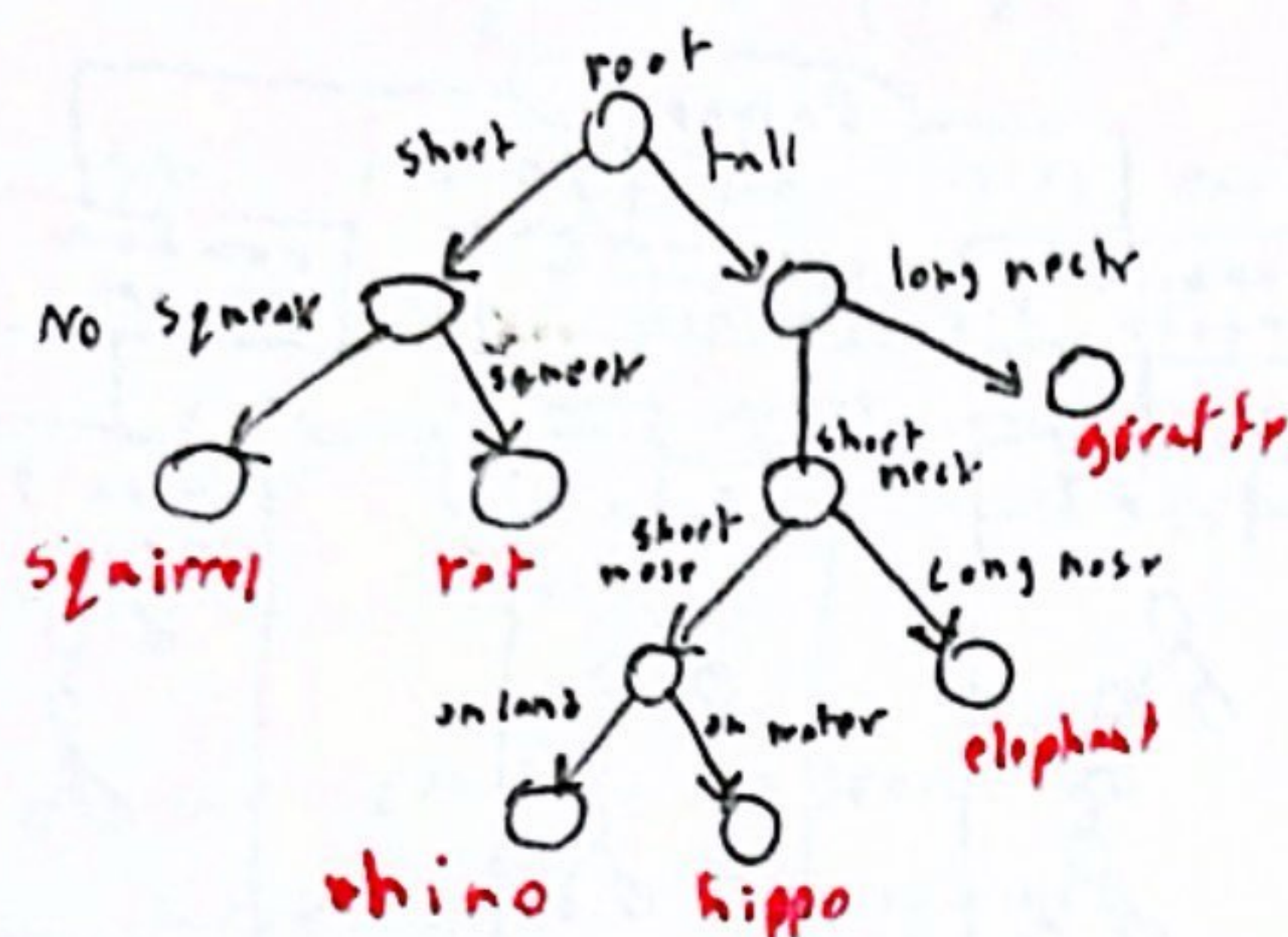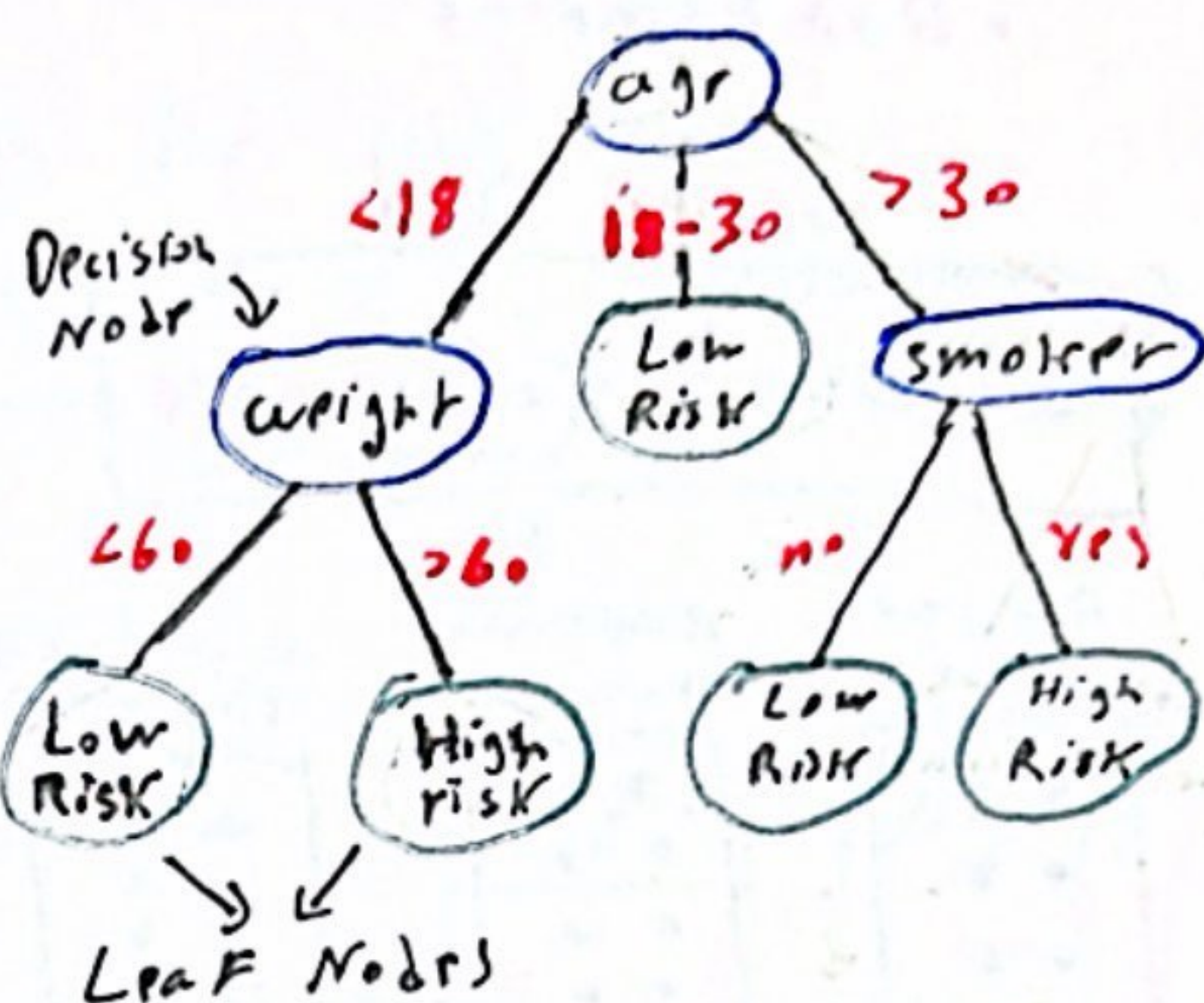# Decision trees  (- supervised  - classification)

- a tree with a series of Yes No style questions that allow us to partition a data set into several Dimensions
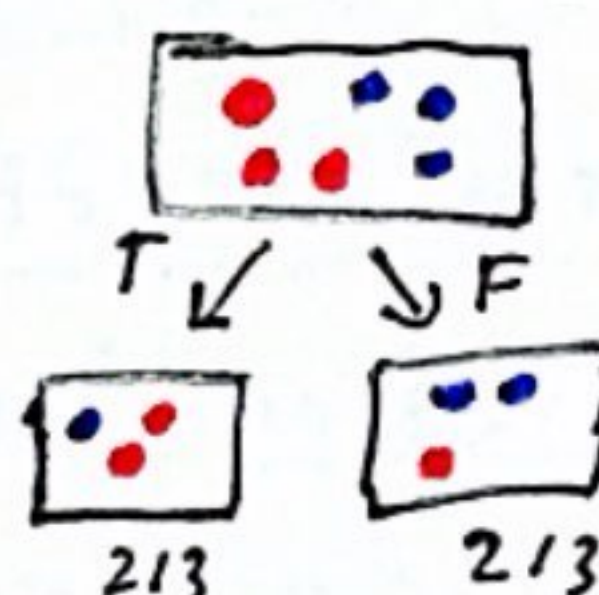
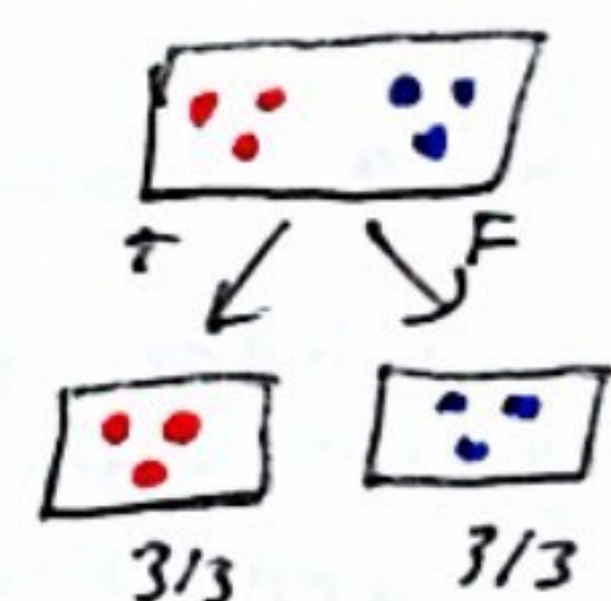Ex's   • Animal classifier                    • Heart attack Risk





LeaF Nodes

△ The goal of this algo is to have Leat nodes that are as pure as possible ie insted of randomly spliting the data we try to find splits that lead to the resulting groups of leafs to be as pure as possible ie as Few datapoints are misclassified



split A
Low pruriky
T ↙ ↘ F
2/3        2/3

split B
Highe pruriky
T ↙ ↘ F
3/3        3/3

## Ensemble Algorithms

-. a decision tree is simple but we can make it powerful by combining many decision trees together. combining many simple ML models to a better model is called Ensemble Algorith there are many type's of ensembles some a dissussed in next pages