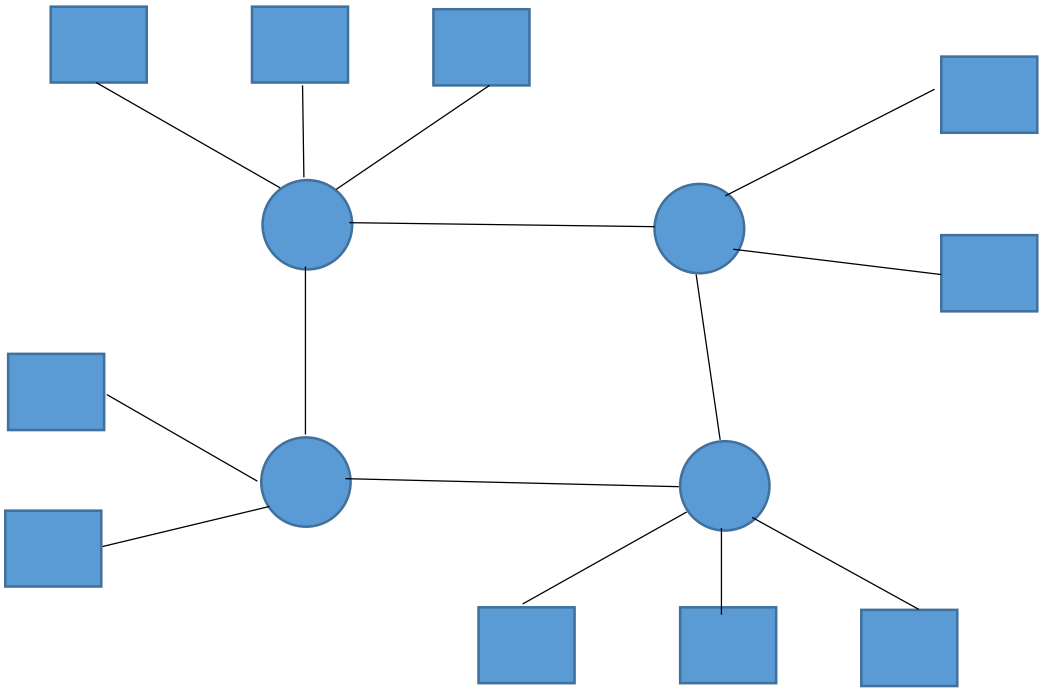
LAB 10 – NS2 simulator— Network Analysis

DATE : 04.10.2024

BATCH : N & Q

1. Design the following network and assign appropriate IP addresses for all the nodes:

Note: circles are routers and rectangles are host machines.



2. Create a network with a series of 'n' nodes connected one after another like a string. The nodes are spaced 150m apart from each other. The data communication between any two nodes is possible only by transfer of data between neighboring nodes and a single TCP connection is established between the source and the destination nodes for transfer of all packets in a specific communication. Each node has a buffer/queue which can hold a maximum of 50 packets and can aid in transmission of packets in first-in-first-out fashion. Simulate the following for 60 seconds:

1. communication by the first node to the last node, considering that the first node generates data at a rate of 4 packets/second with each packet having 1460 bytes for the following window sizes: 4, 8 and 32.
2. communication by a node to its neighboring node, considering that the former node generates data at a rate of 4 packets/second with each packet having 1460 bytes for the following window sizes: 4, 8 and 32.
3. keeping the window size as 8, simultaneous communications by the first node to i^{th} node and j^{th} node to the last node (if there are n nodes from 0 through n-1, $0 < i < j < n - 1$).
4. keeping the window size as 8, simulate two communications, the first from node i to j and the second from node k to j - 1 ($0 < k < j – 1 < i < n$) in the following two scenarios:
    a. both communications start at the same time.
    b. the second communication start 10 seconds after the first.