Assignment #1

Linux Shell Scripting

In this assignment you will practice shell scripting by performing search, matching and formatting over text files. The file you will be processing, **`airlog.txt`**, is an excerpt from a WiFi packet trace. It's first column is the relative time of the frame sniffed, the second column is the received power (i.e., RSSI) of the signal in dBm which delivered the frame, the third column is the MAC address of the sender of the frame.

1. Write a shell script that outputs all the senders MAC address in the log file. Your script should produce each MAC address only once.
2. Write a shell script that receives a MAC address as an input command line argument and outputs all RSSI levels associated to that MAC address.
3. Write a shell script that produces a separate file containing RSSI for each MAC address. Use proper file naming convention, such that the file name includes MAC address in a suitable manner (e.g., rssi_MACaddress.txt).
4. Write a MATLAB program (m-file) that uses results from the previous scripts and graphically plots received power levels from a given MAC address versus time.
5. Write a MATLAB program that calculates the average RSSI for a given MAC address.
6. Write a MATLAB program that calculates the percentage of RSSI measurements that are below a given threshold for a given MAC address.