

Esercizio 46

~~$$f(1,2) \leq 0, f(1,3) \leq 0, f(4) \leq 0, f(5) \leq 0, f(t) \leq 0$$~~

~~$$G = (V, E)$$~~

~~$$f(1,2) = 0, f(1,3) \leq 0, f(2,3), f(2,5), f(2,4), f(3,4), f(4,t), f(5,t)$$~~

~~$$G_f = (V, E_f) \quad E_f = \{ e_f(1,2) = 15, e_f(1,3) = 12, e_f(2,3) = 5, e_f(2,4) = 10, e_f(2,5) = 10, e_f(3,5) = 10, e_f(5,4) = 15, e_f(4,t) = 14, e_f(5,t) = 16 \}$$~~

~~$$b = 5$$~~

~~$$e_f(1,2) = 15, e_f(1,3) = 12, e_f(2,3) = 5, e_f(2,4) = 10, e_f(2,5) = 10, e_f(3,5) = 10, e_f(5,4) = 15, e_f(4,t) = 14, e_f(5,t) = 16$$~~

~~$$e_f(1,2) = 15, e_f(1,3) = 12, e_f(2,3) = 5, e_f(2,4) = 10, e_f(2,5) = 10, e_f(3,5) = 10, e_f(5,4) = 15, e_f(4,t) = 14, e_f(5,t) = 16$$~~

~~$$f(1,2) = 5, f(1,3) \leq 5, f(2,3) \leq 5, f(2,5) \leq 5, f(2,4) \leq 5, f(3,4) \leq 5,$$~~

~~$$f(4,t) \leq 5, f(5,t) \leq 5$$~~

~~$$E_f = \{ e_f(1,2) = 10, e_f(1,3) = 7, e_f(2,3) = 0, e_f(2,4) = 5, e_f(2,5) = 1, e_f(3,5) = 5, e_f(5,4) = 10, e_f(4,t) = 3, e_f(5,t) = 11 \}$$~~

Esercizio 42

Dato un grafo $G=(V,E)$, possiamo definire un flusso f come una funzione definita $f: E \rightarrow \mathbb{R}_+$ dove gli elementi di E , non sono altro che gli archi, e per $f(e)$ i flussi presenti su quegli archi $f(e) \geq 0$.

Un flusso deve soddisfare due condizioni:

$$\sum_{e: (u,v) \text{ entrante}} f(e) - \sum_{e: (v,x) \text{ uscente}} f(e) = 0$$

$$\forall e \in E \quad 0 \leq f(e) \leq c(e)$$

dove $c(e)$ è la capacità su quell'arco.

Dalle affermazioni

$$\sum_{v \in V} f(u,v) = 0$$

segue

$$\sum_{e: (u,v) \text{ entrante in } v} f(e) - \sum_{e: (v,x) \text{ uscente da } v} f(e) = 0$$