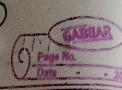
## 19005098 (T) +\* (Page No. Date - 20

\* ML Assignment\*

- \* Student Name: PARTH NITESHKUMAR PATEL
- \* Student Id: 19005098
- \* Subject code & Name: ICS3447 machine Learning.
- 2 Explain Random Forest Algarithm
  - => Random Forest is a supervised learning algorithm
  - =) This algorithm is majorly used in:

    (1) Classification of Problems
    - (2) Regression Problems (1)
  - =) Random Forest Algorithm can handle both: (1) Continuous Variables ((ase of Regression)
    - (2) Categorical Variables

      (case of classification)
  - => Here, the forest it builds, is an ensemble of deusion trees, usually trained with "bagging method!"
- =) Here, ensemble means combining multiple models.



Bagging means creating a different

Sample training data with replacement
and the final out put is based con

majority voting

The simple term, Random forest construct

multiple devision trees and merges them

The simple term, Rundom forest construct
multiple decision trees and merges them
together to get a more actual en
cend ctable prediction.

> Random forest add randomness to the model while growing the tree.

\* Steps involved in the Algorithmis-

andom records are taken from

The data set i having K number of

records and maning K number of

for each sample bolicopin) (c)

(4) Final output is considered based on

(4) Final output is considered based on majority Voting or Averaging

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\* Important Hyperparameters used: -\* To increase predictive Power! (1) n\_estimators > no. of trees the algo, builds before averaging. (2) max-features > max number of features Random forest considers splitting a node (3) mini-sample-leaf -) determines the minimum number of leaves required to split an internal mode \* To increase speed:-(1) n-jobs > tells how many processors allowed to use. (2) random-state -> controls randomness of the sample (3) oob-store -> means out of bag; a cross validation method This algorithm is used in a lot of different fields, like banking, stock market, medicine, e-commerce, etc