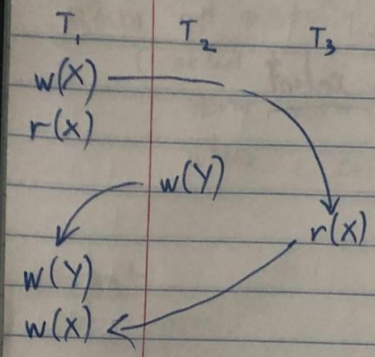
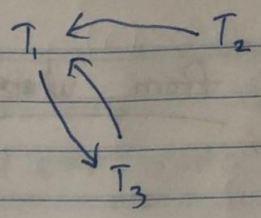
Assigment 4:

Q1)

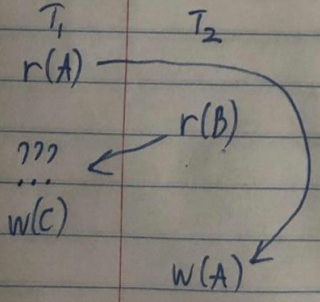


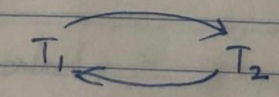


NOT conflict-serializable

Q2) Serializable and conflict serializable schedules are both whose "effect" is equivalent to a serial schedule. But they are not two equivalent sets. some serializable schedules are not conflict serializable schedule. In other words, conflict serializable schedule is a subset of serializability. Finally, when determining if a schedule is serializable, it is much easier to prove if the schedule is conflict serializable than serializable.

Q3)





??? ... is w⊥(B) will make not conflict serializable.

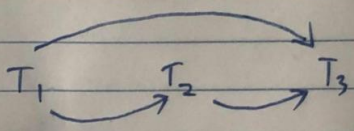
Q4)

conflict serializable: $r_1(A)$ $w_1(A)$ $r_1(B)$ $w_1(B)$ $r_2(B)$ $w_2(B)$ $r_2(A)$ $w_2(A)$

non conflict serializable: $r_1(A)$ $w_2(A)$ $w_1(A)$ $r_1(B)$ $w_1(B)$ $r_2(B)$ $w_2(B)$ $r_2(A)$

Q6) a)

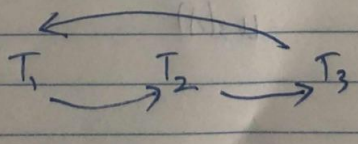
T_1	T_2	T_3
r(A)		
w(B)		
	r(B)	
	w(C)	
		r(C)
		w(A)



Yes, it is conflict serializable

b)

T_1	T_2	T_3
		w(A)
r(A)		
w(B)		
	r(B)	
	w(C)	
		r(C)



Yes, it is conflict serializable

Q5)

$r_1(A)$ $w_1(B)$ $r_2(B)$ $w_2(C)$ $r_3(C)$ $w_3(A)$

T_1	T_2	T_3
$l_1(A)$		
$r_1(A)$		
$l_1(B)$		
$u_1(A)$		
$w_1(B)$		
$u_1(B)$		
	$l_2(B)$	
	$r_2(B)$	
	$l_2(C)$	
	$u_2(B)$	
	$w_2(C)$	
	$u_2(C)$	
		$l_3(C)$
		$r_3(C)$
		$l_3(A)$
		$u_3(C)$
		$w_3(A)$
		$u_3(A)$

```
-- first part
DELIMITER $$ create trigger updateBalance
after
insert on transaction for each row begin
update card
set balance = balance + new.amount
where cardNumber = NEW.cardNumber;
END $$ DELIMITER;

-- second part
DELIMITER $$ create trigger cardUpdate before
update on card for each row begin if(new.creditLimit < new.balance) then signal sqlstate '12345';
end if;
END $$ DELIMITER;
```