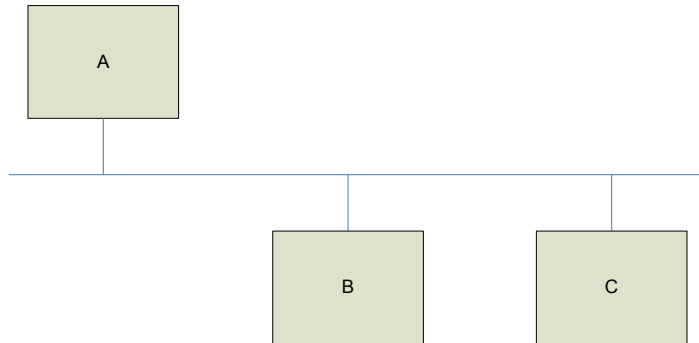# Lab 3
Medium Access Control using HDLC

Objectives: (1) to get familiar with medium access control; (2) to further know the importance of protocols; (3) to master sliding window mechanism; and (4) to study a concrete second-layer protocol, the High-level Data Link Control (HDLC).

In this lab, students are required to make Java programs using sockets to support the communications between multiple computers on the network. The following gives the details:

1. The intended local area network consists of at least three (3) computers, which can be simulated by three or more Java programs on the same computer or different computers.
2. The local area network is controlled by using the HDLC (refer to the textbook).
3. The Normal Response Mode (NRM) is used.
4. The 8-bit control field format is used.
5. In the network, there is one and only one computer that is the primary station (e.g., A in the above figure), and all others are secondary stations (e.g., B, C and others in the above figure).
6. The identification (address) and the role (primary or secondary) for the computers are known when a computer starts up.
7. The communications can be made between these secondary computers. When B sends a message to C, C should print the message on its screen.
8. On the screen of A, a communication log can be displayed.
9. Sliding window is used.
10. The maximum length of the information field is 64 bytes.
11. Necessary assumptions can be made.
12. The TA will give a tutorial on this lab.
13. A lab report is required for each group to detail the design of the medium access control, all assumptions made, algorithms (flowcharts) for the primary and secondary stations, and all other information needed for the design and implementation.
14. The Java programs for both the primary and secondary stations must be submitted.
15. The lab can be conducted in group of two students.
16. Each group is required to demonstrate its work to the TA.