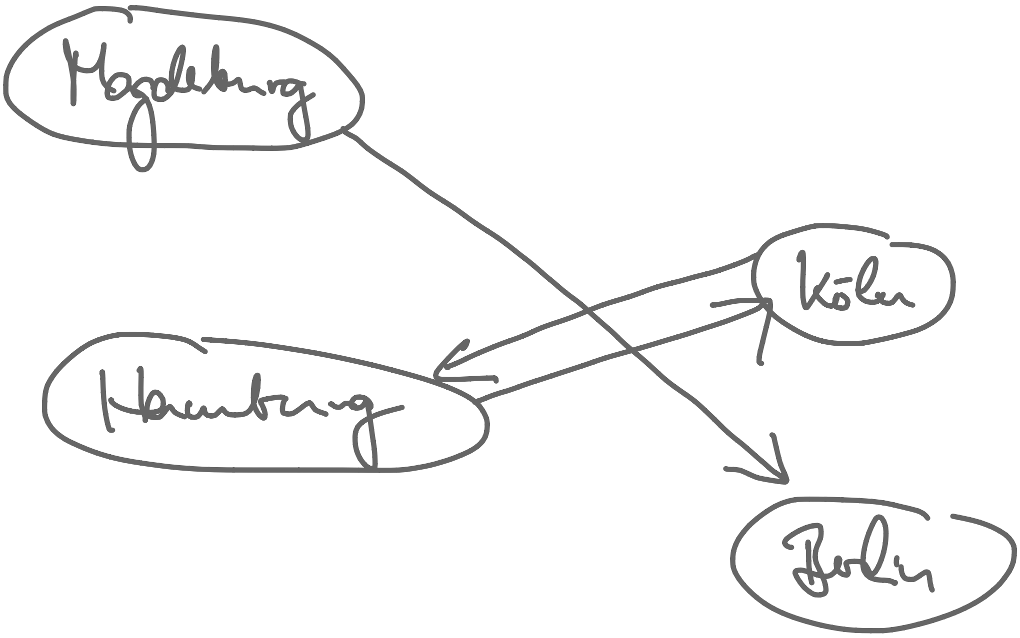
CAO 10.10.17

[1] Example (1):

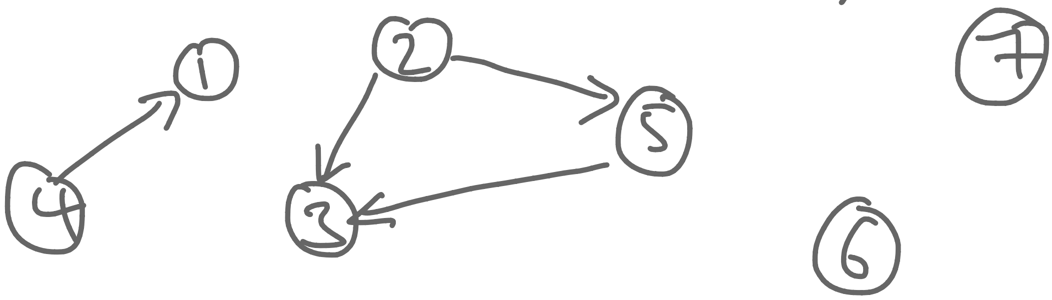
$$V = \{\text{Berlin}, \text{Hamburg}, \text{Köln}, \text{Magdeburg}\}$$

$$A = \{(\text{Hamburg}, \text{Köln}), (\text{Köln}, \text{Hamburg}), (\text{Magdeburg}, \text{Berlin})\}$$



Example (2): $V = \{1, 2, \dots, 7\} =: [7]$

$$A = \{(4,1), (2,3), (2,5), (5,3)\}$$

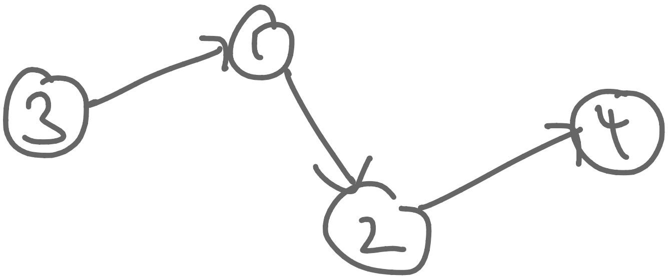


$(\ldots, \ldots, \ldots)$: order matters

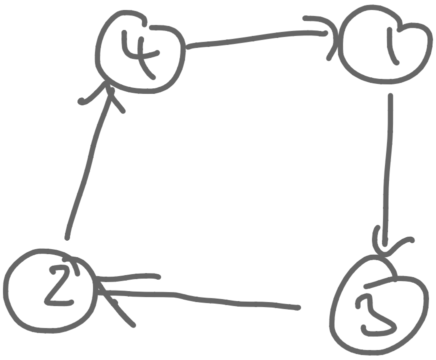
$\{ \ldots, \ldots, \ldots \}$: order does <u>NOT</u> matter

[2] <u>Examples:</u>

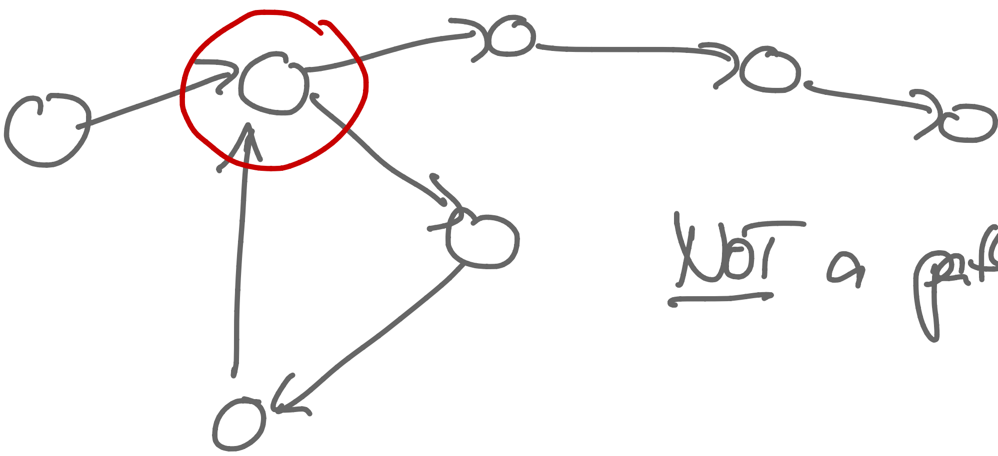
$V = \{1, 2, 3, 4\}$



3-4-path

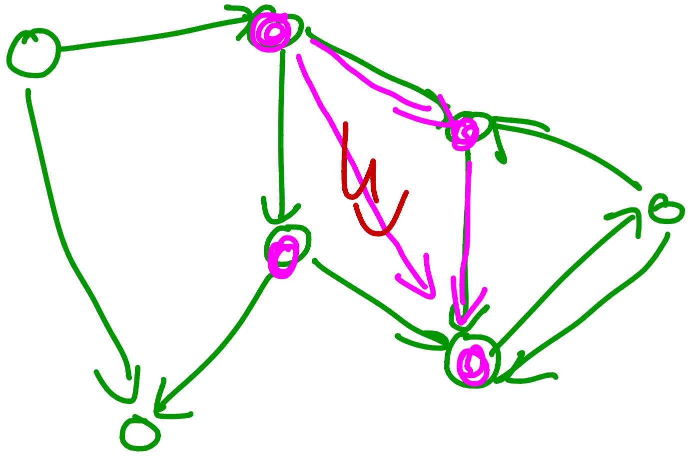


cycle



<u>NOT</u> a path

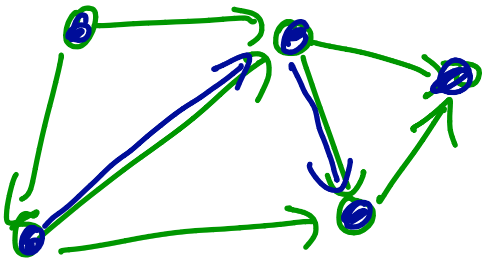
[3]



D' D

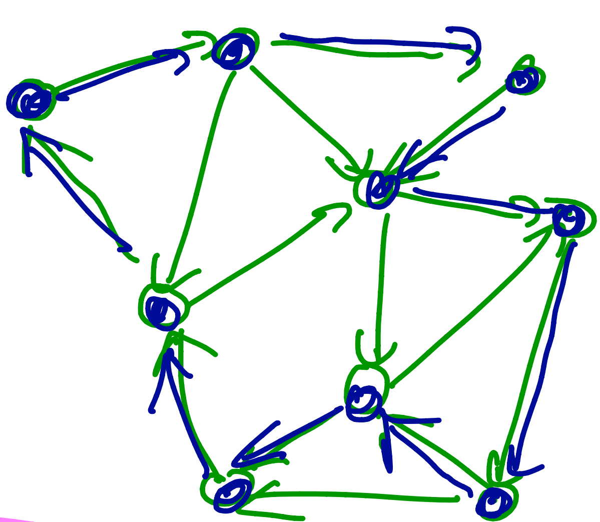
↑

subdigraph,
NOT spanning
NOT induced

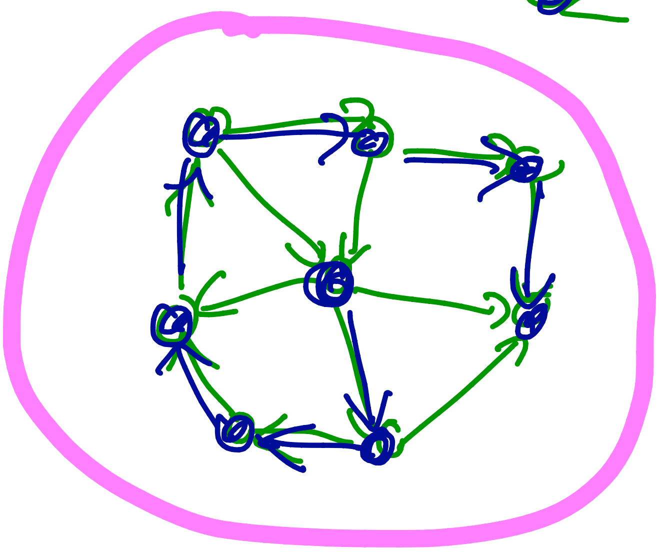


spanning subdigraph

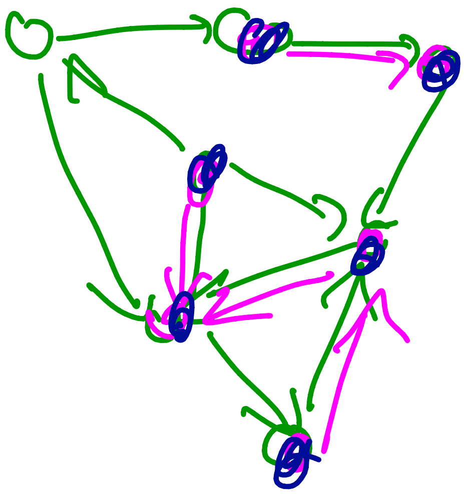
[4]



spanning cycle (= Hamiltonian cycle) in D



spanning subdipath (= Hamiltonian path) in D



subset of arcs

$\mathcal{F}$ $\quad V(\mathcal{F})$

$\rightsquigarrow$

$(V(\mathcal{F}), \mathcal{F})$ subdigraph

[5] $A = \{b, g, e, h, c\}$

$v \in \mathbb{R}^A : \quad v_e = 7$

$v_h = 3$

$v_c = -1$

$v_b = \pi$

$v_g = 0$

$$\boxed{B = \{g, b, c\}}$$

$$v(B) = 0 + \pi + (-1) = \pi - 1$$