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Implement delete (H) & decrease key (H) function on binomial heap.

Binomial-Heap-decrease-Key (H, x, k)

if $k > \text{key}[x]$

then error "new key is greater than current key"

$\text{key}[x] \leftarrow k$

$y \leftarrow x$ // y initially points to node x

$z \leftarrow p[y]$

while $z \neq \text{NULL}$ & $\text{key}[y] < \text{key}[z]$

do exchange $\text{key}[y] \leftrightarrow \text{key}[z]$

If y and z have satellite fields exchange them too.

$y \leftarrow z$

$z \leftarrow p[y]$

after ensuring that new key isn't greater than current key, assign new key to x.

Binomial-Heap-delete (H, x)

{
Binomial-Heap-decrease-Key (H, x, $-\infty$)
Binomial-Heap-Extract-Min (H)
}

Here make the node x as minimum key node by assigning key value as $-\infty$. This is then removed by calling Extract min function.

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