Name: Shikher Singh
Course: Data Analytics
Student Number: 19308502

Test Case Number	Details
1	Using all X and Y features, showing CP table before pruning and image of pruned tree based on minimum xerror
2	Using all X features, showing CP table before pruning and image of pruned tree based on minimum xerror
3	Using all Y features, showing CP table before pruning and image of pruned tree based on minimum xerror
4	Using all X and Y features for Group =0 only, showing CP table before pruning and image of pruned tree based on minimum xerror
5	Using all X for Group =0 only, showing CP table before pruning and image of pruned tree based on minimum xerror
6	Using all Y features for Group =0 only, showing CP table before pruning and image of pruned tree based on minimum xerror
7	Using all X and Y features for Group =1 only, showing CP table before pruning and image of pruned tree based on minimum xerror
8	Using all X for Group =1 only, showing CP table before pruning and image of pruned tree based on minimum xerror
9	Using all Y features for Group =1 only, showing CP table before pruning and image of pruned tree based on minimum xerror

Test case 1:

```
        CP nsplit rel error    xerror       xstd
1 0.27172457      0 1.0000000 1.0024941 0.00489957
2 0.03512004      1 0.7282754 0.7449331 0.05109997
3 0.03110859      2 0.6931554 0.7566858 0.05373062
4 0.01370313      3 0.6620468 0.7260592 0.05079050
5 0.01000000      4 0.6483437 0.7334457 0.05181024
```
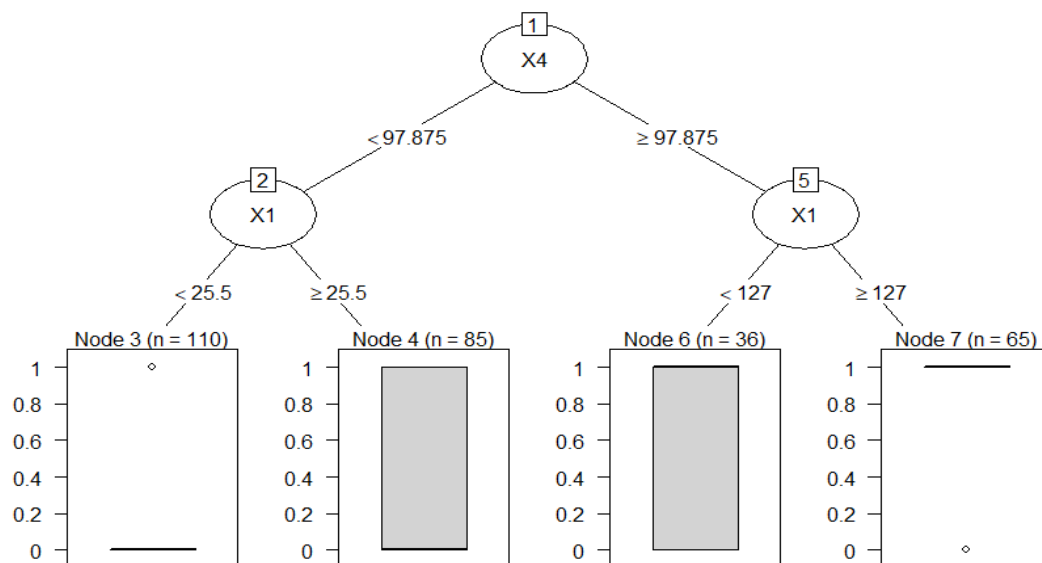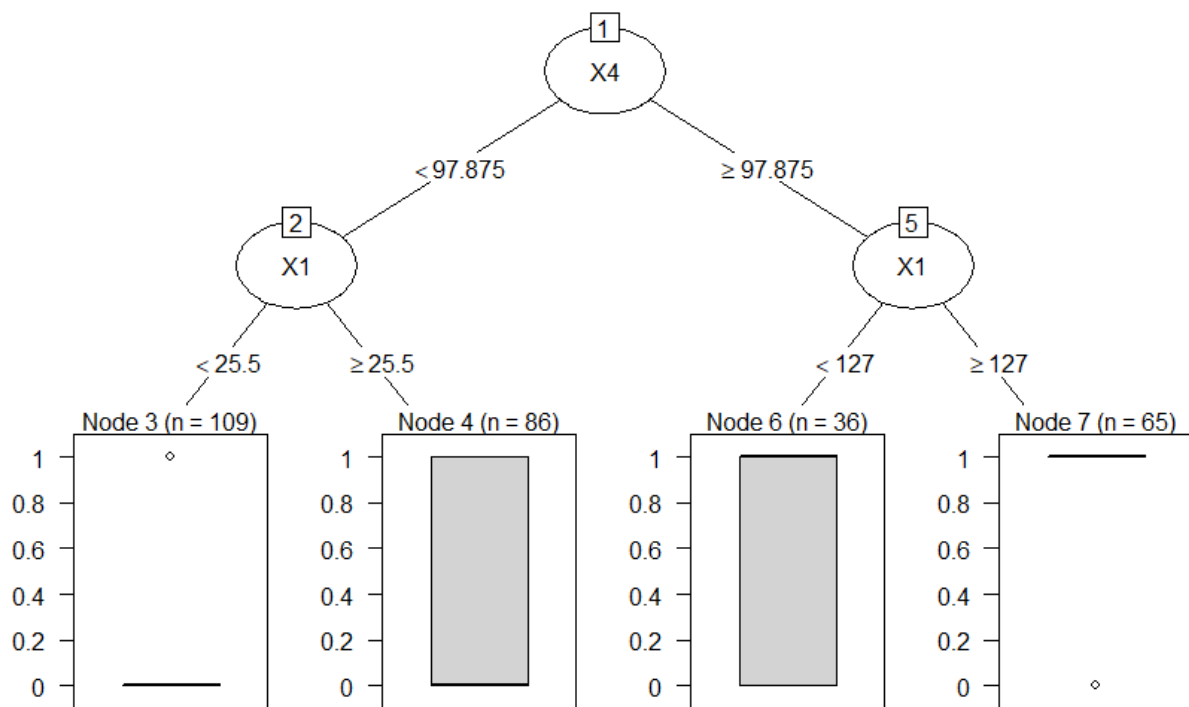
Test Case 2:

```
        CP nsplit rel error    xerror        xstd
1 0.27172457      0 1.0000000 1.0084183 0.005336419
2 0.03321812      1 0.7282754 0.7638375 0.051321738
3 0.03110859      2 0.6950573 0.7896032 0.052158826
4 0.01229842      3 0.6639487 0.7611375 0.051181114
5 0.01000000      4 0.6516503 0.7678574 0.052378120
```


Test Case 3:

```
        CP nsplit rel error    xerror        xstd
1 0.19162127      0 1.0000000 1.0074234 0.005250063
2 0.01999498      1 0.8083787 0.8620574 0.048744862
3 0.01000000      2 0.7883837 0.8528245 0.051232968
```
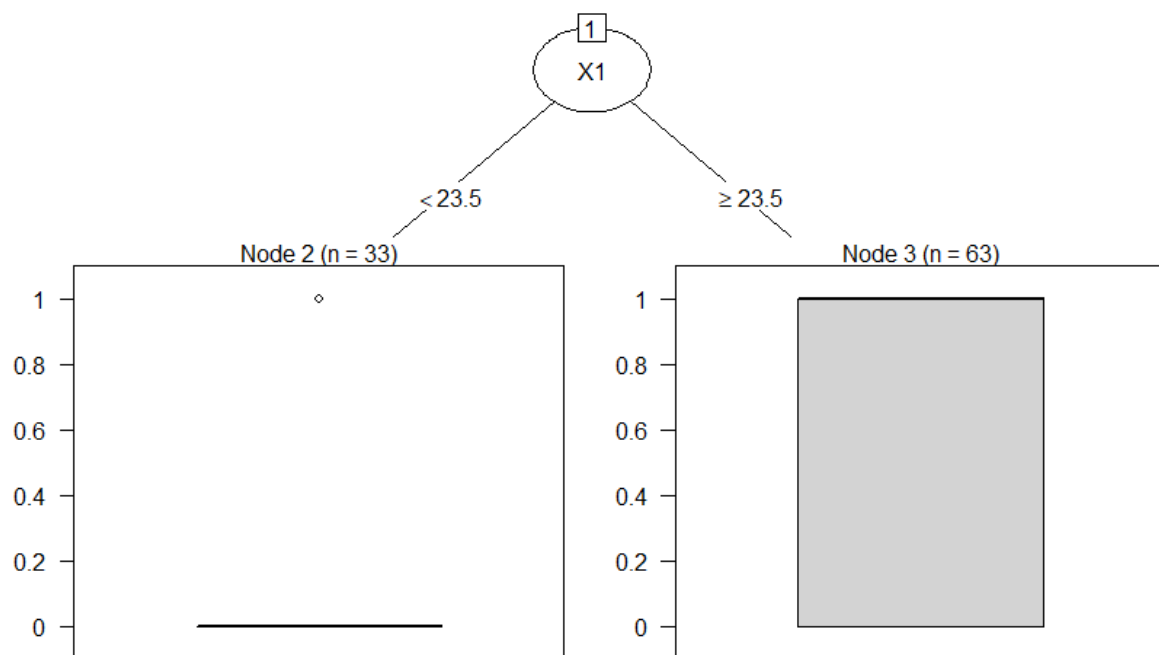
Name: Shikher Singh
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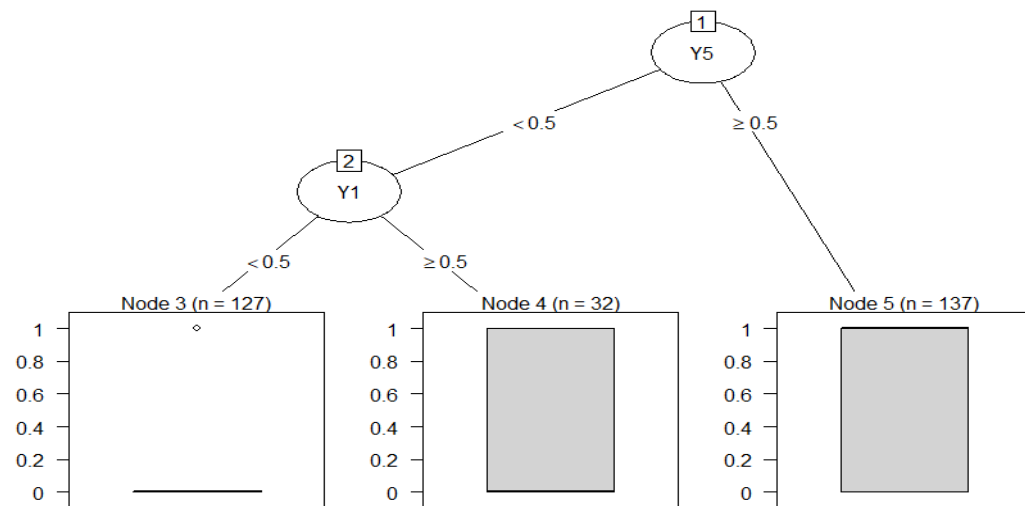
Test Case 4:
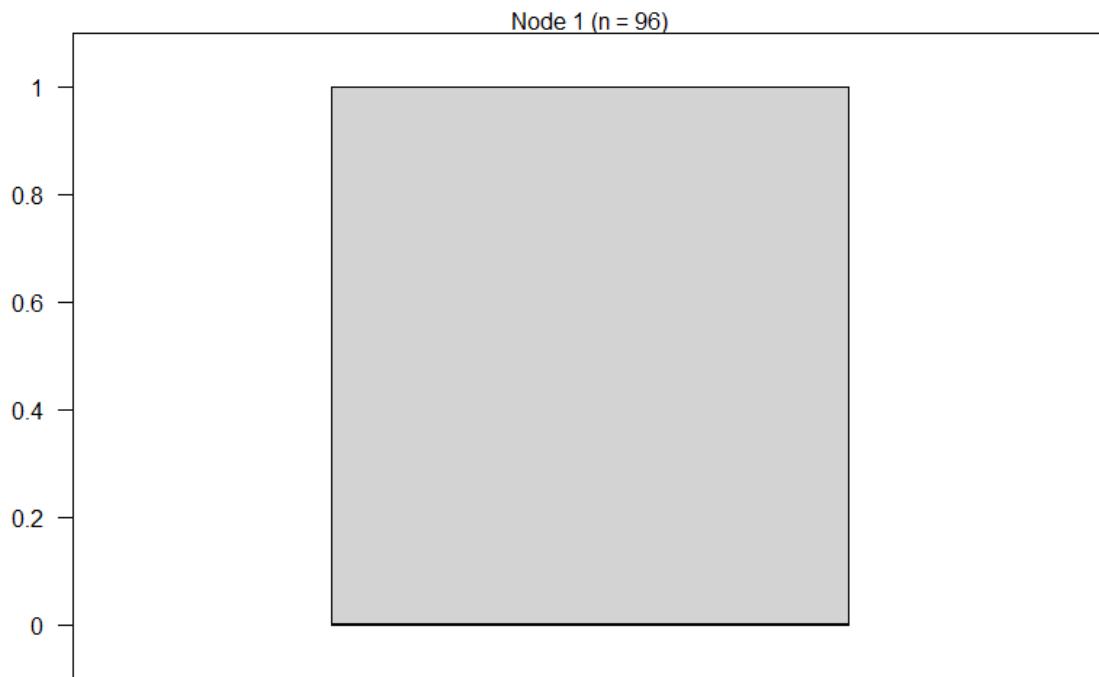
```
          CP nsplit rel error   xerror      xstd
1 0.19861956      0 1.0000000 1.030783 0.0189327
2 0.05236582      1 0.8013804 1.017830 0.0919893
3 0.01000000      2 0.7490146 1.017830 0.0919893
```
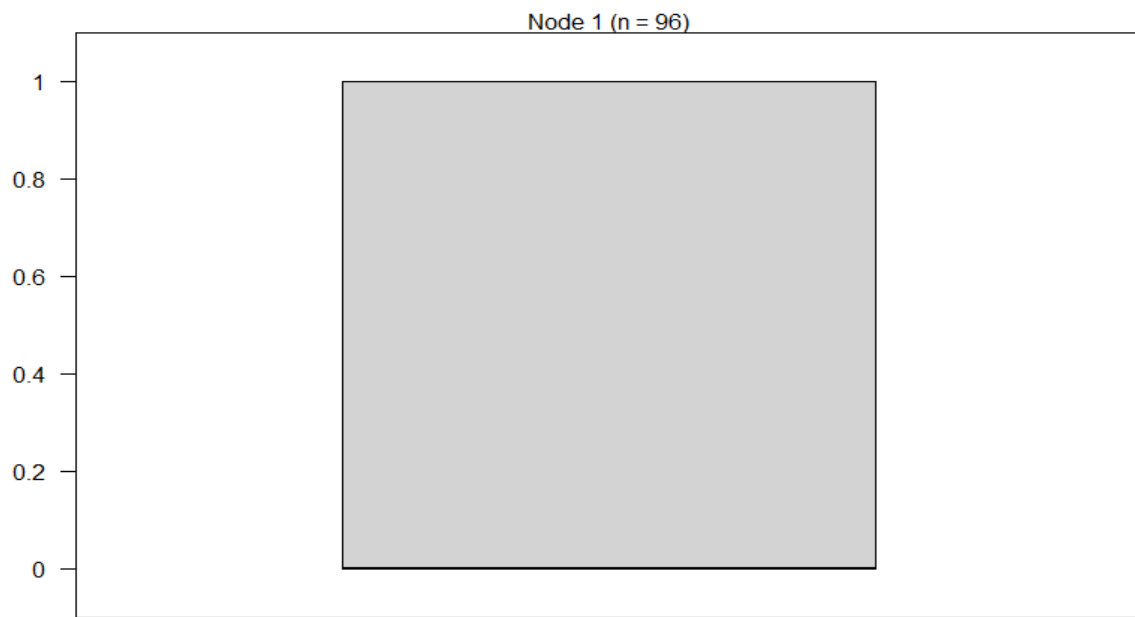
Test Case 5:

	CP	nsplit	rel error	xerror	xstd
1	0.19861956	0	1.0000000	1.029352	0.01912351
2	0.05236582	1	0.8013804	1.050119	0.08734673
3	0.01000000	2	0.7490146	1.050119	0.08734673

Node 1 (n = 96)

Test Case 6:

	CP	nsplit	rel error	xerror	xstd
1	0.0837823	0	1.0000000	1.011700	0.01794214
2	0.0100000	1	0.9162177	1.019217	0.06262912

Node 1 (n = 96)

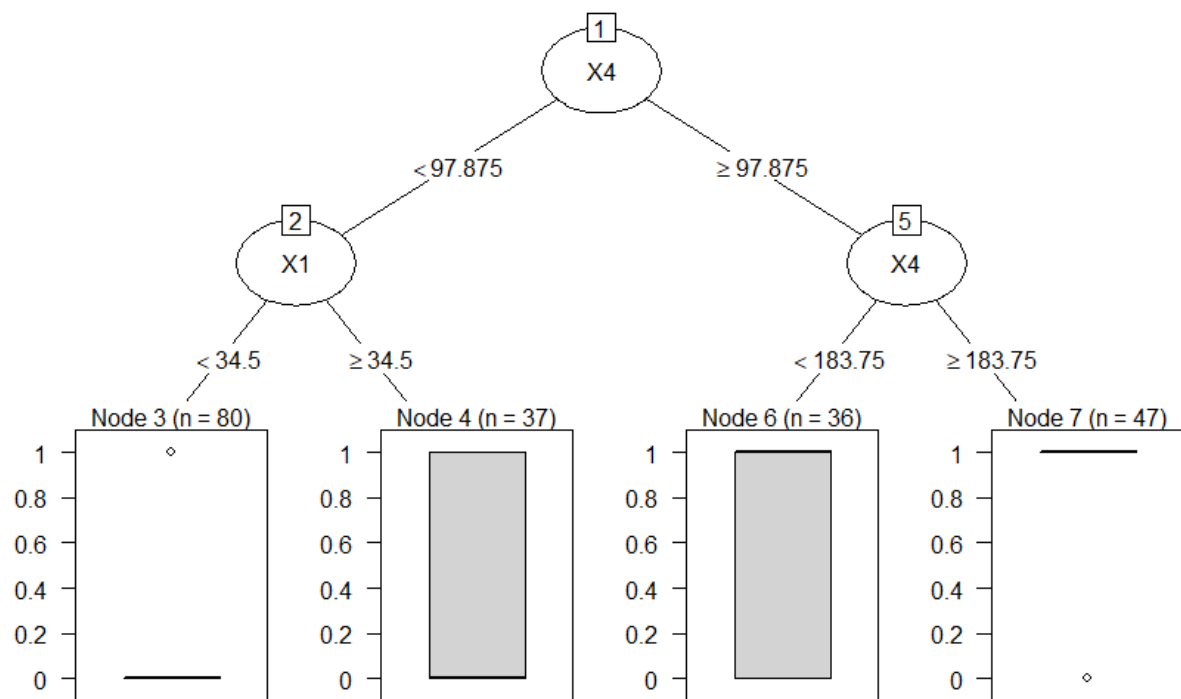Test Case 7:

```
            CP nsplit rel error    xerror        xstd
1 0.30778614      0 1.0000000 1.0060073 0.003798592
2 0.04139071      1 0.6922139 0.8016858 0.070934616
3 0.03354564      2 0.6508232 0.7577154 0.066183955
4 0.01000000      3 0.6172775 0.7141852 0.066891270
```
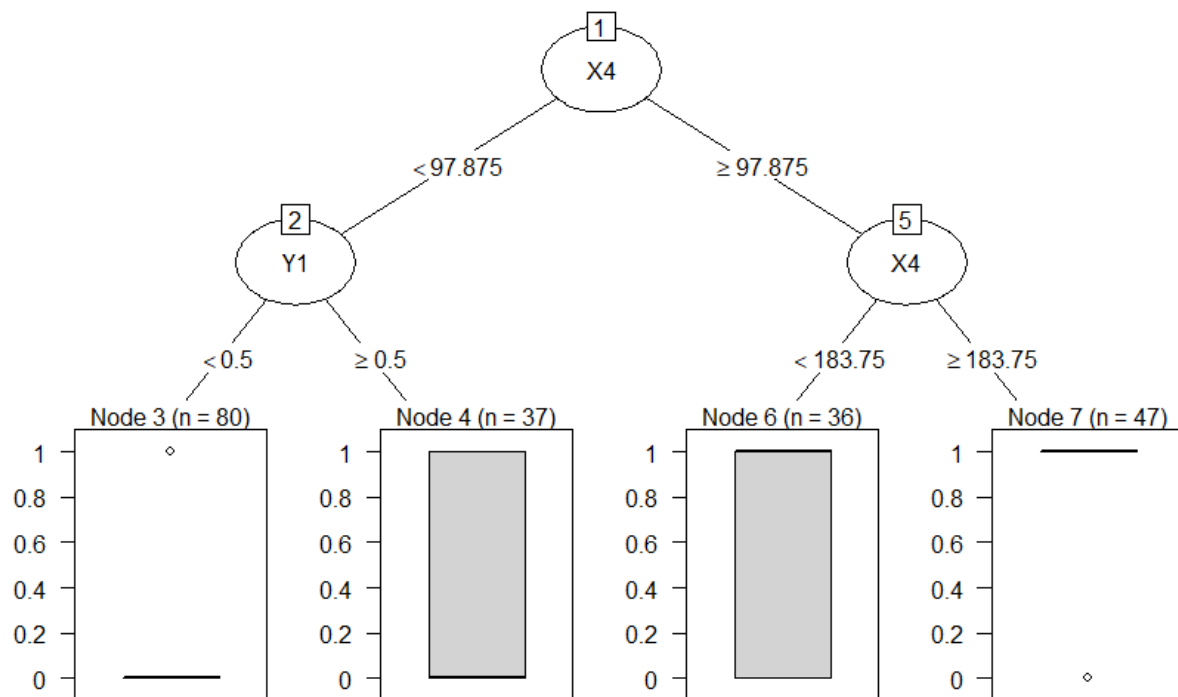
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Test Case 8:

```
        CP nsplit rel error    xerror       xstd
1 0.30778614      0 1.0000000 1.0060073 0.003797688
2 0.04139071      1 0.6922139 0.7516009 0.068110931
3 0.03354564      2 0.6508232 0.7405316 0.066428419
4 0.01000000      3 0.6172775 0.7049076 0.066534113
```


Test Case 9:

```
        CP nsplit rel error    xerror       xstd
1 0.27020028      0 1.0000000 1.0111699 0.004410272
2 0.02824659      1 0.7297997 0.7795858 0.065883325
3 0.01000000      2 0.7015531 0.7783194 0.065585703
```

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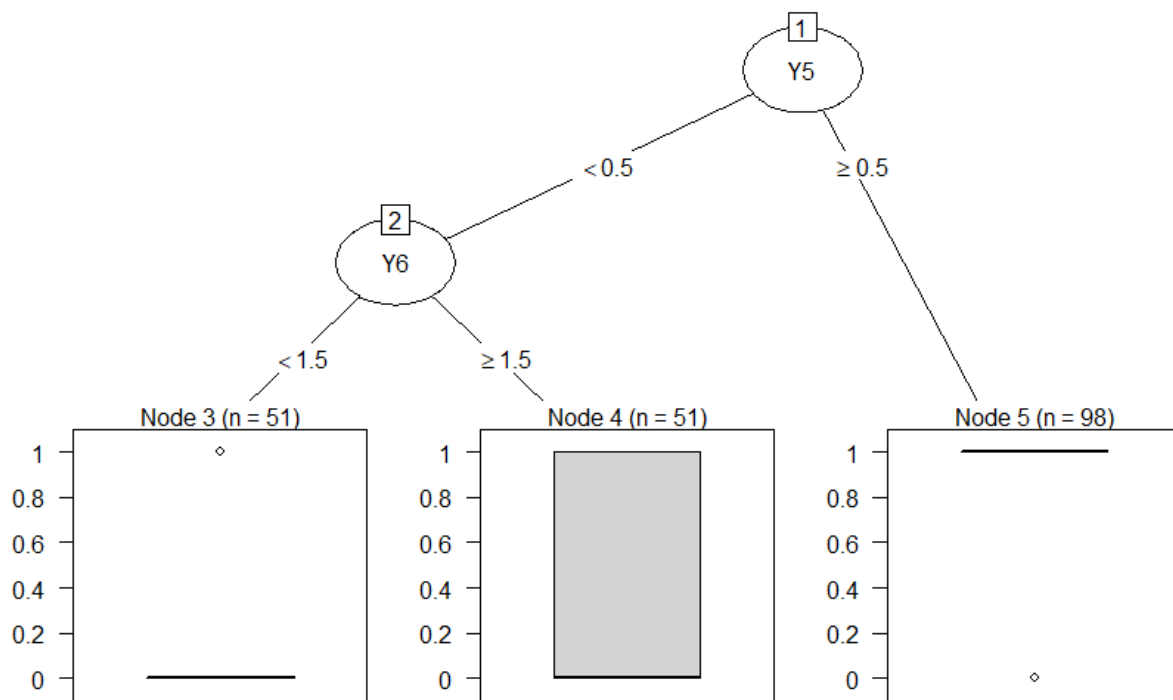
Conclusion: Rel Error got reduced when we only train Model for Group 1 only with either X & Y together or X alone.