Input : Graph: $G(\mathcal{V}, \mathcal{E})$, α, Maximum number of iteration: $MaxIter$, Tolerence: ϵ
Output : Vector: $\mathbf{PR}\,[1..|\mathcal{V}|]$
Definition: $\mathcal{N}_u^-$: in-neighbourhood of node u, $\mathcal{N}_u^+$: out-neighbourhood of node u

`// add extra edge for all dangling nodes`
for $v \in \mathcal{V}$ **do**
  if $|\mathcal{N}_v^+| = 0$ **then**
    for $u \in \mathcal{V}$ **do**
      $\mathcal{E} \leftarrow append\_edge(v, u)$
    end
  end
end
`// initialize` **PRold**
$\mathbf{PRold}\,[1 \ldots |\mathcal{V}|] \leftarrow 1/|\mathcal{V}|$
`// power iteration`
for $i \in [0 \ldots MaxIter - 1]$ **do**
  for $v \in \mathcal{V}$ **do**
    $\mathbf{PR}\,[v] \leftarrow \frac{1-\alpha}{|\mathcal{V}|} + \alpha \sum_{e \in \mathcal{N}_v^-} \frac{\mathbf{PRold}[e]}{|\mathcal{N}_e^+|}$
  end
  if $\epsilon > |\mathcal{V}| \times \|\mathbf{PR} - \mathbf{PRold}\|_{L1}$ **then**
    return PR
  end
  $\mathbf{PRold} \leftarrow \mathbf{PR}$
end