zapfino, a torture test for luatex
The opentype font reader is borrowed from fontforge once it was ready, we could look into such a font. It tooks 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) and 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 OpenType specific table is translated into a TFM one, but for handling features, we keep the original table available.
Currently we provide several interfaces. The \texttt{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 re-
ally read)
this font provides a good testbed because has many features defined
the associated tables are rather large
there can be hundreds of lookups per character with lookahead and back-
tracking
when writing support for such features, bugs in such fonts complicate matters
visually checking the output is complicated by the fact that wrong alterna-
tives may look good
we must make sure that \text{'s other mechanisms don't spoil the game
special care is needed for lookups that involve spaces
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, synopsize, winnow the wheat from the chaff and separate the sheep from the goats.

Mr. E.R. Tufte
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, synopsize, winnow the wheat from the chaff and separate the sheep from the goats.

Mr. E.R. Tufte
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, synopsize, winnow the wheat from the chaff and separate the sheep from the goats.

Mr. E.R. Tufte
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, synopsize, winnow the wheat from the chaff and separate the sheep from the goats.

Mr. E. R. Tufte
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, synopsize, winnow the wheat from the chaff and
separate the sheep from the goats.

Mr. E. R. Tufte
This font has many advanced Arabic-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.
الحمد لله حمد مُغتَربف بحمده، مُغتَرف من بحر مِنْه، بِلسان الأثْنَانِ شَراكَةَ، ولحسن الأئِه ناشِراً، الْذِّي خَلَق الْمُوت، والَّحيَاة، والخَيْرَ والشَّرَّ، والَّنَفَعُ والضَّرَّ، والسُّكْونُ والحَرَكةَ، والأُرواحُ والأَجْسَامَ، والذَّكْرُ والرَّسُولِيَّةَ.
الْحَمْدُ لِلَّهِ حَمْدًا مَعْتَرَفٍ بِحَمْدِهِ، مَعْتَرَفٍ مِنْ بِحَارِ مَجِدهِ، بِلِسَانِ الشَّيْطَانِ شَآكِرًا، وَلَحْسُنِ اِلَّاِيِهِ فَالْذِي مَلِكَ الْحُقُوُقَ وَالْحَيَاةَ، وَالْخَيْرَ وَالشَّرِّ، وَالنَّقْفَ وَالضَّرِّ، وَالسُّكُونَ وَالْحُرَكَةَ، وَالْأَرْوَاحَ وَالأَجْسَامَ، وَالذِّكْرِ وَالبَيْتِيَّانَ.
ِرﺎَﺤِﺑْﻦِﻣٌفِﺮَﺘْﻐُﻣ،ٖﻩِﺪْﻤَﺤِﺑٍفِﺮَﺘْﻌُﻣَﺪْﻤَﺣِﻪّٰﻠِﻟُﺪْﻤَﺤْﻟَا
؛اًﺮِﺷﺎَﻧٖﻪِﺋۤﺎﻟٰاِﻦْﺴُﺤِﻟَو،اًﺮِﻛﺎَﺷِءۤﺎَﻨَّﺜﻟاِنﺎَﺴِﻠِﺑ،ٖﻩِﺪْﺠَﻣ
َﻊْﻔَّﻨﻟاَو،َّﺮَّﺸﻟاَوَﺮْﯿَﺨْﻟاَو،َةﻮٰﯿَﺤْﻟاَوَتْﻮَﻤْﻟاَﻖَﻠَﺧْيِﺬَّﻟَا
،َمﺎَﺴْﺟَﺄْﻟاَوَحاَوْرَﺄْﻟاَو،َﺔَﻛَﺮَﺤْﻟاَوَنْﻮُﻜُّﺴﻟاَو،َّﺮَّﻀﻟاَو
.َنﺎَﯿْﺴِّﻨﻟاَوَﺮْﻛِّﺬﻟاَو
الَّذِي خَلَقَ الْمُوْتَ وَالْحَيَوَةَ وَالْخَيْرَ وَالشَّرَّ، وَالْنَّفْعَ وَالضَّرَّ، وَالسُّكُونَ وَالحُرَكَةَ، وَالْأَرْوَاحِ وَالْأَجْسَامِ، وَالذَّكْرِ وَالنَّسْبَانَ.
الْحَمْدُ لِلَّهِ الَّذِي حَمَدَ مَعْتَرَفٍ بِحَمَدِهِ، مُعْتَرِفٍ مِنَ بِحَارِ مَجَدهِ، بِليْسَانِ الشَّتَاءِ شَآَكِرًا، وَلَحْسَنِ الْآيَةِ نَاَشِرًا، الَّذِي خَلَقَ الْمُؤْتِ وَالْحَيْوَةَ، وَالْخَيْرَ وَالشَّرَّ، وَالْتَفَعُّلَ وَالضَّرَّ، وَالسُّكُونَ وَالْحَرْكَةَ، وَالْأَرْوَاحَ وَالأَجْسَامَ، وَالذِّكْرَ وَالنِّسَيَانَ.
الحمد لله حمد معتَرف بحمده، معتَرف من بحارة مجده، يُلسَان الشَّتاء شَآكَرًا، وَلِحُسْنٍ آلَئه نَأْشِرًا، الَّذِي خُلِقَ المَوْتِ وَالحَيْوَة، وَالْخَيْرَ وَالشَّرَّ، وَالنَّفْعُ وَالضَّرَّ، والسُّكُونَ وَالحُرَّكة، وَالْأَرْوَاحَ وَالْأَجْسَامَ، والذِّكْرُ وَالنِّسْيَانَ.
الْحَمْدُ لِلَّهِ حَمْدٌ مُّغْتَرِفٌ بِحَمْدِهِ، مُّغْتَرِفٌ مِنْ بِحَارِ مَجِيدِهِ، يَلِيسانِ الشَّتَاءِ شَآکْرٍا، وَلِحُسَّنِ الْآیَاتِ نَآِشُرَا، الَّذِي خَلَقَ الْمَوْتَ وَالْحَيَاةَ، وَالْخَيْرَ وَالشَّرَّ، وَالْنَّفْعَ وَالضَّرَّ، وَالْسُكُونَ وَالْحَرَكَةَ، وَالْأَرْوَاحَ وَالأَجْسَامَ، وَالْذِّكْرُ وَالْثَّـِيْسِانَ.
أَحْمَدُ لِلَّهِ حَمْدَ مُعْتَرِفٍ بِحَمْدِهِ، مُعْتَرِفٍ مِنْ بِحَارِ مَجِيدِهِ، بِلِسَانِ الْيَتَاءِ شَآَكِرًا، وَلِحُسْنِ أَلَائِهِ نَافِرًا; أَلَّذِيْ خَلَقَ الْمَوْتِ وَالْحَيْوَةَ، وَالْخَيْرَ وَالشَّرَّ، وَالنَّفْعَ وَالضَّرَّ، وَالسُّكُونَ وَالْحَرْكَةَ، وَالْأُرُوْاحَ وَالْأَجْسَامَ، وَالذِّكْرِ وَالنِّسْيَانُ.
Remark

the samples on the previous pages were generated with an experimental version of `luatex` and `mkiv` code and therefore may contain errors when this document is generated with a post-beta version of `luatex` and `CON-TEXT` the results can be different