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Title: Improving interoperability of OpenFontFormat files (fonts) in the area of duplicated axis names

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Introduction

(This introduction is not part of the proposal)

This proposal does not introduce any new features. Rather, it provides documentation for what should happen in what might previously have been thought to be a rare edge case, so that different implementations can interoperate correctly.

Currently, a variable font can have multiple entries in 'fvar' for the same axis. The specification does not disallow this. However, if more than one such multiple entry is visible to the user interface, the result is unpredictable and may be confusing for users.

Therefore, we explicitly state that only one duplicated axis entry may be visible, and require, for interoperability with existing tools, that it be the first.

Fonts with multiple entries for the same axis are in use on the Web today, including as part of a technique referred to as Higher Order Interpolation (HOI). It is not a new feature, but the current specification is silent about it.

https://github.com/harfbuzz/boring-expansion-spec/issues/15

In 7.3.3 fvar—Font variations table, after VariationAxisRecord, after the paragraph about the HIDDEN_AXIS tag, add a new final paragraph as follows:

For smooth animation, and for non-linear interpolation, it may be necessary for a font to use multiple axes with the same axisTag.

If a font contains more than one axis with the same axisTag, at most one of those axes shall be visible (i.e. have the HIDDEN_AXIS bit set to zero). The VariationAxisRecord for such a visible axis in this case shall appear first, before the records for any of the other axes with that same axisTag, all of which shall have their HIDDEN_AXIS flag set to 1.

The range of values for that first axis should be used for user interfaces or API access. Where the ranges of the axes with a given axisTag differ in minimum or maximum, the value shall be clamped to be within the minimum and maximum of the each axis. The default (initial value) shall be taken from the non-hidden axis entry.

[end]