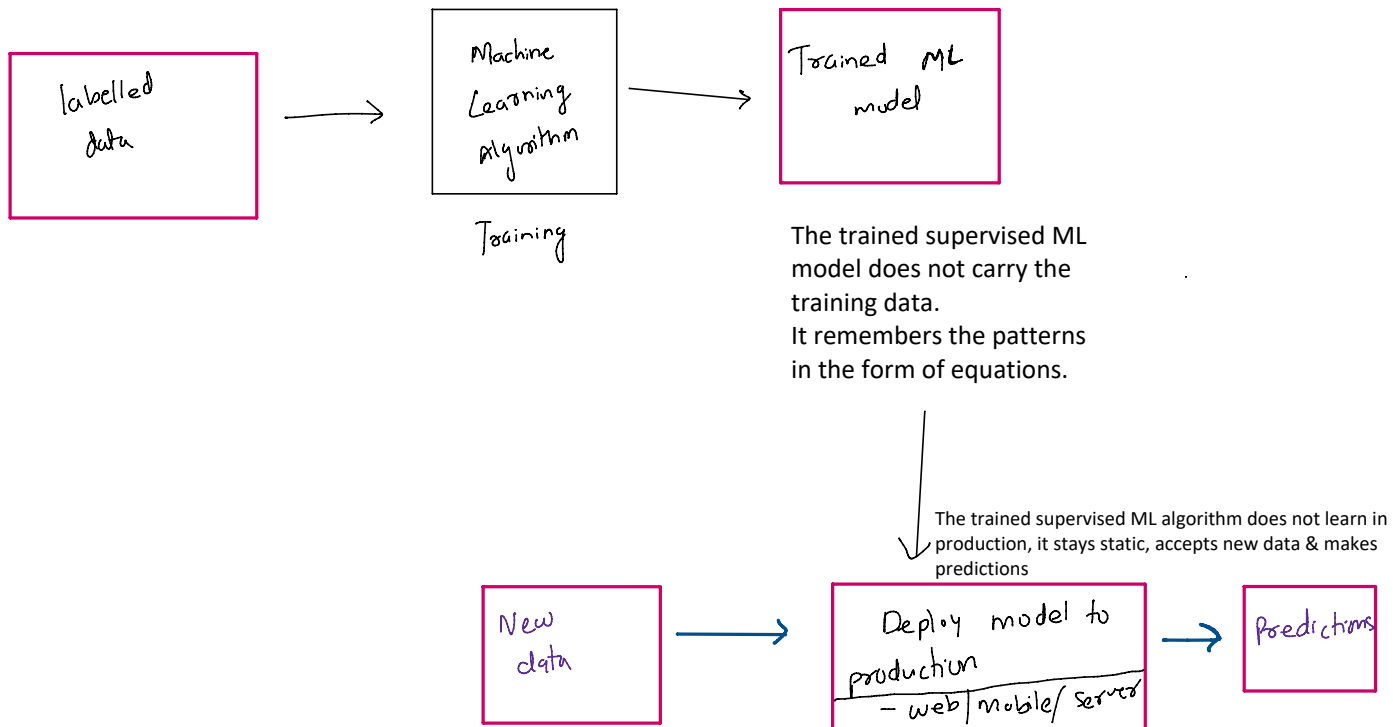


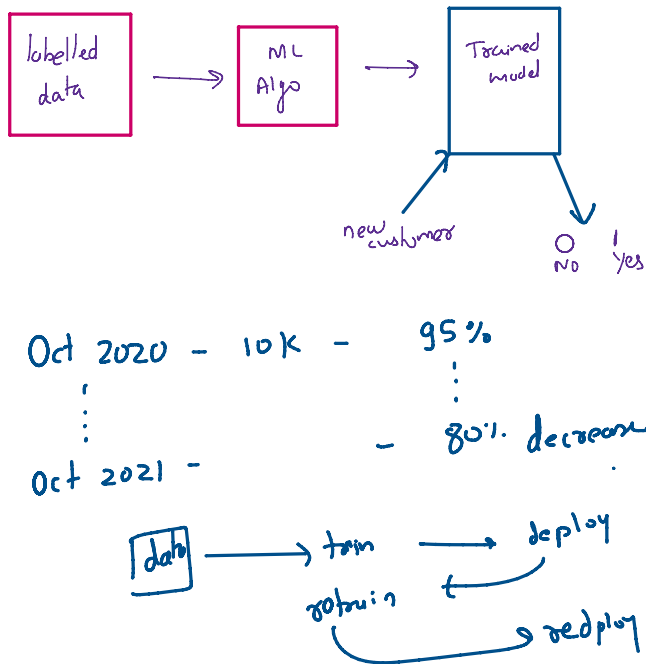
## Supervised Machine Learning

- Problems like making predictions about future, identifying objects can be solved
- It always required labelled data
- We train the algorithm using labelled data and get a trained model, the trained model can then accept any new data point and can make predictions
- In supervised Machine learning, we train the model with the labelled data, the trained model does not carry the data, it optimizes a predictive equations.
- In production, the supervised models only makes predictions, there is no learning
- According to the sensitivity of the business case, we may need to retrain the model and redeploy to production over a period.



### Case 1 - Bank Churn Modelling - supervised ML use cases

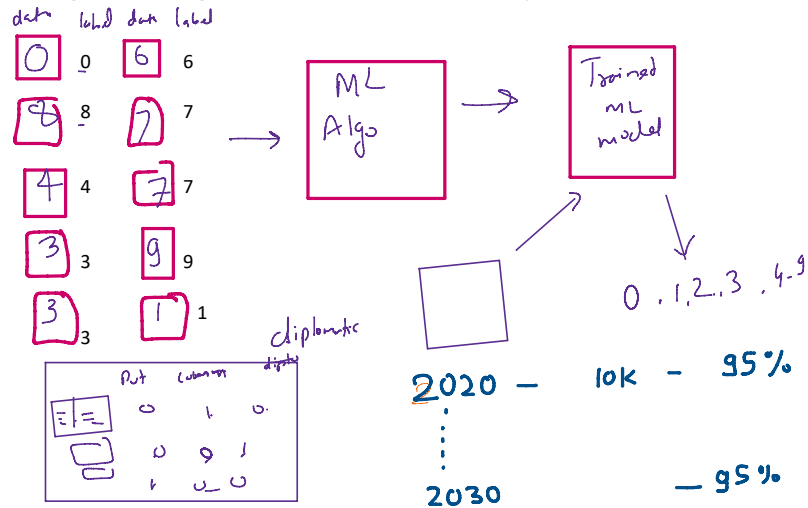
Objective - to build a model which can learn from labelled data and make predictions about any customer whether they will leave the bank or not.



### Case 2 - AVNPR - Automated Vehicle Number Plate Recognition - supervised ML use cases

Recognition - supervised ML use cases

Objective - to build a model which can learn from labelled data and can recognise the digit from the image and thus can recognise the digits from the vehicle number plate.



## Lifecycle of any enterprise with Data/AI

- What has happened in past / what is happening now?
  - Build dashboards to display important KPIs
  - Data Reporting / Business Intelligence - power BI / Tableau BI
- Why this happened in past?
  - Prepare exploratory data analytics report / root cause analytics report to answer the question.
  - Exploratory Data Analytics - Python / R - statistics and Data visualization
  - Tools for dealing with large volume of data - big data tools like hadoop / apache spark
- What will happen tomorrow?
  - Build a predictive model which can make predictions, integrate it to a web/mobile app or a dashboard.
  - Predictive Analytics - Supervised machine learning - python / R
- How can we make it happen?
  - Prescriptive Analytics - Unsupervised Machine Learning - python / R / big data tools