Class 05

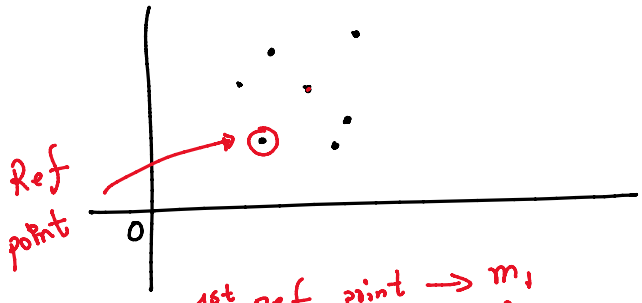
Sunday, September 26, 2021 9:29 PM

Prob 1

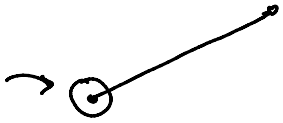
N সংখ্যক 2D points দেয়া হবে।

$\binom{N}{2} \approx n^2$ সংখ্যক লাইন × O(n) check

↳ $O(n^3)$



1st ref point → m_1, m_2, $2m_3$, m_4, m_5



max_point = 3

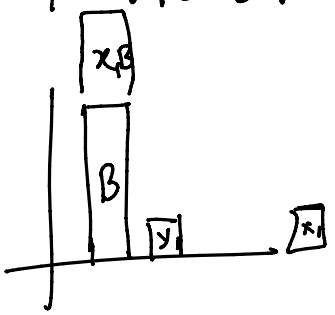
$\frac{\Delta y}{\Delta x} = \frac{\text{rise}}{\text{run}}$

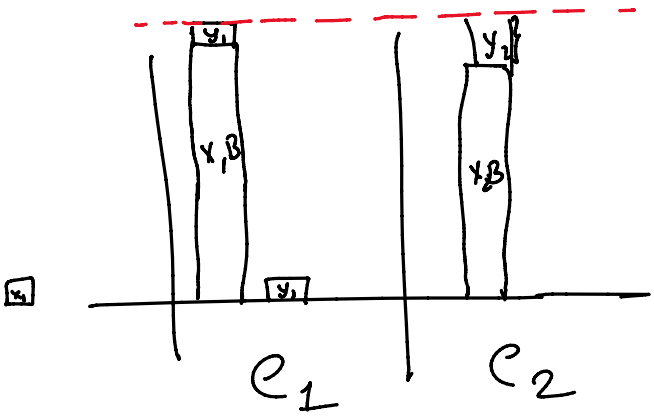
$|x_i|, |y_i| \leq 10^4$

$\{1, 2\} \rightarrow 1 \times 10^1 + 2 \times 10^0$

$\{x_1, y_1\} \rightarrow x_1 \times B + y_1$

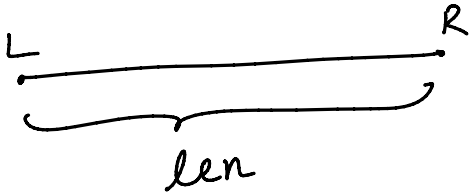
$\{x_2, y_2\}$





— ○ —

O(n)



L + (0 ~ len-1)

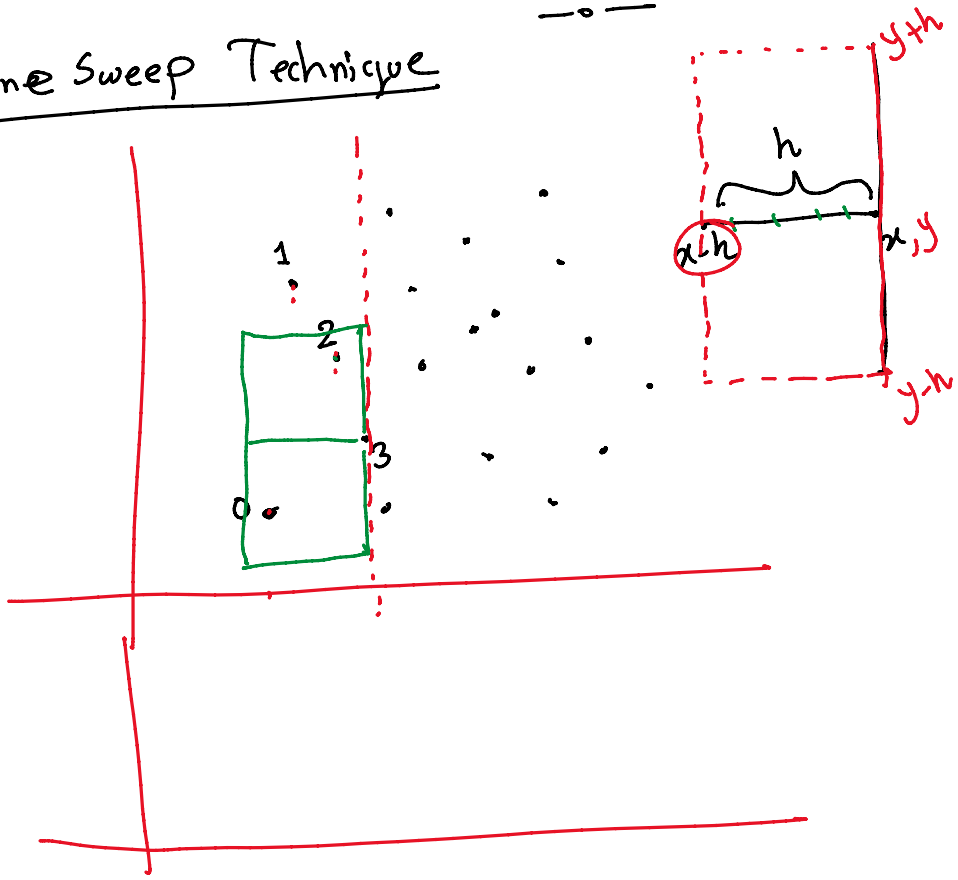
len

$L + (0 \sim len-1)$

rand() % len

$[L+0$
$\vdots$
$L + len - 1 = R]$

Line Sweep Technique



min_dist = 3

set ← {0, 1, 2}

(x, y)

(xN, yN)

T: O(N+M)

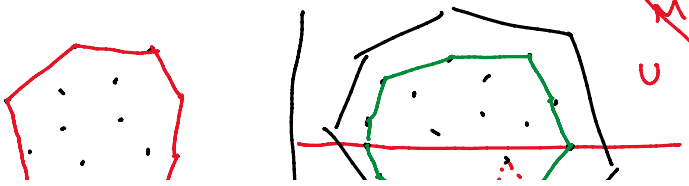
M: O(1)

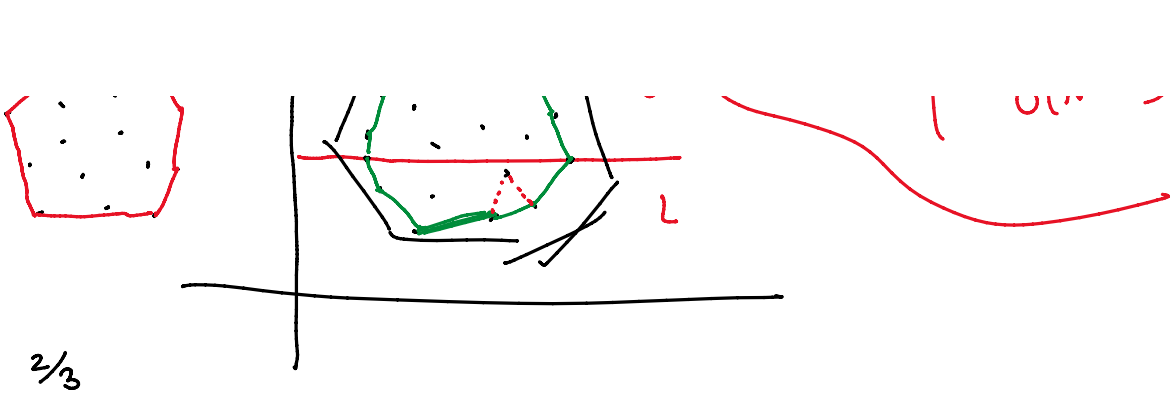
T: O(N+M)
O(N+M)

M: O(N+M)

U

Convex Hull





$$N \longrightarrow N^{2/3}$$