

## Recoveryklassifisering - oppgave

mandag 17. april 2023 12:40

$H_1 : r_1(A); w_1(A); r_2(A); w_2(A); C_2; C_1;$

$H_2 : r_1(A); w_1(A); C_1; r_2(A); w_2(A); C_2;$

$H_3 : r_1(A); w_1(A); r_2(A); w_2(A); C_1; C_2; 1;$

$H_4 : r_2(A); w_2(B); w_1(B); C_2; r_1(A); C_1;$

Ikke gjenopprettbar

Gjenopprettbar: Hver trans. committer etter trans. de har lest fra committer

ACA: En trans. kan kun lese committede verdier.

Strict: En trans kan verken lese eller skrive ikke-committede verdier.

## Recoveryklassifisering - oppgave

mandag 17. april 2023 12:40

$H_1 : r_1(A); w_1(A); r_2(A); w_2(A); C_2; C_1;$   
ikke gi. rettbar

$H_2 : r_1(A); w_1(A); C_1; r_2(A); w_2(A); C_2;$   
strict

$H_3 : r_1(A); w_1(A); r_2(A); w_2(A); C_1; C_2; 1;$   
gi. rettbar

$H_4 : r_2(A); w_2(B); w_1(B); C_2; r_1(A); C_1;$   
ACA

Ikke gjenopprettbar

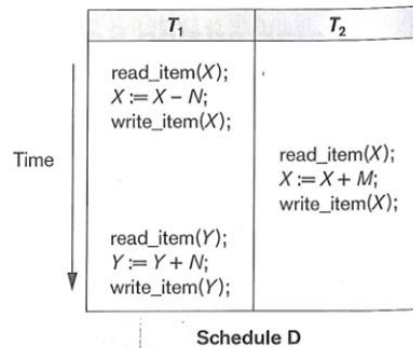
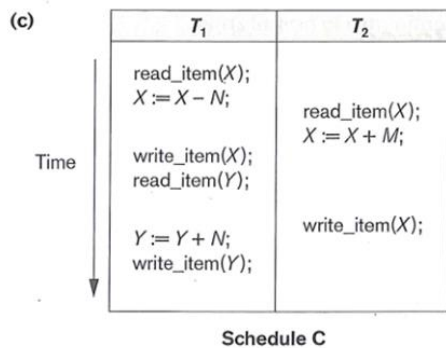
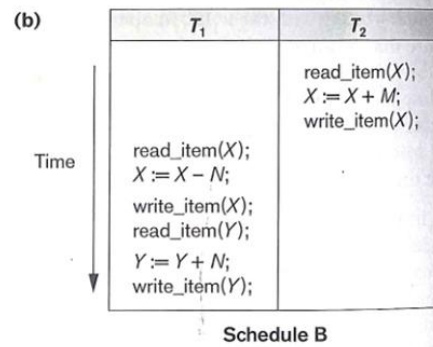
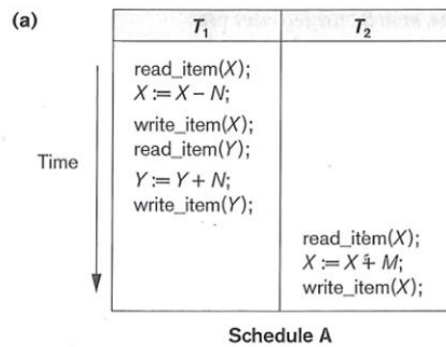
Gjenopprettbar: Hver trans. committer etter trans. de har lest fra committer

ACA: En trans. kan kun lese committede verdier.

Strict: En trans kan verken lese eller skrive ikke-committede verdier.

# Serialiserbarhet - eksempel

17.april 2023



I utgangspunktet er  $X=90$ ,  $Y=90$ . Anta  $N=3$  og  $M=2$ .

Sch A:

Sch B:

Sch C:

Sch D:

## Presedensgraf, eksempel

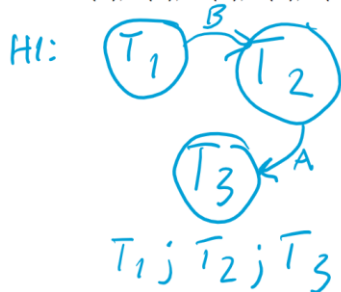
17. april 2023

- $H_1: r_2(A); r_1(B); w_2(A); r_3(A); w_1(B); w_3(A); r_2(B); w_2(B);$
- $H_2: r_2(A); r_1(B); w_2(A); r_2(B); r_3(A); w_1(B); w_3(A); w_2(B);$

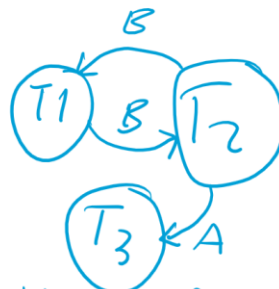
## Presedensgraf, eksempel

17. april 2023

- $H_1: r_2(A); r_1(B); w_2(A); r_3(A); w_1(B); w_3(A); r_2(B); w_2(B);$
- $H_2: r_2(A); r_1(B); w_2(A); r_2(B); r_3(A); w_1(B); w_3(A); w_2(B);$



H2:



## Presedensgraf, oppgave

17.april 2023

a) Gitt de følgende historiene

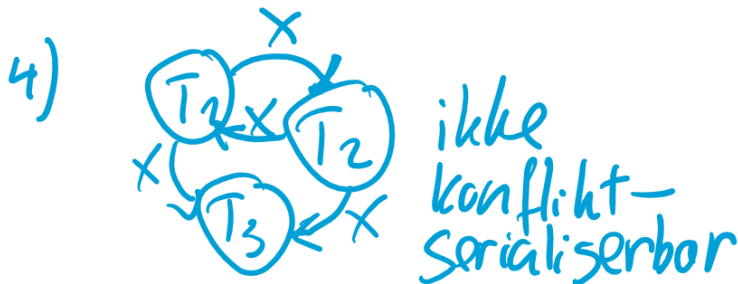
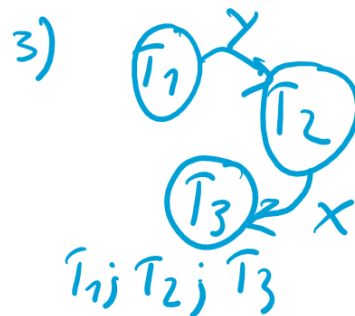
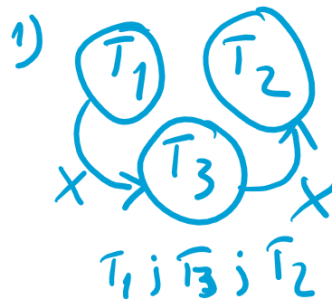
- (1)  $r1(X); r2(Y); w3(X); r2(X); r1(Y)$
- (2)  $r1(X); r1(Y); w1(X); r2(Y); w3(Y); w1(X); r2(Y);$
- (3)  $r2(X); w3(X); w1(Y); r2(Y); w2(Z);$
- (4)  $r1(X); w2(X); w1(X); r3(X);$

## Presedensgraf, oppgave

17.april 2023

a) Gitt de følgende historiene

- (1)  $r1(X); r2(Y); w3(X); r2(X); r1(Y)$
- (2)  $r1(X); r1(Y); w1(X); r2(Y); w3(Y); w1(X); r2(Y);$
- (3)  $r2(X); w3(X); w1(Y); r2(Y); w2(Z);$
- (4)  $r1(X); w2(X); w1(X); r3(X);$



# Låsetting - eksempel

17.april 2023

- $H_1: r_1(A); w_2(A); w_2(B); w_3(B); w_1(B); C_1; C_2; C_3;$
- $H_2: r_1(A); w_2(B); w_2(A); w_3(B); w_1(B); C_1; C_2; C_3;$

Låsetting - eksempel

17.april 2023

Rigorous 2PL

- $H_1: r_1(A); w_2(A); w_2(B); w_3(B); w_1(B); C_1; C_2; C_3;$
- $H_2: r_1(A); w_2(B); w_2(A); w_3(B); w_1(B); C_1; C_2; C_3;$

$H_1$      $T_1$      $T_2$      $T_3$   
 $r_1(A)$   
 $r_1(A)$      $trylock_2(A)$      $w_3(B)$   
 $w_3(B)$   
 $trylock_1(B)$      $w_3(B)$   
 $C_3; unlock(B)$   
 $w_1(B)$   
 $w_1(B)$   
 $C_1; unlock(A,B)$      $w_2(A)$   
 $w_2(A)$   
 $w_2(A)$   
 $w_2(B)$   
 $C_2; unlock(A,B)$

$H_2:$      $T_1$      $T_2$      $T_3$   
 $r_1(A)$   
 $r_1(A)$      $w_2(B)$   
 $w_2(B)$   
 $trylock_1(A)$      $trylock_3(B)$   
 $trylock_1(B)$   
Deadlock

## Låsetting - oppgave

17.april 2023

Anta følgende historie:

H4:  $r_1(A); r_2(B); w_1(B); w_1(C); r_2(A); c_1; c_2;$

Innfør lese- og skrivelåser (2PL - rigorous) i H4. Skriv om historien H4 slik at den gjør bruk av låser.

## Låsetting - oppgave

17.april 2023

Anta følgende historie:

H4:  $r_1(A); r_2(B); w_1(B); w_1(C); r_2(A); c_1; c_2;$

Innfør lese- og skrivelåser (2PL - rigorous) i H4. Skriv om historien H4 slik at den gjør bruk av låser.

$T_1$        $T_2$

$r_{l_1}(A)$   
 $r_1(A)$   
  
 $trylock_1(B)$   
  
 $w_{l_1}(B)$   
 $w_1(B)$   
 $w_{l_1}(C)$   
 $w_1(C)$   
 $c_1; unlock(A, B, C)$

$r_{l_2}(B)$   
 $r_2(B)$   
  
 $r_{l_2}(A)$   
 $r_2(A)$   
 $c_2; unlock(A, B)$