

**zapfino, a  
torture test  
for luatex**

# loading fonts

the `opentype` font reader is borrowed from `fontforge`

once it was ready, we could look into such a font

it took while to figure out the format due to rather fuzzy specs

it took us even more time to find out that the loader was flawed

one reason was that fonts themselves may have bugs or be incomplete

then we changed to `fontforge` version 2

this made the missing pieces surface in more complex feature handling

while implementing features the new table format was cleaned up

# making it work

the `fontforge` library loads the fonts into memory

the internal data structures are mapped into a `lua` table

we enhance this table a bit (extra hashes as well as rearranging glyphs)

we save the table in a cache and compile it to bytecode

after that reloading is fast and efficient

when defining a font instance we share data as much as possible

the open type specific table is translated into a `tfm` one

but for handling features we keep the original table available

in context `mkiv` currently we provide several interfaces

the `xetex` syntax is (more or less) supported

there is a higher level interface to associating features with fonts

there will be a font instance independent feature switch mechanism

there can be generic treatments unrelated to the specific font

fonts can be accessed by various names

but ... using features demands that users know what they're doing

we needed this exercise as a prelude to handling arab (which we cannot really read)

this font provides a good testbed because has many features defined

the associated `luatex` tables are rather large

there can be hundreds of lookups per character with lookahead and backtracking

when writing support for such features, bugs in such fonts complicate matters

visually checking the output is complicated by the fact that wrong alternatives may look good

we must make sure that `tex`'s other mechanisms don't spoil the game

special care is needed for lookups that involve spaces

## examples : nothing

*We thrive in information-thick worlds because of our marvelous and everyday capacity to select, edit, single out, structure, highlight, group, pair, merge, harmonize, synthesize, focus, organize, condense, reduce, boil down, choose, categorize, catalog, classify, list, abstract, scan, look into, idealize, isolate, discriminate, distinguish, screen, pigeonhole, pick over, sort, integrate, blend, inspect, filter, lump, skip, smooth, chunk, average, approximate, cluster, aggregate, outline, summarize, itemize, review, dip into, flip through, browse, glance into, leaf through, skim, refine, enumerate, glean, synopsise, winnow the wheat from the chaff and separate the sheep from the goats.*

*Mr. E.R. Tufte*

## examples : ligatures

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*M: E.R. Tufte*

# examples : cont ligs

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*M: E.R. Tufte*



## examples : cont alts

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Mr. E.R. Truste

# examples : all

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*Mc E.R. Trufte*



this font has many advanced arab related features

there is quite some kerning and positioning going on

vowels travel with the base characters (glyphs) and ligatures

vowels need to be positioned relative to each other as well

الْحَمْدُ لِلَّهِ حَمْدٌ مُعْتَرِفٌ بِحَمْدِهِ،  
مُعْتَرِفٌ مِنْ بَحَارِ مَجْدِهِ، بِلِسَانِ  
الْتِئَانِ شَاكِرًا، وَلِحُسْنِ الْإِيَّهِ نَاشِرًا؛  
الَّذِي خَلَقَ الْمَوْتَ وَالْحَيَاةَ، وَالْخَيْرَ  
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# Remark

the samples on the previous pages were generated with an experimental version of `luatex` and `mkiv` code and therefore may contain errors