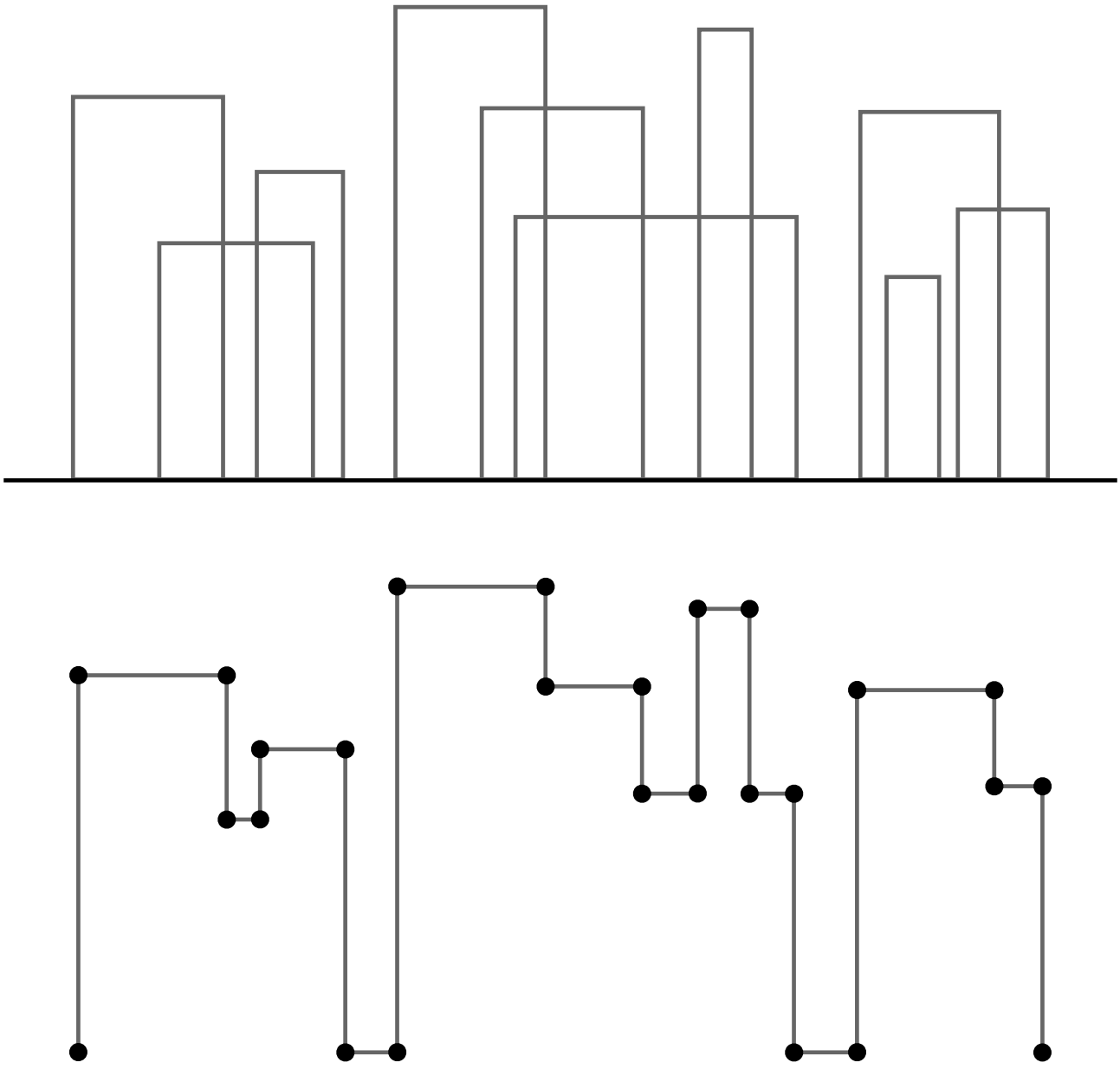
Manhattan Skyline

[11 points]

Consider a set of n partially overlapping rectangles (“Skyscrapers”) which are all based on a horizontal line as in the figure below. Together they form a “skyline”.



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Example data is given in the *skyscrapers* PLY file under *Resources/Datasets*.

a) Think of and implement an O(n logn) sweepline algorithm that computes the skyline from this information.

Hint: A good start is to make up your mind about what your events, status and output is.
Eventually your program should generate an image as the one above.

b) "LEGO variant": Assume that all the coordinates are integral and bounded, say spread over m length units.

Think of and implement an alternative routine for this scenario that is linear in the number of buildings, like O(n * m).
Please realize your solution in a Jupyter Notebook (.ipynb file), e.g. based on the template from the tutorial.