$p^0 \leftarrow \{p_v^0\}$ *for* $v \in$ *nodes in* G

$$p_v^0 = \begin{cases} \frac{1}{N}, & \text{if} v \in Q \\ 0, & \text{otherwise} \end{cases}$$

$W \leftarrow$ *Column normalized Adjacency Matrix of* G
while $|p^{t+1} - p^t| \leq$ *threshold* ***and*** *iter* $\leq$ *iter_cutoff*
do
$\quad p^{t+1} = (1-r)Wp^t + rp^0$
end
$p^{final} = p^{t+1}$