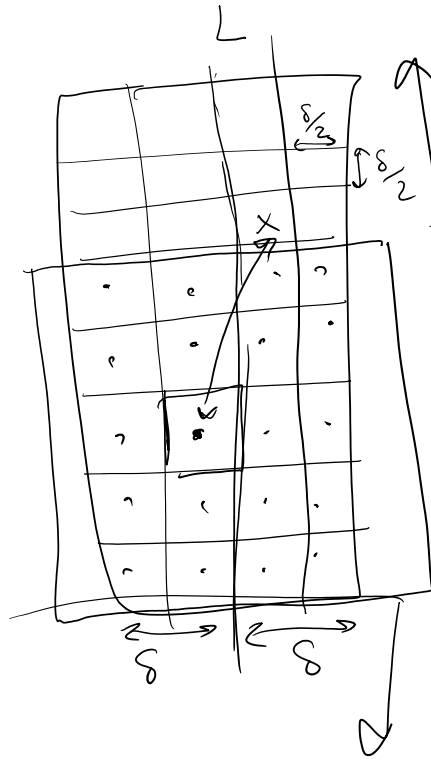


$$\sqrt{\left(\frac{\delta}{2}\right)^2 + \left(\frac{\delta}{2}\right)^2} \approx 0.7\delta < S$$



Fact: No two points in the same box.

Pf: If two points in a box (say to the left of L) then $\text{dist} < \delta$.

But this contradicts the fact that distance of all pairs in the same side of $L \geq \delta$.