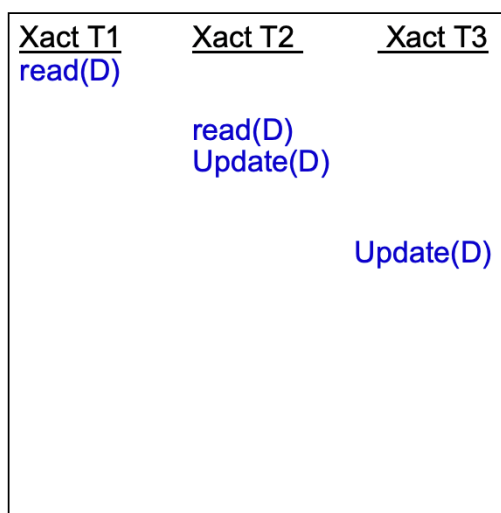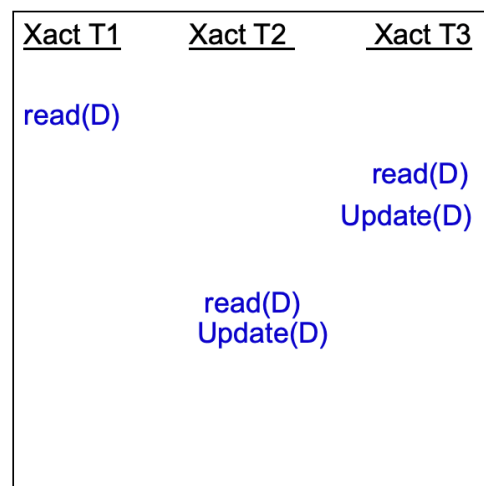Assignment 5
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1.
- If we have a commit or abort log rec for Xact T, but not an end rec, must redo/undo T.
  - If this node is the coordinator for T, keep sending commit/abort msgs to subs until acks received.
- If we have a prepare log rec for Xact T, but not commit/abort, this node is a subordinate for T.
  - Repeatedly contact the coordinator to find status of T, then write commit/abort log rec; redo/undo T; and write end log rec.
- If we don't have even a prepare log rec for T, unilaterally abort and undo T.
  - This site may be coordinator!  If so, subs may send msgs.

2.
a)

| Xact T1 | Xact T2 | Xact T3 |
|---------|---------|---------|
| read(D) | | |
| | read(D) | |
| | Update(D) | |
| | | Update(D) |

b)

| Xact T1 | Xact T2 | Xact T3 |
|---------|---------|---------|
| | | |
| read(D) | | |
| | | read(D) |
| | | Update(D) |
| | read(D) | |
| | Update(D) | |

3.
a) R+W > N
 minimum number=6

b) R+W > N
minimum number=1

4.
a) The first row does not have conflict. Because all data in Copy 2 is same as all data in Copy 1. Therefore, we have conclusion that Copy2 & Cpoy1 are in same version.

b} The second row have the conflict. In Copy 1 [$S_Y$,10], in Copy2 [$S_Y$,20], so they are not belong same version