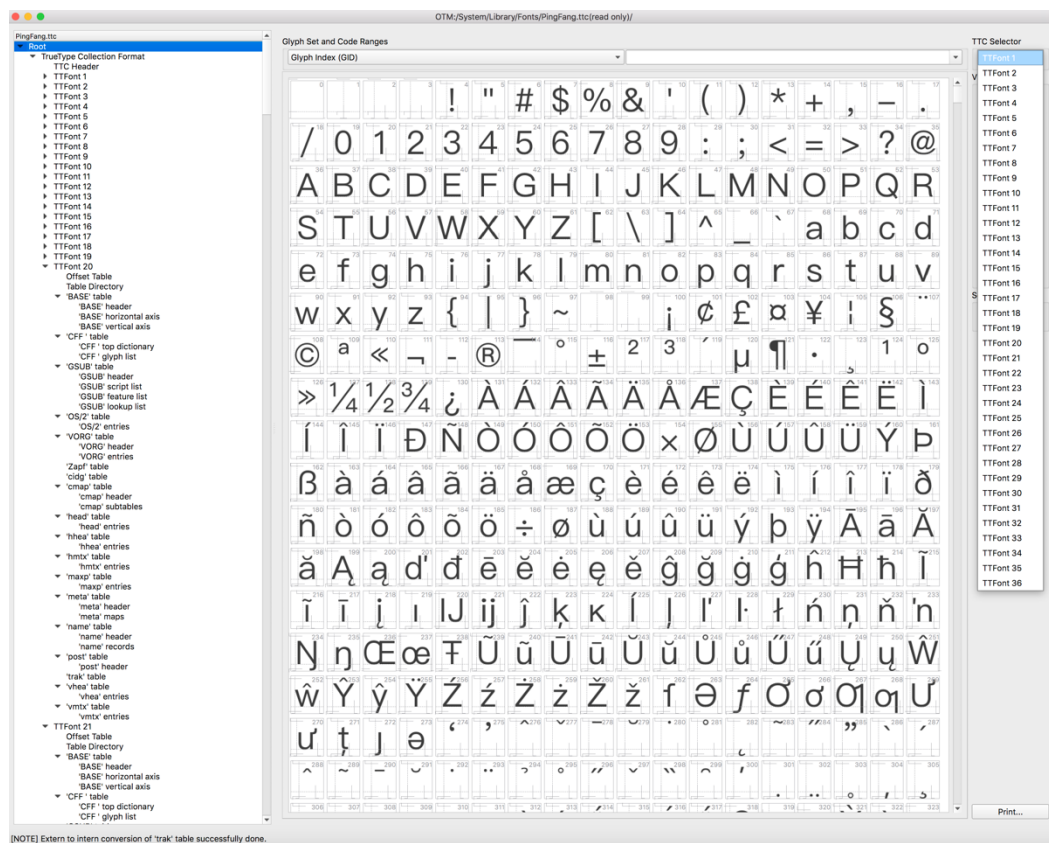**OTM 8.0 TrueType Collection Editor**

TrueType Collection files (TTC) have been existing for a long time and have been used initially for Japanese fonts, which came in two versions: with proportional and with monospaced kanas. The idea behind TTC was to share tables between fonts and keep the data size as small as possible.
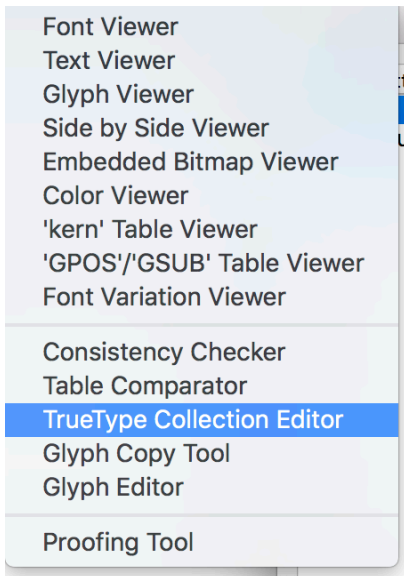Recently TTC files became more visible and have been extensively used to reduce the file size for large CJK fonts. Adobe started to create CFF-based TTC files, also known as 'OpenType Collections'. Since handling one file for a whole family of fonts also is considerably simpler and more convenient, many font families in macOS are now delivered as TTC files –even the core typefaces such as Helvetica and Palatino. Here is a small collection of TTC fonts:

-	HelveticaNeue	macOS System	14 Fonts TTF	6.6 Mb
-	PingFang	macOS System	36 Fonts OTF	80 Mb
-	SourceHanSans	Adobe (Open Source)	28 Fonts OTF	130 Mb

If one opens a TTC file in OTM, every font in the collection will be opened as a complete TTF/OTF font. The tables which are shared, will be displayed as part of each font they belong to. Editing a table means that the modified table will be altered in the selected font and will not be shared any longer. OTM will compare all tables again at the end before saving the font and share only binary- identical tables. Editing a shared 'glyph' table will result in a large increase in file size when the collection is saved at the end.

In order to allow sharing of tables and also modifying tables for all fonts at the same time, we have introduced a TTC editing tool:

Font Viewer
Text Viewer
Glyph Viewer
Side by Side Viewer
Embedded Bitmap Viewer
Color Viewer
'kern' Table Viewer
'GPOS'/'GSUB' Table Viewer
Font Variation Viewer

Consistency Checker
Table Comparator
TrueType Collection Editor
Glyph Copy Tool
Glyph Editor

Proofing Tool

This will open a large window that will show all available tables. An 'x' indicates that this table exists and is the first version of its kind. In case this table is shared between different fonts this will be marked by a '=TTFont1' if the first appearance of the table is in font 1 as one can see below:

OTM TrueType Collection Editor - PingFang.ttc (read only)

	TTFont 1	TTFont 2	TTFont 3	TTFont 4	TTFont 5	TTFont 6	TTFont 7	TTFont 8	TTFont 9	TTFont 10	TTFont 11	TTFont 12	TTFont 13	TTFont 14	TTFont 15	TTFont 16	TTFont 17	TTFont 18	TTFont 19	TTFont 20
BASE	x	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1
CFF	x	= TTFont 1	= TTFont 1	x	= TTFont 4	= TTFont 4	x	= TTFont 7	= TTFont 7	x	= TTFont 10	= TTFont 10	x	= TTFont 13	= TTFont 13	x	= TTFont 16	= TTFont 16	= TTFont 1	= TTFont 1
GSUB	x	x	x	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2
OS/2	x	= TTFont 1	x	x	= TTFont 4	x	x	= TTFont 7	x	x	= TTFont 10	x	x	= TTFont 13	x	x	= TTFont 16	x	= TTFont 1	= TTFont 1
VORG	x	= TTFont 1	= TTFont 1	x	= TTFont 4	= TTFont 4	x	= TTFont 7	= TTFont 7	x	= TTFont 10	= TTFont 10	x	= TTFont 13	= TTFont 13	x	= TTFont 16	= TTFont 16	= TTFont 1	= TTFont 1
Zapf	x	x	x	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2
cidg	x	x	x	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2
cmap	x	x	x	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2
head	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
hhea	x	= TTFont 1	= TTFont 1	x	= TTFont 4	= TTFont 4	x	= TTFont 7	= TTFont 7	x	= TTFont 10	= TTFont 10	x	= TTFont 13	= TTFont 13	x	= TTFont 16	= TTFont 16	x	= TTFont 19
hmtx	x	= TTFont 1	= TTFont 1	x	= TTFont 4	= TTFont 4	x	= TTFont 7	= TTFont 7	x	= TTFont 10	= TTFont 10	x	= TTFont 13	= TTFont 13	x	= TTFont 16	= TTFont 16	= TTFont 1	= TTFont 1
maxp	x	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1
meta	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
name	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
post	x	= TTFont 1	= TTFont 1	x	= TTFont 4	= TTFont 4	x	= TTFont 7	= TTFont 7	x	= TTFont 10	= TTFont 10	x	= TTFont 13	= TTFont 13	x	= TTFont 16	= TTFont 16	= TTFont 1	= TTFont 1
trak	x	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1
vhea	x	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1
vmtx	x	= TTFont 1	= TTFont 1	x	= TTFont 4	= TTFont 4	x	= TTFont 7	= TTFont 7	x	= TTFont 10	= TTFont 10	x	= TTFont 13	= TTFont 13	x	= TTFont 16	= TTFont 16	= TTFont 1	= TTFont 1

Reset   Apply   Autoset   New ...   Insert ...   Duplicate   Remove   Export ...   Save   Close
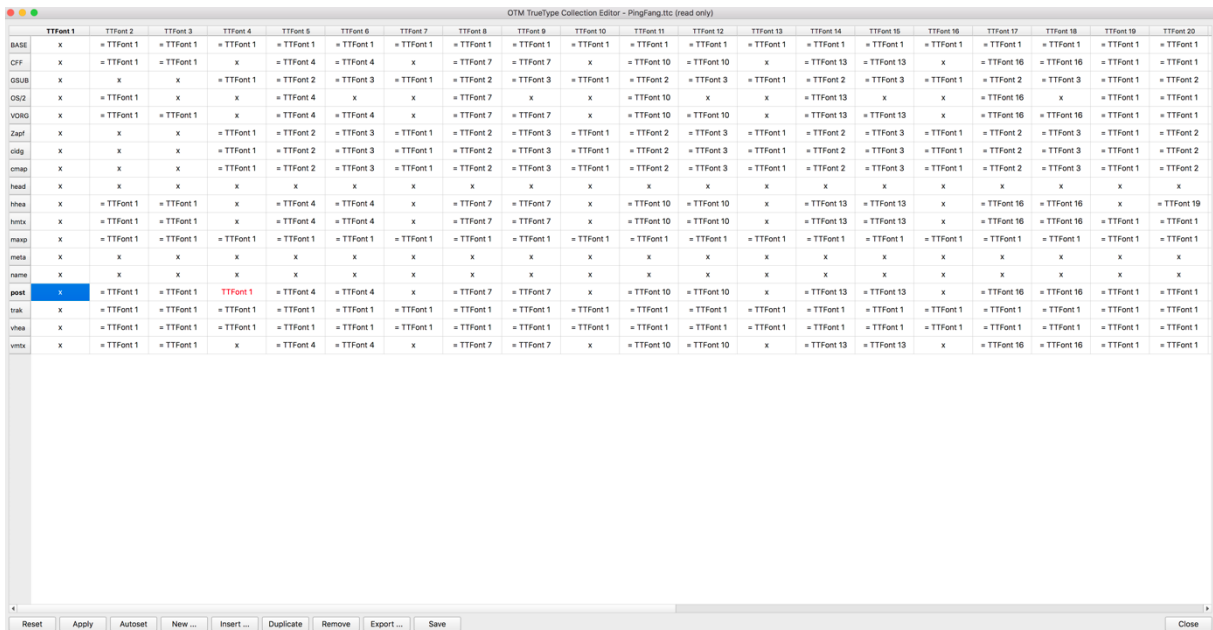
The buttons below left are options to edit the TTC tables and explained in the following paragraph.

The ⲧⲧⲥ editing functions allow to create and modify a new or an existing ⲧⲧⲥ file, as well as to extract a ⲧⲧꜰ/ⲟⲧꜰ file from a TrueType collection:

1. 'Reset'   Resets everything to the origin.
2. 'Apply'   Applies the changes to the ⲧⲧⲥ fil e.
3. 'Autoset'   If one table is changed this function will modify all instances of this table.
4. 'New'   Creates a new empty ⲧⲧⲥ file.
5. 'Insert'   Insert an arbitray ⲧⲧꜰ/ⲟⲧꜰ font into the ⲧⲧⲥ file.
6. 'Duplicate'   Duplicate a ⲧⲧꜰ/ⲟⲧꜰ font inside a ⲧⲧⲥ file.
7. 'Remove'   Remove a ⲧⲧꜰ/ⲟⲧꜰ font in a ⲧⲧⲥ file.
8. 'Export'   Exports a single ⲧⲧꜰ/ⲟⲧꜰ file.
9. 'Save'   Saves all changes.

Besides these management functions, the user can also edit an existing ⲧⲧⲥ font by copying tables from one font to another:
For this one can select an arbitrary table in the window and use drag and drop to overwrite the same table in another font. Of course, this requires some knowledge which tables are depending on each other, and it is *very* easy to mess up the ⲧⲧⲥ collection completely!

OTM TrueType Collection Editor – PingFang.ttc (read only)

	TTFont 1	TTFont 2	TTFont 3	TTFont 4	TTFont 5	TTFont 6	TTFont 7	TTFont 8	TTFont 9	TTFont 10	TTFont 11	TTFont 12	TTFont 13	TTFont 14	TTFont 15	TTFont 16	TTFont 17	TTFont 18	TTFont 19	TTFont 20
BASE	x	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1
CFF	x	= TTFont 1	= TTFont 1	x	= TTFont 4	= TTFont 4	x	= TTFont 7	= TTFont 7	x	= TTFont 10	= TTFont 10	x	= TTFont 13	= TTFont 13	x	= TTFont 16	= TTFont 16	= TTFont 1	= TTFont 1
GSUB	x	x	x	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2
OS/2	x	= TTFont 1	x	x	= TTFont 4	x	x	= TTFont 7	x	x	= TTFont 10	x	x	= TTFont 13	x	x	= TTFont 16	x	= TTFont 1	= TTFont 1
VORG	x	= TTFont 1	= TTFont 1	x	= TTFont 4	= TTFont 4	x	= TTFont 7	= TTFont 7	x	= TTFont 10	= TTFont 10	x	= TTFont 13	= TTFont 13	x	= TTFont 16	= TTFont 16	= TTFont 1	= TTFont 1
Zapf	x	x	x	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2
cidg	x	x	x	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2
cmap	x	x	x	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2	= TTFont 3	= TTFont 1	= TTFont 2
head	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
hhea	x	= TTFont 1	= TTFont 1	x	= TTFont 4	= TTFont 4	x	= TTFont 7	= TTFont 7	x	= TTFont 10	= TTFont 10	x	= TTFont 13	= TTFont 13	x	= TTFont 16	= TTFont 16	x	= TTFont 19
hmtx	x	= TTFont 1	= TTFont 1	x	= TTFont 4	= TTFont 4	x	= TTFont 7	= TTFont 7	x	= TTFont 10	= TTFont 10	x	= TTFont 13	= TTFont 13	x	= TTFont 16	= TTFont 16	= TTFont 1	= TTFont 1
maxp	x	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1
meta	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
name	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
post	x	= TTFont 1	= TTFont 1	TTFont 1	= TTFont 4	= TTFont 4	x	= TTFont 7	= TTFont 7	x	= TTFont 10	= TTFont 10	x	= TTFont 13	= TTFont 13	x	= TTFont 16	= TTFont 16	= TTFont 1	= TTFont 1
trak	x	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1
vhea	x	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1
vmtx	x	= TTFont 1	= TTFont 1	x	= TTFont 4	= TTFont 4	x	= TTFont 7	= TTFont 7	x	= TTFont 10	= TTFont 10	x	= TTFont 13	= TTFont 13	x	= TTFont 16	= TTFont 16	= TTFont 1	= TTFont 1

Reset | Apply | Autoset | New … | Insert … | Duplicate | Remove | Export … | Save   Close
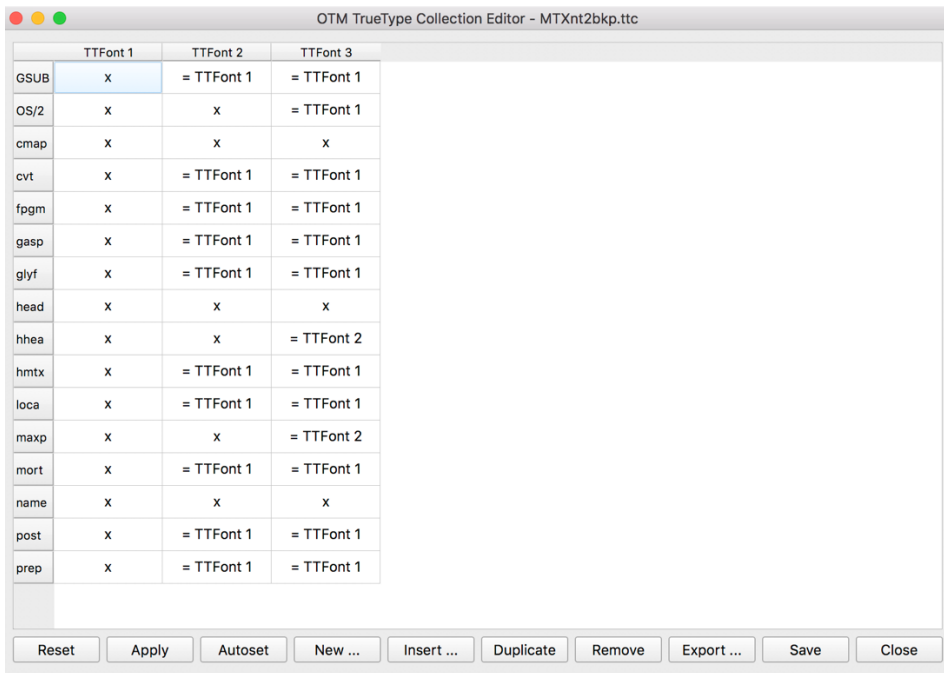
Here the 'post' table from font 1 has been selected and dragged it to font 4, overwriting the existing 'post' table. The modified table is indicated in red. Clicking on the ' Apply' button will change the ⲧⲧⲥ file. This is just a theoretical example to show how the editing of the tables can be operated. Other, perhaps more useful examples follow next.

Example 1: To modify an existing ᴛᴛᴄ font (adding glyphs to an existing ᴛᴛᴄ).

We start from an existing ᴛᴛᴄ file and want to add one glyph to a particular font. The workflow is then as follows:

- Open the ᴛᴛᴄ font.
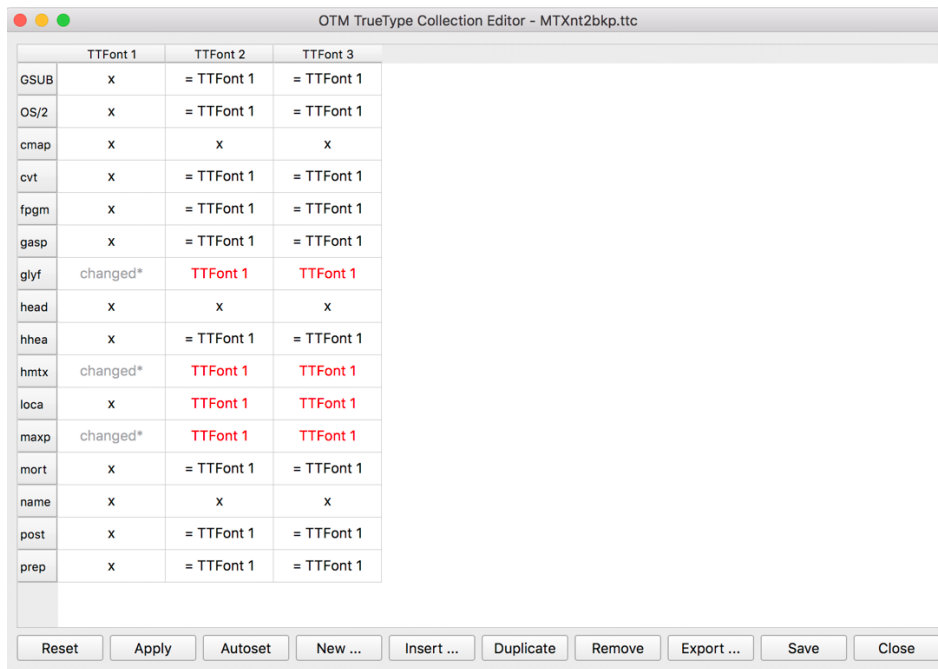- The ᴛᴛᴄ font shares the glyph table between three fonts.

OTM TrueType Collection Editor - MTXnt2bkp.ttc

	TTFont 1	TTFont 2	TTFont 3
GSUB	x	= TTFont 1	= TTFont 1
OS/2	x	x	= TTFont 1
cmap	x	x	x
cvt	x	= TTFont 1	= TTFont 1
fpgm	x	= TTFont 1	= TTFont 1
gasp	x	= TTFont 1	= TTFont 1
glyf	x	= TTFont 1	= TTFont 1
head	x	x	x
hhea	x	x	= TTFont 2
hmtx	x	= TTFont 1	= TTFont 1
loca	x	= TTFont 1	= TTFont 1
maxp	x	x	= TTFont 2
mort	x	= TTFont 1	= TTFont 1
name	x	x	x
post	x	= TTFont 1	= TTFont 1
prep	x	= TTFont 1	= TTFont 1

Reset | Apply | Autoset | New ... | Insert ... | Duplicate | Remove | Export ... | Save | Close

- As a next step, add a new glyph for font 1 to the glyph table:

OTM TrueType Collection Editor - MTXnt2bkp.ttc

	TTFont 1	TTFont 2	TTFont 3
GSUB	x	= TTFont 1	= TTFont 1
OS/2	x	= TTFont 1	= TTFont 1
cmap	x	x	x
cvt	x	= TTFont 1	= TTFont 1
fpgm	x	= TTFont 1	= TTFont 1
gasp	x	= TTFont 1	= TTFont 1
glyf	changed*	= TTFont 1	= TTFont 1
head	x	x	x
hhea	x	= TTFont 1	= TTFont 1
hmtx	changed*	= TTFont 1	= TTFont 1
loca	x	= TTFont 1	= TTFont 1
maxp	changed*	= TTFont 1	= TTFont 1
mort	x	= TTFont 1	= TTFont 1
name	x	x	x
post	x	= TTFont 1	= TTFont 1
prep	x	= TTFont 1	= TTFont 1

Reset | Apply | Autoset | New ... | Insert ... | Duplicate | Remove | Export ... | Save | Close

The ᴛᴛᴄ editor will indicate which tables have been changed ('glyf', 'hmtx', 'maxp').

Pressing the 'Autoset' button will make these identical for all 3 fonts again:

	TTFont 1	TTFont 2	TTFont 3
GSUB	x	= TTFont 1	= TTFont 1
OS/2	x	= TTFont 1	= TTFont 1
cmap	x	x	x
cvt	x	= TTFont 1	= TTFont 1
fpgm	x	= TTFont 1	= TTFont 1
gasp	x	= TTFont 1	= TTFont 1
glyf	changed*	TTFont 1	TTFont 1
head	x	x	x
hhea	x	= TTFont 1	= TTFont 1
hmtx	changed*	TTFont 1	TTFont 1
loca	x	TTFont 1	TTFont 1
maxp	changed*	TTFont 1	TTFont 1
mort	x	= TTFont 1	= TTFont 1
name	x	x	x
post	x	= TTFont 1	= TTFont 1
prep	x	= TTFont 1	= TTFont 1

OTM TrueType Collection Editor – MTXnt2bkp.ttc

Reset | Apply | Autoset | New ... | Insert ... | Duplicate | Remove | Export ... | Save | Close
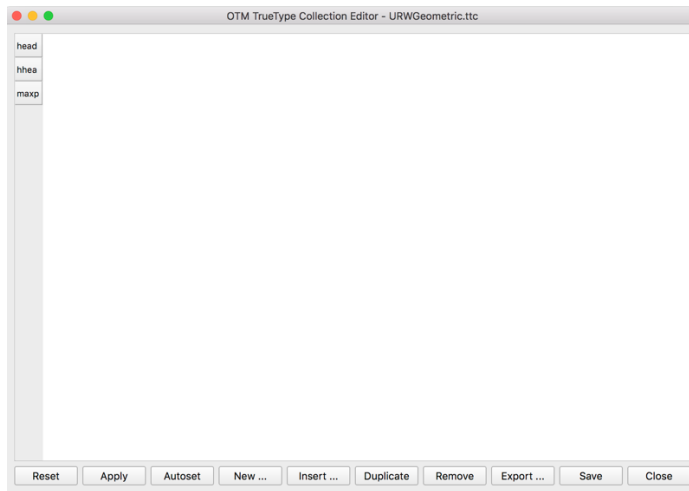
As one can see, the 'loca' table (which is connected to the 'glyph' table) will be updated too.

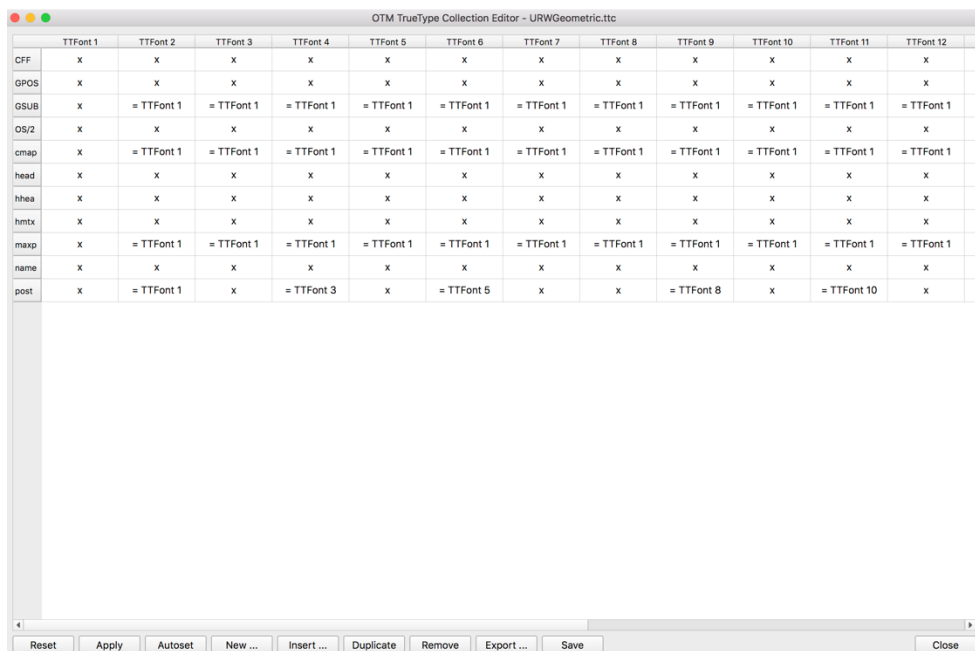Saving this font ensures that the ttc file will not get bigger and still shares all tables as the original one.

Example 2: Creating a new ᴛᴛᴄ font.

As an example, a ᴛᴛᴄ/ᴏᴛᴄ file from the ᴜʀᴡ Geometric family has been created via:

- Open ᴏᴛᴍ.
- Open the 'TrueType Collection Editor'.
- Click on 'New…' and create an empty ᴛᴛᴄ file.

- Select insert and select the ᴏᴛꜰ or ᴛᴛꜰ fonts you want to include from the open dialogue.
  Here 20 fonts from the font family have been selected: the first 12 are indicated below, the other ones become visible with the scroll button.

	TTFont 1	TTFont 2	TTFont 3	TTFont 4	TTFont 5	TTFont 6	TTFont 7	TTFont 8	TTFont 9	TTFont 10	TTFont 11	TTFont 12
CFF	x	x	x	x	x	x	x	x	x	x	x	x
GPOS	x	x	x	x	x	x	x	x	x	x	x	x
GSUB	x	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1
OS/2	x	x	x	x	x	x	x	x	x	x	x	x
cmap	x	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1
head	x	x	x	x	x	x	x	x	x	x	x	x
hhea	x	x	x	x	x	x	x	x	x	x	x	x
hmtx	x	x	x	x	x	x	x	x	x	x	x	x
maxp	x	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1	= TTFont 1
name	x	x	x	x	x	x	x	x	x	x	x	x
post	x	= TTFont 1	x	= TTFont 3	x	= TTFont 5	x	x	= TTFont 8	x	= TTFont 10	x

The 'gsub', 'cmap', and 'maxp' tables are all identical and shared automatically.