

III Raymond's Tree Based Algorithm.

- sites are locally arranged as a directed tree. such that the edges of the tree are assigned directions towards the site (root of the tree) that has the token.

Holder - Every site has it that points to an immediate neighbour node on a directed path to the root node.

- Holder variable at the sites define logical tree structure among the sites.
- If we follow holder variables at sites, every site has a directed path leading to the site holding the token.
- At Root, holder points to itself.
- Every site keeps FIFO queue, called request-q, which stores the requests of the neighbouring sites that have sent a request to this site, but have not yet been sent the token.

Algo

Requesting the CS

- a) When site wants to enter the CS, it sends a REQUEST message to the node along the directed path to the root, provided it does not hold the token & its request-q is empty. It then adds its request to its request-q.

- b) When a site on the path receives this msg, it places the REQUEST in its request-q & sends a REQUEST message along the directed path to the root provided it has not sent out a REQUEST message on its outgoing edge
- c) When the root site receives a REQUEST msg, it sends the token to the site from which it received the REQUEST message & sets its holder variable to point at that site.
- d) When a site receives the token, it deletes the top entry from its request-q, sends the token to the site indicated in this entry, & sets its holder variable to point at that site. If the request-q is nonempty at this point, then the site needs & sends a REQUEST message to the site which is pointed at by holder variable.

Executing the CS

A site enters the CS when it receives the token & its own entry is at the top of its request-q. In this case, the site deletes the top entry from its request-q & enters the CS.

Releasing the CS

After execution

- If its request-q is nonempty, then it deletes the top entry from its request-q, sends the

token to that site, & sets its holder variable to point at that site.

- If the request- q is non empty at this point, then the site sends a REQUEST message to that site which is pointed at by the holder variable.