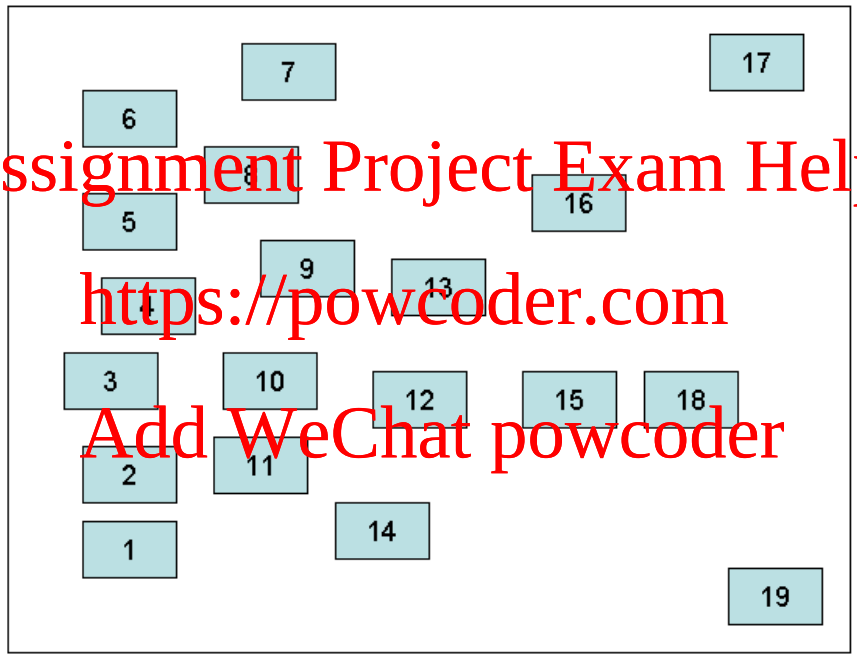
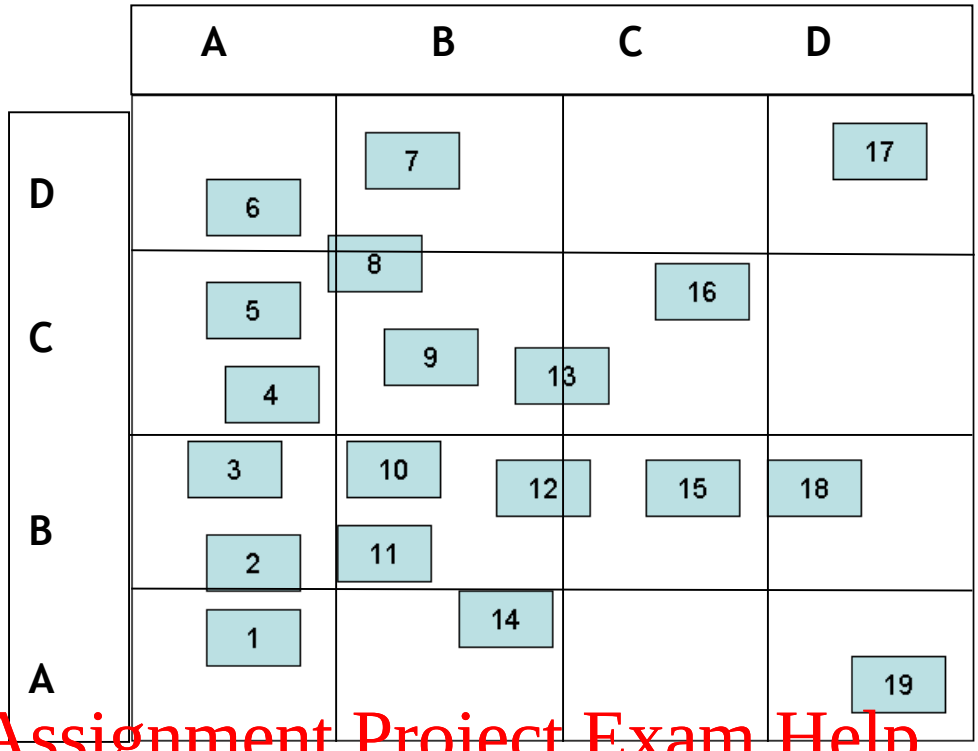
Worked Example - Grid and Quadtree Indexes

1. Create a Grid index and a Quadtree index for the following data. Your grid should be at least 16 cells in size.

   Your Quadtree index should have 4 children per node (hence **Quad**tree). You can also assume that the page size on disk for the quadtree allows a maximum of FOUR polygon references per leaf.

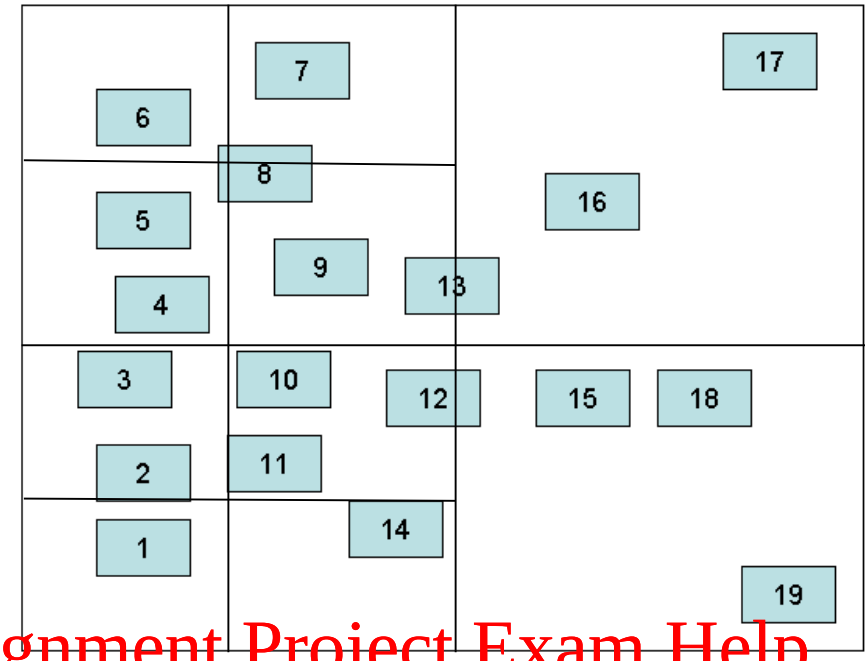
For the Quadtree, node order is: Top Left, Top Right, Bottom Left, Bottom Right (in practice this will depend on the software being used)

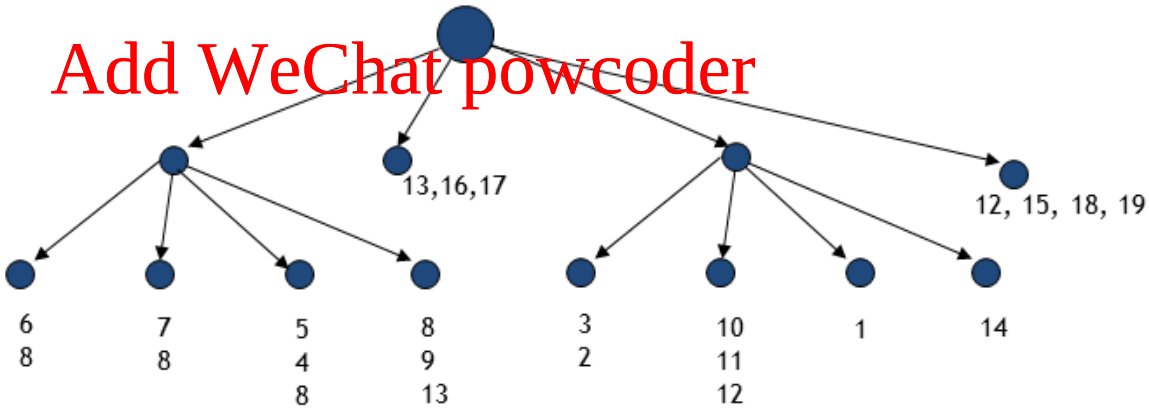




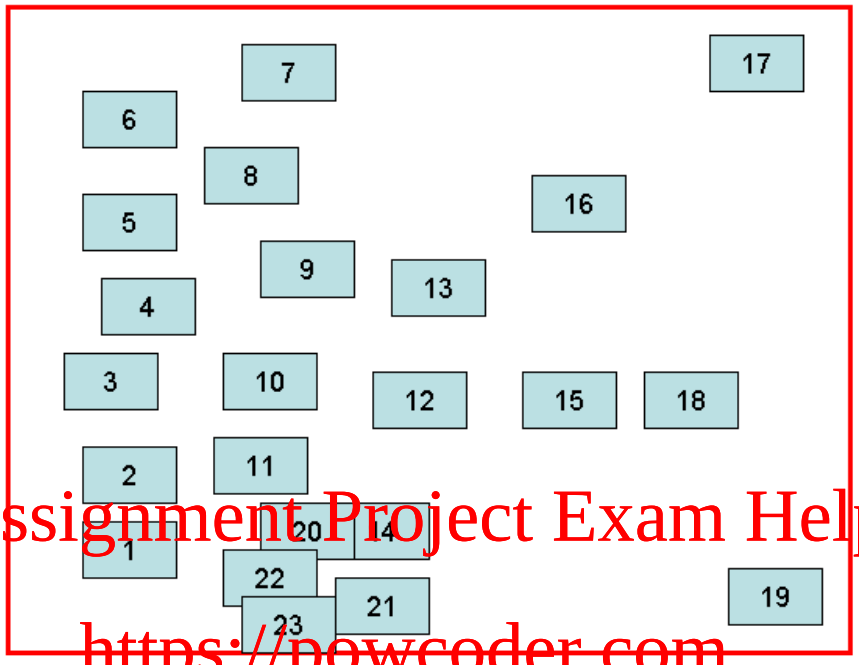
Grid	Content
AA	1
AB	14
AC	
AD	19
BA	2,3
BB	10,11,12
BC	12,15
BD	18

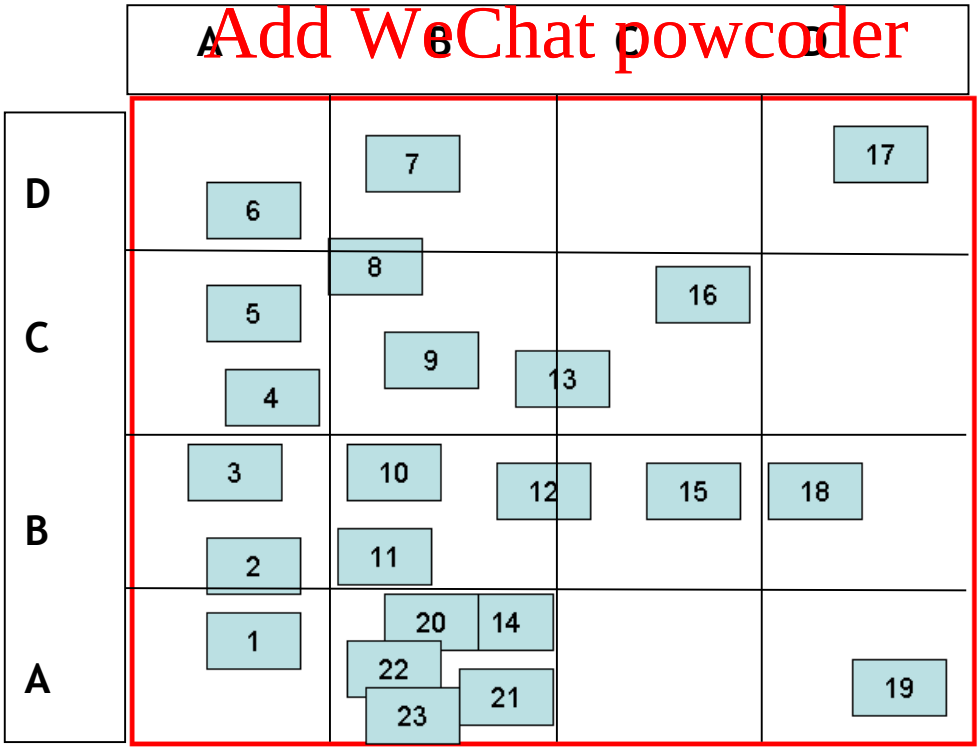
Grid	Contents
CA	4,5,8
CB	8,9,13
CC	16
CD	
DA	6,8
DB	7,8
DC	
DD	17





2. Modify the indexes created above to include Polygons 20, 21, 22 and 23, which have been inserted in the diagram below.





Grid	Content
AA	1
AB	14, 20,22,23,21
AC	
AD	19
BA	2,3
BB	10,11,12
BC	12,15
BD	18

Grid	Contents
CA	4,5,8
CB	8,9,13
CC	16
CD	
DA	6,8
DB	7,8
DC	
DD	17