Program 4 Report

Variables

cycle-map: A map of cycle queues. The map key is the global-clock cycle.

queue-clock: An integer used to set the cycle for busy nodes and node-links

dispatched-list: A vector of dispatched node labels.

Pseudo Code For Recursion

```
while the current cycle queue is not empty
     queue-clock = global-clock

     if the queued node is busy and not dispatched
          add it to the next cycle's queue
          pop it off the queue

     else if the node is not dispatched
          dispatch the message
          add it to the dispatched list

          for each link
               queue-clock ++
               cycle-map[ queue-clock ].push( link )

     pop the queued node off the queue

recurse( cycle-map, dispatched_list )
```

Analysis of the Busy Algorithm

A queued node should have a 25% chance of being busy and having it's cycle changed. I also have noticed that if a link is queued twice for the same cycle from different source nodes, the output can show busy and the node will still pass through. This is desired.