Observation Report

From the output, it can be observed that

5. FOR KYPHOSIS DATA:

Variable importance of the original tree using 80% data as training data
training_data$Start training_data$Age training_data$Number
Accuracy of the original tree using testing data= 0.5625
Variable importance of the pruned tree
training_data$Start training_data$Number
Accuracy of the pruned tree using testing data= 0.625

Variable importance of the original tree using 90% data as training data
training_data1$Start training_data1$Age training_data1$Number
Accuracy of the original tree using testing data= 0.6666667
Variable importance of the pruned tree
training_data1$Start training_data1$Age training_data1$Number
Accuracy of the pruned tree using testing data= 0.6805556

In both of the above situations, pruned tree has greater accuracy.
But the best decision tree to be chosen for the kyphosis data is the pruned tree with 90% of original data as the training data.

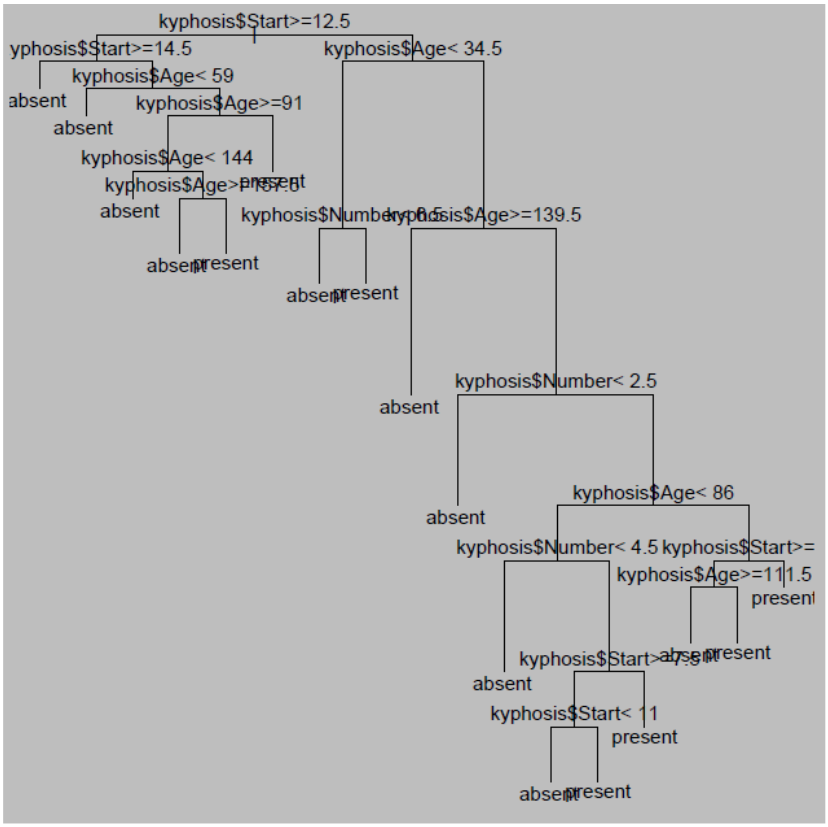
6. FOR SOLDER DATA:

Variable importance of the original tree using 80% data as training data
training_data$skips training_data$Opening training_data$Mask training_data$PadType
Accuracy of the original tree using testing data= 0.5399306
Variable importance of the pruned tree
training_data$skips training_data$Opening training_data$Mask training_data$PadType
Accuracy of the pruned tree using testing data= 0.5399306

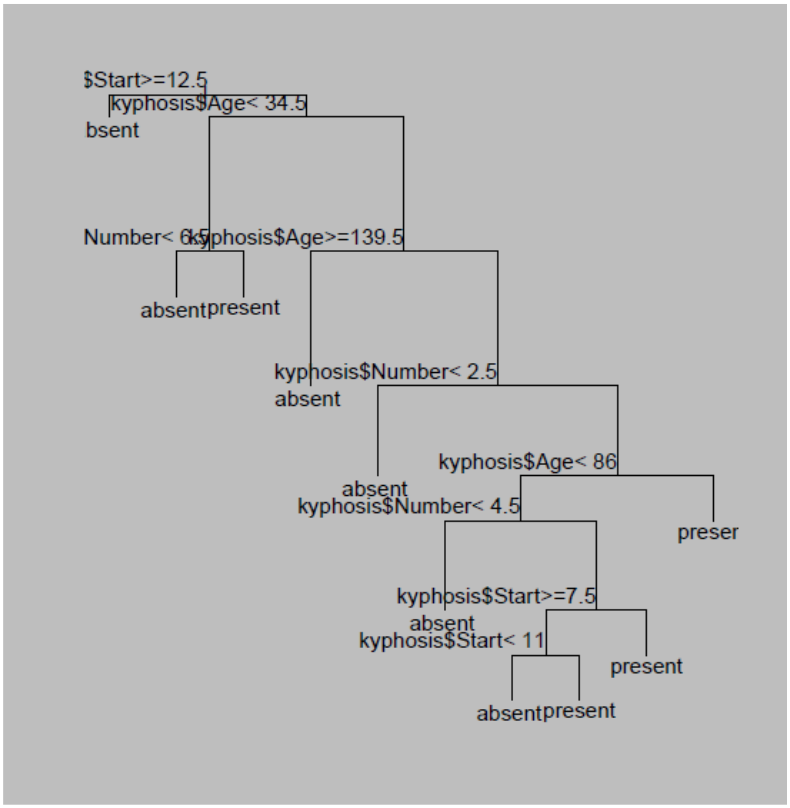
Variable importance of the original tree using 90% data as training data
training_data1$skips training_data1$Opening training_data1$Mask training_data1$PadType
Accuracy of the original tree using testing data= 0.4984568
Variable importance of the pruned tree
training_data1$skips training_data1$Opening training_data1$Mask training_data1$PadType
Accuracy of the pruned tree using testing data= 0.4984568

In this situation, both original and pruned trees obtained are the same.
It can be said that 80% data as the training data can be considered for the solder data to get the tree with greater accuracy

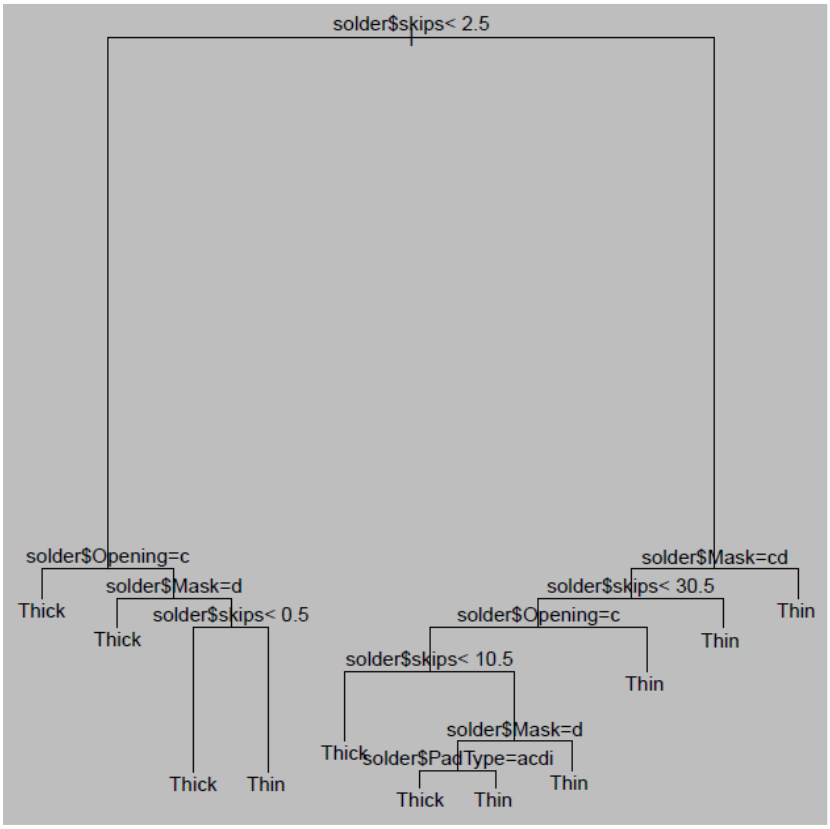
DECISION TREE WITH THE KYPHOSIS TRAINING DATASET



PRUNED DECISION TREE OF KYPHOSIS



DECISION TREE OF SOLDER WITH THRAING DATASET



PRUNED DECISION TREE OF SOLDER DATASET