**CONVEX HULL**

Given a set of points in the plane. the convex hull of the set is the smallest convex polygon that contains all the points of it.

**USING GRAHAM SCAN ALGORITHM TO FORM THE CONVEX HULL**

Let points[0..n-1] be the input array.

1) Find the bottom-most point by comparing y coordinate of all points. If there are two points with same y value, then the point with smaller x coordinate value is considered. Put the bottom-most point at first position.

2) Consider the remaining n-1 points and sort them by polar angle in counterclockwise order around points[0]. If polar angle of two points is same, then put the nearest point first.

3) Create an empty stack ‘S’ and push points[0], points[1] and points[2] to S.

4) Process remaining n-3 points one by one. Do following for every point ‘points[i]‘  
 4.1) Keep removing points from stack while orientation of following 3 points is not counterclockwise or they don’t make a left turn.  
 a) Point next to top in stack  
 b) Point at the top of stack  
 c) points[i]

4.2) Push points[i] to S

5) Print contents of S.

Step 1:-

Step 2:-