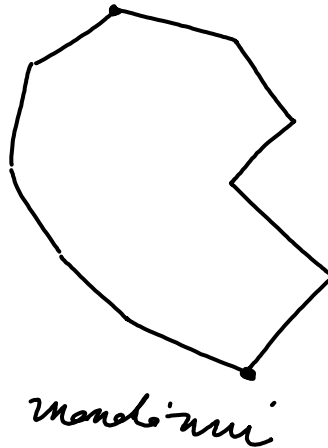
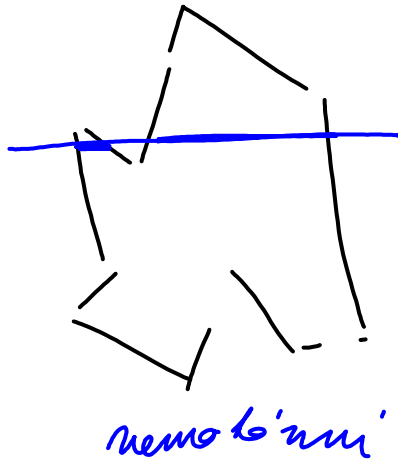


Triangulasi ^① mukaikeluru (n. i keluru)

- Optimalisasi .
- (1) dari mukaikeluru sedelime na mandainni mukaikeluru ($O(n \log n)$)
 - (2) mandainni mukaikeluru lude me triangulasi ($O(n)$)

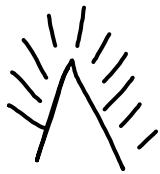


. Inddy mukaikeluru ha jua
ni siji kypni

- 1) start
- 2) end
- 3) rekursi
- 4) split
- 5) merge

(2)

Muchaiheluit p. munda'uni, yodli-ia nema' mcholy kypu split a merge



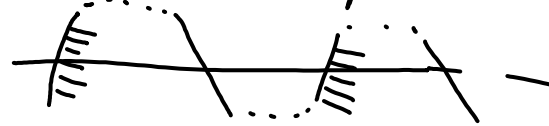
split mchol



merge mchol

Moloda sadilemi na mon. muchaiheluit - samolaci pishaba
fronta ude'lochi ... ade iras mcholy muchaiheluita

stom (linai'mi, yv'ie'ij) micuji p'iachi stam muchaiheluita,
kevo maji muchaiheluita yv'ie'ij a p'ok'iaji ram pishaba



(3)

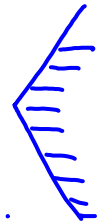
Mudkēhēdrii pēpāim pēman dējite rēvīdēte rēvanu, a nēkē pōkypnē
 upāilime dējite rēvīdēte rēvanu pō rēdēlūi mudkēhēdrii
 nā mōu cāiše.

Rimovij algoritmas.

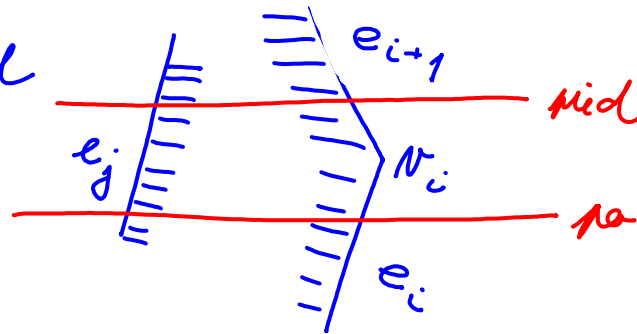
Mimule dāk udeh
~~uade udeh~~



a regulāri udeh



Pārij' eq. udeh

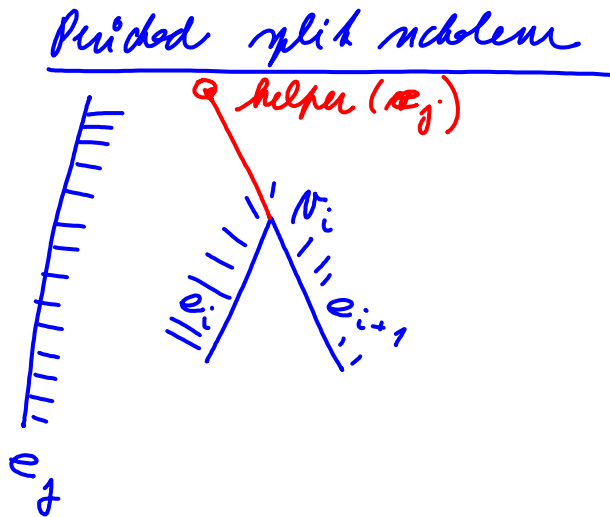


(1) jādliše helper(e_j) jē
 typru merge, upāilime
 o m m n_i

(2) n_i → helper(e_j)

(4)

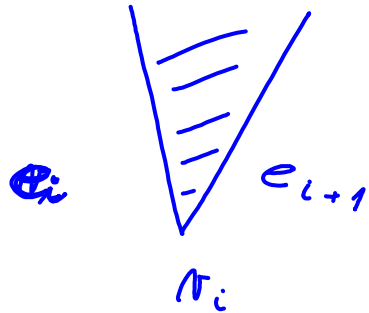
Pomocník (helper) strany e_j = node najbliže na samelasi pismku, kedy
 lze konzultovať s inými stranami v
 oblasti s danou stranou e_j



- | | |
|---|------------------|
| (1) vyime v_i s helper (e_j) | pliny c
maxim |
| (2) $v_i \rightarrow$ helper (e_j) | konk |
| (3) e_{i+1} dame do stonu T a ten vyaii | $O(\log n)$ |
| (4) $v_i \rightarrow$ helper (e_{j+1}) | konk |

⑤

Príklad sítu mchalem



(1) jekliže helper(e_i) je typu merge,
 spojíme n_i a helper(e_i)

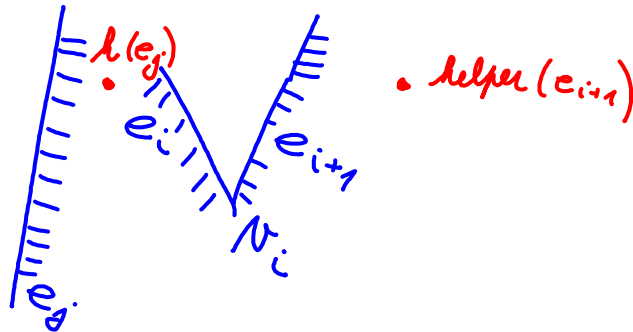
Čas

komp

(2) e_i spojíme a T a ten spojíme

Oldoz

Príklad merge mchalem



1) jekliže helper(e_j) je typu merge,
 spojíme n_i a helper(e_j)

2) jekliže helper(e_{i+1}) je typu merge,
 spojíme n_i a helper(e_{i+1})

⑥

(3) $r_i \rightarrow \text{helper}(e_j)$ (4) e_{i+1} uzjumsene τ a ten rypaiime $O(\log n)$

Tuveni. Algoritms sadala dary mndakiteluik na mndakini car
 Cas kraiini algoritmu π ($O(n \log n)$)

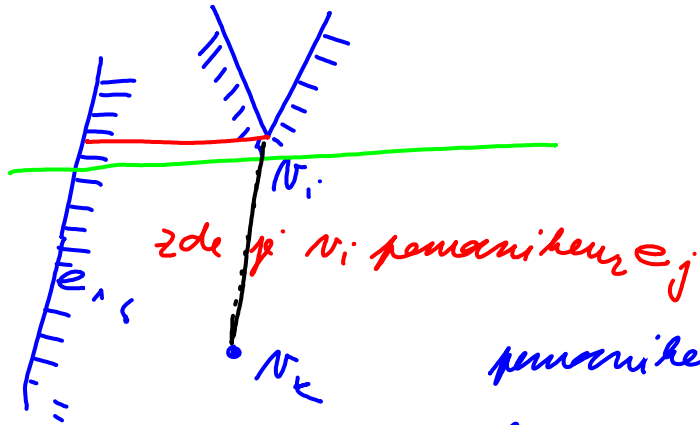
Du'kas: n vechdu stomaime da pienty (Q v car $O(n \log n)$)
 Pochaiime n mchdy, v kaidem du'raime max cas rida $\log n$.

K du'kam 1. Carhi mnaime ub'rat, i ostkaimie vichy split a merge
 mchdy a ie diagonaly, hku' kida'raime se nepidinaji.

(7)

Split uctdy odstavime, neboli z kaidiko vedeme diagonálu smirem nahoru

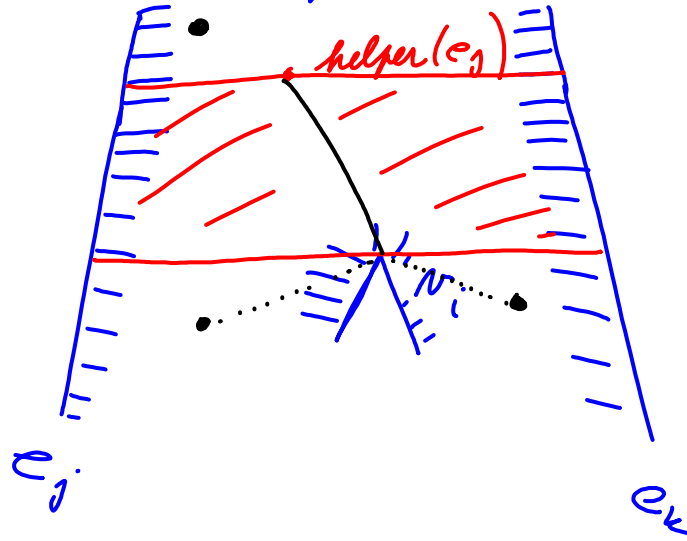
Merge uctdy odstavime, neboli se stane pomocnikem nepříš strany



pomocnikem se po mitekém čase mění, a v_i na v_k
 V tom okamžiku podle algoritmu spojíme v_k s v_i
 a tím odstavíme merge uctdy.

(8)

Prudane diagonalu re nepudinaji: diukas π pdicta dilal pro kaidij tyg ma
 arlatit. Udelaime pro nplit nichol



∇ caveni ablasti π pidimeu diag
 naitou n_i helper(e_j)

9

Triangulasi monotonika muka-kelirika

- get poadime metodeu samelari pui'uhg

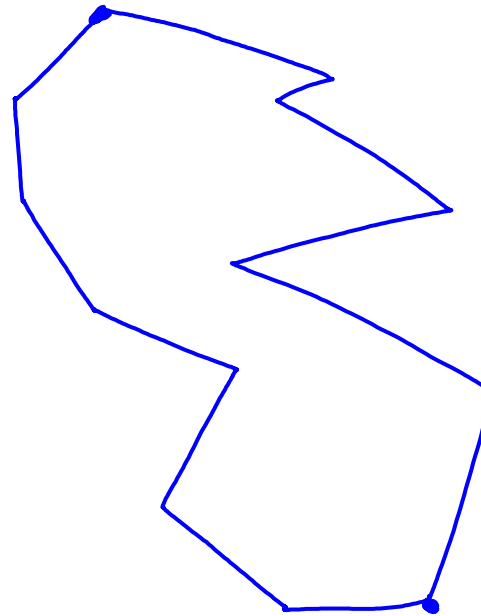
Men muka-kelirika

Stylisimi

fronty n lombo pui'padē

lora ~~man~~ $O(n)$

lora' coda

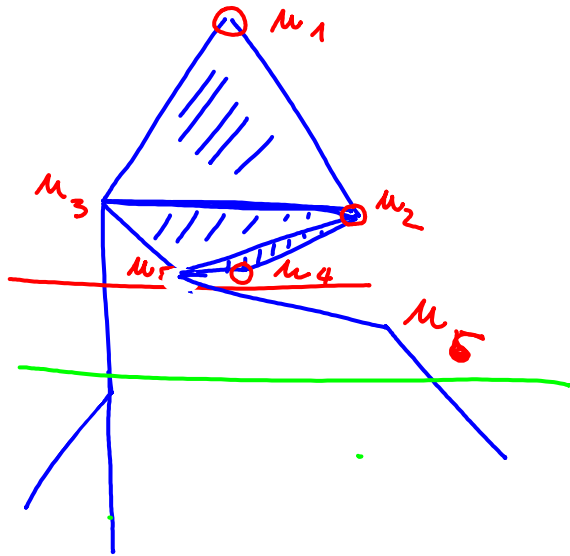


lora' coda

(10)

Mida shomon hude dala' shullurau sa'rbnik (stack)

STACK : mchdy nad samdaci' p'rimkau pes lich kelere' lyfy odizana
pi' liangplaci



$$\begin{pmatrix} M_5 \\ M_3 \end{pmatrix}$$

$$\begin{pmatrix} M_6 \\ M_5 \\ M_4 \end{pmatrix}$$

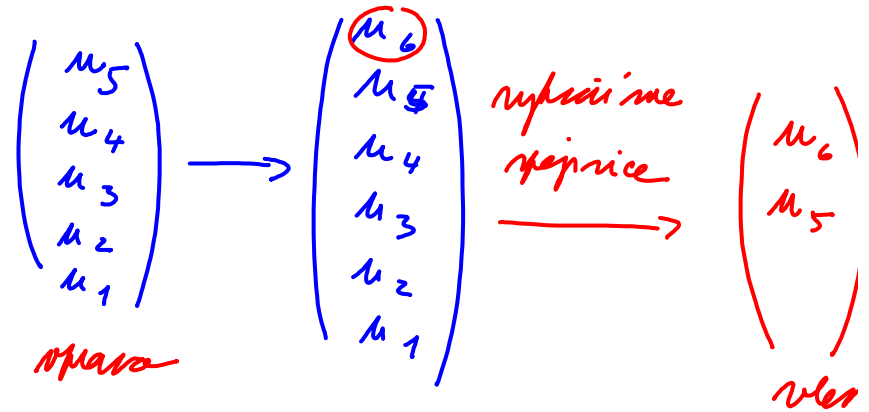
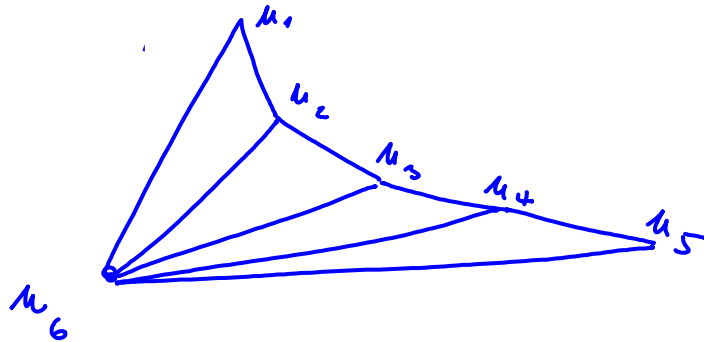
Stacknost sa'rbniku - mchdy mchdy hudi vlene'
nebo n' p'ane' ceste.

(11)

Postup algoritmu. (Zasobník je tvořen ušlechťovacími))

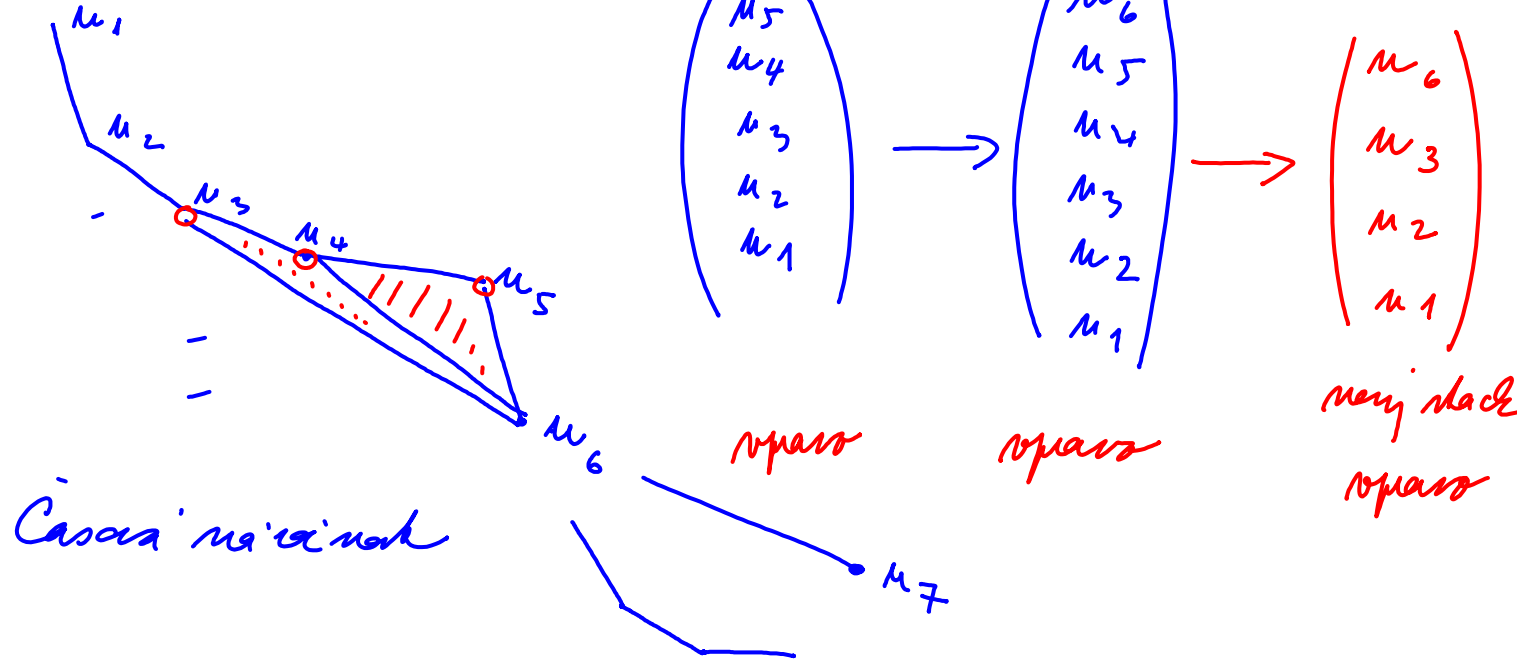
Do zásobníku přidáme první ušlechťovací a fronty:

(1) karta ušlechťovací a vstava

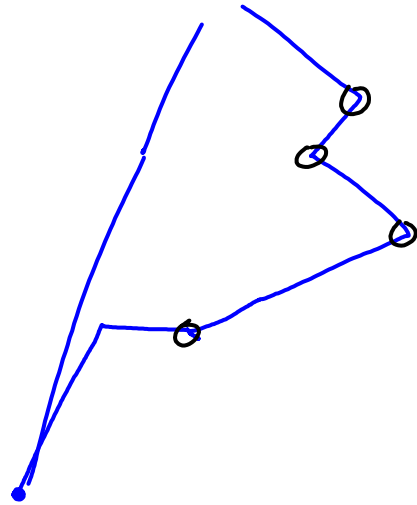


12

(2) may need finite time repair



(13)



Metre nprtaic k poure $n(1)$.

Casova nainat:

Kaidy udal do nainatku
 jidnou dainame a jidnou nprtaicim
 Oboji lra hant cas, poto
 Casova nainat algoritmu je
 $O(n)$.

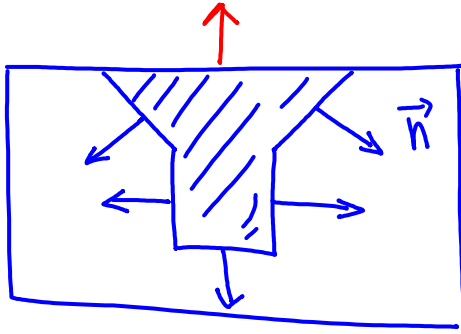
Ukuceni:

Podobni mjet lra nprtaicim n body to nainat

(14)

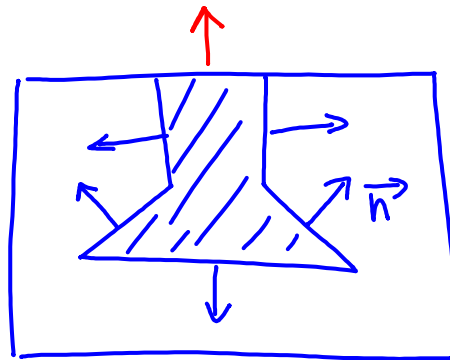
Prümitiv planin a uilka lin. programirami
n uimē

Mokuse se dēstārnj:



bez valihis farnj

stakim rucim $\langle \vec{d}, \vec{n} \rangle \leq 0 \quad \forall \vec{n}$
 $\Leftrightarrow \angle(\vec{n}, \vec{d}) \geq 90^\circ$



farnu p. lita valik

Odlikek lalime
ne nuim vektoru

\vec{n}_i namilej uilka
negate dērnj

$\exists \vec{n} \langle \vec{d}, \vec{n} \rangle > 0$

uikel meir \vec{d} a \vec{n} xi meir
meir 90° .

(15)

Skalarni proizvod $\vec{x} = (x_1, x_2, x_3)$, $\vec{y} = (y_1, y_2, y_3)$

$$\langle \vec{x}, \vec{y} \rangle = x_1 y_1 + x_2 y_2 + x_3 y_3$$

Idelitet = množenje, pi micanje namaluy

$$\vec{n}_1$$

$$\vec{n}_2$$

$$\dots$$

$$\vec{n}_k$$

Ekstremni \vec{d} kaloni, ie $\langle \vec{d}, \vec{n}_i \rangle \leq 0$
 po mechna i

$$\langle \vec{d}, \vec{n}_1 \rangle \leq 0$$

$$\langle \vec{d}, \vec{n}_2 \rangle \leq 0$$

$$\vdots$$

(16)

Pieņņēsim, ņē $\vec{d} = (d_x, d_y, 1)$

Skalarā :

$$d_x n_{1x} + d_y n_{1y} + n_{1z} \leq 0 \leftarrow \begin{array}{l} \text{Maksimāli ņē ņē,} \\ \text{ņē minimāli} \end{array}$$

$$d_x n_{2x} + d_y n_{2y} + n_{2z} \leq 0 \leftarrow \text{minimāli}$$

.....

(d_x, d_y) ņē bod ņē minimāli minimāli

==