

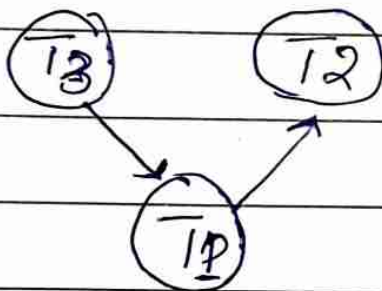
Database Assignment 3

Q:1)

20K-0190

* Schedule S1:

Graph:-

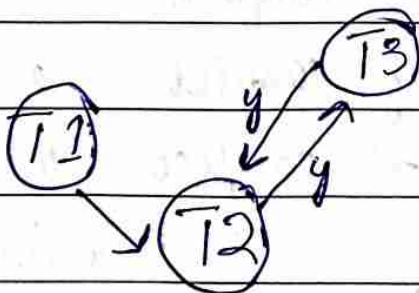


- T1 reads x which was not modified by T2 or T3.
- T3 reads x before T1 modifies it.
- T2 reads y and writes y after T3.

So schedule is serializable.

* Schedule S2:

Graph:-



$\Rightarrow T_2$ reads 'y' which is the read ~~by~~ and modified by

T_3

$\Rightarrow T_3$ reads 'Y', which is modified before T_2 modifies it.

In this case T_3 will interfere with T_2 's schedule, so S2 is not serializable.

Q.2)

* $T_1 \Rightarrow r_1(x), w_1(x), r_1(y), w_1(x)$

* $T_2 \Rightarrow r_2(x), w_2(x)$

Total

Total Transactions = $(n_1 + n_2)! / (n_1! \times n_2!) = 15$

(X)

Transactions:-

- $\Rightarrow r_1(x), w_1(x), r_1(y), w_1(y), r_2(x), w_2(x)$ serial + serializable
- $\Rightarrow r_1(x), w_1(x), r_2(x), w_2(x), r_1(y), w_1(y)$ Conflict serializable
- $\Rightarrow r_1(x), w_1(x), r_1(y), r_2(x), w_1(y), r_2(x)$ conflict serializable
- $\Rightarrow r_1(x), w_1(x), r_2(x), r_1(y), w_2(x), w_1(y)$ conflict "
- $\Rightarrow r_1(x), w_1(x), r_1(y), r_2(x), w_2(x), w_1(y)$ conflict "
- $\Rightarrow r_1(x), w_1(x), r_2(x), r_1(y), w_1(y), w_2(x)$ conflict "
- $\Rightarrow r_2(x), w_2(x), r_1(x), w_1(x), r_1(y), w_1(y)$ serial + serializable

$\Rightarrow r_2(x), r_1(x), w_2(x), w_1(x), r_1(y), w_1(y)$ not conflict serializable
 $\Rightarrow r_1(x), r_2(x), w_1(x), r_1(y), w_1(y), w_2(x)$ not conflict "
 $\Rightarrow r_2(x), r_1(x), w_1(x), w_2(x), r_1(y), w_1(y)$ not conflict "
 $\Rightarrow r_1(x), r_2(x), w_1(x), r_1(y), w_2(x), w_1(y)$ not conflict "
 $\Rightarrow r_2(x), r_1(x), w_1(x), r_1(y), w_2(x), w_2(y)$ not conflict "
 $\Rightarrow r_1(x), r_2(x), w_2(x), w_1(x), r_1(y), w_1(y)$ not conflict "
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 $\Rightarrow r_1(x), r_2(x), w_1(x), r_1(y), w_2(x), w_2(y)$ not conflict "