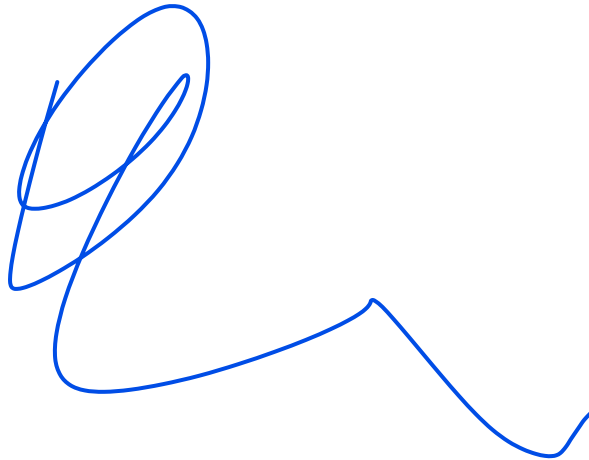


## Method 2: Check the View-Serializability of a Schedule

There's another method to check the view-serializability of a schedule. The first step of this method is the same as the previous method i.e. checking the conflict serializability of the schedule **by creating the precedence graph**.

Let us take an example of the schedule as follows to check the **View Serializability**

T1	T2	T3
R(X)		
	W(X)	
		R(X)
W(X)		
		W(X)

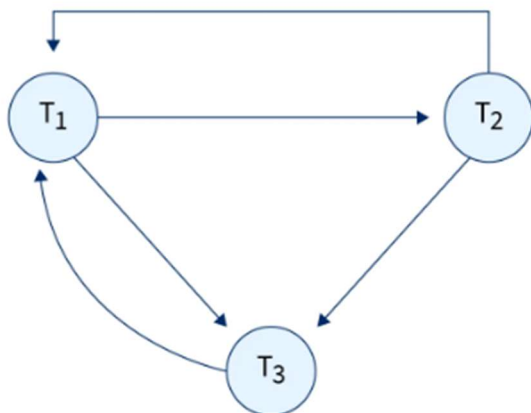


**Giải:**

**Writing all the conflicting operations:**

- R1(X), W2(X) ( $T1 \rightarrow T2$ )
- R1(X), W3(X) ( $T1 \rightarrow T3$ )
- W2(X), R3(X) ( $T2 \rightarrow T3$ )
- W2(X), W1(X) ( $T2 \rightarrow T1$ )
- W2(X), W3(X) ( $T2 \rightarrow T3$ )
- R3(X), W1(X) ( $T3 \rightarrow T1$ )
- W1(X), W3(X) ( $T1 \rightarrow T3$ )

The precedence graph for the above schedule is as follows:



If the precedence graph doesn't contain a loop/cycle, then it is conflict serializable, and thus concludes that the given schedule is consistent. We are not required to perform the **View Serializability** test as a conflict serializable schedule is view-serializable as well.

As the above graph contains a loop/cycle, it does not conflict with serializable. Thus we need to perform the following steps –

Next, we will check for blind writes. If the blind writes don't exist, then the schedule is non-view Serializable. We can simply conclude that the given schedule is inconsistent.

If there exist any blind writes in the schedule, then it may or may not be view serializable.

**Blind writes:** If a write action is performed on a data item by a Transaction (updatation), without performing the reading operation then it is known as blind write.

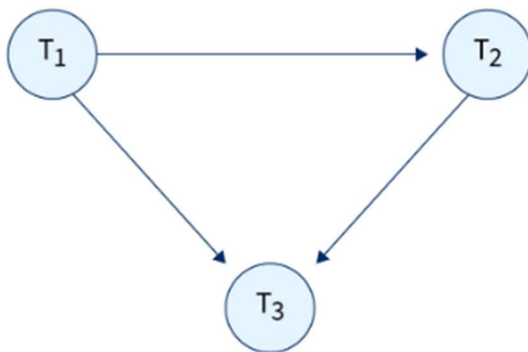
In the above example, transaction T2 contains a blind write, thus we are not sure if the given schedule is view-serializable or not.

Lastly, we will draw a **dependency graph** (đồ thị phụ thuộc) for the schedule. **Note: The dependency graph is different from the precedence graph.**

Steps for dependency graph:

- Firstly, T1 reads X, and T2 first updates X. So, T1 must execute before the T2 operation. (T1 → T2)
- T3 performs the final updatation on X thus, T3 must execute after T1 and T2. (T1 → T3 and T2 → T3)
- T2 updates X before T3, so we get the dependency as (T2 → T3)

The dependency graph is formed as follows:



As no cycles exist in the **dependency graph** for the example we can say that the schedule is view-serializable.

If any cycle/ loop exists then it is not view-serializable and the schedule is inconsistent. If cycle//loop doesn't exist then it is view-serializable.

### Conclusion

- View Serializability is a long process to check the consistency of the given schedule.

- If the given schedule is conflict serializable, then it is view-serializable as well. The opposite is **not** true.
- There are two methods to check if the given schedule is View Serializable, one is **using the serial schedule**, and another **uses blind writes and dependency graphs**.