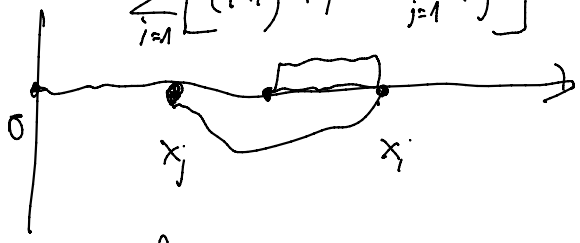
K19 - Zamiatanie

Friday, 18 March 2022 17:24

$$\sum_{i=0}^{n-1} \sum_{j=0}^{i-1} (x_i - x_j) \qquad O(n^2)$$

$$\sum_{i=1}^{n} \left[(i-1)\, x_i - \sum_{j=1}^{i-1} x_j \right] \qquad O(n^2)$$



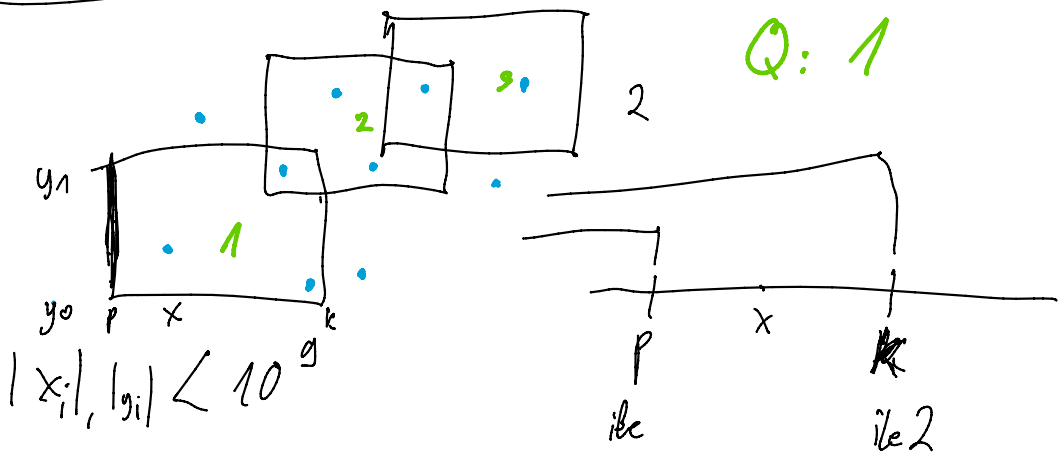
$i-1$ razy

sum = 0

for i = 1 i <= N

res += (i-1) * x[i] - sum; $O(n)$

sum += x[i];



Q: 1

ile2 - ile

U: sum[p.y]++;

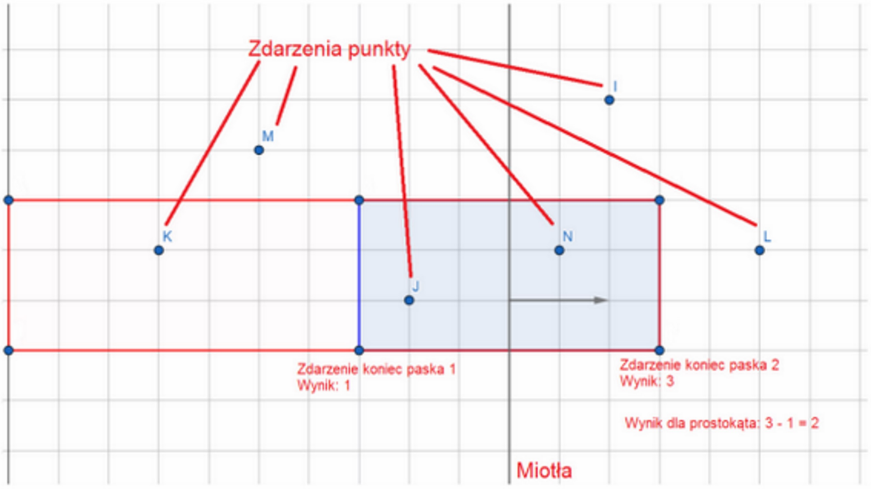
Q: for i = y_0 i <= y_1

res += sum[i];

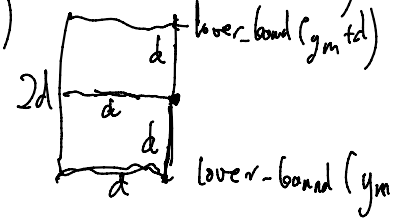
V(x): tab[x]++

Q(a, b): sum(tab[a], tab[b])

$O(n \log n)$



$O(n^2)$

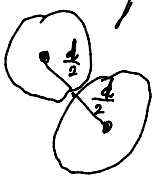


1) usuń z kolejki i setu pkt takie że $x < x_m - d$

2) spr punkty o y między $(y_m - d, y_m + d)$ i zaaktualizuj d jeśli trzeba

3) wrzuć $p(x_m, y_m)$ na kolejkę i set

queue (x, id) set (y, id)

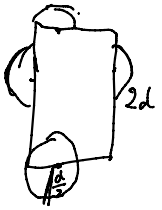


$\frac{\pi d^2}{4} \cdot k < 6d^2$

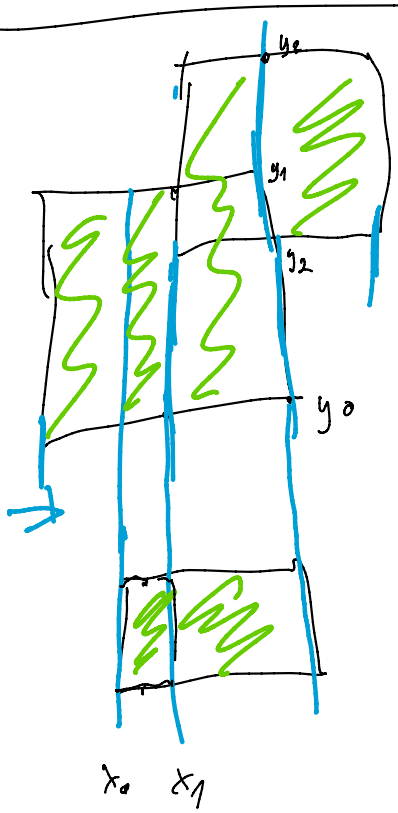
$d^2 \cdot k < \frac{24 d^2}{11}$

$k < \frac{24}{11} < \frac{27}{3} = 8$

$2d \times 3d$



$O(n \log n)$



$(b-a) * sum\ y$

val - ilość prost na danym przedziale bazowym
sum - ile do wyniku

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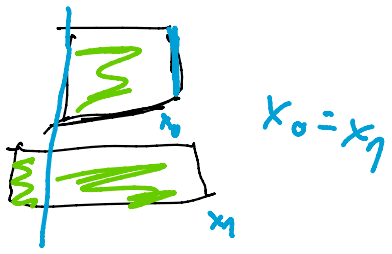
if(val[x] > 0)
    sum[x] = en - beg + 1;
else
    sum[x] = sum[2x] + sum[2x+1];
```

nie trzeba lazy

$(x_1 - x_0) \cdot sum[1]$



$(x_1 - x_0) \cdot d_1 + (x_1 - x_0) \cdot d_2 = (x_1 - x_0)(d_1 + d_2)$