

“Size” ignored if placed before fontproperties #16389

Link to issue:

<https://github.com/matplotlib/matplotlib/issues/16389>

Issue arises when creating any text object. If the “size” kwargs is passed in before the “fontproperties” kwargs, then the size kwargs is ignored. Upon tracing the code, it can be seen that this happens because fontsize (among many others) is a part of the fontproperties attribute which is managed by the FontManager class. When fontproperties is passed in as kwargs, a new copy of the FontManager class is created with default values set and replaces the old fontproperties with the copy. This means that all attributes of fontproperties that were set prior to this change will be overridden by the new object. Since this is an issue in the Text class itself, it is expected that this bug can be reproduced through other instantiations of the Text object rather than just the x and y label as suggested by the bug report.

Plan:

Since the issue is isolated in the fontproperties attribute of the Text class, we can apply a fix by first saving all fontproperties attribute before we overwrite the fontproperties attribute within the set_fontproperties() function in the Text class. This can be done on line 1229 of Text.py by using the fontproperties’ getter methods to save the attributes first, and then after line 1229, we re-apply these attributes with the corresponding setter methods.

Plan (Updated):

Upon changing the code, we realize that because self._fontproperties is not set yet in the initialization stage of Text object, we cannot check whether or not the attributes have been set yet as it would result in a crash. The only way to do so would be to use a try/except block which seems like a bit of a hack. As such, we have re-evaluated our options and will attempt to force the Text class’ update method to update fontproperties before line 180 updates all the kwargs using the Artist.update() method.