SUCCESSIVE SHORTEST PATH ALGORITHM

Input:	A digraph G, capacities $u : E(G) \rightarrow \mathbb{R}_+$, numbers $b : V(G) \rightarrow \mathbb{R}$ with $\sum_{v \in V(G)} b(v) = 0$, and conservative weights $c : E(G) \rightarrow \mathbb{R}$.
Output:	A minimum cost b-flow f.

①   Set $b' := b$ and $f(e) := 0$ for all $e \in E(G)$.

②   **If** $b' = 0$ **then stop**, **else:**
      Choose a vertex s with $b'(s) > 0$.
      Choose a vertex t with $b'(t) < 0$ such that t is reachable from s in G_f.
      If there is no such t **then stop**. (There exists no b-flow.)

③   Find an s-t-path P in G_f of minimum weight.

④   Compute $\gamma := \min \left\{ \min_{e \in E(P)} u_f(e), b'(s), -b'(t) \right\}$.
      Set $b'(s) := b'(s) - \gamma$ and $b'(t) := b'(t) + \gamma$. Augment f along P by γ.
      Go to ②.