"C:\Program Files\Java\jdk-10.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2018.2.4\lib\idea\_rt.jar=59078:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2018.2.4\bin" -Dfile.encoding=UTF-8 -classpath "C:\Users\varad\IdeaProjects\BST\out\production\BST;C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2018.2.4\plugins\Kotlin\kotlinc\lib\kotlin-stdlib.jar;C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2018.2.4\plugins\Kotlin\kotlinc\lib\kotlin-reflect.jar;C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2018.2.4\plugins\Kotlin\kotlinc\lib\kotlin-test.jar;C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2018.2.4\plugins\Kotlin\kotlinc\lib\kotlin-stdlib-jdk7.jar;C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2018.2.4\plugins\Kotlin\kotlinc\lib\kotlin-stdlib-jdk8.jar;C:\Users\varad\.m2\repository\junit\junit\4.12\junit-4.12.jar;C:\Users\varad\.m2\repository\org\hamcrest\hamcrest-core\1.3\hamcrest-core-1.3.jar" assignment.mainFunction

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Initializing tree with 100 nodes \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Time required to insert 100 nodes is 1 milliseconds

Size of Tree after Initial seed : 100

Height of Tree after Initial seed : 14

So, When N = 100 O(ln N) = 4.605170185988092

and When N = 100 O(SquareRoot(N)) = 10.0

No Of Nodes|Size|Height|O(log N)|O(Sqrt(N))

10100.0|411.0|20.0|8.682994583681683|20.273134932713294

20100.0|397.0|19.0|8.632995197142959|19.924858845171276

30100.0|287.0|20.0|8.16490692667569|16.941074346097416

40100.0|383.0|21.0|8.581200581924957|19.570385790780925

50100.0|288.0|24.0|8.169925001442312|16.97056274847714

60100.0|384.0|21.0|8.584962500721156|19.595917942265423

70100.0|279.0|20.0|8.124121311829187|16.703293088490067

80100.0|334.0|21.0|8.383704292474054|18.275666882497067

90100.0|333.0|21.0|8.379378367071263|18.24828759089466

100100.0|322.0|21.0|8.330916878114618|17.944358444926362

110100.0|380.0|21.0|8.569855608330949|19.493588689617926

120100.0|310.0|21.0|8.276124405274238|17.60681686165901

130100.0|374.0|21.0|8.546894459887637|19.339079605813716

140100.0|301.0|21.0|8.233619676759702|17.349351572897472

150100.0|417.0|22.0|8.703903573444665|20.42057785666214

160100.0|293.0|21.0|8.194756854422248|17.11724276862369

170100.0|337.0|22.0|8.396604781181859|18.35755975068582

180100.0|265.0|21.0|8.049848549450562|16.278820596099706

190100.0|326.0|20.0|8.348728154231077|18.05547008526779

200100.0|396.0|20.0|8.62935662007961|19.8997487421324

210100.0|233.0|22.0|7.86418614465428|15.264337522473747

220100.0|292.0|23.0|8.189824558880018|17.08800749063506

230100.0|284.0|23.0|8.149747119504683|16.852299546352718

240100.0|371.0|21.0|8.535275376620802|19.261360284258224

250100.0|482.0|22.0|8.912889336229961|21.95449840010015

260100.0|316.0|21.0|8.303780748177104|17.776388834631177

270100.0|389.0|22.0|8.603626344986191|19.72308292331602

280100.0|387.0|23.0|8.59618975614441|19.672315572906

290100.0|272.0|21.0|8.08746284125034|16.492422502470642

300100.0|324.0|20.0|8.339850002884624|18.0

310100.0|435.0|22.0|8.76487159073609|20.85665361461421

320100.0|439.0|24.0|8.778077129535358|20.952326839756964

330100.0|293.0|23.0|8.194756854422248|17.11724276862369

340100.0|359.0|22.0|8.487840033823051|18.947295321496416

350100.0|327.0|21.0|8.353146825498083|18.083141320025124

360100.0|282.0|21.0|8.139551352398794|16.792855623746664

370100.0|385.0|23.0|8.588714635582265|19.621416870348583

380100.0|378.0|20.0|8.562242424221074|19.44222209522358

390100.0|260.0|22.0|8.022367813028454|16.1245154965971

400100.0|318.0|21.0|8.312882955284357|17.832554500127006

410100.0|340.0|22.0|8.409390936137703|18.439088914585774

420100.0|364.0|22.0|8.507794640198696|19.078784028338912

430100.0|336.0|24.0|8.39231742277876|18.33030277982336

440100.0|403.0|23.0|8.654636028527968|20.074859899884732

450100.0|397.0|21.0|8.632995197142959|19.924858845171276

460100.0|379.0|22.0|8.566054038171092|19.467922333931785

470100.0|320.0|20.0|8.321928094887362|17.88854381999832

480100.0|303.0|21.0|8.24317398347295|17.406895185529212

490100.0|482.0|23.0|8.912889336229961|21.95449840010015

500100.0|255.0|21.0|7.994353436858858|15.968719422671311

Number Of Experiments : 50

Average Size of the Tree after is 344.44

Average Height of Tree : 21.48

So average O(ln N) = 8.408152305648178

and average O(SquareRoot(N)) = 18.49510416599022

Process finished with exit code 0