**Lab Practical #11:**

Visit your Institute server room and various places where racks and servers installed, identify various network components, collect information about installation of necessary hardware and software.

**Practical Assignment #11:**

1. **To identify various network components, collect information about installation of necessary hardware and software like firewall, routers, switches, etc.**
   * **Server room:**
     + The structure of server room is low-cost and unstructured.
     + All the design and implementation are done by the network administrator.
     + In this network there are two topologies are use I. Star Topology, II. Ring Topology.
     + There are some components are use in this internet connection network Like Switch, router, ethernet cable, media convertor, fiber-optic cable, Fire Wall, etc.
     + One individual ethernet cable comes from all labs of 1st, 2nd, 3rd floor.
     + All the ethernet cable is connected to the switches in the server room.
     + the “**cisco**” switches (**24 ports**) are use in the network connection.
     + For provide connection to all buildings of campus through fiber-optic.
     + In server room, we use media convertor for connect ethernet cable to fiber-optic cable.
     + This ethernet cable is connected to switch.
     + All the switches and firewall are interconnected in ring topology structure.
     + In the server room we use **SOPHOS XGS 2100** Firewall.
     + 2 uplink port are use in firewall for network antenna to get wireless internet connection through internet service provider.
   * **Building(a) – switching room:** 
     + The switching room is placed in building – A (Other buildings).
     + In the switching room some components are use like switch (24-port), media convertor, fiber-optics, ethernet cable.
     + All the lab’s computers connected to the switch and one common wire connected to fiber-optic through media converter.
     + Fiber-optic provide connection between two buildings.
     + Here one more fiber-optic is used because one internet service provider’s wireless antenna is located on terrace of building - A.
     + At this time media convertor is again in picture because it is used to convert from ethernet cable to fiber-optic cable which is pass through underground cabling pattern to the building C.
     + Also use wired connection on the terrace between two building.
   * **Terrace – Antenna:**
     + There are 3 wireless antenna are used
     + 2 are of same company.
     + 1 is of another company.
     + 2 antenna are use for regular usage.
     + And other one use as a backup of internet.
     + If in any situation, some problem faced in antenna of one company then other company’s internet service will be used.