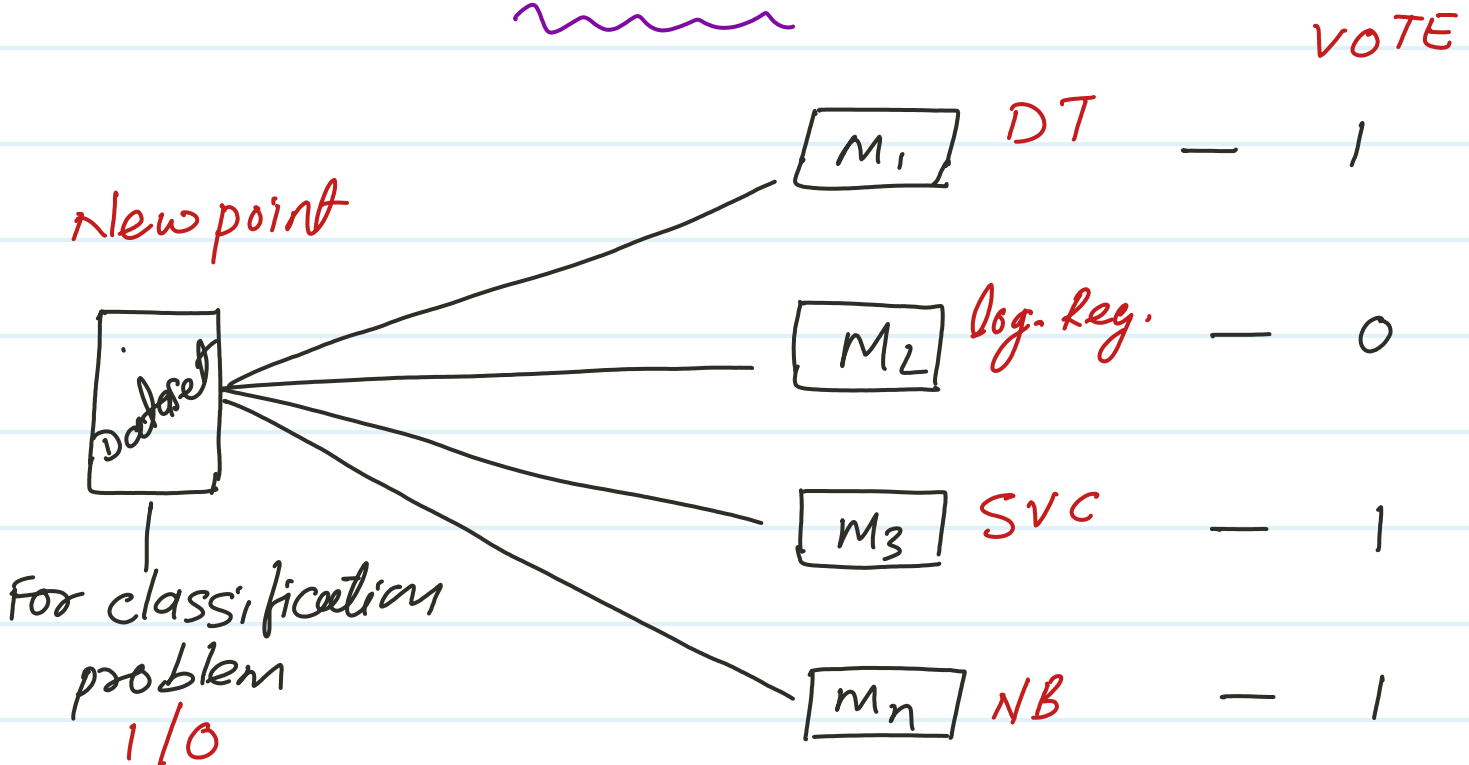


# Ensemble Technique

- ✓ ① Bagging
- ✓ ② Boosting
- ✗ ③ Stacking

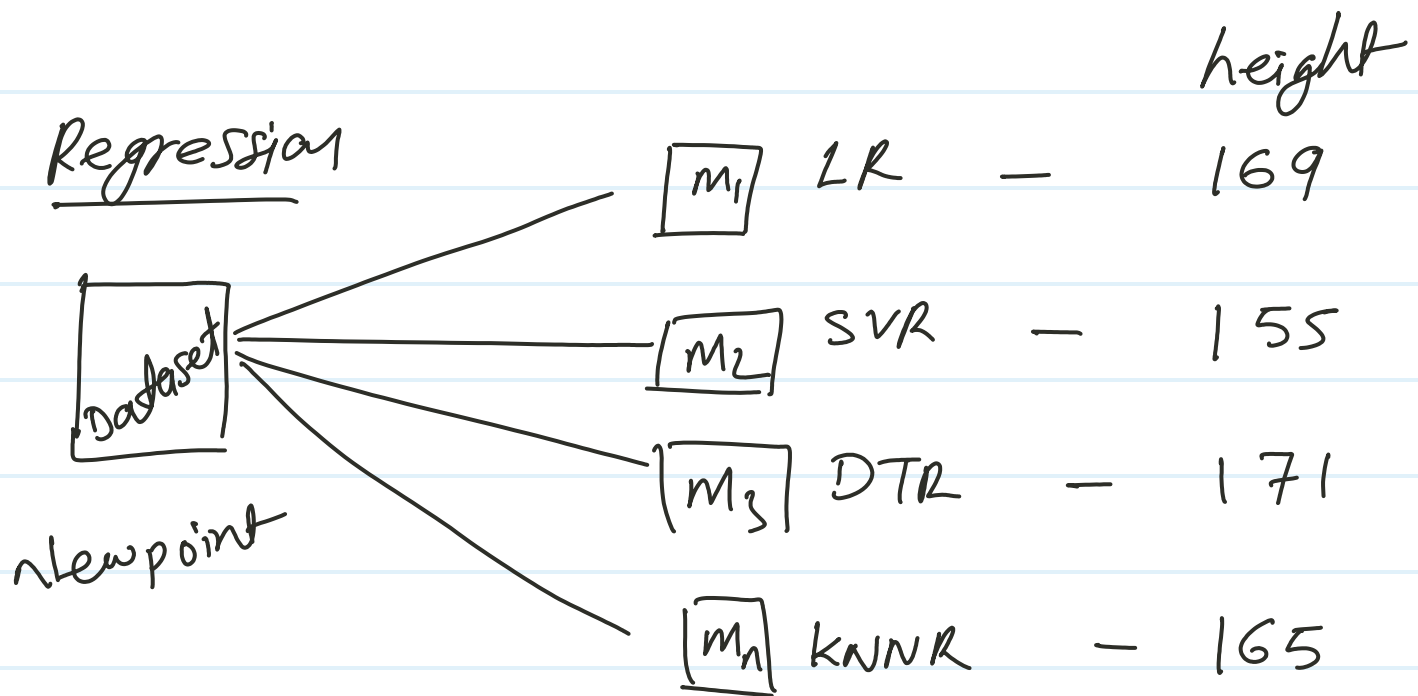
## Bagging



class - 1      3 vote

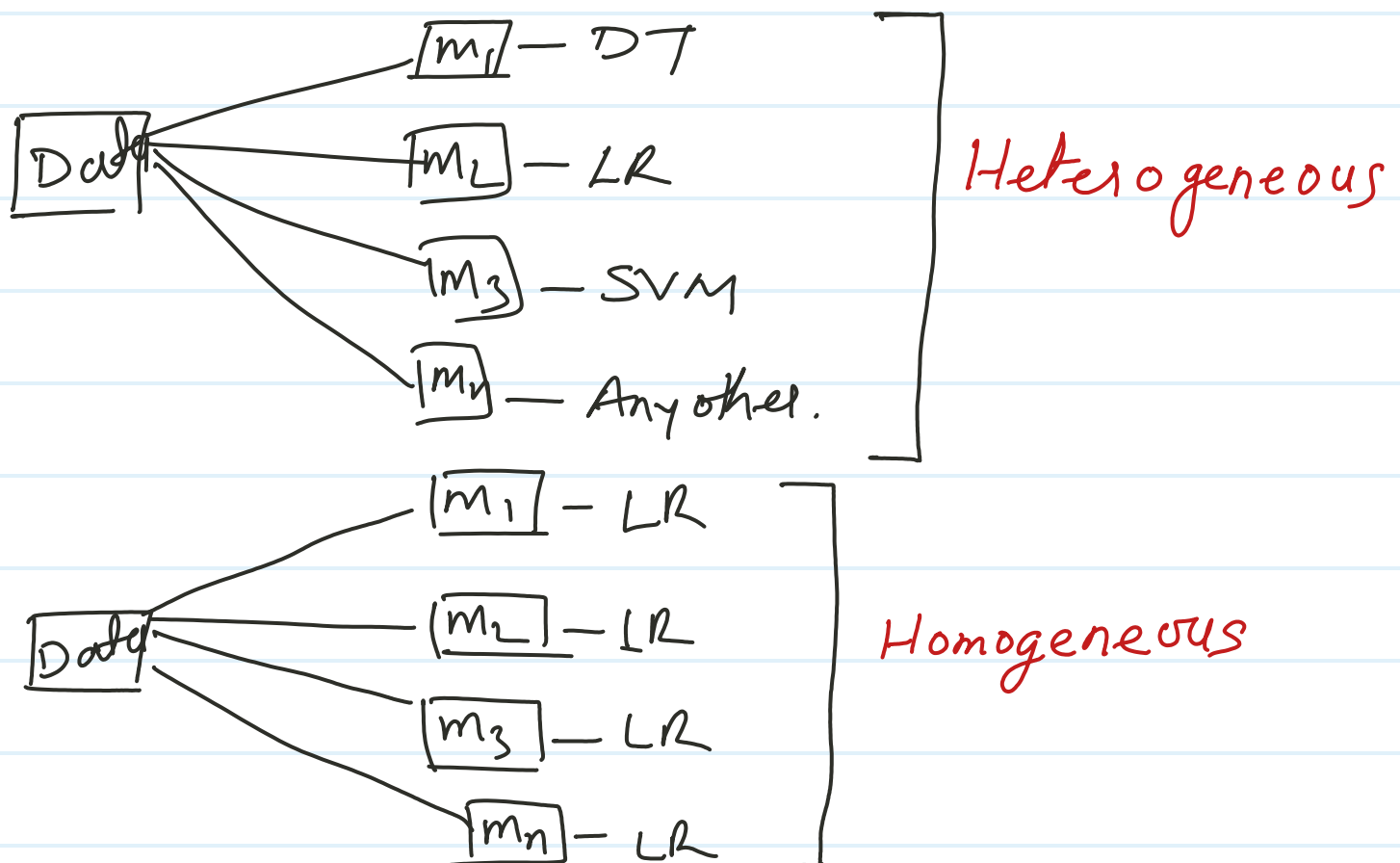
class - 0      1 vote

new point :- class 1

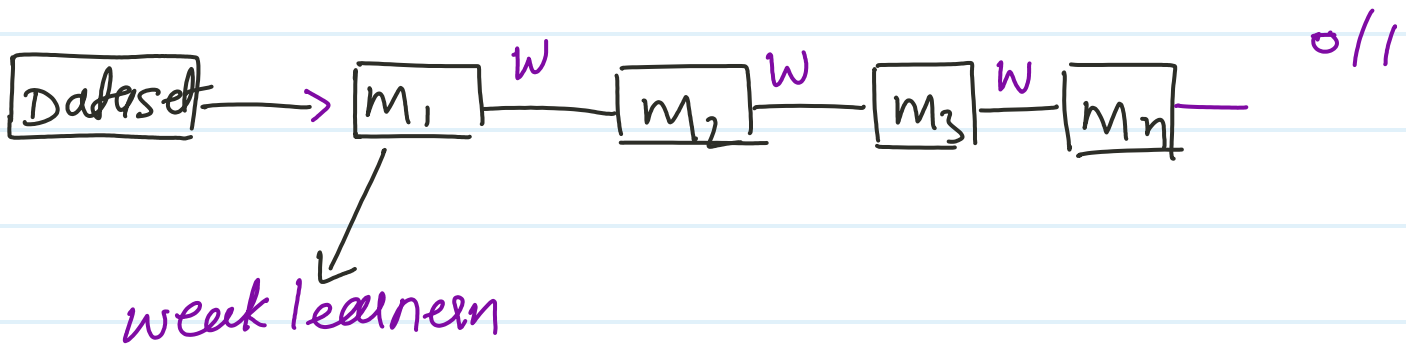


Avg. of all the models

$$\frac{169 + 155 + 171 + 165}{5} = 165$$



# Boosting



## Ensemble learning

- ① Bagging  $\rightarrow$  Parallel learning
- ② Boosting  $\Rightarrow$  Sequence learning

Bagging - Random forest

Boosting -

- ① Ada boost
- ② Gradient boost
- ③ XG Boost