REPORT

For Task 1 two decision stumps were made one taking “lstat” as attribute and other taking “rm” as attribute.We were required to make a single split for the task.The split is decided in a way that the RSS value is minimised.The MSE obtained by comparing predicted value with the test values for “lstat” as attribute is “ 47.66“ and taking “rm” as attribute is “ 38.43“.
The RSS value had its minimum at some central data point and its value increased as we moved to the extreme ends of data points.

For task 2 BDS algorithm was implemented for 1000 trees.For each data point MSE was calculated taking “lstat” and “rm” as attributes and the one with lower MSE was used the the final testing.The residual and prediction value were updated for each iteration.The MSE calculated for this case is “135.21 “.

For task 3 BDS algorithm was implemented for a varying number of trees. We have calculated and plotted the MSE for 1 to 100 number of trees.For these values of MSE kept decreasing as the number of trees increased and the graph will show asymptotic nature.