

CMPS 101:

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- Djikrita Algorithm

$n=|V|$, $m=|e|$

Assume Q is a heap implemental min-Priority Queue.

Line3: (Build Heap) $\Theta(n)$

Line \perp (initialize): $\Theta(n)$

Line 5 (heapify): $\Theta(\log n)$

 All executions: $\Theta(n \log n)$

Line 8 (DecreaseKey): $\Theta(\log n)$

 all executions: $\Theta(m \log n)$

TOTAL COSTS: $\Theta((n+m) \log n)$