

(int[], int[]) CamminiMinimi(GRAPH G , NODE s)

(1) PRIORITYQUEUE $S \leftarrow$ PriorityQueue // $\mathcal{O}(n) \cdot 1$
 $S.\text{inserisci}(s, 0)$

(2) while not $S.\text{isEmpty}$ do // $\mathcal{O}(n)$

 // $\mathcal{O}(n)$ vettore ordinato / $\mathcal{O}(\log n)$ heap binario

 int $u \leftarrow S.\text{deleteMin}$

$b[u] \leftarrow \text{falso}$

 foreach $v \in G.\text{adj}(u)$ do

 if $d[u] + G.w(u,v) < d[v]$ then

 if not $b[v]$ then

 // $\mathcal{O}(1) \cdot n$ vettore ordinato / $\mathcal{O}(\log n) \cdot n$ heap binario

$S.\text{inserisci}(v, d[u] + G.w(u,v))$

$b[v] \leftarrow \text{vero}$

 else

 // $\mathcal{O}(1) \cdot m$ vettore ordinato / $\mathcal{O}(\log n) \cdot m$ heap binario

$S.\text{decrease}(v, d[u] + G.w(u,v))$

$T[v] \leftarrow u$

$d[v] \leftarrow d[u] + G.w(u,v)$

return (T, d)