This homework is worth 4 % for CS 490 and 3 % for CS 590. It is just one problem on the execution of the line segment intersection algorithm.

Say we are given the following set of segments as input to our sweep-line based FindIntersections algorithm of Chapter 2:

\[ s_1 = [ (3, 4), (6, 7) ] \]
\[ s_2 = [ (6, 2), (2, 7) ] \]
\[ s_3 = [ (9, 6), (6, 16) ] \]
\[ s_4 = [ (3, 1), (15, 15) ] \]
\[ s_5 = [ (1, 5), (9, 14) ] \]

Note that the format for each segment is [ endpoint\textsubscript{1}, endpoint\textsubscript{2} ].

1. Delineate the execution of the algorithm on this set. In particular, express the change in the Event Queue and Status Tree at each event handling. Also, show the initial state of the Event Queue. Finally, of course, give the intersection output at the appropriate time.