



# SNS COLLEGE OF TECHNOLOGY

Coimbatore - 35



23BAT615 – Artificial Intelligence for Managers

Unit III – Unboxing AI & Its Applications



Presented by

Ms.S.D.Shamini

Design Thinker

Redesigning Common Mind & Business Towards Excellence

1<sup>st</sup> Indian  
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to Implement  
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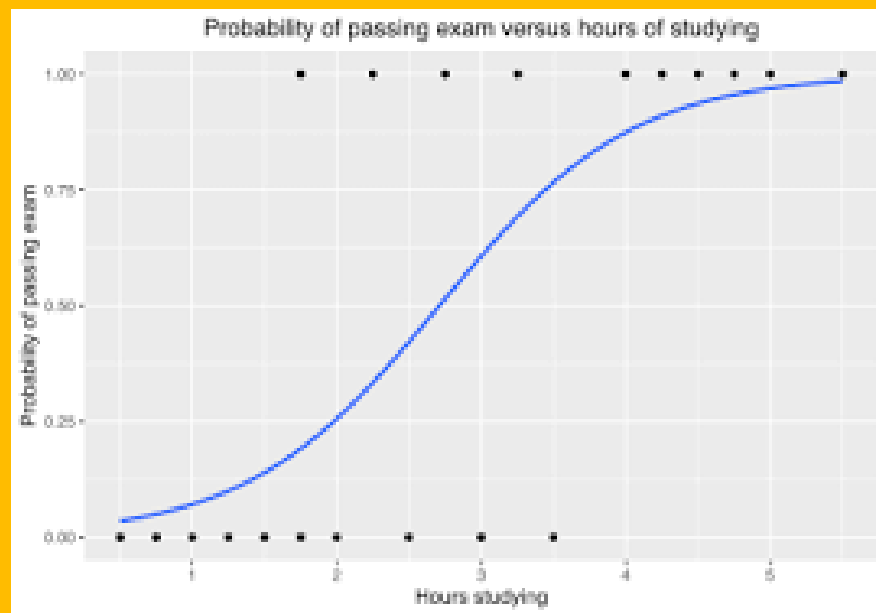
Build an Entrepreneurial Mindset through our Design Thinking FrameWork



# Guess the Topic!!!



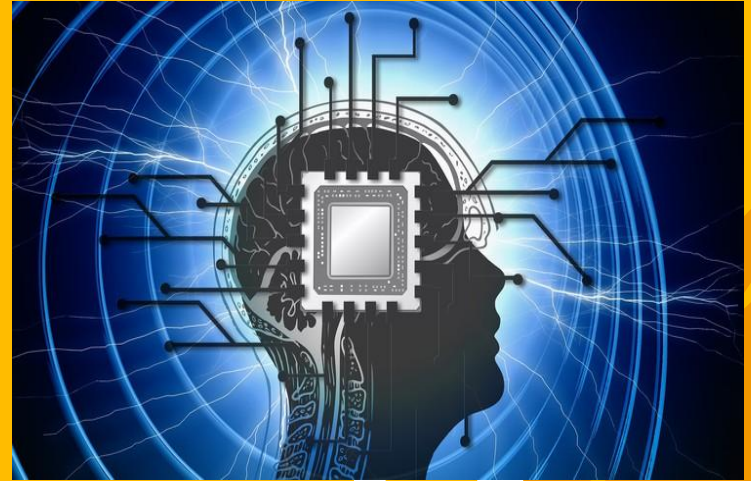
## Logistics Regression





# Recap

- Reason to study Linear Regression
- Linear Regression
- Application of Linear Regression
- Simple linear regression in sales forecast
- Linear regression in Tableau
- Pros and Cons





# Discussion about....

Reason to study Logistics Regression

- Logistics Regression
- Logistics Regression Model
- Logistics Regression for Sales of a New Product
- Pros and Cons
- Logistics Regression at a glance

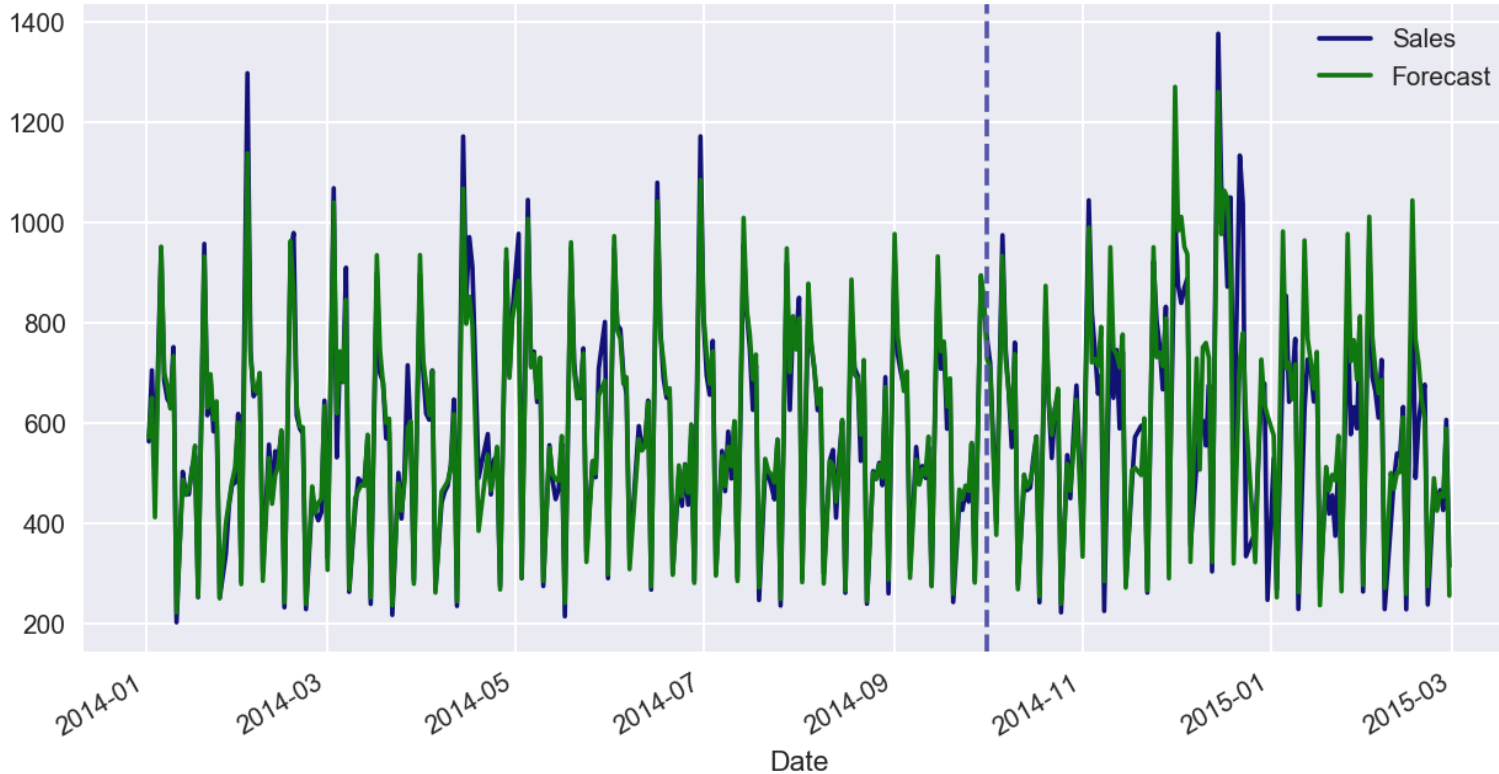




# Reason to study Logistics Regression

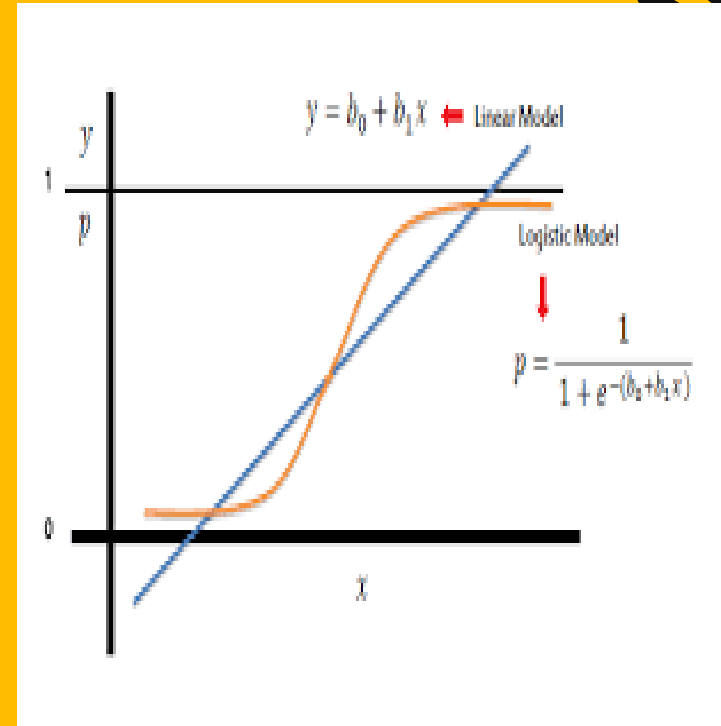
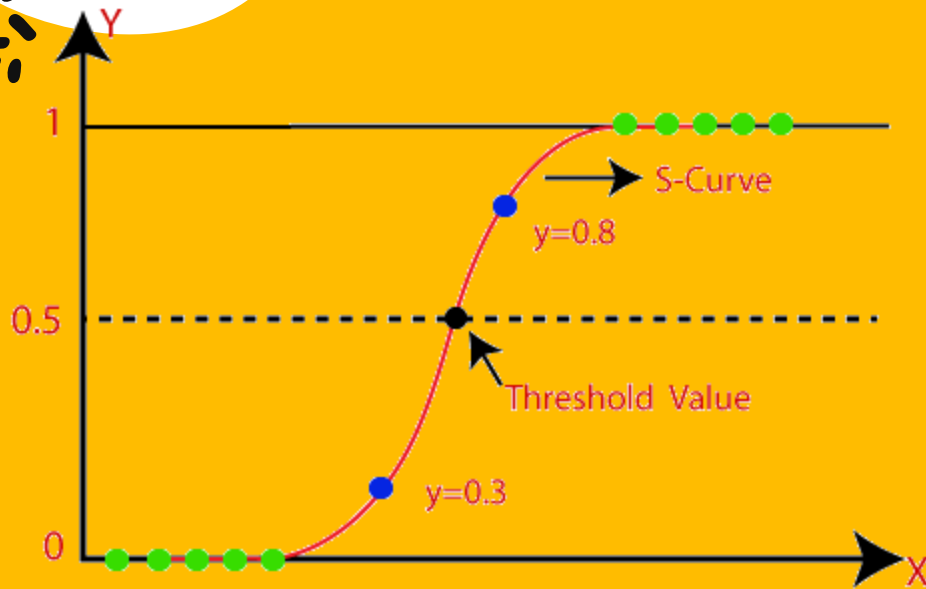


Sales Forecasting (train set error: 3.9% validation set error:11.6%)





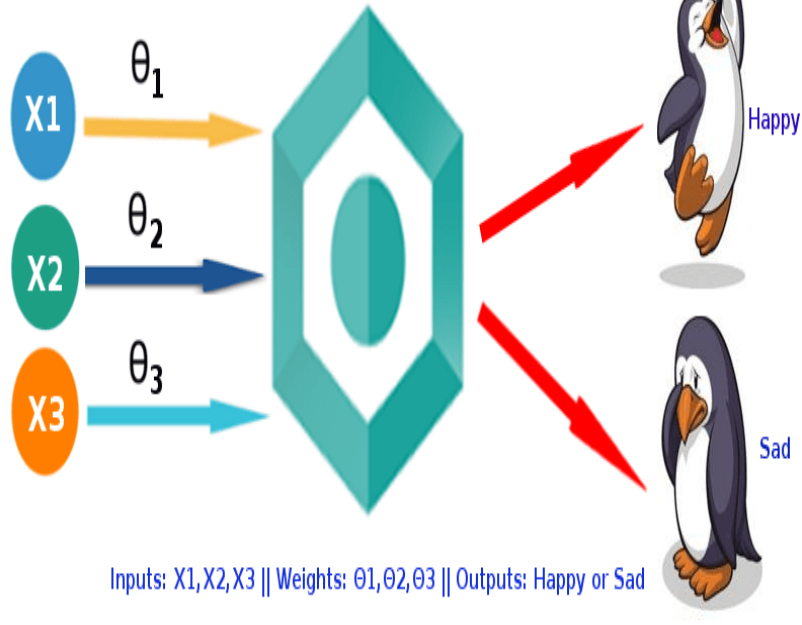
# Logistics Regression





# Logistics Regression Model

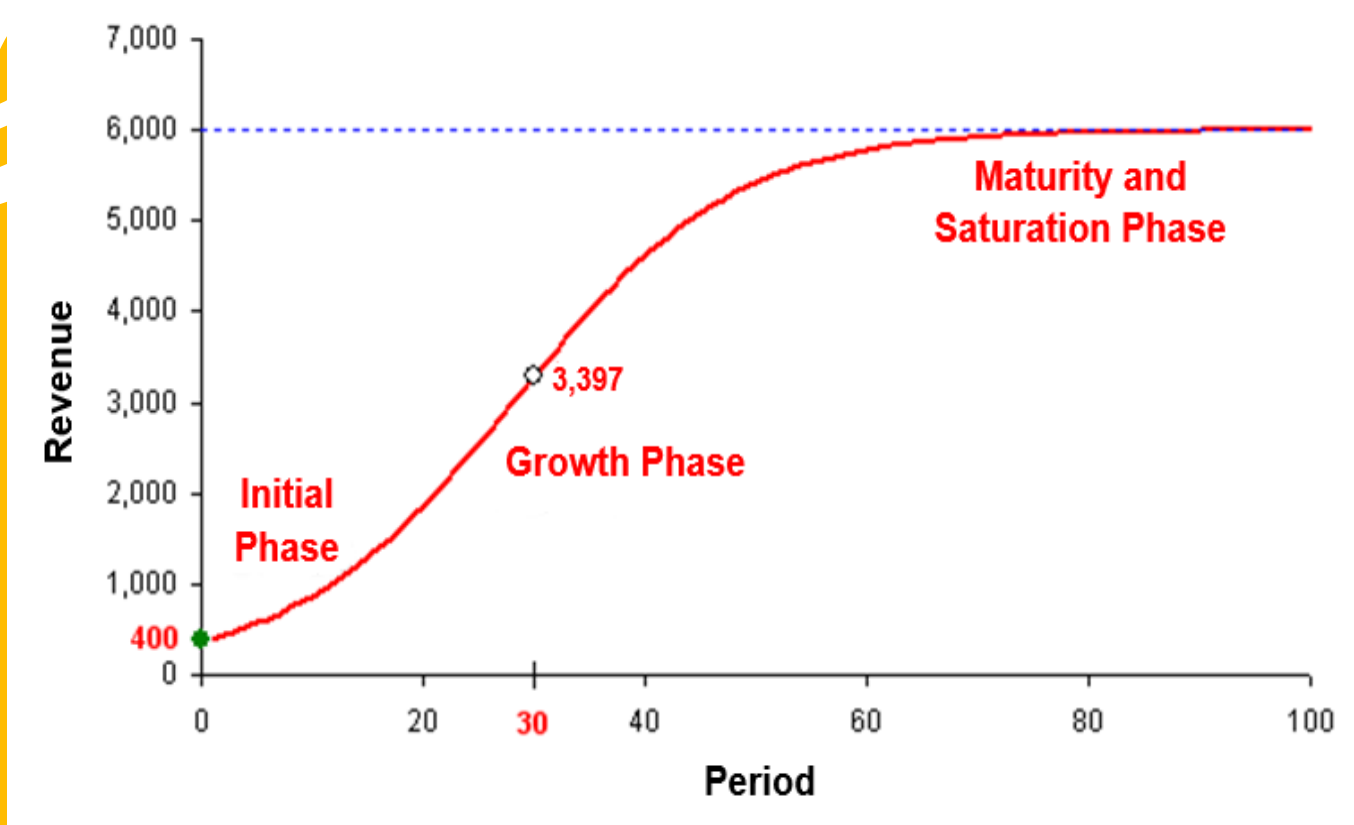
## Logistic Regression Model







# Simple Logistics Regression for Sales of a New Product







# Linear Regression Pros and Cons

## PLUSES

- Easy to set up
- Efficient algorithms
- Reveals interrelationships
- Simplifies complex calculations
- Performance management baseline

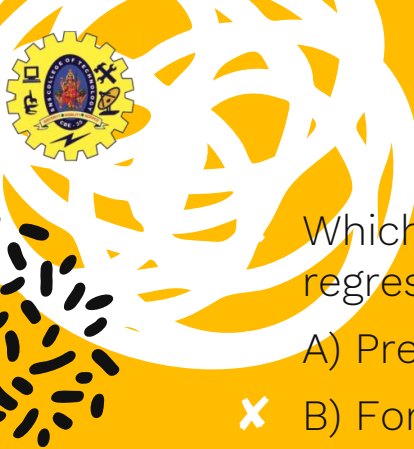


## MINUSES

- Assumption of linearity
- Overfitting and sensitivity to outliers
- Limited to binary outcomes
- Can only predict discrete functions

# Logistics Regression at a glance

| PURPOSE   | TYPES  | KEY ASSUMPTIONS  | APPLICATIONS  | INDUSTRY USE CASES  |
|---|--|--|---|---|
| <ul style="list-style-type: none"><li>■ Classification and predictive analytics</li><li>■ Binary outcome prediction</li><li>■ Machine learning</li><li>■ Probability estimation</li></ul> | <ul style="list-style-type: none"><li>■ Binary logistic regression</li><li>■ Multinomial logistic regression</li><li>■ Ordinal logistic regression</li></ul> | <ul style="list-style-type: none"><li>■ Variables independent of each other</li><li>■ Raw data unrepeated, independent</li><li>■ Linear relationship of variables, outcome</li><li>■ Significant sample sizes</li><li>■ Variables represented by binary categories</li></ul> | <ul style="list-style-type: none"><li>■ Optimization of strategies</li><li>■ Churn prediction</li><li>■ Fraud detection</li></ul> | <ul style="list-style-type: none"><li>■ Healthcare</li><li>■ Drug research</li><li>■ Weather forecasting</li><li>■ Insurance</li><li>■ Banking</li><li>■ Remote sensing</li></ul> |



# Knowledge Check

Which of the following scenarios is an appropriate use case for logistic regression in a business context?

- A) Predicting the exact sales revenue for the next quarter.
- B) Forecasting future stock prices based on historical data.
- C) Classifying customer feedback as either positive or negative.
- D) Determining the optimal price point for a new product launch.
- Answer:C) Classifying customer feedback as either positive or negative.**



# Summary

- Reason to study Logistics Regression
  - Logistics Regression
  - Logistics Regression Model
  - Logistics Regression for Sales of a New Product
  - Pros and Cons
  - Logistics Regression at a glance





# References

- <https://www.javatpoint.com/logistic-regression-in-machine-learning>
- <https://medium.com/@polanitzer/how-to-predict-the-sales-of-a-new-product-from-market-introduction-until-maturity-and-decline-11907bab5e1>
- <https://www.techtarget.com/searchbusinessanalytics/definition/logistic-regression>





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# Thanks!

