

Time to learn and practice concepts. ~ Maxima Point Problem ~

NOTE: This activity will give you good practice for better understanding of the concepts learned during class. It is strongly suggested to brainstorm & scribble

Practice Task 1: Design an algorithm for the maxima point problem (as discussed in class) for a point in 3-D space i.e. a point having its x, y & z components.

Practice Task 2: Write python/C++/Java script for your above algorithm and generate screen dump of your program's output for at least 7 points. Note that your program should be general and should work fine for any value of n points.

Practice Task 3: How will your algorithm behave if all the points lie on the same line vertically or horizontally? Will it effect the total number of iterations of your loops? How? Justify in couple of lines.

Practice Task 4: Twist your algorithm in Practice Task 1 to work for **minima** set of points instead of maxima points.

Practice Task 5: How will your algorithm behave if all the points lie on on left sliding diagonal? Will it effect the total number of iterations of your loops? How? Justify in couple of lines.

Practice Task 6: Design geometric approach for **minima**-point problem while sweeping the sweep line along **y-direction**? Change the class-discussed algorithm accordingly. Dry run your algorithm to prove its working, displaying the stack states side by side.

Practice Task 7: How maxima-point algorithm will behave if multiple points have same value of x-component? E.g. (2,9),(2,5),(2,4),(2,1). What needs to be fixed in the algorithm to handle this boundary case? Geometric Approach.

Thanks to various web and text resources in compilation of this activity.