28.05.2021

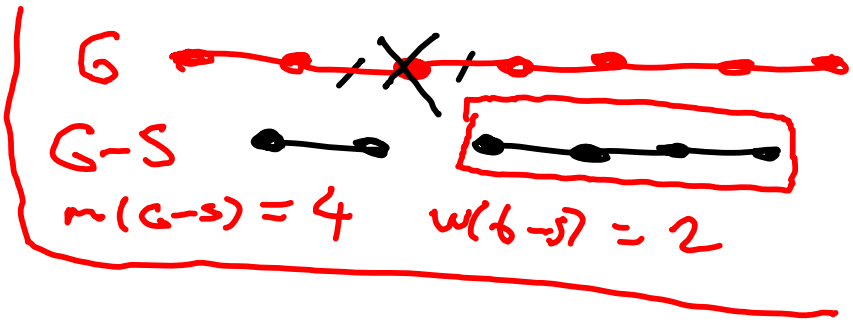
Tanım: Bir G çizgesi için **dayanıklılık (toughness)** değeri; ~~$w(G-S)$~~,

~~$G-S$ çizgesindeki en büyük bileşenin tepe sayısı olmak üzere~~: $w(G-S) > 1$

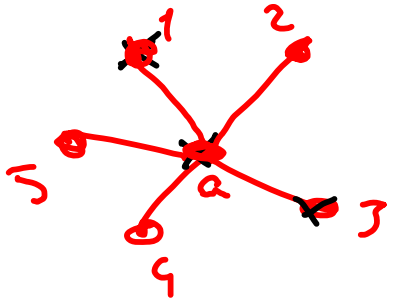
$G-S$ 'nin bileşen sayısı

$$t(G) = \min_{S \subseteq V} \left\{ \frac{|S|}{w(G-S)} \right\}$$

olarak tanımlanır.



Örnek) $t(K_{1,5}) = ?$



Kısımlara ←

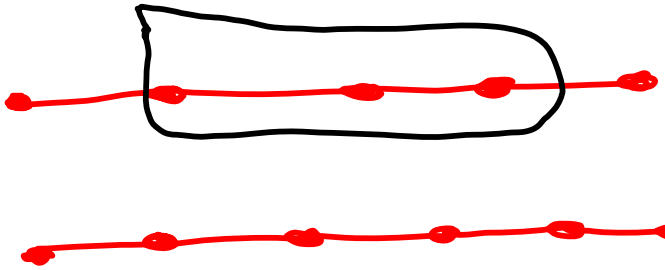
S	|S|	w(G-S)	$\frac{\|S\|}{w(G-S)}$
{a}	1	5	$\frac{1}{5}$
{1}	x	x	x
{1,a}	2	4	$\frac{2}{4} = \frac{1}{2}$
{1,a,3}	3	3	$\frac{3}{3} = 1$

$I(G) = \min\{|S| + w(G-S)\}$ → Geriye kalan grafikteki en büyük bileşenin tepe sayısı

$t(G) = \min\left\{\frac{|S|}{w(G-S)}\right\}$ → Geriye kalan grafikteki

bilgen sayısı

$t(P_N) = ?$?



P_5

P_6

min $S = 2$

$w(G-S) = 3$

$\frac{|S|}{w(G-S)} = \frac{2}{3}$

$\frac{2}{3}$ $\boxed{\frac{1}{2}}$ $\frac{2}{2}$, $\frac{3}{2}$

1 tane $\frac{1}{2}$

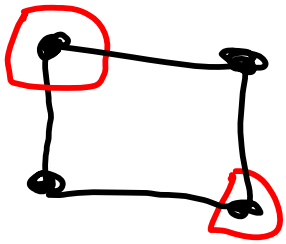
2 tane $\frac{2}{3}$, $\frac{2}{2}$

$\boxed{\frac{1}{2}}$ olur!!

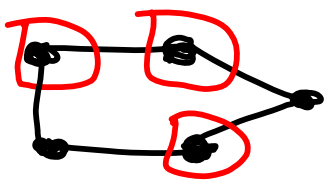
3 tane $\frac{3}{4}$, $\frac{3}{2}$, $\frac{3}{3}$

$t(C_n) = ?$

1

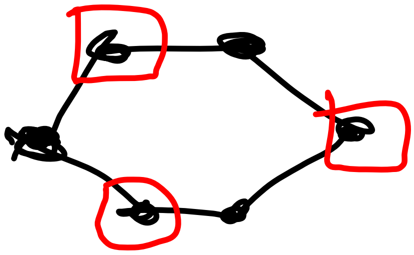


$\frac{2}{2} = 1$



$\frac{2}{2} = 1$

$1 \frac{3}{2}$



$\frac{2}{2} = 1$

$\frac{3}{3} = 1$

$$t(G) = \min_{S \subseteq V(G)} \left\{ \frac{|S|}{w(G-S)} \right\}$$

→ S, kesim küme

graf parçalanacak !!!

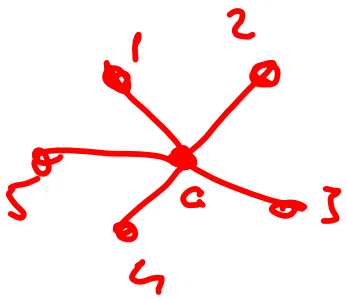
$w(G-S) \Rightarrow$ bileşen sayısı

Tanım: Bir G çizgesi için $S \subseteq V$ ve $w(G\text{-}S)$, $G\text{-}S$ çizgesinin bileşen sayısı olmak üzere, bir çizgenin ***kararlılık (tenacity) değeri*** aşağıdaki biçimde tanımlıdır:

$$T(G) = \min_{S \subseteq V} \left\{ \frac{|S| + w(G-S)}{w(G-S)} \right\}$$

S, kesim kümesi

$T(K_{1,5}) = \frac{2}{5}$



S	$\lvert S \rvert$	$w(G-S)$	$w(G-S)$	$\frac{\lvert S \rvert + w(G-S)}{w(G-S)}$
$\{a\}$	1	1	5	$\frac{2}{5}$
$\{a,1\}$	2	1	4	$\frac{3}{4}$
$\{a,1,3\}$	3	1	3	$\frac{4}{3}$
⋮				

Scattering Number
Rupture degree } Cuma günü (15. hafta Salı günü)