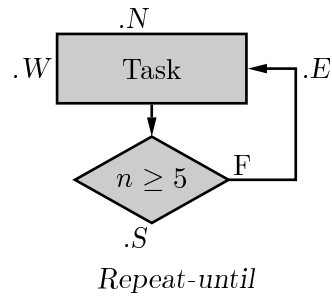
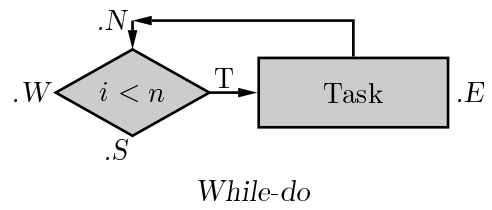
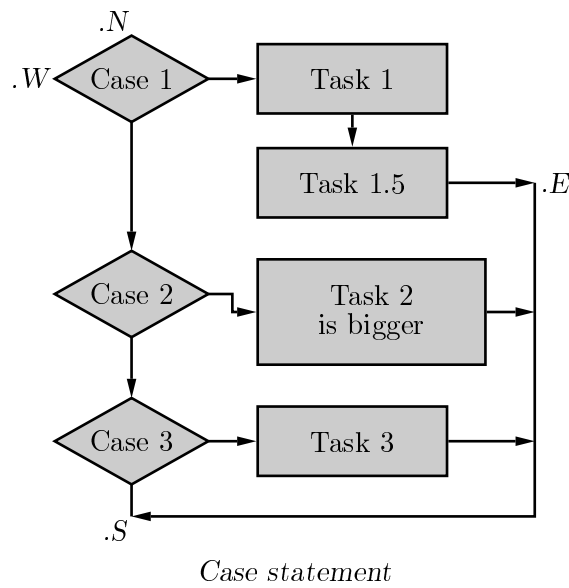


Figure 29: A flowchart sampler [Flow.m4].