Distributed Computing Tutorial 5.

Q Suppose a system uses deadlock prevention approach. Assume a system has 5 transactions T_1, T_2, T_3, T_4 and T_5 with t_1, t_2, t_3, t_4 and t_5 as timestamps.

$t_1 < t_2 < t_3 < t_4 < t_5$.

1. System uses wait and die scheme and T_3 sends request to T_4.

Ans] Wait and die scheme:-

T_i T_j

t_i t_j, $T_i \rightarrow T_j$

$t_i < t_j$

T_i waits

$t_i > t_j$

T_i dies.

as $t_3 < t_4$

T_3 waits/blocks.

2. System uses wait and die scheme and T_4 sends request to T_1

Ans] Wait and die scheme:-

T_i T_j

t_i t_j, $T_i \rightarrow T_j$

$t_i < t_j$

T_i waits

$t_i > t_j$

T_i dies.

as $t_4 > t_i$

T_4 dies.

3. System uses wait and wound approach and T_2 sends request to T_3.

Ans] wait and wound

T_i T_j

t_i t_j

$T_i \rightarrow T_j$

$t_i > t_j$

T_i waits

$t_i < t_j$

T_i wounds T_j

As $t_2 < t_3$

$\therefore T_2$ wounds / preempts T_3.

4. System uses wait and wound approach and T_5 sends request to T_2

Ans] Wait and wound

T_i T_j

t_i t_j

$T_i \rightarrow T_j$

$t_i > t_j$

T_i waits

$t_i < t_j$

T_i wounds T_j

As $t_5 > t_2$

$\therefore T_5$ waits.