datto

The best coding fonts

Fred Mora - System Engineering, Datto

Agenda

- Why bother
- Selection criteria
- The runner-ups

Why bother

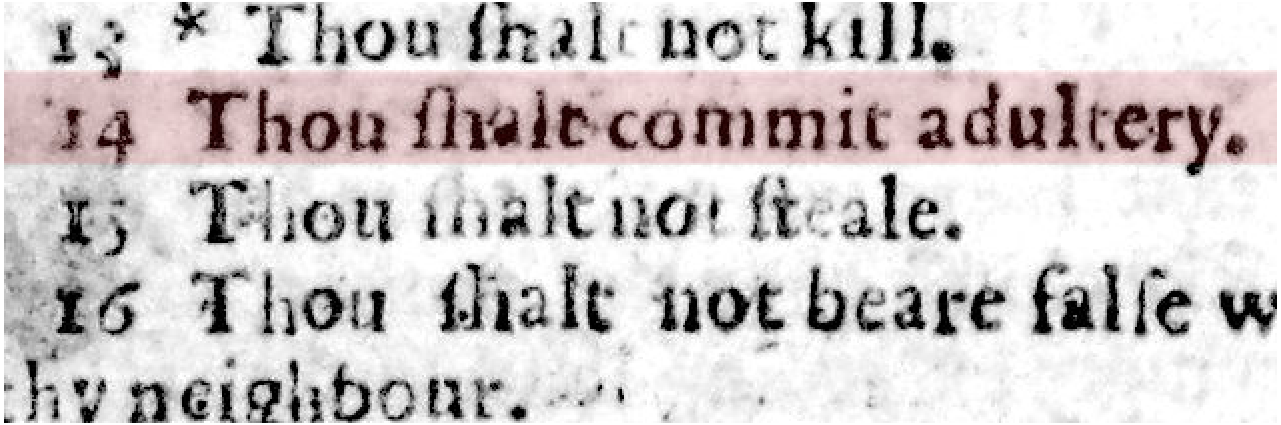
- Font? Really? Why bother?
- Can't we all use Arial?
- Or Comics Sans?
- No. We need fonts that promote precision and readability to avoid the dreaded enemy of coders...

  The TYPO.
  (or is it "teh typ0"?)

A problem as old as printing

- In medieval Korea, by law, engravers who made mistakes on wooden engraved pages where beaten.

- The early typographer who ruined the Ten Commandments in the King James Bible was heavily fined, and 1000 books were called back.

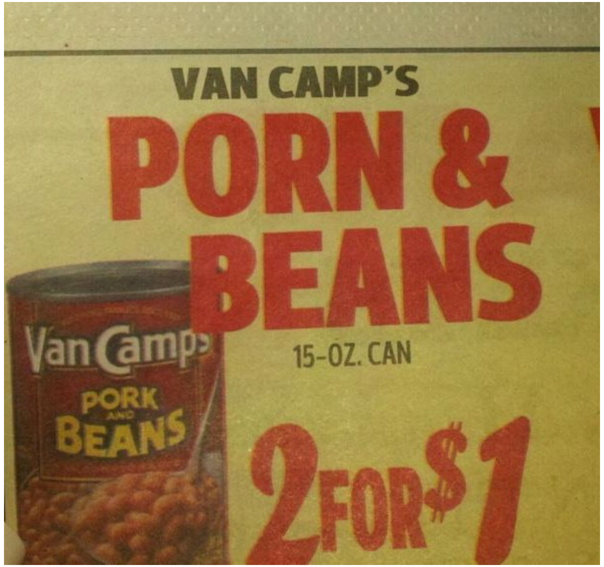


13 * Thou ſhalt not kill.
14 Thou ſhalt commit adultery.
15 Thou ſhalt not ſteale.
16 Thou ſhalt not beare falſe w
thy neighbour.

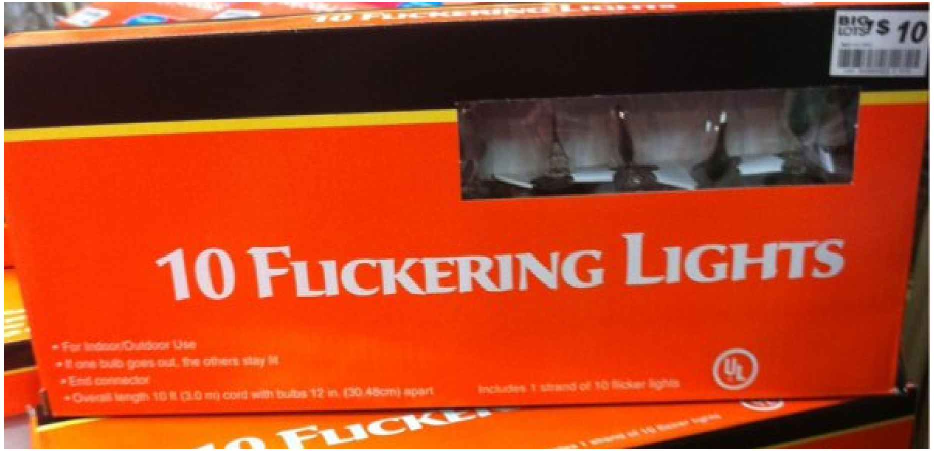
Source: David C. Lacham, antiquarian

Typos in print: a "mere" embarassment

No comments...

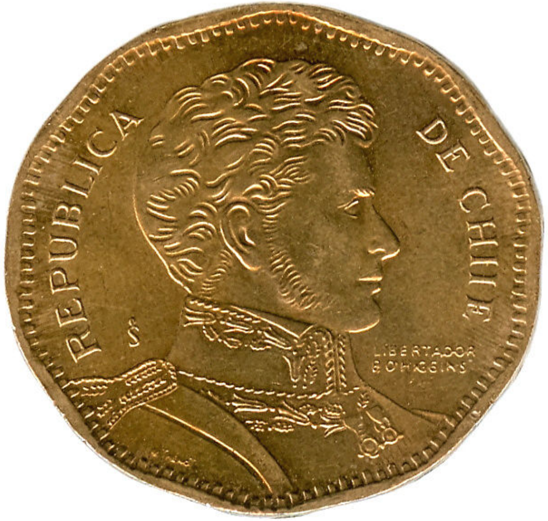


Not even a typo. Just an interesting choice of font.


10 FLICKERING LIGHTS
BIG LOTS! $ 10
• For Indoor/Outdoor Use
• If one bulb goes out, the others stay lit
• End connector
• Overall length 10 ft (3.0 m) cord with bulbs 12 in. (30.48cm) apart
Includes 1 strand of 10 flicker lights
UL

Not even money is immune!

- The 50-peso coin minted by Chile in 2008 had a slight typo. The mint boss was sacked.
- The French 50-Franc note celebrating Saint-Exupéry, of *Little Prince* fame, misspelled his name.
- Financial traders routinely make ruinous typos
  - Instead of "buy 100,000 stock at $20", one trader bought 20 stocks at $100,000 each
  - The "one zero too many" gag is more common than one might think.



Monospace for the win

- We desperately need to avoid typos
  - In print, a typo is an embarrassment
  - In code, it can be a disaster
- To avoid typos, it is recommended to use a monospace font (a.k.a. fixed pitch)
- In some languages, you can get away with a variable pitch font, but that's an exception

Typos in code

- Coders and sysadmins spend hours looking at screens

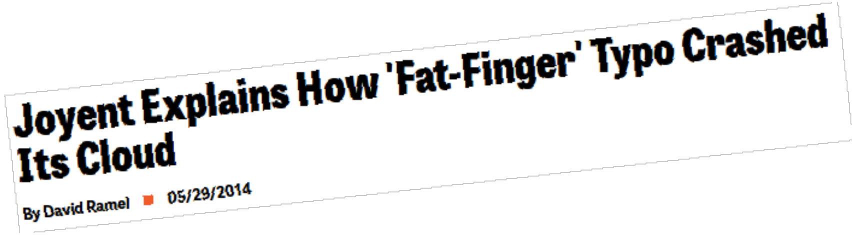
- A single typo can signify ruin, if not death

  - In 1962, a rocket carrying probe Mariner I veered off course and was destroyed due to a missing bar over a symbol in equations

$$\bar{\dot{R}}_n \quad \text{became} \quad \dot{R}_n$$

  - Typos brought down networks and computers many times in recent years

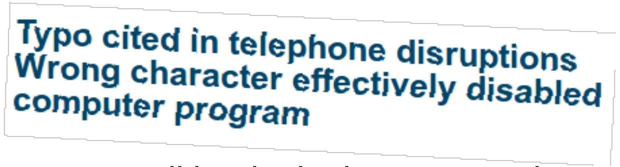
- So we better have a clear idea of what's on the screen.



Joyent Explains How 'Fat-Finger' Typo Crashed Its Cloud

By David Ramel ■ 05/29/2014

2014: Joyent network goes down



Typo cited in telephone disruptions
Wrong character effectively disabled computer program

1991: Bell land telephone network goes down - “6” instead of “D”

NATO Troops Invade Wrong Country

2000: During exercise, Italian troops land in Kristianstad, Sweden instead of Kristiansand, Norway

An old problem…

- When airlines introduced CRTs, the personnel was unenthusiastic
- Reservation staff complained about blurry characters, insufficient contrast, and tired eyes
- And they made LOTS of typos. Which meant LOTS of customer complaints.
- Solutions:
  - Better phosphorus with higher beam focus
  - Better character color – Amber on dark green
  - Fonts carefully designed to avoid ambiguities
  - Anti-glare coating on screens

Selection criteria

- Modern screens have the anti-glare coating and high contrast
- But the right fonts are not always there by default
- Criteria for a good technical font:
  - Unambiguous glyphs (a glyph is a drawing for a character)
    Example: Capital i and lowercase L should not look like identical vertical bars.

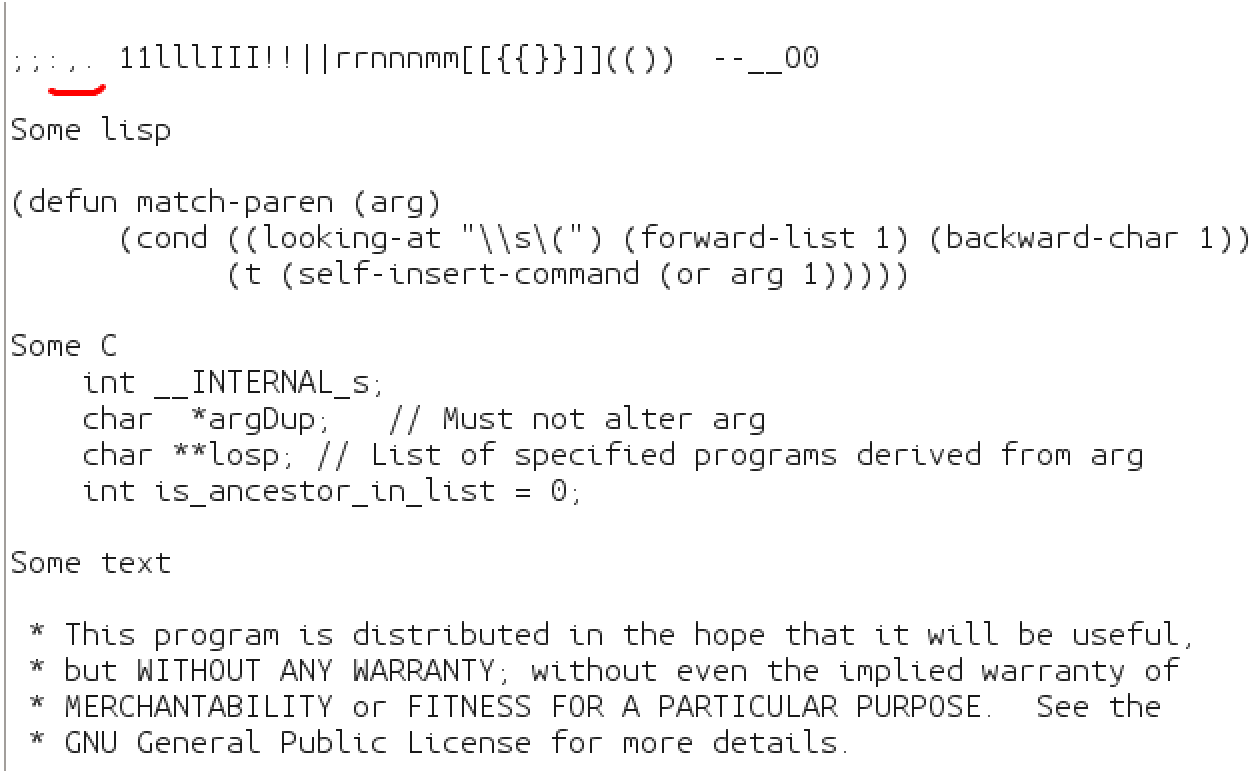
    Capital i, lowercase L and pipe in Arial are just bars: Il|
  - Good separation...
    You don't want the glyphs to run into each other
  - … But sufficient density
    You want to see a good number of lines in a given window size.

Rendering

- The sample fonts presented here are all renderings of the same text.
- The sample text is designed to emphasize ambiguous glyphs, if any.
- All fonts rendered at 12 points unless noted.
- I am using grayscale smoothing, medium hinting.
- This is an old version of Linux so the rendering on your modern box might be different.
- Check the rendering with your equipment and decide.

Ubuntu Mono

- Good differentiation
- Some glyphs are be a bit light
- If rendered "thicker", consecutive underscores merge



```
;;::,. 11lllIII!!||rrnnnmm[[{{}}]](())  --__O0

Some lisp

(defun match-paren (arg)
      (cond ((looking-at "\\s\(") (forward-list 1) (backward-char 1))
            (t (self-insert-command (or arg 1)))))

Some C
    int __INTERNAL_s;
    char  *argDup;   // Must not alter arg
    char **losp; // List of specified programs derived from arg
    int is_ancestor_in_list = 0;

Some text

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 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
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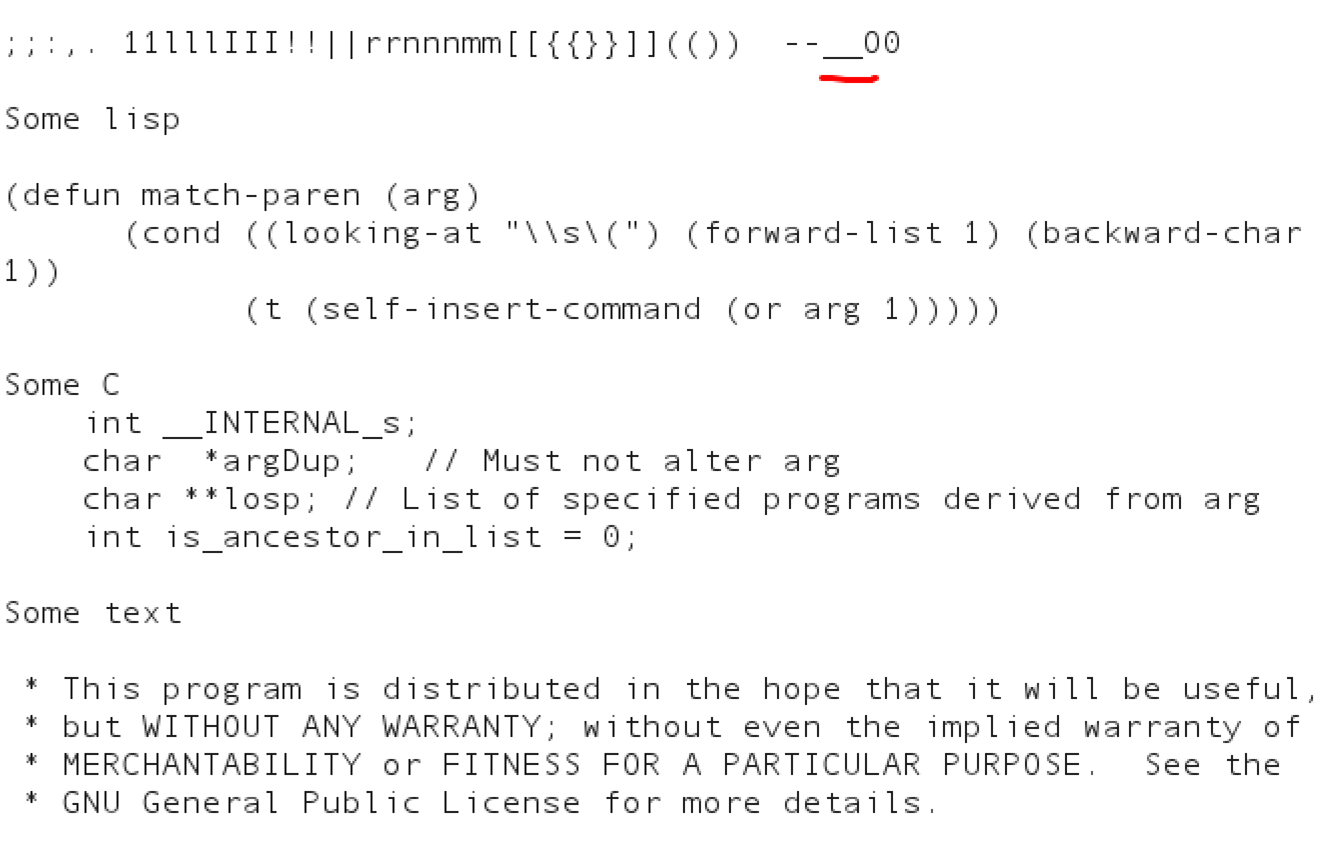
```

Andale Mono

- Functional if not pretty
- A bit wide
- Jointed underscores



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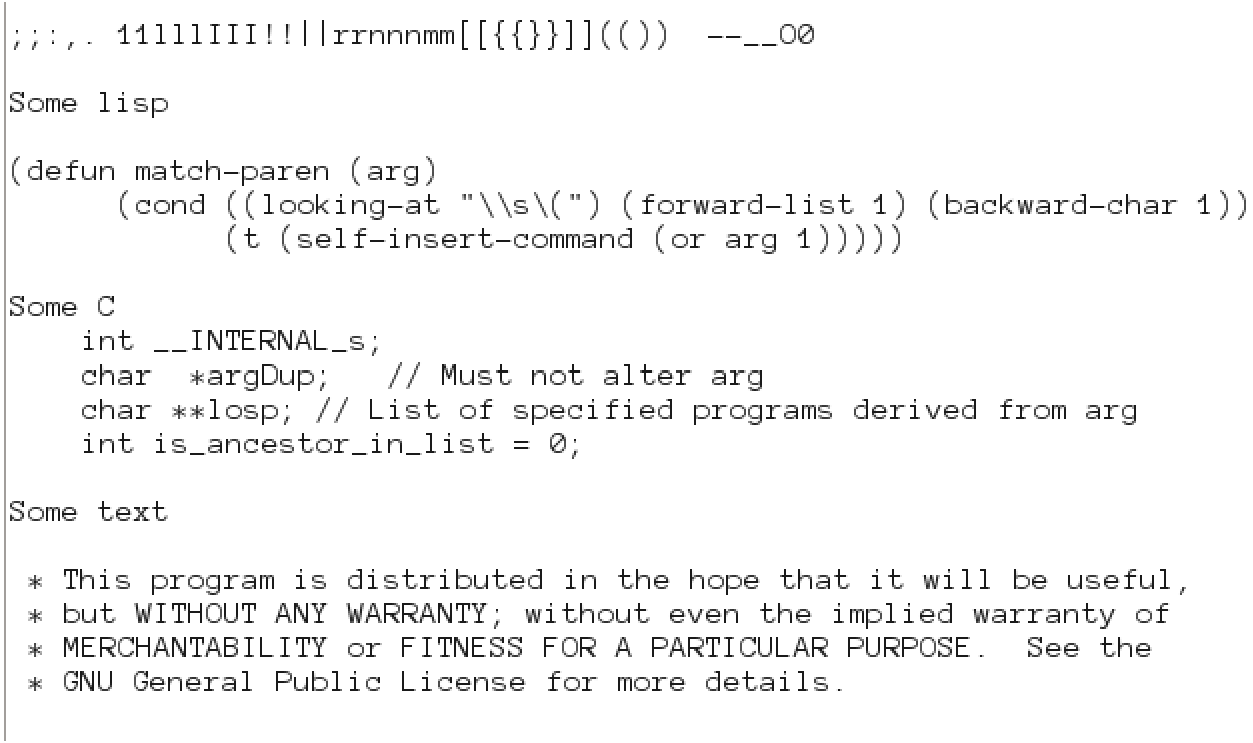
```

Anonymous Pro

- Author: Mark Simonson, 2009
- Released by Google
- Designed explicitly as a coding font
- Narrow yet precise
- Serifs on capitals
- Excellent readability



```
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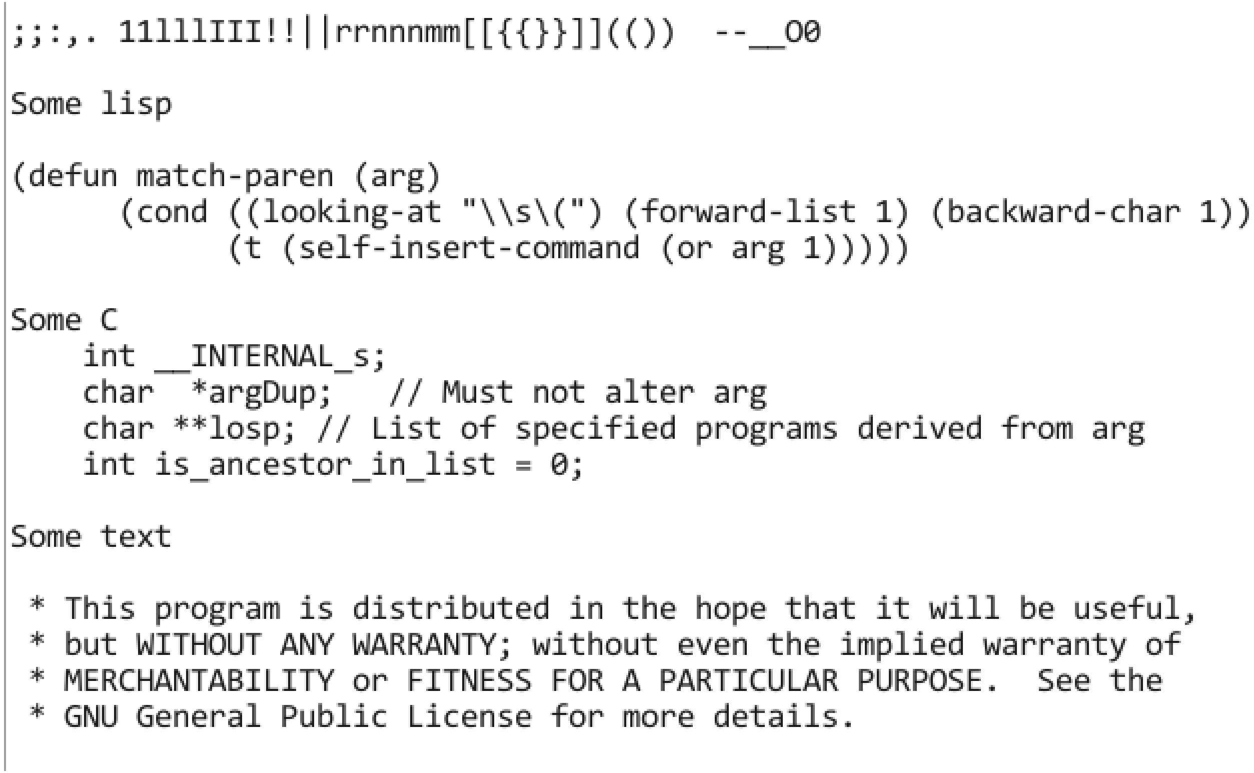
```

Consolas
13 points

- MS font released with Windows 10
- Jointed underscores
- For some reason, the 12-point rendering is ugly on my box



```
;;:,. 11lllIII!!||rrnnnmm[[{{}}]](())  --__O0

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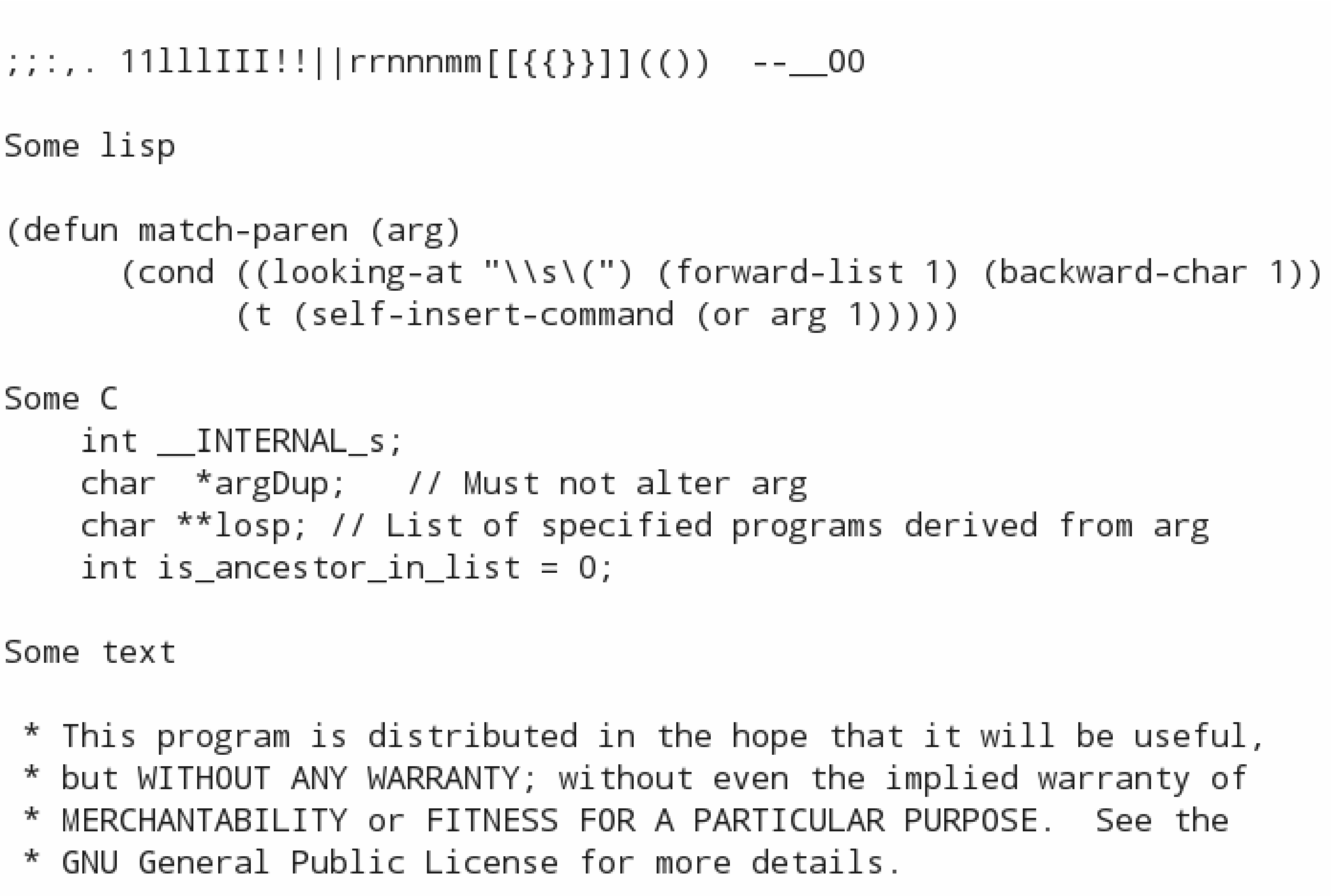
Droid Sans Mono

- The Droid family was popularized by Google
- Released in 2007
- Underscores...



```
;;:,. 11lllIII!!||rrnnnmm[[{{}}]](())  --__0O

Some lisp

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Some C
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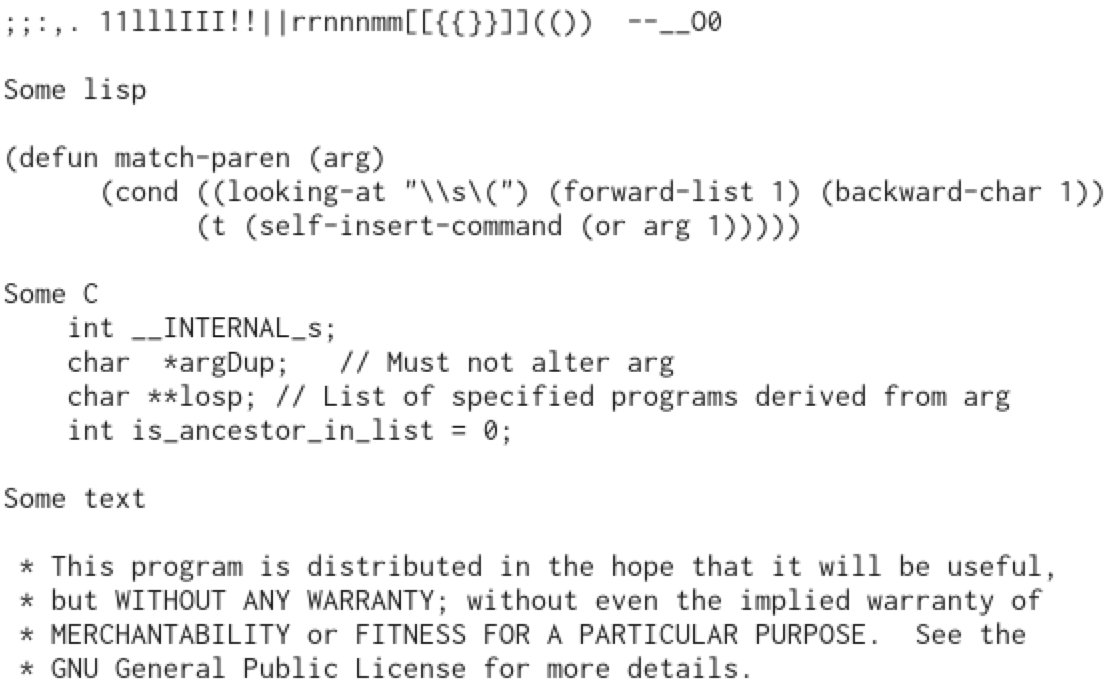
```

Inconsolata

- Author: Ralph Leven, 2014
- Released by Google
- My current favorite for its density



```
;;:,. 11lllIII!!||rrnnnmm[[{{}}]](())  --__O0

Some lisp

(defun match-paren (arg)
      (cond ((looking-at "\\s\(") (forward-list 1) (backward-char 1))
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Some C
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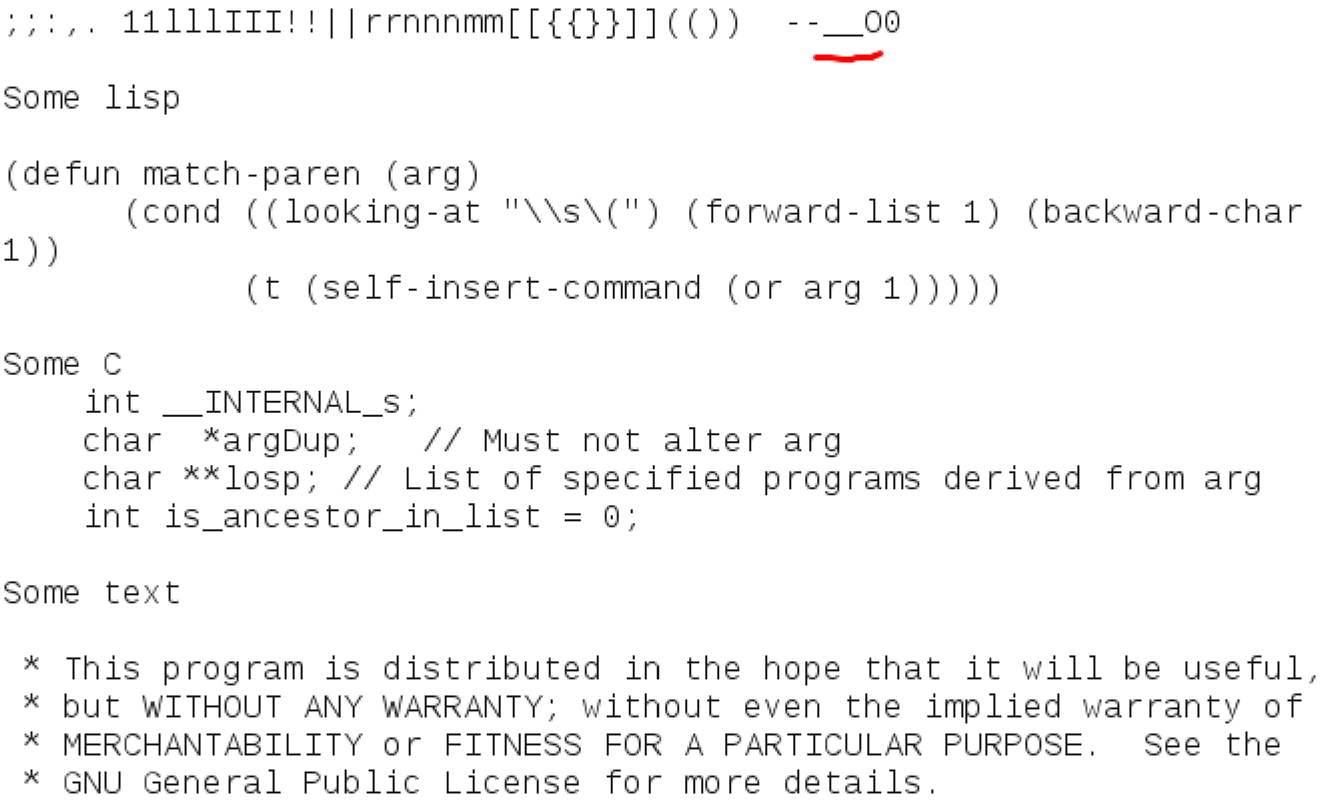
```

Liberation Sans Mono

- Jointed underscores
- Not very dense



```
;;:,. 11lllIII!!||rrnnnmm[[{{}}]](())  --__O0

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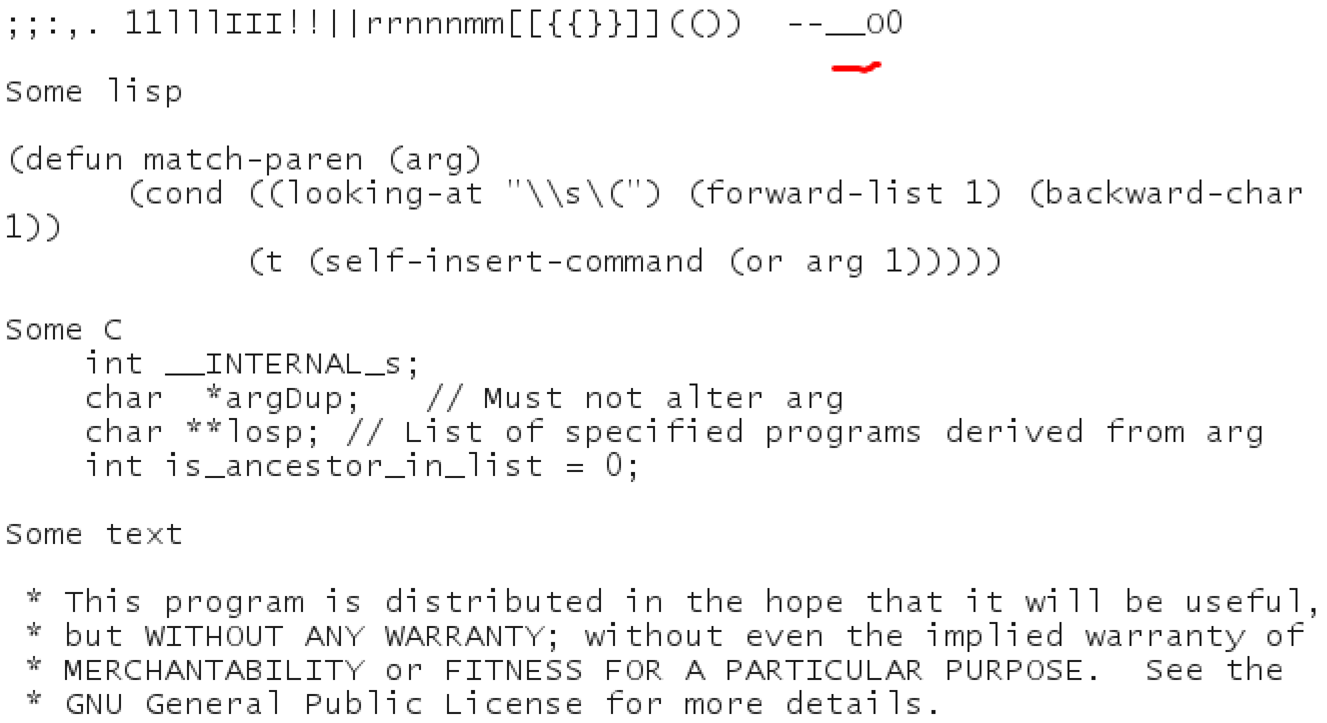
Lucida console

- Here in its semi-condensed form
- Jointed underscore



```
;;:,. 11lllIII!!||rrnnnmm[[{{}}]](())  --__o0

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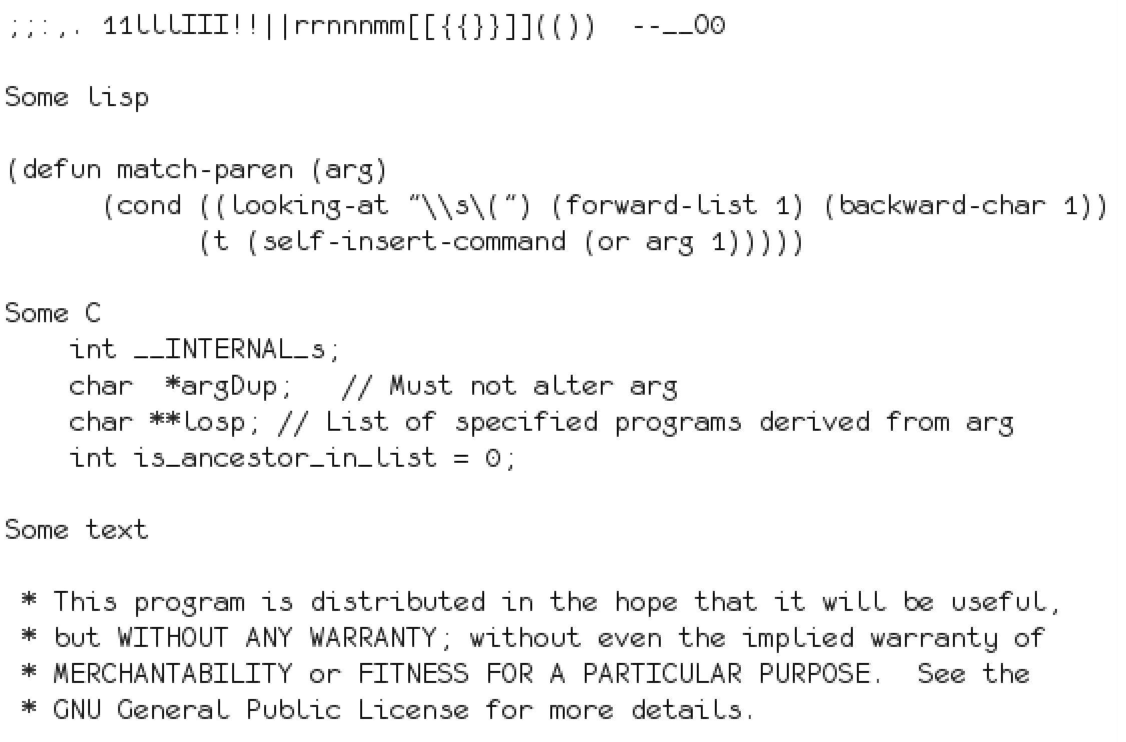
```

Monofur

- Author: Tobias B. Köhler, 2000
- Freeware but not OSS
- Nice density
- Love it or hate it



```
;;:,. 11lllIII!!||rrnnnmm[[{{}}]](())  --__O0

Some lisp

(defun match-paren (arg)
      (cond ((looking-at “\\s\(”) (forward-list 1) (backward-char 1))
            (t (self-insert-command (or arg 1)))))

Some C
    int __INTERNAL_s;
    char  *argDup;   // Must not alter arg
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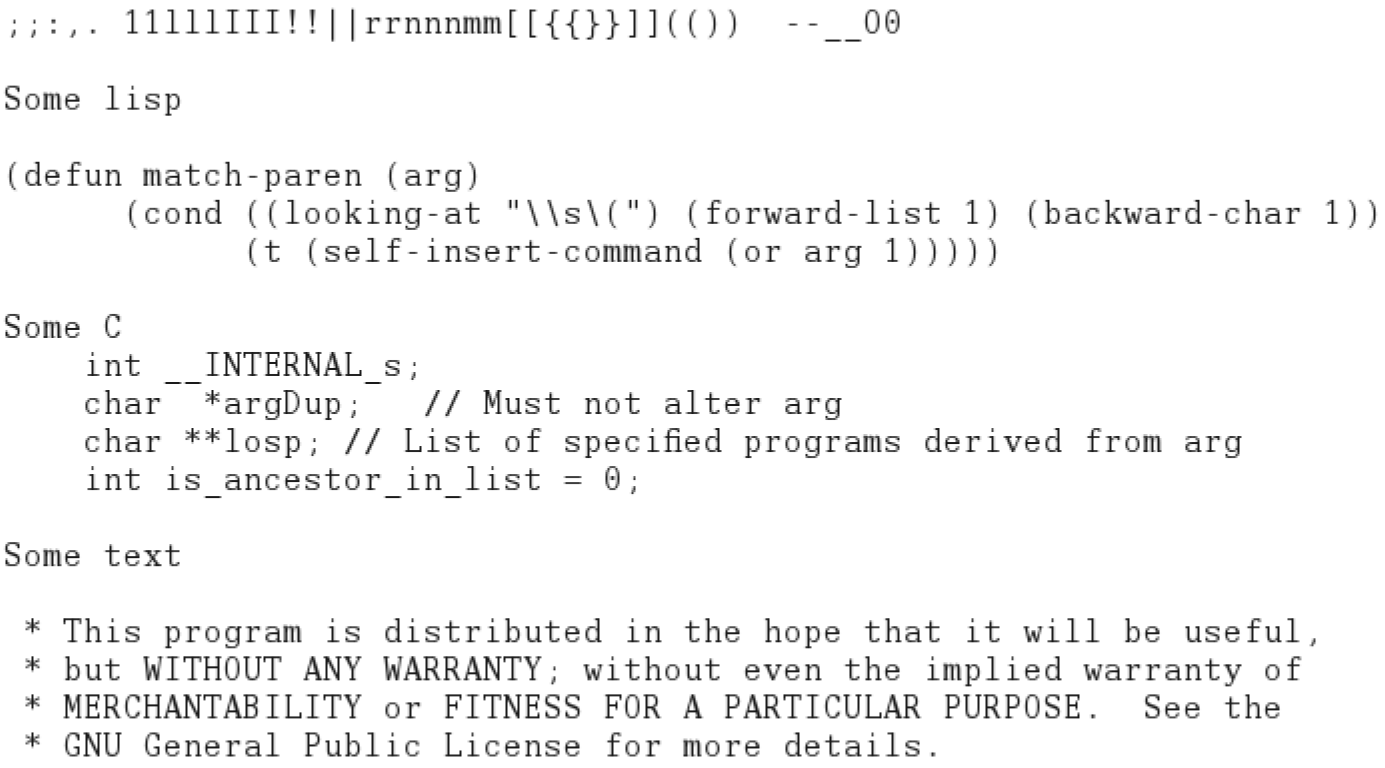
Verily Sans Mono

- Author: Stephen G. Hartke, 2006
- Very readable
- Serif AND monospaced
- Based on Bitstream Vera
- Probably my next standard coding font



```
;;:,. 11111III!!||rrnnnmm[[{{}}]](())  --__00

Some lisp

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Questions?