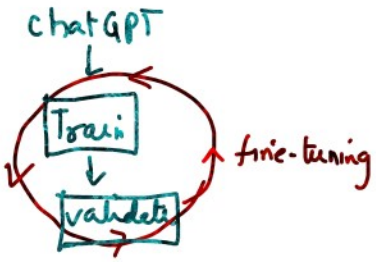
Training, Validation & Testing

21 December 2023 08:17

© apc **Concept of Movie Making**

1. Commercial Movie: [drama, action, music (recaipe), chemistry]
   ↕
   Training dataset: different attributes (features) having diverse characteristics
   → sample should truly represent the data (population)



(feedback)

2. Movie Premieres: (validate the movie they made in a small audience)
   Validation set
   critics → (criticize)

3. Releasing the movie: In the BO: Box Office
   Testing set
   Performance Metrics: Day #1 $
   Rating
   Day #2 $

6 months
3 + 2 + 1 month testing
Data Pick — Model Building — T+V

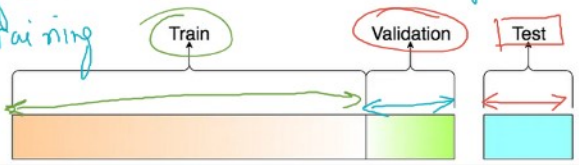
RMSE, R^2, Confusion matrix
Accuracy, Precision, Recall, F1-score, ROC curve
MAPE, MSE, WMAPE

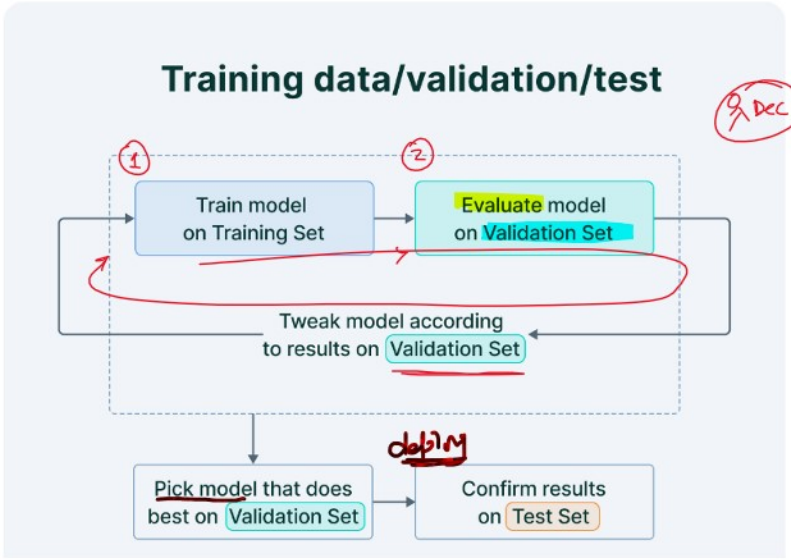
Training, Validation and Testing Set

- **Training set:** Sample of data used to fit/train the model and make the model learn the hidden features/pattern in the data

- **Validation Set:** It is a set of data separate from training set that is used to validate the model performance during training & update hyperparameters

- **Test set:** It is a separate set of data used to test the model after completing the final training

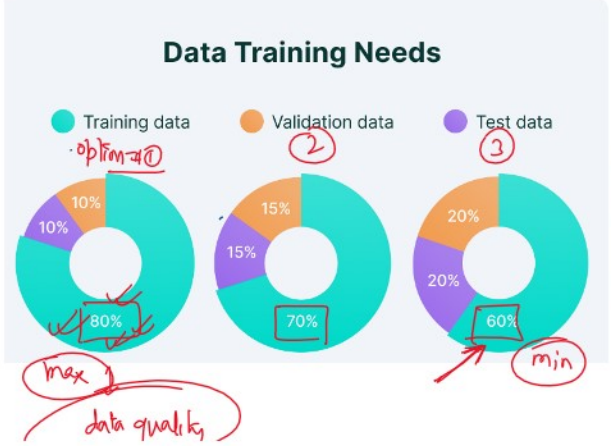




Forecasting Sales

	2024	Model	Actual	(Error)
Prod A →	JAN	100	150	50/150 × 100 = 33% FH.
	FEB	80	90	10/90 × 100/9 = 11% .. 89%
	MAR	90	100	10/100 × 100 = 10% 90%

100/9=11.1111



500 × 80% = 400

Training = 80%
Validation = 10%
Testing = 10%

max

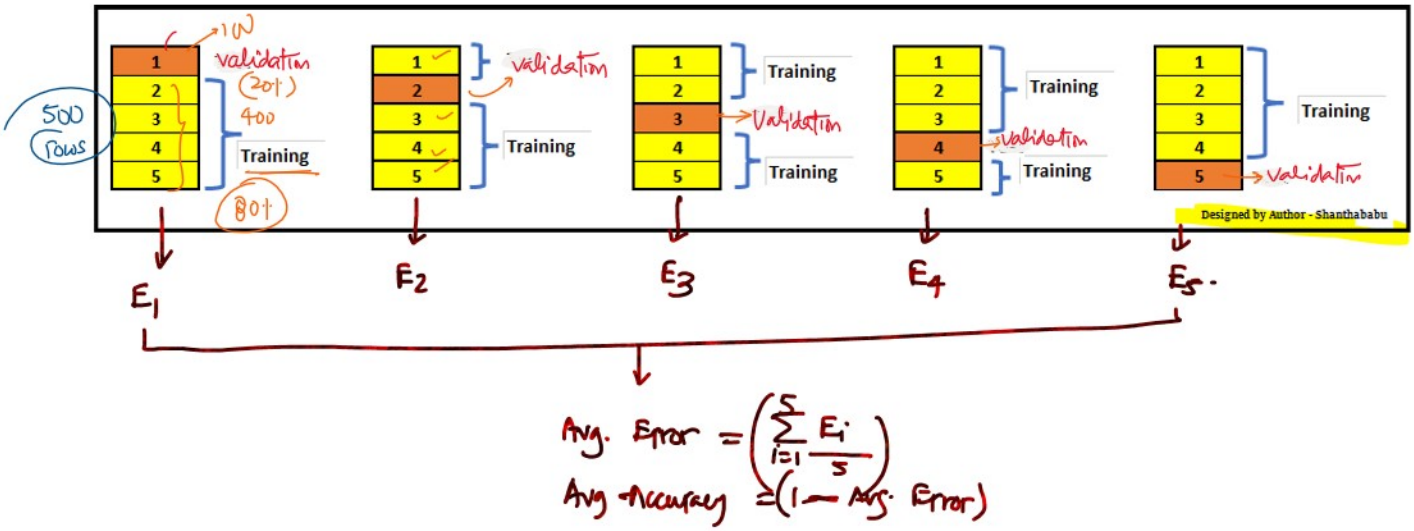
min

data quality is bad

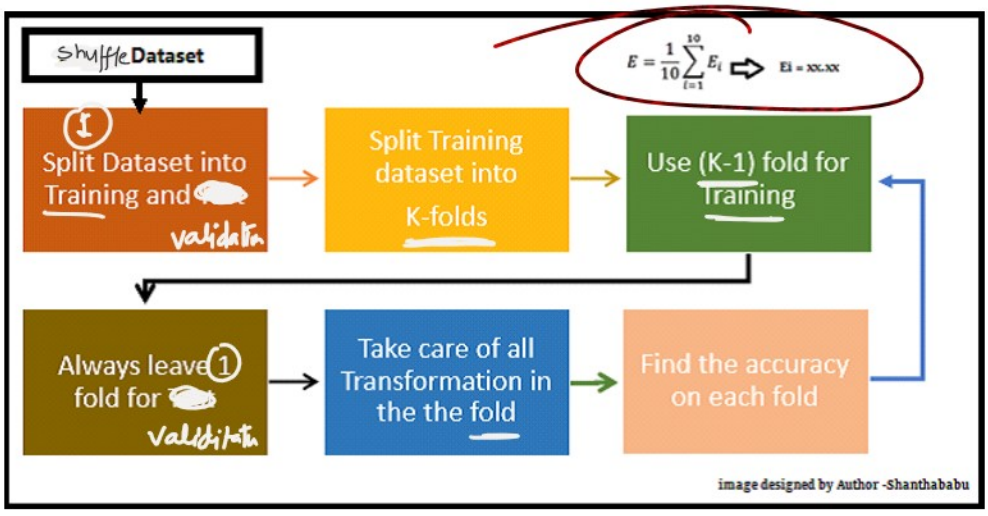
Validation Techniques

K-fold CV : K-fold cross validation

- it is a technique for evaluating the predictive models during training.
- Dataset is divided into K-subsets or folds randomly.
- Model is trained and evaluated K-times, using a different fold as the validation set each time.



Life-cycle of K-fold CV



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