

Mariposa decides to try to make a font so that the sixteen glyphs for which she has already assigned code numbers can be used in practical situations.

'Yes, a colour font, yet that can also be used as a monochrome font', thinks Mariposa.

Mariposa had learned how to make fonts when she was an observer at the research centre, with Caroline Appleby helping her if she could not understand something.

Mariposa has now bought a licence for the same software so that she can use it independently.

Mariposa decides to set up the glyphs so that each of them is in a 2048 by 2048 font unit box.

'Maybe they should be centred horizontally, but it will be easier to design them if I put them in a square box that is from (0, 1792) in the upper left corner to (1792, 0) in the lower right corner, though making the advance width for each one 2048 font units. .... If I decide to centre them horizontally later then I can do that at that time.'

Mariposa decides to have the font name of the font to be Mariposa Zero, and that the finished font for publication can be named Mariposa System, so that there is no confusion that the font under development is the finished font.

Mariposa sets up the font. Mariposa chooses to have a few glyphs supplied by the fontmaking software. Mariposa checks which glyphs are supplied and is pleased to note that glyphs for the digits and for the percent sign are all included.

Mariposa sets up the metrics and chooses to set the design grid to be 256 by 256 with solid grid lines in orange and metric lines in blue.

Mariposa sets the font name to be Mariposa Zero and sets up the file name to be used as MZERO001.otf ready for exporting the font.

'I shall need sixteen unmapped glyphs and for each I need to devise a glyph name .... but I need forty-eight glyphs in total, three for each named glyph so as to construct the colour font with a monochrome fallback.'

Mariposa decides to start off by trying to produce a first version of the font with just one Mariposa System glyph. Mariposa chooses to encode the glyph for the personal pronoun 'I'. Mariposa wonders whether to name the glyph percent l l, or p l l, but decides to name it percent\_l\_l as that might allow the encoding sequence to be copied out of a PDF file.

Mariposa adds a glyph at the end of the font and sets its advance width to 2048 font units.

Mariposa adds two more glyphs and pastes a copy of the first one into each of them.

Mariposa sets the glyph name of the first one to be percent\_l\_l but leaves the other two without names.

'So, I need to add the blue box in the second of those glyphs and the green part in the third of them.'

Mariposa draws the box that she intends will be blue, but it is not blue yet. Two contours, one clockwise and one counterclockwise.

Mariposa decides to colour the glyph blue, so goes back to the original glyph designs to find the exact shade of blue needed.

'Ah, red 64, green 128, blue 255.'

Mariposa enters colour mode, then colorizes the glyph. Initially it is coloured blue, but not the shade of blue that she wants, so she adds another colour to the palette for the desired shade and colours the glyph.

Mariposa goes out of colour mode and designs the glyph that will be a shade of green.

'Ah, red 0, green 128, blue 0.'

Mariposa adds another colour to the palette and colours the glyph to that shade of green.

'So now I need to make the monochrome glyph from copies of those two glyphs.'

Mariposa wonders if she should have made the monochrome glyph before colorizing the two other glyphs.

'Well, try it and observe what happens - maybe I shall have to go back and do it again, but maybe not.'

Mariposa adds copies of the two glyphs and joins them together.

'No, that seems to work alright.'

'Now to try to build the colourful glyph!'

Mariposa goes into colour mode and adds the two coloured glyphs to the monochrome glyph, noting that the monochrome glyph had disappeared when she enters colour mode.

'Yes, that looks good. .... So now to try the font. .... Ah, I need to add a liga table so that the sequence of percent one one will cause the glyph to be substituted.'

Mariposa sets up the liga table, by first copying what she has in a monochrome font and then altering it a little.

'The liga table is used to set up glyph substitution for ligatures, but is good for this too.'

Mariposa exports the font and tests it.

'Excellent.'

Mariposa saves a copy of the font to another location, as a precaution in case something goes wrong when trying to add glyphs for the other fifteen abstract emoji that she plans to include in the font, so that she can be able to get back to how the font is now if she needs to do so.

Mariposa decides not to try to add those glyphs now, but to try to do it at some other time.