

This method would perform a grouping action on a list of wireframe entities. It would also calculate the new X-Y coordinates, the new height and width of this group after grouping. After grouped, all members of this grouped would be locked unless moved/deleted as a whole group

Group (entityList)

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1: groupXCoordinate  $\leftarrow \infty$ 
2: groupYCoordinate  $\leftarrow -\infty$ 
3: bottomYValue  $\leftarrow \infty$ 
4: rightXValue  $\leftarrow -\infty$ 
5: for each entity in entityList do
6:   validate all the entity is not and can be grouped
7:   add entity into groupMemberList
8:   lock the entity // so it won't be moved/modified individually
9:   groupXCoordinate  $\leftarrow \min$  (groupXCoordinate, entity's X coordinate)
10:  groupYCoordinate  $\leftarrow \max$  (groupYCoordinate, entity's Y coordinate)
11:  bottomYValue  $\leftarrow \min$  (bottomYValue, entity's YCoordinate - entity's height)
12:  rightXValue  $\leftarrow \max$  (rightXValue, entity's XCoordinate + entity's width)
13: end for
14: move the group to the group coordinates
15: groupHeight  $\leftarrow$  groupYCoordinate - bottomYValue
16: groupWidth  $\leftarrow$  rightXValue - groupXCoordinate
17: set the height of width of the group to corresponding values
```