

## Main Functions:

- statsList: Generates a sorted list of statistics.  
Helper methods: slHalp, sortZ, sortZZ, and insert.
- findFurnitureUpdate: finds the object in the given stats list then calls updateZ to update the object stats.  
Helpers used: updateZ and updateZZ.
- Generate: updates the stats for each object given updated stats after calling gen.  
Helpers used: gen, genRight, and genBelow.
- furnishRoom: calls furnishRowz.  
Helpers used: furnishRowz, furnishFirstRow, and furnishRow.
- getFurnStat: function used to search for certain object x through the output of statsList and outputs its statistics.  
Helpers used: gfs.
- getPossibleNeighbour: given stats about the objects left to X and on top of X, and outputs a possible value of X.  
Helpers used: duplz and duplzO

## Helper Functions:

- slHalp: inputs the training list from FurnitureResources.hs file and applies generate function on every room in the list.
- sortZ: applies sortZZ on every object statistics in the input list
- sortZZ: reversed insert sort.
- insert: inserts into a sorted list.
- updateZ: given the neighbour to be inserted, its position, and the current stats, it checks the position and applies updateZZ function according to the position.
- updateZZ given the neighbour to be inserted, its position, and the current stats, it finds the target neighbour and increases the frequency.
- gen: given row X and the row below it Y then apply genRight on X and stats which gives updated stats then call genBelow on Y, X, updated stats.
- genRight: given a row of the room then apply findFurnitureUpdate then call genRight on the rest of elements (y:xy) with position of “right”
- genBelow: given 2 row then gets the first element from both of them let a and b then apply findFurnitureUpdate on a and b with position of “below”.
- gfs: find the target object and return its stats.

- Duplz: concatenates lists of replicated objects.
- DuplzO: replicates the object a number of times equal to the freq.
- furnisRowz: furnishes n rows given the upper row.
- furnishFirstRow: generates only the first row in the target room.
- furnishRow: furnishes a row given the object to be placed in this cell, counter, room width and the upper row to get the possible neighbour.
- Length
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