*You need to work on Linux platform for doing the following assignment. You need to know UNIX shell scripting. Use GNUPLOT tool for generating plots. Read* ***man*** *pages of the following commands: iwconfig, wlanconfig, iwscan, iwlist, ifconfig, iptables, apt-get; which are useful for doing this assignment.*

1. Wireshark assignment on Wi-Fi: Collect Wi-Fi traffic trace for at least 10 minute from your laptop/ALIX3D3 SBC (/w miniPCI Wi-Fi radio in ***Monitor mode***) and answer queries given in *Kurose and Ross textbook wireshark assignment on Wi-Fi*. Select one of the orthogonal channels (1, 6, 11) in ISM band for this trace collection (preferably one that is having lot of user traffic). Additionally, answer the following by using the same trace:
   1. Pie chart of Management, Control, Data Traffic. Further division in Management and control frames (i.e., probe reqs, association reqs, RTS/CTS, power-saving, etc)
   2. Bar graph/pie chart for different Application/network layer protocol traffic (i.e., htpp, ftp, smtp, dns, dhcp, arp, etc). You may need to supply encryption key in wireshark to first decrypt packets.
   3. Plot avg packet size vs Time (1-minute resolution), Plot avg PHY data rate vs Time, Plot RSSI (received signal strength) vs Time
   4. Histograms of packet sizes and PHY data rates
2. Names of APs and their operating channels/mode(a/b/g/n) in IITH campus
3. Configure your laptop or ALIX SBC as a custom Access Point with WPA encryption. One should able to connect to Internet through this AP. Your AP should give out IP addresses dynamically by using DHCP. Describe the whole procedure involved in setting up of your custom AP.