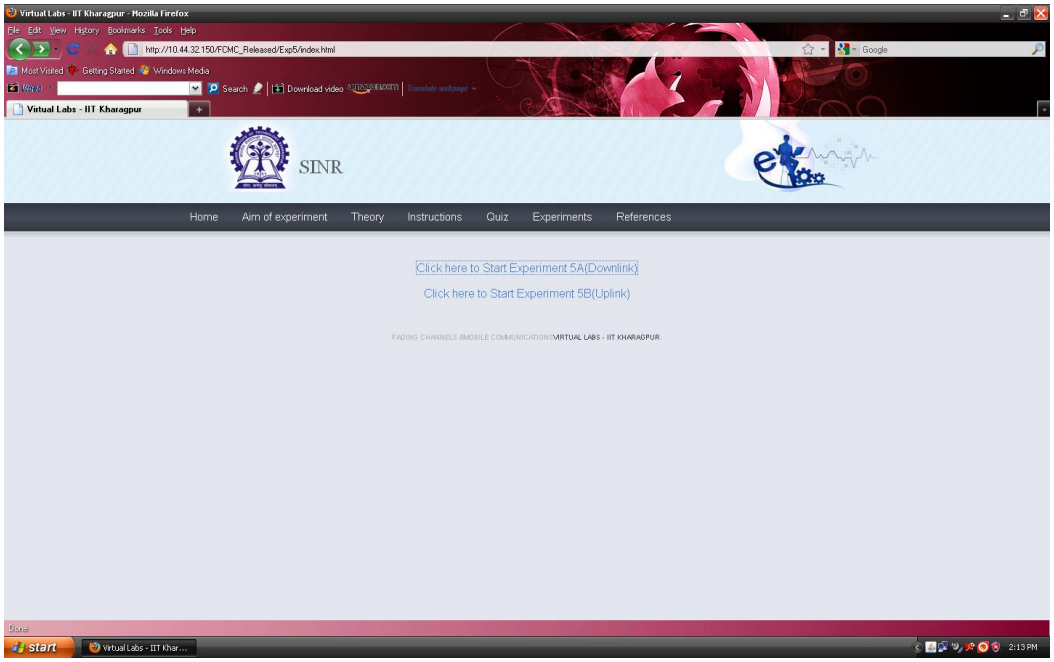
1 Instructions for Experiment 5 :- SINR

Follow the instructions given below to perform the experiments.

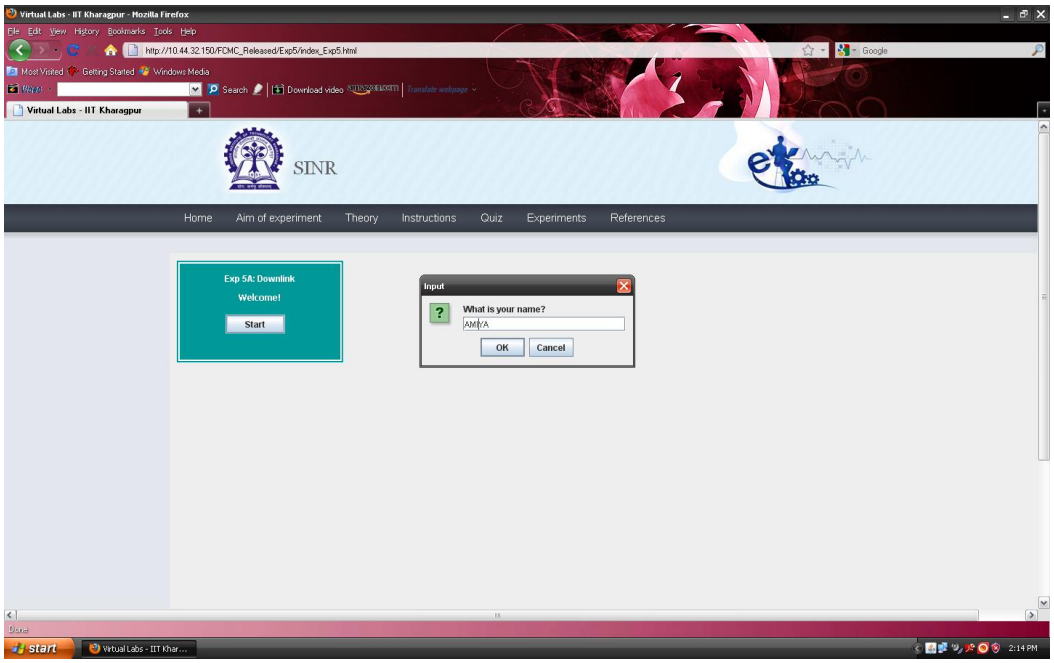
1.1 Starting the Experiments :-

• Step 1: Click on the experiment you want to do by clicking on either 'Click here to start Experiment 5A (Downlink)' or 'Click here to start Experiment 5B (Uplink)'.



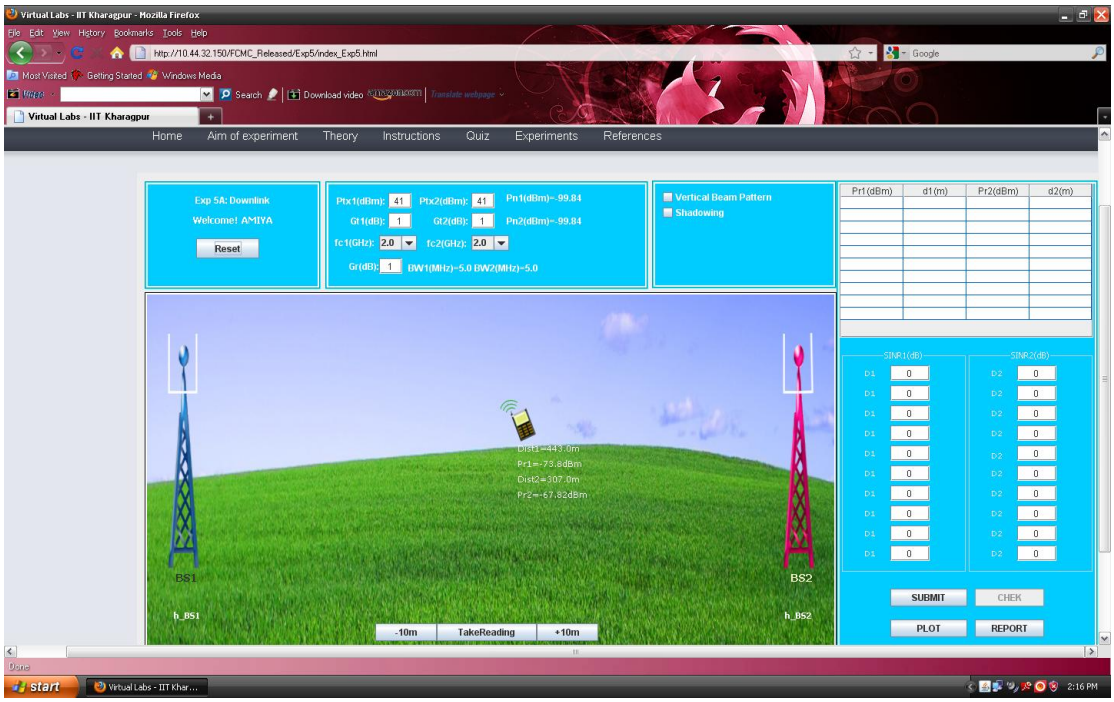
1.2 Starting Experiment 5A :-

• Step 2: Let Experiment 5A (Downlink) is chosen. Click on the button START. A page appears with a dialogue box asking for your name. Enter your name and click OK.

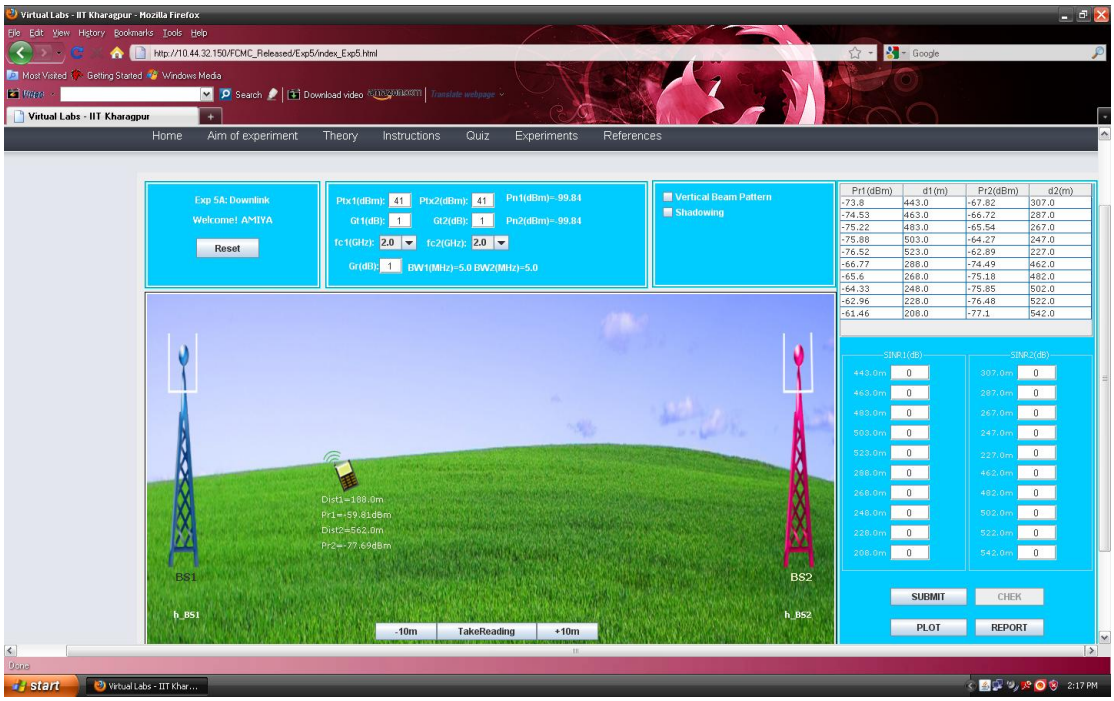


1.3 Performing Experiment 5A :-

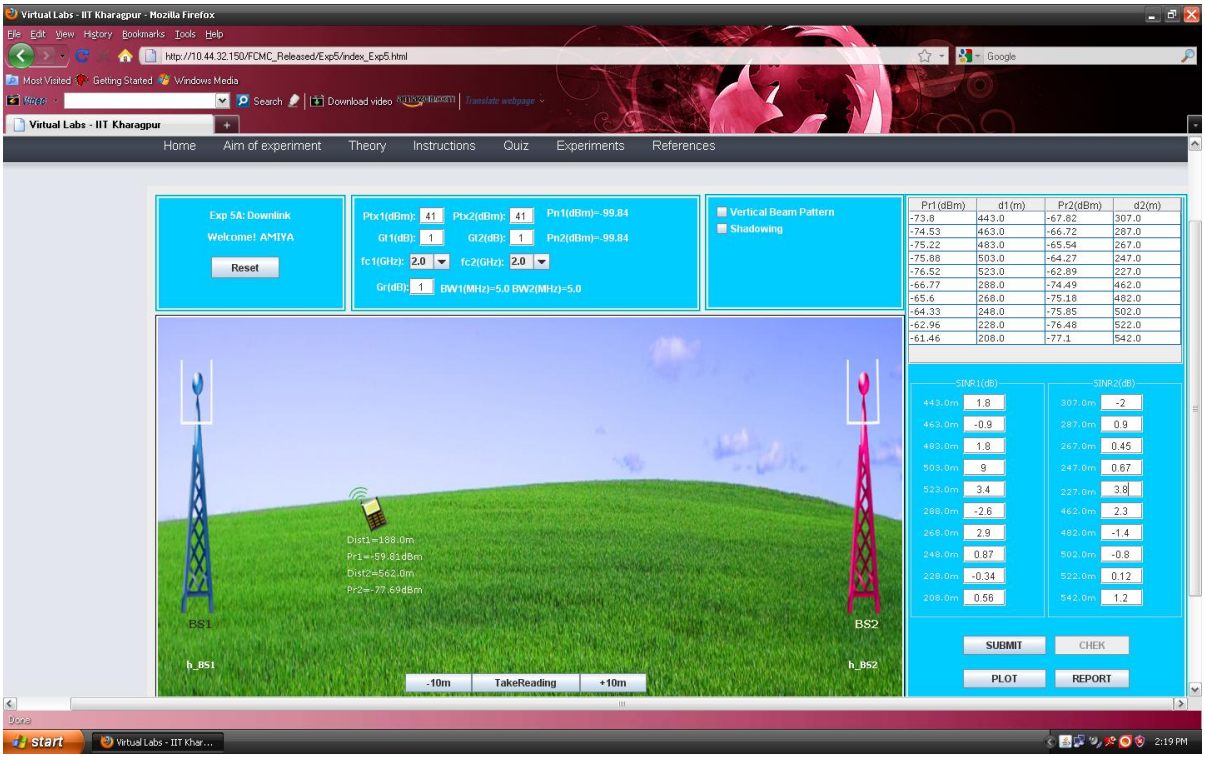
• Step 3: Drag the mobile and adjust its position from the base stations. You can also use + or - sign to adjust the position of your mobile. To do the experiment adding the effect of Vertical Beam Pattern with Tilt and Shadowing conditions click on the check boxes 'Vertical Beam Pattern' and 'Shadowing' selecting required Tilt.



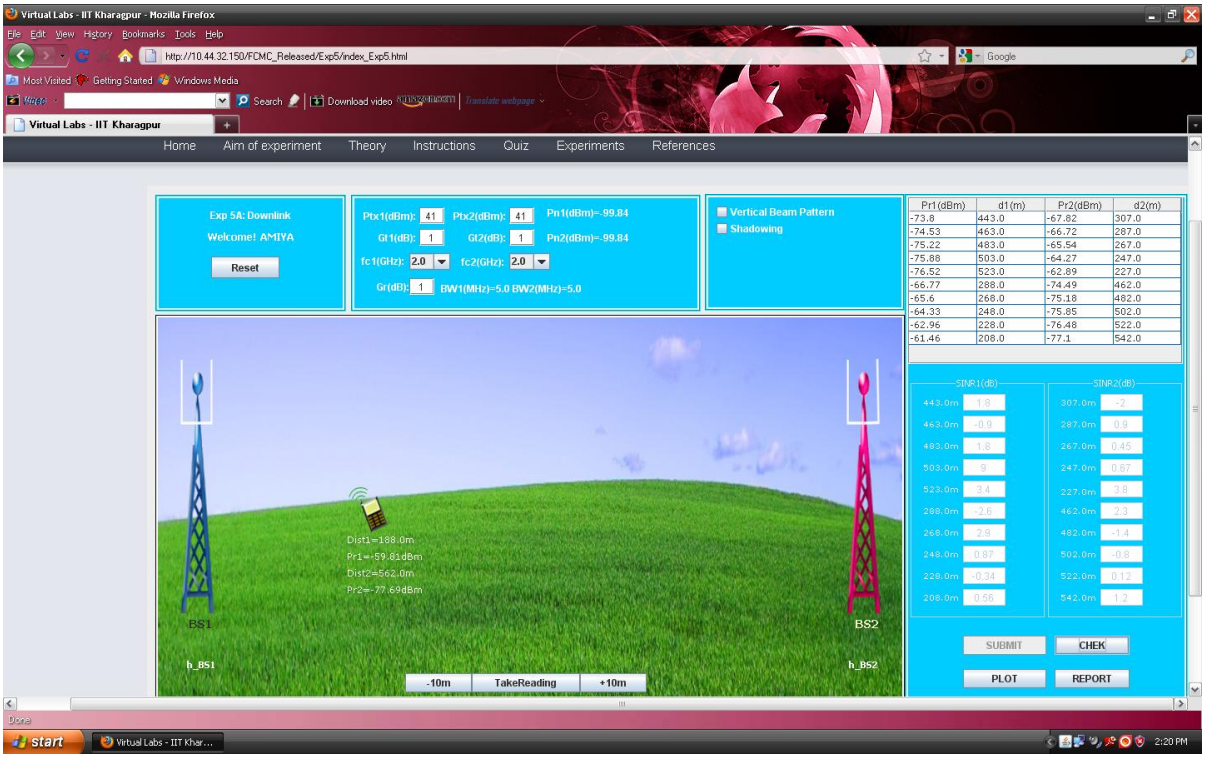
• Step 4: Click on the button TAKE READING to record the received power by the mobile at different distances from the base stations. Take 10 readings.



• Step 5: Calculate the values of $SINR_1$ and $SINR_2$ in dB from the formula given in theory section. Enter your values in the boxes provided in the RHS of the page.

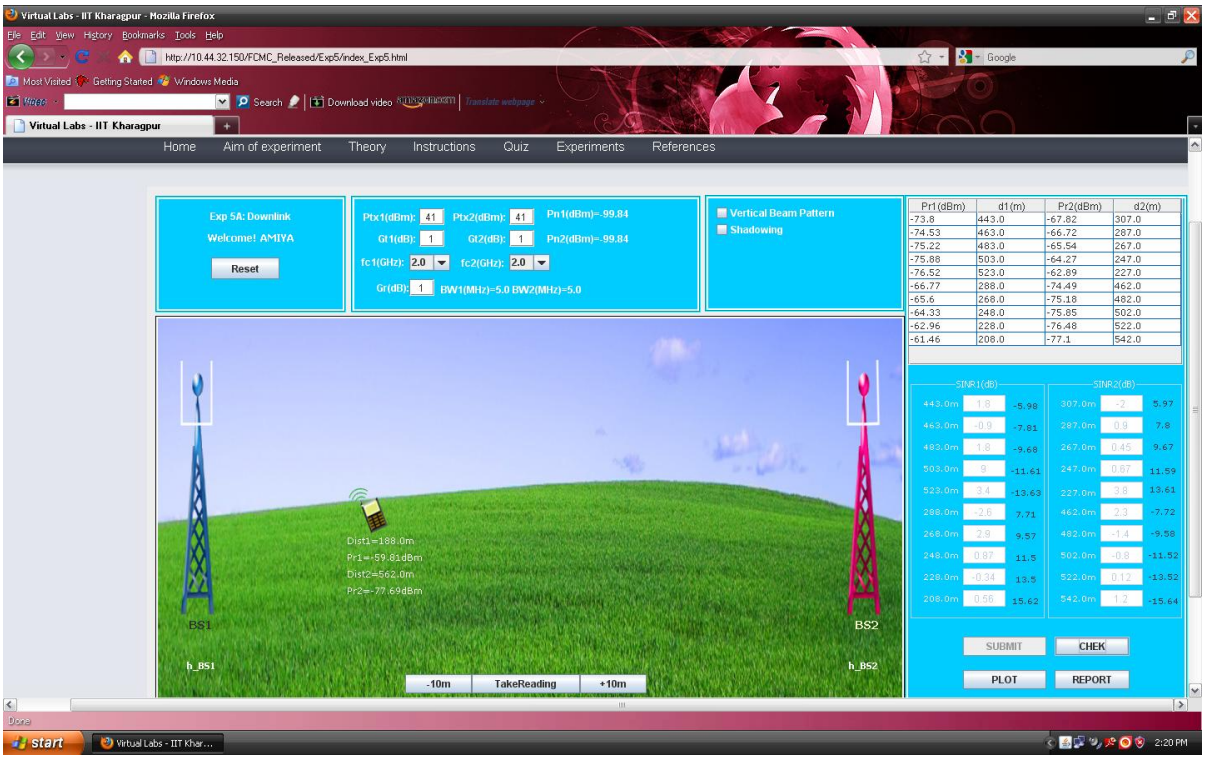


• Step 6: Click on the button SUBMIT to submit your calculated values.

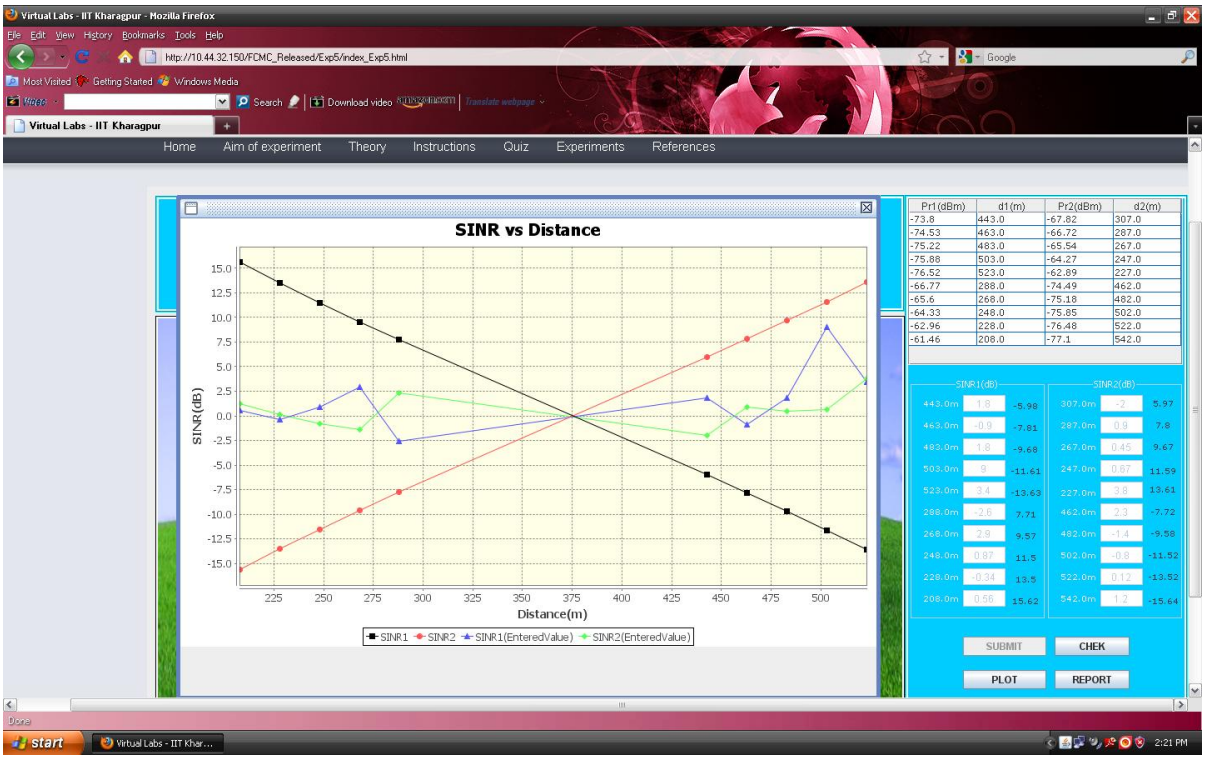


• Step 7: Click on the button CHECK to see whether your manually calculated values match with the computed values. If your manually calculated values do not match with

the computed values then the correct values will be displayed in the RHS of the page.

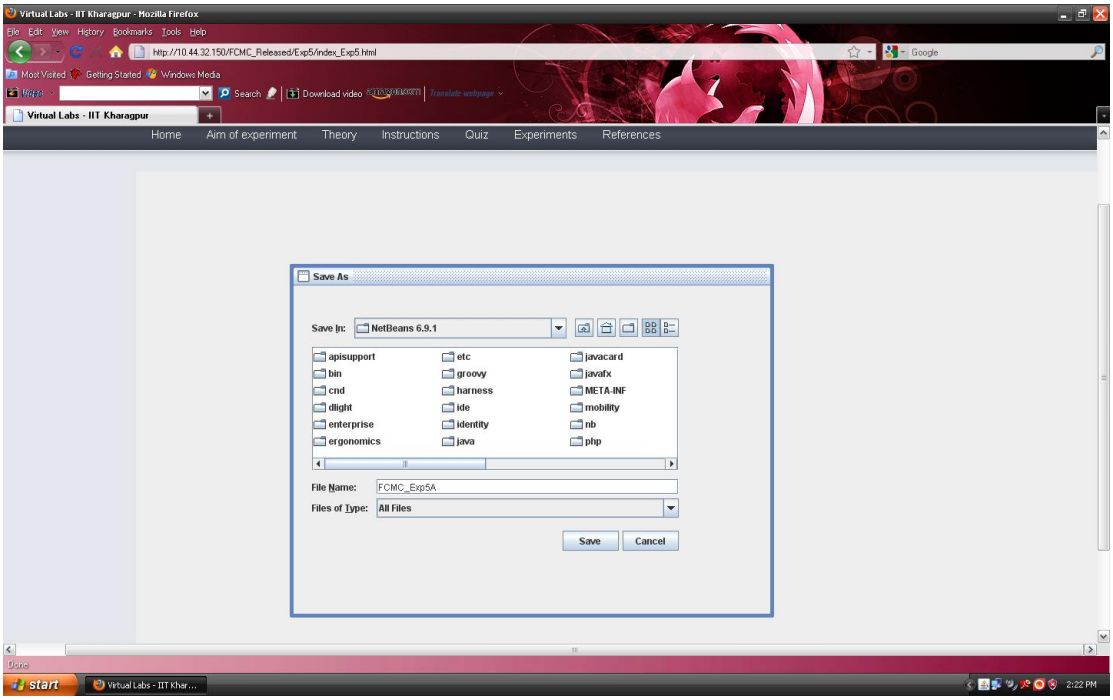


• Step 8: Click on the button PLOT to see the plot of SINR versus Distance.

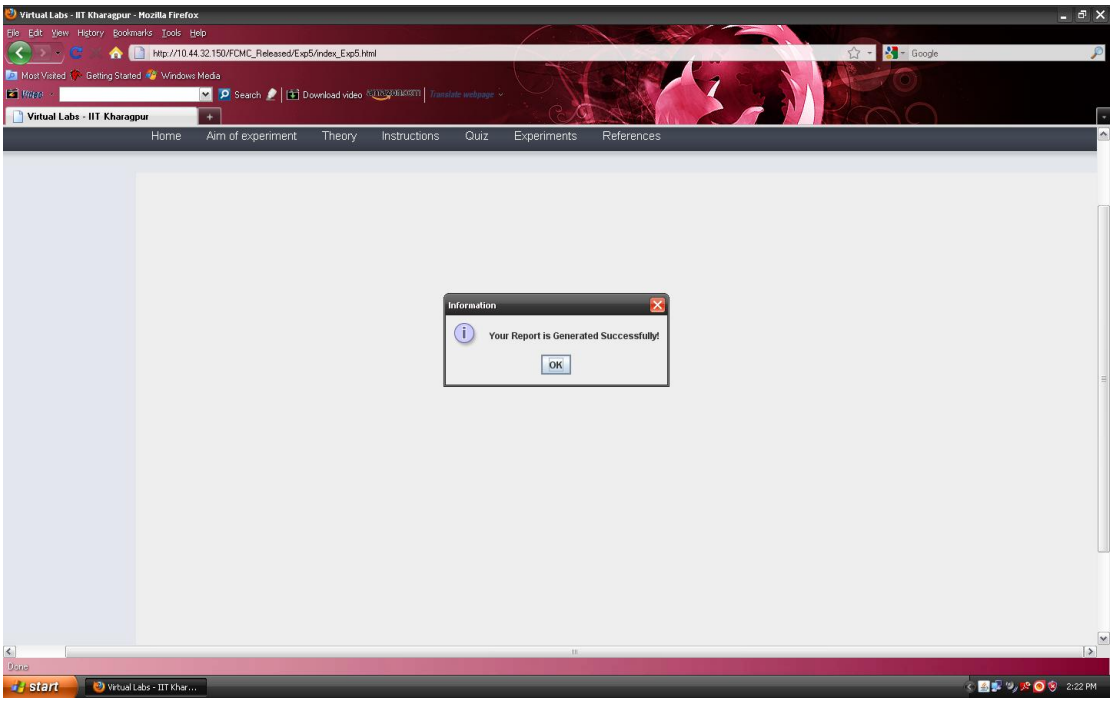


• Step 9: Click on the button REPORT to generate the report of the experiment you have performed.

• Step 10: A dialogue box appears. Click on the button Save to save your report.



• Step 11: A dialogue box appears with the message that 'Your report has generated successfully'. Click on button OK in the dialogue box.

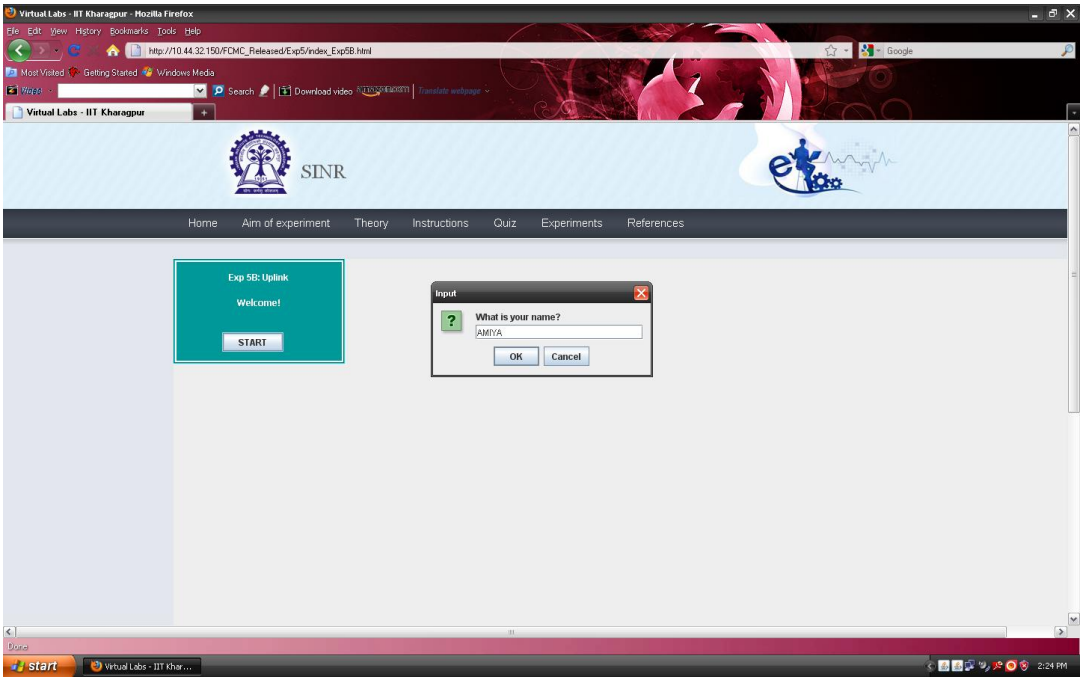


• Step 12: Now you can view the pdf report.

• Step 13: You can repeat the experiment by clicking the RESET button at the upper corner in the LHS of the page.

1.4 Starting Experiment 5B :-

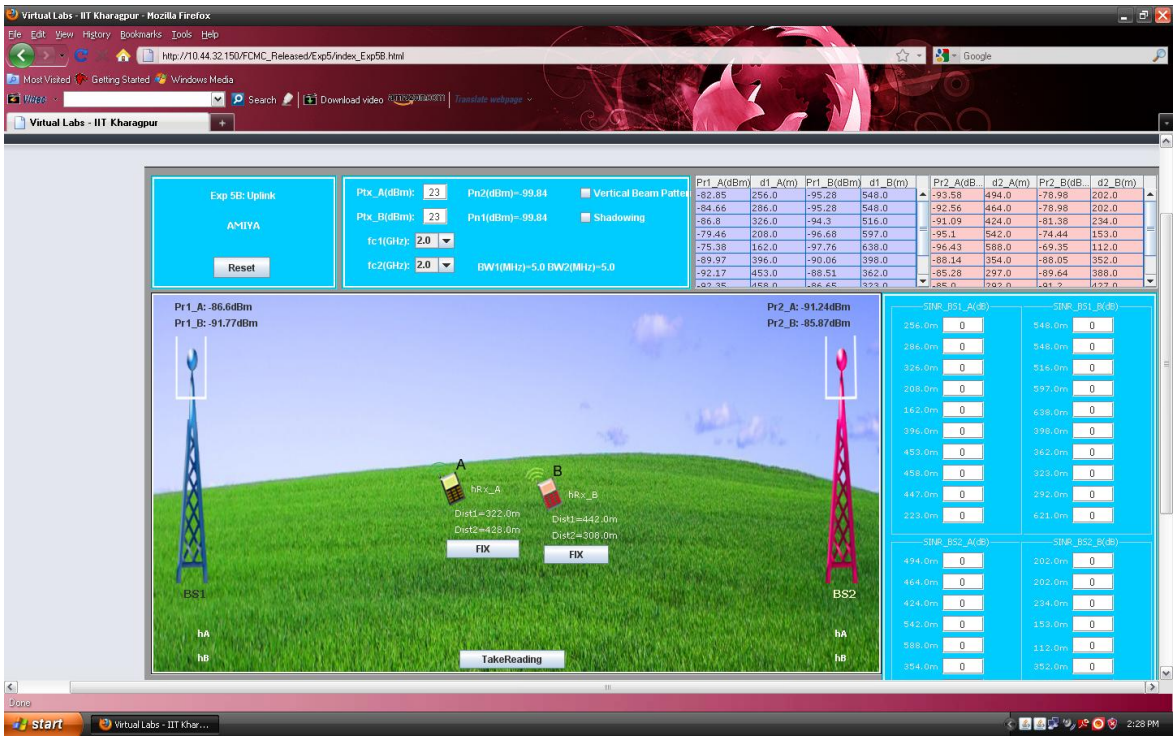
• Step 14: Let Experiment 5B (Uplink) is chosen. Click on the button START. A page appears with a dialogue box asking for your name. Enter your name and click OK.



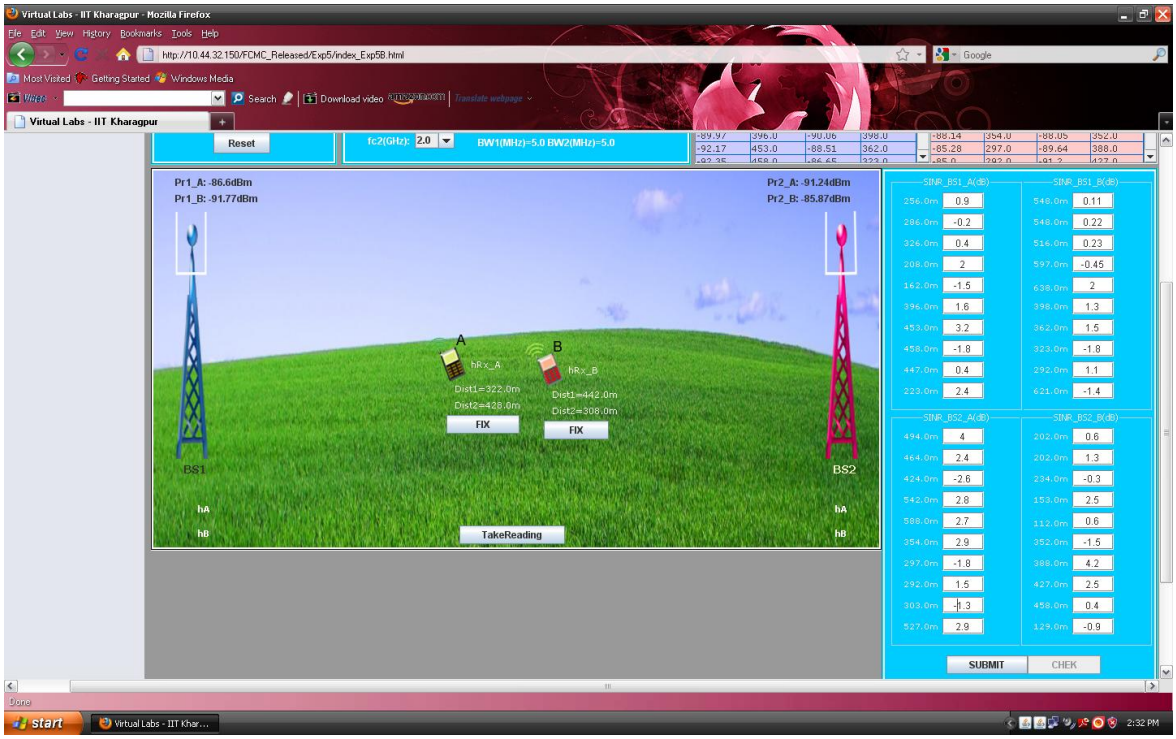
1.5 Performing Experiment 5B :-

• Step 15: Drag the mobile A and mobile B to adjust their positions from the base stations. To do the experiment adding the effect of Vertical Beam Pattern with Tilt and Shadowing conditions click on the check boxes 'Vertical Beam Pattern' and 'Shadowing' selecting required Tilt. The experiment can also be done fixing any one mobile by clicking on the FIX button associated with that mobile.

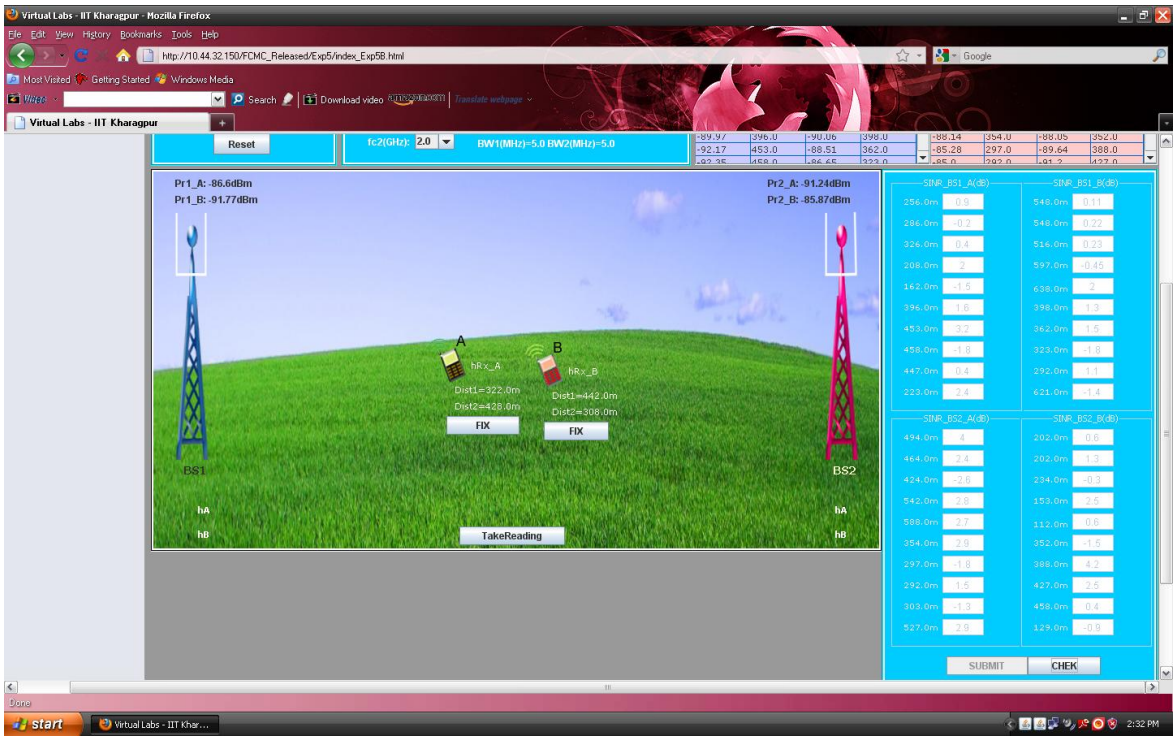
• Step 16: Click on the button TAKE READING to record the received power by mobile A and mobile B at different distances from the base stations. Take 10 readings.



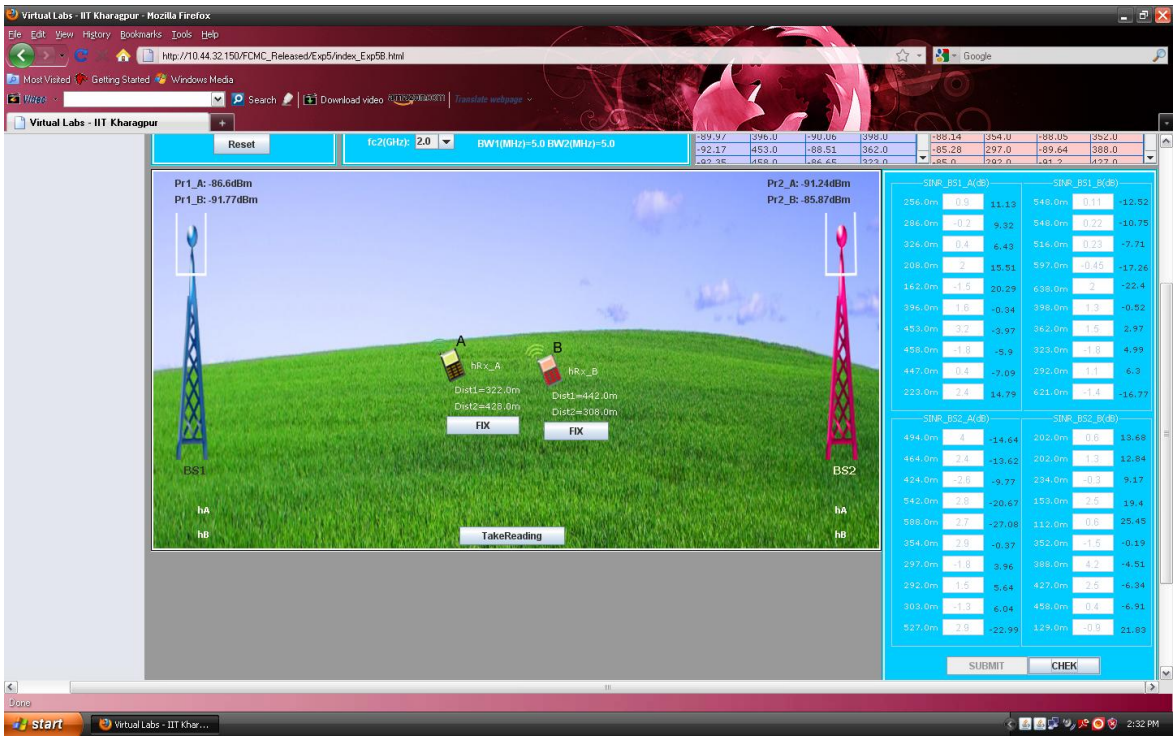
• Step 17: Calculate the values of $SINR_{1A}$, $SINR_{2A}$, $SINR_{1B}$ and $SINR_{2B}$ in dB from the formula given in theory section. Enter your manually calculated values in the boxes provided for different SINR parameters in the RHS of the page.



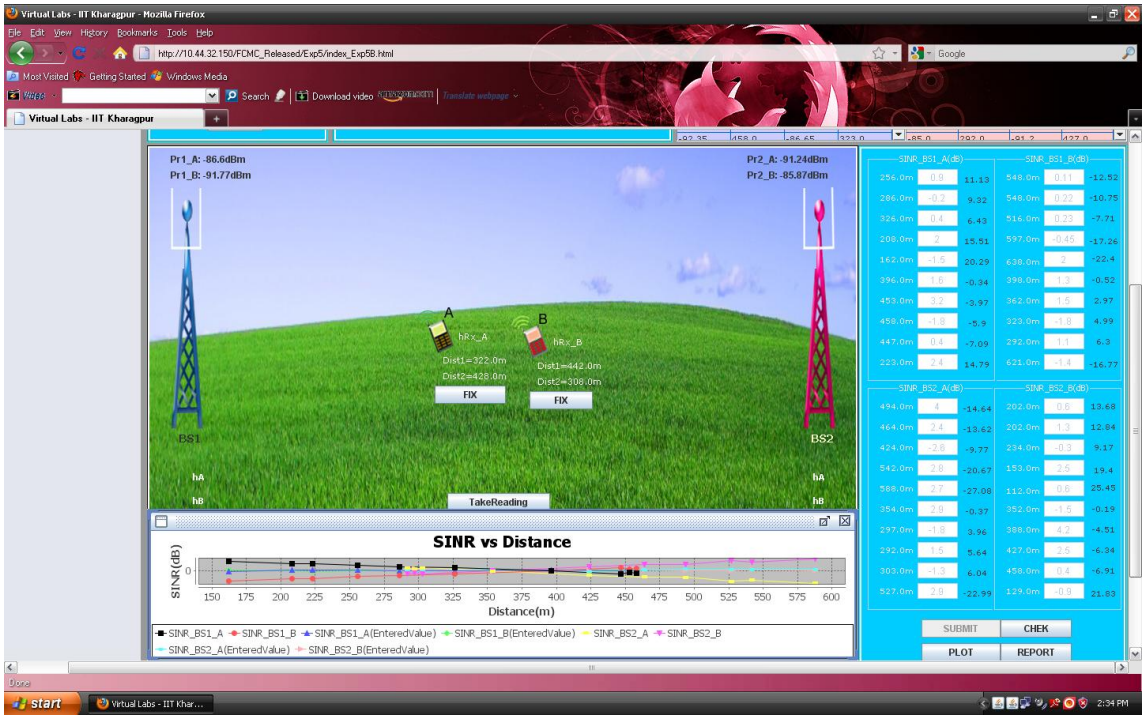
• Step 18: Click on the button SUBMIT to submit your calculated values.



• Step 19: Click on the button CHECK to see whether your manually calculated values match with the computed values. If your manually calculated values do not match with the computed values then the correct values will be displayed in the RHS of the page.

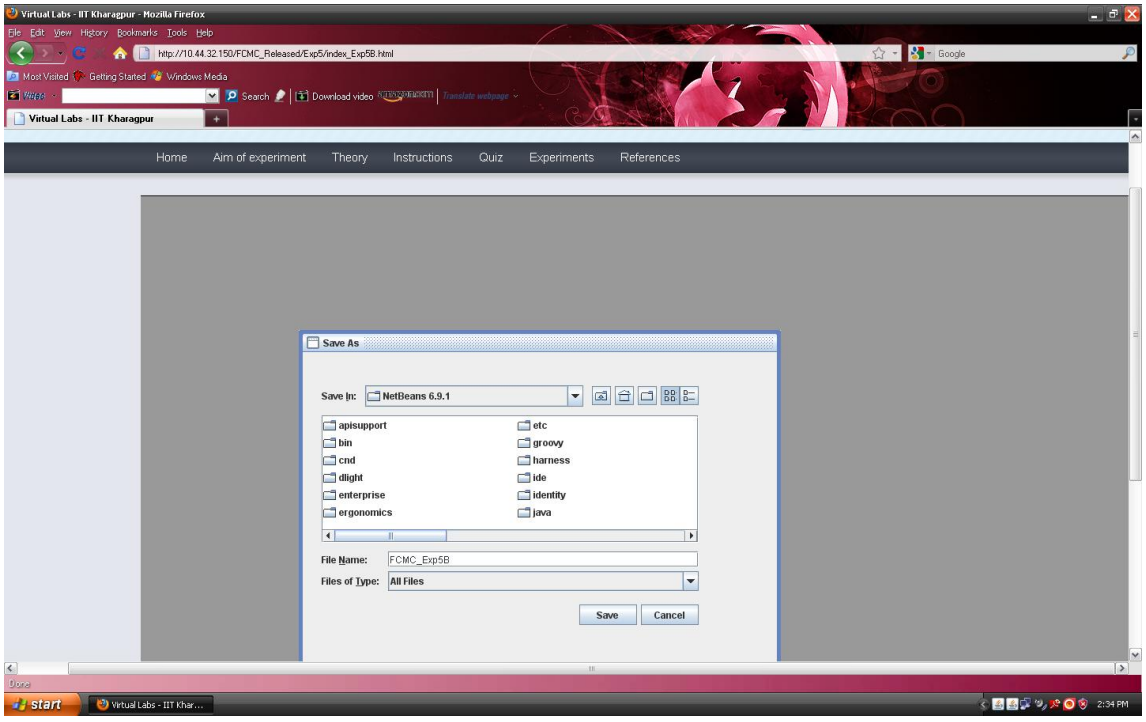


• Step 20: Click on the button PLOT to see the plot of SINR versus Distance.

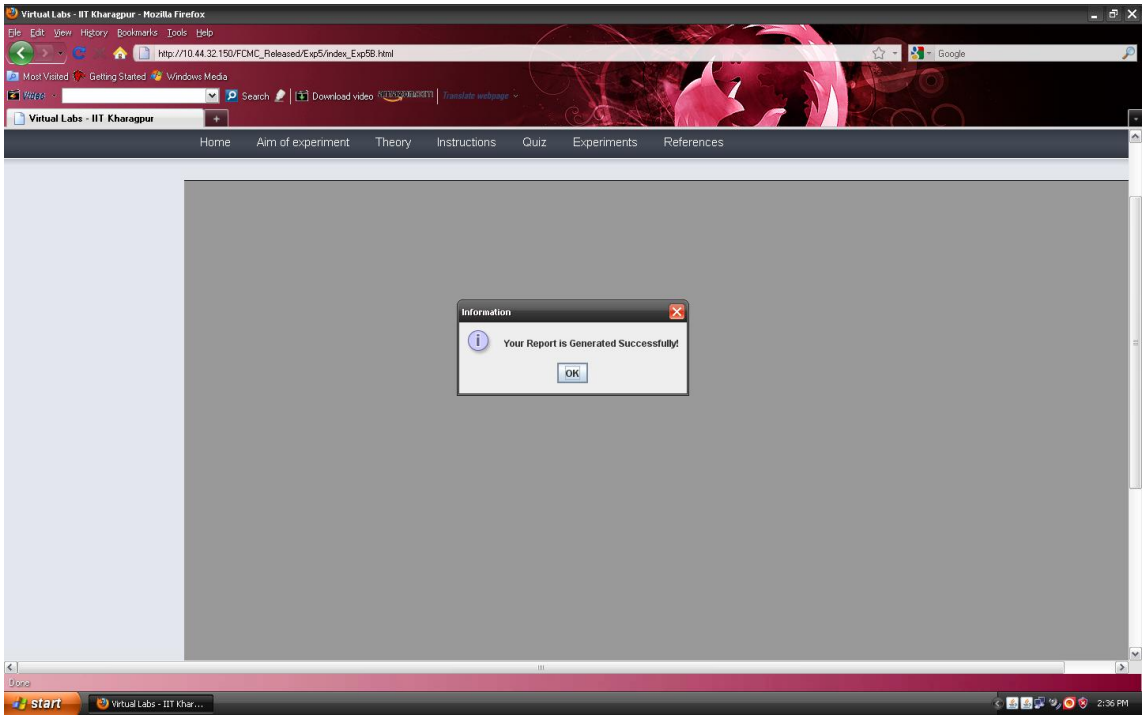


• Step 21: Click on the button REPORT to generate the report of the experiment you have performed.

• Step 22: A dialogue box appears. Click on the button Save to save your report.



• Step 23: A dialogue box appears with the message that 'Your report has generated successfully'. Click on button OK in the dialogue box.



• Step 24: Now you can view the pdf report.

• Step 25: You can repeat the experiment by clicking the RESET button at the upper corner in LHS of the page.