11th Handout

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Algorithm 1: Algorithm of Edmonds and Karp

EDMONDS-KARP-MAXFLOW(G, u, s, t)

Input : A simple directed graph $G = (V, R)$, a non-negative
capacity function $u \colon R \to \mathbb{R}$, two nodes $s, t \in V$.
Output: A maximum (s, t)-flow f.

1   Set $f(r) := 0$ for all $r \in R$
2   **while** *there exists a path from s to t in G_f* **do**
3   Choose such a shortest path P
4   Set $\Delta := \min\{u_f(\sigma r) \colon \sigma r \in P\}$ // residual capacity of path P
5   Augment f along P by Δ units
6   Update G_f