NAME
until – **U**h**n**uther **T**echnical **Il**lustrator

SYNOPSIS
until [file...]

DESCRIPTION
UNTIL is a hierarchical graphics editor for creating high quality illustrations on the Apple Laserwriter laser printer or the HP plotters. Illustrations created in UNTIL can also be included in TEX output. UNTIL is designed to creat line-art, such as the technical illustrations in many books, circuit diagrams, and graphs. UNTIL is not a What-You-See-Is-What-You-Get editor or paint program that you might see on a Macintosh or PC. UNTIL does use the full resolution of the output device, so things look better on the printed page than on the screen.

OVERVIEW
UNTIL has lines, boxes, dots, ellipses, circles, text, curves, polygons, and arrows as primitive objects. These can be composed together to form a <u>figure</u> which can be displayed on the screen, saved in a file, printed on the laser printer, or plotted. A figure can also <u>instance</u> another figure to create more complicated diagrams. For example, there could be a set of figures for logic symbols, like a

THE MENU
Some basics about the menu system:

1) Selected objects have a yellow box drawn around them.
2) Items that refer to other menus are red.
3) Instant action things are white.
4) Some menu items are white and green. The green stuff is the sub-mode (as in COPY) or value (as in GRID). The first time a sub-mode item is pressed, that square is selected (i.e., enter COPY mode). If the square is pressed while it is selected The sub-mode will change. Pressing value squares change the value each time the square is pressed.
5) The COLOR menu of couse displays the colors of the colors.

KEYBOARD COMMANDS
There are some. Type **?** to get at them.

THE TABLET
The tablet interface is relatively simple–Press to start an action, press to stop the action or lift to abort the action. There are no fancy press and hold or tap things like in *log(1)*.

EDIT
This is one of the unique features of UNTIL. When you are in edit mode (press the EDIT menu square), the current item that will be editted flashes. If the whole object is flashing, then pressing the pen down at that point would probably move the object. If a funny little square is flashing, then probably only one point of the object will be moved.

Each kind of object behaves a little differently, so play around to figure out how things work. There are 4 submodes of EDIT.

Plain mode **-**.

Dull, boring. Touch something and it gets editted.

Add point mode **ADDP**.

This only effects line and curve editting. If a line segment is flashing and you press the pen down, you will add a new point between the two endpoints of the segment. If a point is flashing and you press the pen down, it behaves as usual.

Delete point mode **DELP**.

This only effects line and curve editting. If a point is flashing and you press the pen down, the point gets deleted. If a line segment is flashing and you press the pen down, the usual thing happens. Note: If you leave only one point in a line, the line gets deleted.

Extended edit mode **XTND**.

When you press the pen down, the currently flashing object will be displayed on the screen in a textual fashion. You can move the cursor around and change the values of different fields on the screen. The green items are OK for normal users to change. Changing the green items can not hurt you too much, but you should still use caution when you are playing with them. The blue items should only be changed by *experts*–in fact, you can not change them unless you type **^E** to get into expert mode. You can also walk down the links by typing **^W** when you are on top of that item. **^P** will pop you back to some previous level (the determination of the level is a little weird). The walking and such is mainly for debugging, but it may be helpful to you somehow. **[EXECUTE]** will take you back to the real world.
CAUTION: You are changing THE datastructure as you go. Every change is immediate!!

BUGS

The single biggest bug is the lack of documentation.

WARNING: Since this is still under development, I reserve the right to change the specifications at any moment (even while you are running the program).

AUTHOR

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