**Exercise Wait Graph**

Exercise 1:

|  |  |  |
| --- | --- | --- |
| T1 | T2 | T3 |
| R(A) |  |  |
|  | R(B) |  |
|  | W(A) |  |
|  | Commit |  |
| W(A) |  |  |
| Commit |  |  |
|  |  | W(A) |
|  |  | Commit |

2PL

|  |  |  |
| --- | --- | --- |
| T1 | T2 | T3 |
| S(A) |  |  |
| R(A) |  |  |
|  | S(B) |  |
|  | R(B) |  |
|  | Waitlock(A) |  |
| X(A) |  |  |
| W(A) |  |  |
| Commit |  |  |
| Unlock (A) | X(A) | Waitlock(A) |
|  | W(A) |  |
|  | Commit |  |
|  | Unlock(B) |  |
|  | Unlock(A) | X(A) |
|  |  | W(A) |
|  |  | Commit |
|  |  | Unlock(A) |

A

A

No Deadlock

Exercise 2:

|  |  |  |  |
| --- | --- | --- | --- |
| T1 | T2 | T3 | T4 |
| R(A) |  |  |  |
|  | R(c) |  |  |
|  |  | R(B) |  |
|  |  |  | R(D) |
|  | W(A) |  |  |
|  |  | W(C) |  |
|  |  |  | W(A) |
| W(B) |  |  |  |
| Commit |  |  |  |
|  | Commit |  |  |
|  |  | Commit |  |
|  |  |  | Commit |

2PL

|  |  |  |  |
| --- | --- | --- | --- |
| T1 | T2 | T3 | T4 |
| S(A) |  |  |  |
| R(A) |  |  |  |
|  | S(C) |  |  |
|  | R(C) |  |  |
|  |  | S(B) |  |
|  |  | R(B) |  |
|  |  |  | S(D) |
|  |  |  | R(D) |
|  | Waitlock(A) |  |  |
|  |  |  |  |
|  |  | Waitlock(C) |  |
|  |  |  |  |
|  |  |  | Waitlock(A) |
| Waitlock(B) |  |  |  |
|  |  |  |  |

A

B

C

A

There is a deadlock in the graph between the transactions T1, T2 and T3.

Solution: Aborting T3