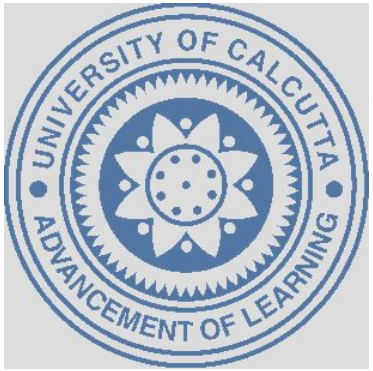
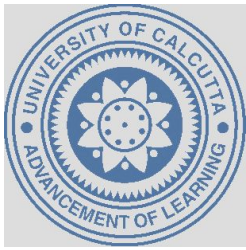
Centralized DDD Algorithm

Assignment 07

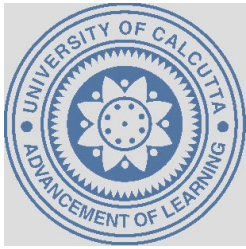


Centralized DDD Algorithm



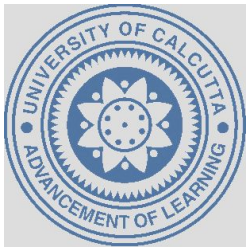
- Each site maintains 2 status tables: resource status table and process status table.
  - Resource status table: Resources locked by or requested by processes.
  - Process status table: Processes that are locked or are waiting for resources.
- Controller periodically collects these tables from each site.

Centralized DDD Algorithm



- Controller constructs a WFG from transactions common to both the tables.
- If there is no cycle, then no deadlock is detected.
- A cycle means a deadlock.

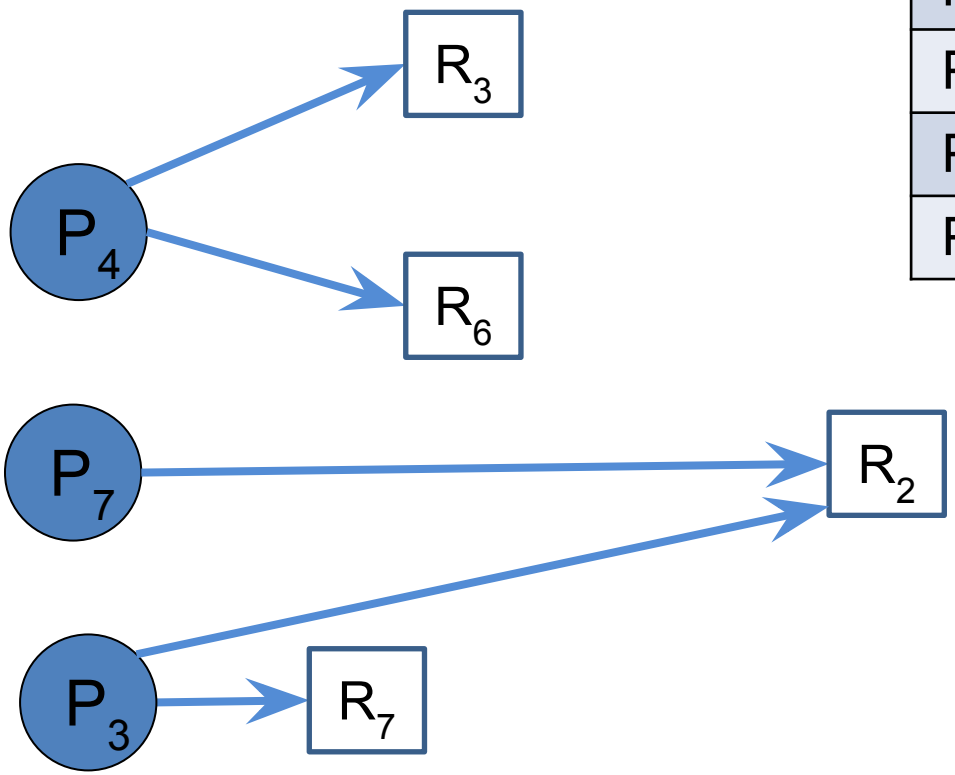
Hints



- Start with 3 to 4 nodes in a graph
- Assume a set of resources and a set of processes for each node
- Populate two status tables for each of these nodes as described in the algorithm only for local resources and processes

Process Status Table at Site 1

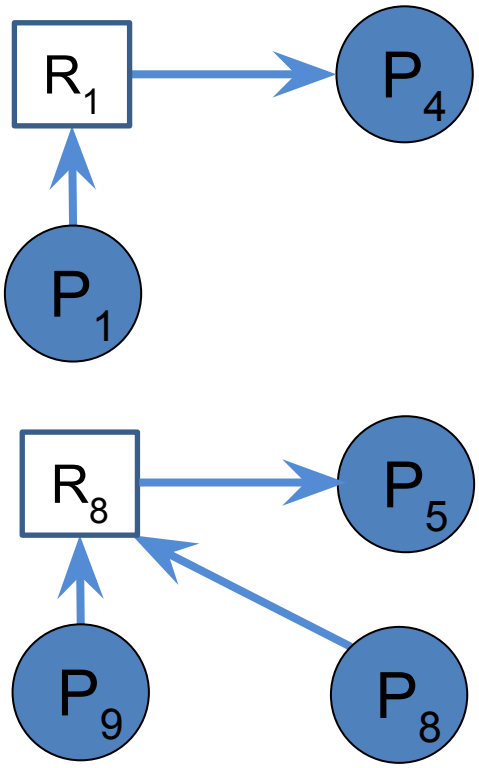
Local Processes P_2, P_3, P_4, and P_7



	R_2	R_3	R_6	R_7
P_2	0	0	0	0
P_3	1	0	0	1
P_4	0	1	1	0
P_7	1	0	0	0

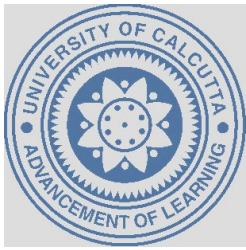
Resource Status Table at Site 1

Local Resources are R_1, R_5, and R_8



	P_1	P_4	P_5	P_8	P_9
R_1	-1	1	0	0	0
R_5	0	0	0	0	0
R_8	0	0	1	-1	-1

Hints



- Collect these status table data
- Count total number of processes
- Build wait for graph matrix from process to resource request data and resource to process assignment data
- Check for cycle and infer accordingly