Greedy Forward and Backward Feature Selection

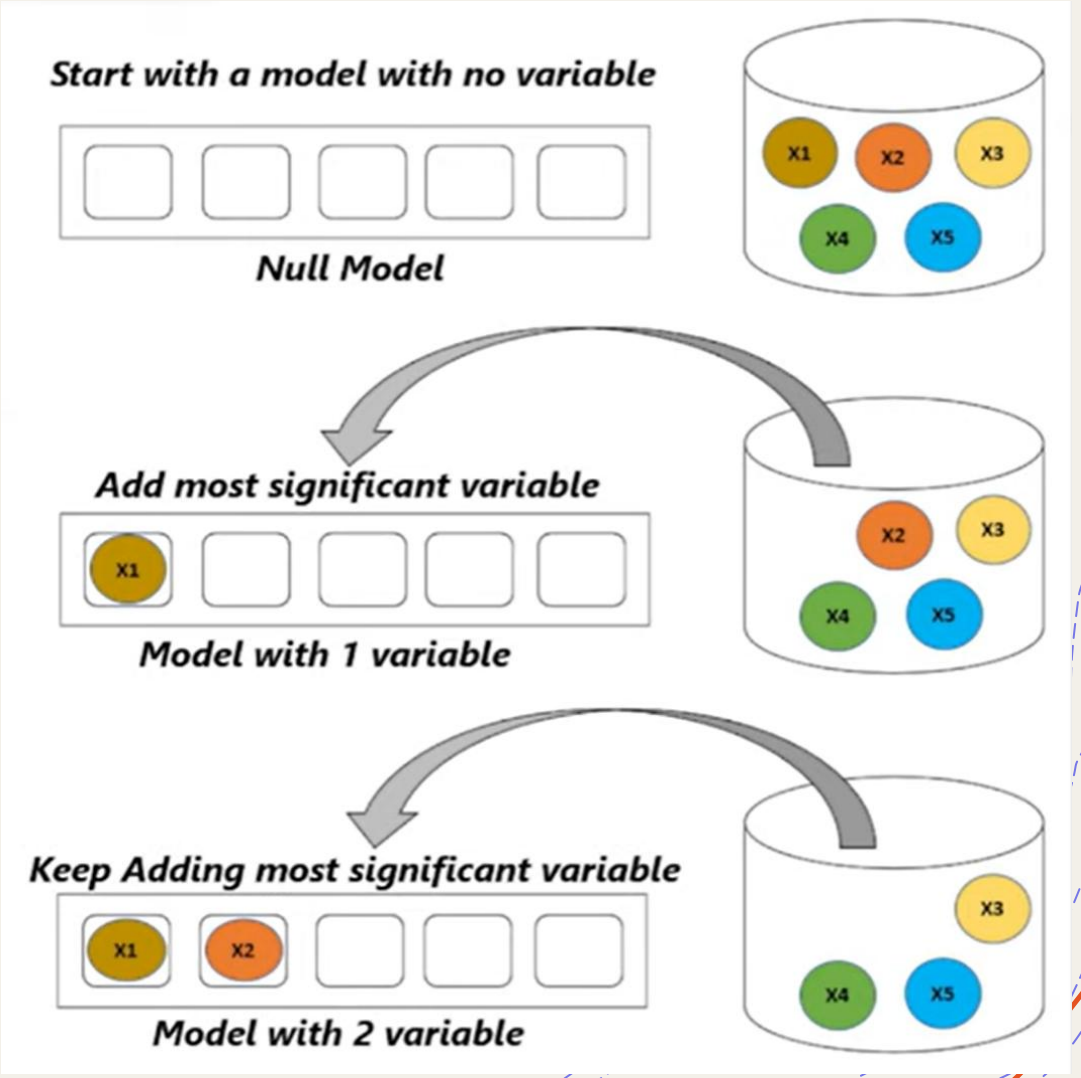
Forward Selection-

-> Iterative process

->Begins with empty set of features

-> After each iteration, it keeps adding on a feature and evaluates the performance

-> The process continues until the addition of a new feature does not improve the performance of the model



Usage:

- Greedy Forward Selection is often used when the number of features is not too large, as the combinatorial nature of the feature space can make it computationally expensive for a large number of features.
- This method is a heuristic and doesn't guarantee the optimal subset, it can still be effective in practice for feature selection.

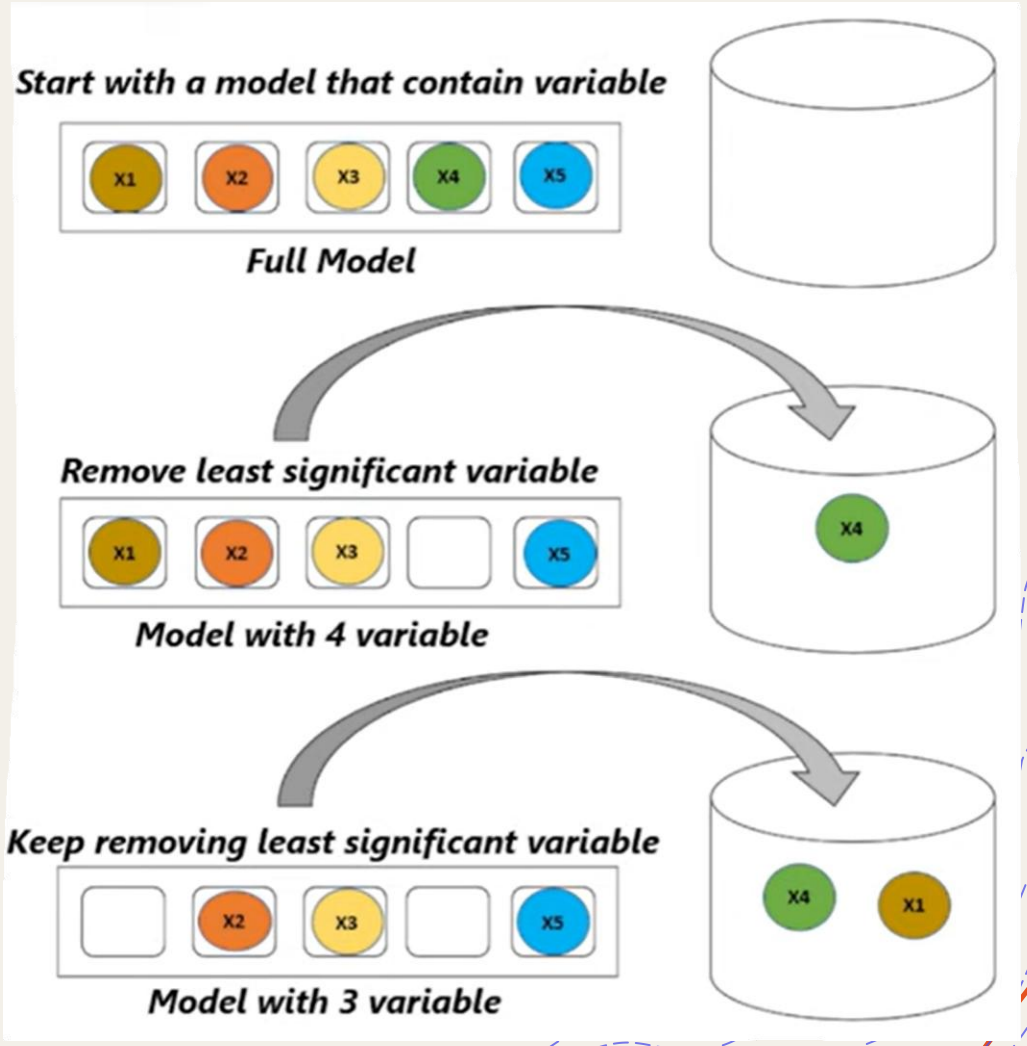
Backward Elimination-

-> Iterative process

-> Opposite of forward selection

->Begins by considering all the features and removes the least significant feature

-> The elimination process continues until removing the features that does not improve the performance of the model



Usage:

- Greedy Backward Selection can be useful when the number of features is relatively large, and you want to iteratively prune the less important features. It is essential to carefully choose the stopping criterion to avoid overfitting.