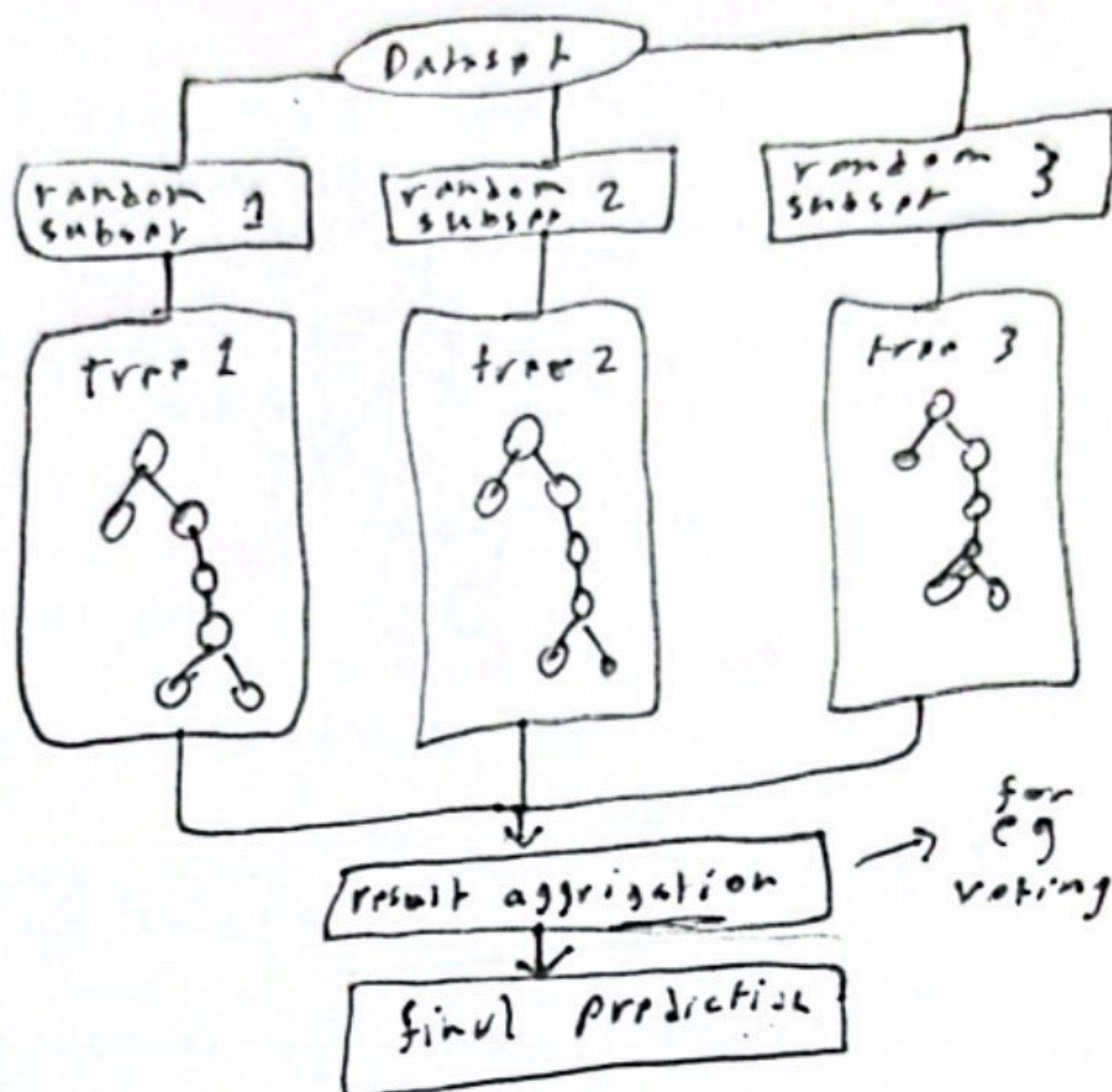
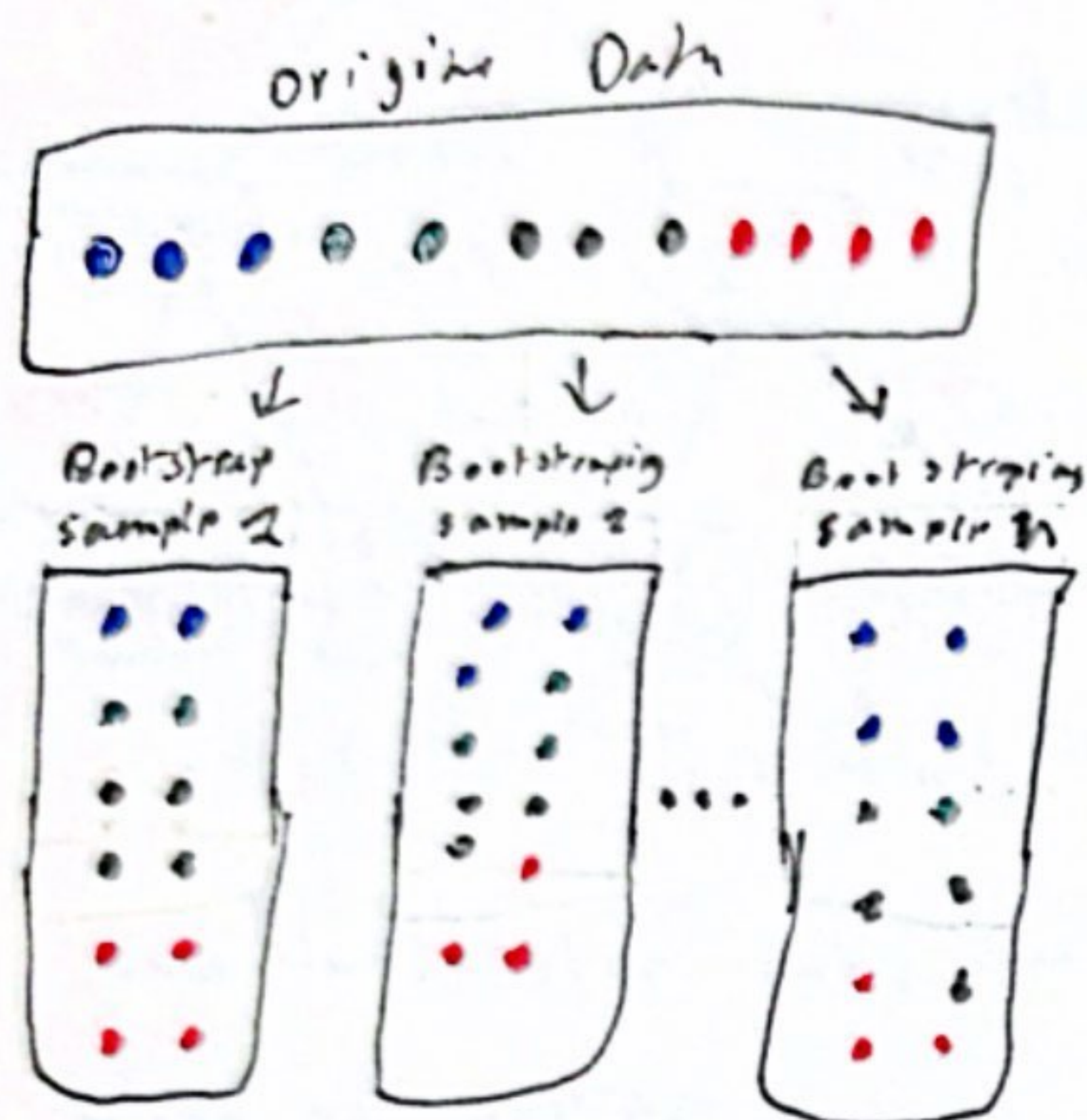


# Bagging

(form of Ensembling)  
common for decision trees

- is a form of ensembling where we train multiple models on different subsets of training data using a method called Bootstrapping
- Bagging: (parallel)

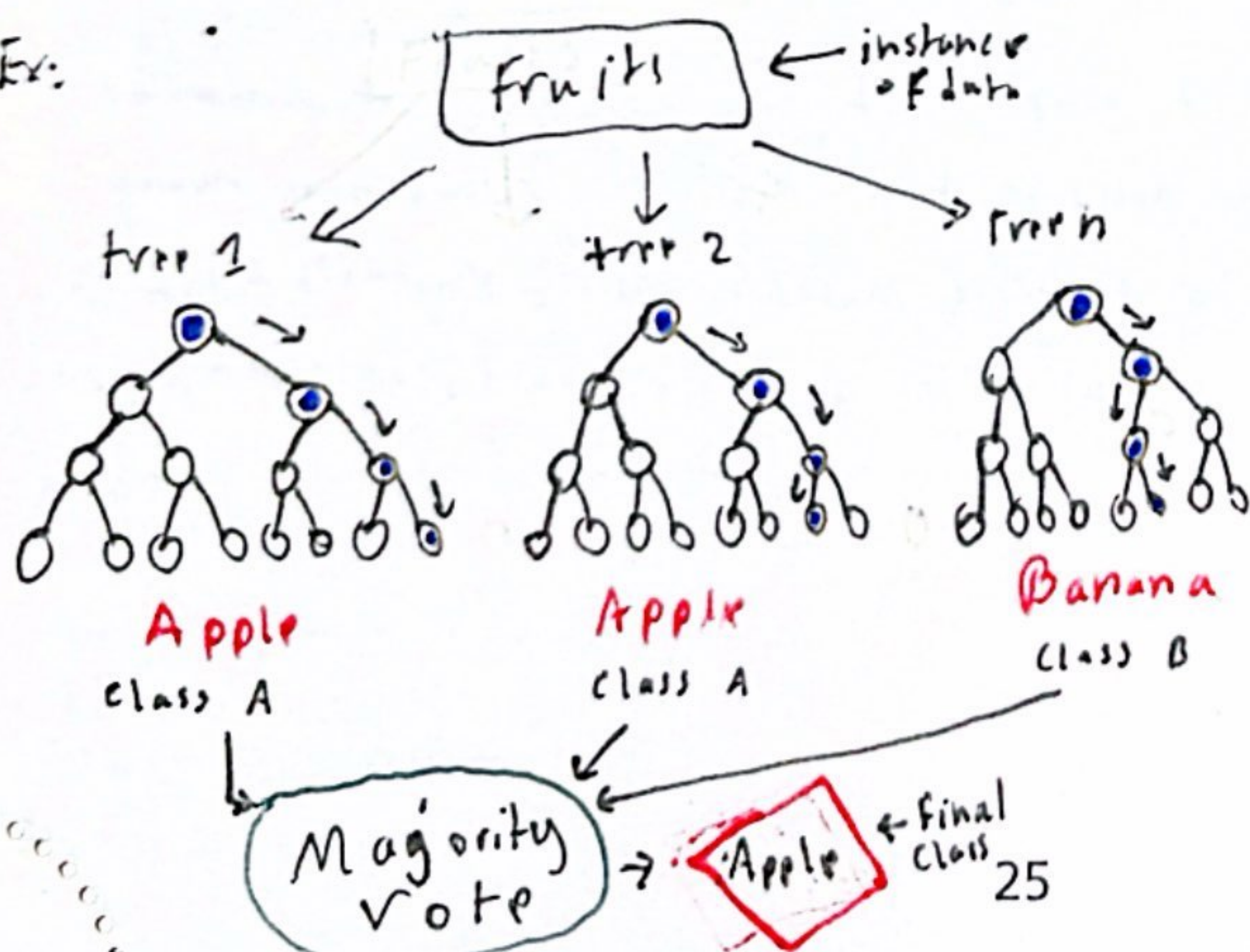
## • Bootstrapping



## Random forest (Ensemble Algo for decision trees)

- a famous version of Bagging is random forests
- where many decision trees vote (based on majority or averaging depending on classification or regression) on the final answer. They are powerful estimators used for both classification and Regression.

Ex:



- The "Randomness" comes from Randomly excluding features for different trees in Random forest which prevents overfitting

Decision Type

Feature 1  
Feature 2  
Feature 3  
Feature 4

Left node

Right node

Random forest 1

Feature 2  
Feature 3

L

R

Random forest 2

Feature 1  
Feature 3

L

R