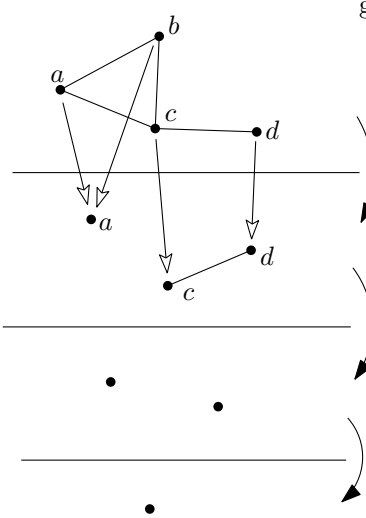


graph

$e_{ab1} = T \quad r_{ab1} = F$

$e_{ac1} = T \quad r_{ac1} = F$

$e_{ad1} = F \quad r_{ad1} = F$

$\vdots \quad \vdots$

red degree

$\forall a, i : \mathrm{count}_b(r_{abi}) \leq k$

count

	$\emptyset$	a^T	b	c^T	d^T	e
0	T					
1		T	T			
2				T		
$\vdots$		x	z		T	T
k		X				
		Y	Z			

$z \Rightarrow (X \Rightarrow Z) \wedge \neg z \Rightarrow (Y \Rightarrow Z)$

$\leq k \rightarrow (e_0 \vee e_1 \vee \ldots \vee e_k)$

merging

$\forall x, i : \neg m_{xi} \vee \neg d_{xi}$

ba	$m_{a1}\, d_{a1}$	$m_{b1}\, d_{b1}$	m_{c1}	$\ldots$	d_{n1}
db	m_{a2}				$d_{(n-1)1}$
dc	m_{a3}			$d_{(n-2)1}$	
	$\vdots$			$\vdots$	

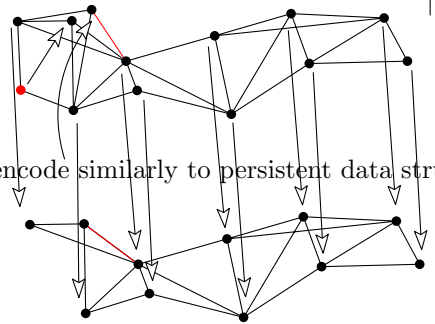
time

$\forall x, y : \{x, y\} \cap \{a, b\} = \emptyset : e_{xyi} \Leftrightarrow e_{x'y'(i+1)}$
$\wedge\, r_{xyi} \Leftrightarrow r_{x'y'(i+1)}$

$(m_{ab1} = T) \Rightarrow \forall x : (e_{xai} \neq e_{xbi}) \vee r_{xai} \vee r_{xbi} \Leftrightarrow r_{x'a(i+1)}$

$\forall x : (e_{xai} = e_{xbi}) \wedge \neg r_{xai} \wedge \neg r_{xbi} \Leftrightarrow e_{x'a(i+1)} = e_{xai}$

possible improvement



encode similarly to persistent data structures