

Lista 3 - AED 2 -

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1- ShellSort:

$h=3$: $\overset{0}{2}, \overset{1}{2}, \overset{2}{35}, \overset{3}{2}, \overset{4}{1}, \overset{5}{13}, \overset{6}{7}$.

$\overset{1}{1}, \overset{2}{35}, \overset{3}{2}, \overset{4}{22}, \overset{5}{13}, \overset{6}{7}$

$\overset{0}{1}, \overset{1}{13}, \overset{2}{2}, \overset{3}{22}, \overset{4}{35}, \overset{5}{7}$

$h=2$: $\overset{0}{1}, \overset{1}{13}, \overset{2}{2}, \overset{3}{22}, \overset{4}{35}, \overset{5}{7}$.

$\overset{0}{1}, \overset{1}{13}, \overset{2}{2}, \overset{3}{22}, \overset{4}{35}, \overset{5}{7}$

$\overset{0}{1}, \overset{1}{13}, \overset{2}{2}, \overset{3}{22}, \overset{4}{35}, \overset{5}{7}$

$\overset{0}{1}, \overset{1}{13}, \overset{2}{2}, \overset{3}{22}, \overset{4}{35}, \overset{5}{7}$

$h=1$: $\overset{0}{1}, \overset{1}{7}, \overset{2}{2}, \overset{3}{13}, \overset{4}{35}, \overset{5}{22}$

$\overset{0}{1}, \overset{1}{7}, \overset{2}{2}, \overset{3}{13}, \overset{4}{35}, \overset{5}{22}$

$\overset{0}{1}, \overset{1}{2}, \overset{2}{7}, \overset{3}{13}, \overset{4}{35}, \overset{5}{22}$

$\overset{0}{1}, \overset{1}{2}, \overset{2}{7}, \overset{3}{13}, \overset{4}{35}, \overset{5}{22}$

$\overset{0}{1}, \overset{1}{2}, \overset{2}{7}, \overset{3}{13}, \overset{4}{35}, \overset{5}{22}$

$i=3$

22 com 1, troca!

$i=4$

35 com 13, troca!

$i=5$

2 com 7.

$i=2$

1 com 2.

$i=3$

13 com 22.

$i=4$

1 com 2

2 com 35

$i=5$

22 com 7, troca!

7 com 13, troca!

$i=1$

1 com 7.

$i=2$

7 com 2, troca!

$i=3$

7 com 13

$i=4$

13 com 35

$i=5$

35 com 22, troca!

Ordenado: 1, 2, 7, 13, 22, 35

→ Quicksort: ^{esq} 22, 35, 2, 1, 13, ^{dir} 7

Particiona:

(V, 0, 5)

^{esq} 22, 35, 2, 1, 13, ^{dir} 7

^{esq} 22, 7, 2, 1, 13, ^{dir} 35

^{esq} 22, 7, 2, 1, 13, ^{dir} 35

^{esq} 22, 7, 2, 1, 13, ^{dir} 35

^{esq} 22, 7, 2, 1, 13, ^{dir} 35

^{esq} 22, 7, 2, 1, 13, ^{dir} 35

^{esq} 22, 7, 2, 1, 13, ^{dir} 35

^{esq} 22, 7, 2, 1, 13, ^{dir} 35

^{esq} 13, 7, 2, 1, 22, ^{dir} 35

Particiona
(V, 0, 3)

13, 7, 2, 1 | 22 | 35

Analisaremos em!

$esq \leq pivô, esq++$

$esq > pivô$, comp com dir
 $dir < pivô, esq \leftrightarrow dir$

$esq < dir$, continue o while.

$esq \leq pivô, esq++$

$esq \leq pivô, esq++$

$esq \leq pivô, esq++$

$esq \leq pivô, esq++$

$esq > pivô$, comp com dir
 $dir > pivô, dir--$

$pivô > dir$ e $dir > esq$.
troca dir e $pivô$

dir é o novo $pivô$

Particiona (V, 5, 5)

Particiono
(V, 0, 3)

↑

13, 7, 2, 1

↑

13, 7, 2, 1

↑

13, 7, 2, 1

↑

13, 7, 2, 1

↑

1, 7, 2, 13

↑

$esq \leq pivo, esq++$

$esq \leq pivo, esq++$

$esq \leq pivo, esq++$

$dir < pivo, troco dir \leftrightarrow pivo$
 $dir \text{ é o pivo.}$

1, 7, 2 | 13 | 22 | 35 → Vetor.

Particiono Analisaremos
(V, 0, 2) na particiono.

Particiono:
(V, 0, 2)

↑

1, 7, 2

↑

1, 7, 2

↑

1, 7, 2

↑

1, 7, 2

↑

$esq \leq pivo, esq++$

$esq > pivo, comp dir.$
 $pivo < dir, dir--$

$dir > pivo, dir--$

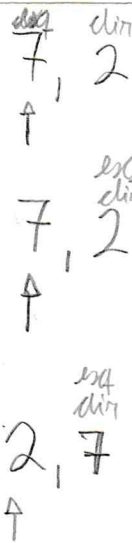
$dir \text{ é o novo pivo.}$

1 | 7, 2 | 13 | 22 | 35 → Vetor

↑

Particiono
(V, 1, 2)

Particionamento:
(V, 1, 2)



$\text{esq} \leq \text{pivo}^1, \text{esq}++$

$\text{esq} \geq \text{final}, \text{comp dir}$

$\text{pivo} > \text{dir}, \text{troca esq} \leftrightarrow \text{dir}$

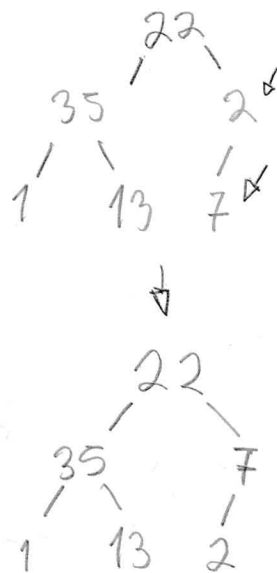
$\text{troca dir} \leftrightarrow \text{pivo}^1$

dir é o novo pivo.

1 | 2 | 7 | 13 | 22 | 35 \rightarrow Vetor ordenado.

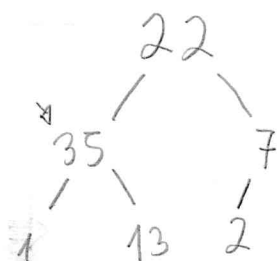
\rightarrow Heap sort: 22, 35, 2, 1, 13, 7.

bioHeap(V, 2, 5):



aux = 2

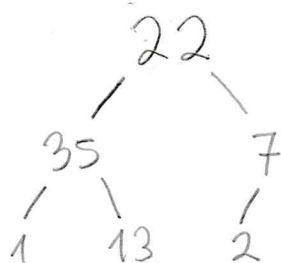
bioHeap(V, 1, 5):



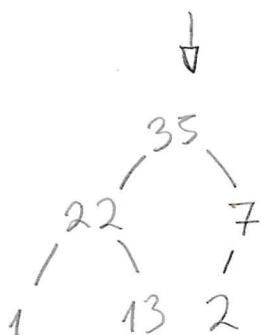
aux: 35

Nenhum filho é maior, análise no bioHeap(V, 0, 5).

bioHeap(V, 0, 5):

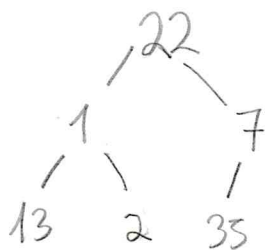


aux = 22.

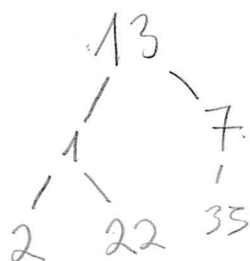


Aplicar no Heap Sort:

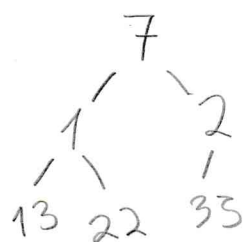
$i-1=4$:



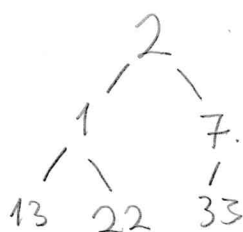
$i-1=3$:



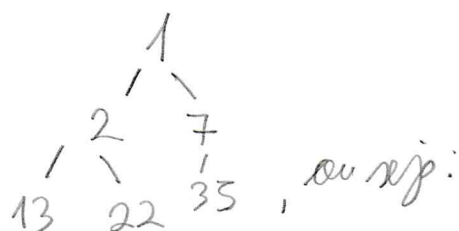
$i-1=2$:



$i-1=1$:



$i-1=0$:



aux = 1.

1, 2, 7, 13, 22, 35 \rightarrow Vetor ordenado.