

ADS Lab Binomial Heap

init (H, k) :-

$H' \leftarrow \text{MAKE-BINOMIAL-HEAP}()$

$P[x] \leftarrow \text{NIL}$

$\text{child}[x] \leftarrow \text{NIL}$

$\text{sibling}[x] \leftarrow \text{NIL}$

$\text{degree}[x] \leftarrow 0$

$\text{head}[H'] \leftarrow x$

$H \leftarrow \text{BINOMIAL-HEAP-UNION}(H, H')$

getMin (H)

* $\text{iterator} = H.\text{begin}()$

* $\text{temp} = * \text{iterator}$

while ($\text{iterator} \neq \text{heap-end}()$) {
 if ($\text{iterator} \rightarrow \text{data} < \text{temp} \rightarrow \text{data}$)

$\text{temp} = * \text{iterator}$

$\text{iterator}++$;

}

return temp;

extractMin (H)

$H' \leftarrow \text{MAKE-BINOMIAL-HEAP}$

$\text{it} = \text{head}.\text{begin}()$

while ($\text{it} \neq \text{head}.\text{end}()$)

 if ($* \text{it} \neq \text{temp}$)

$H' \leftarrow \text{push-back}(* \text{it})$

$\text{it}++$;

}

$\text{lo} = \text{Remove Min and Return BHeap Item}$

$\text{new-heap} = \text{union}(H', \text{lo})$

$\text{new-heap} = \text{adjust}(H')$

return H'