

What is Time Series Forecasting?

What is Forecasting?

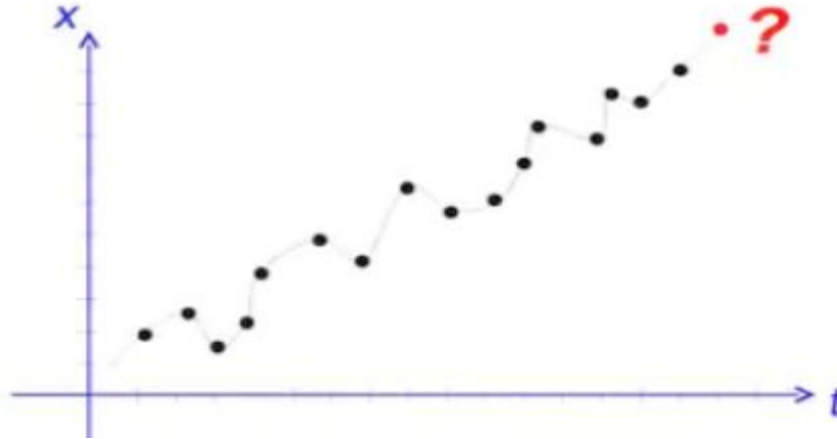
What is Forecasting?

- Forecasting is the process of making predictions of the future



What is Forecasting?

- Forecasting is the process of making predictions of the future
- Predictions based on past and present data



What is Forecasting?

Forecasting Stock Price

	Date	Open	High	Low	Last	Close
0	2018-10-08	208.00	222.25	206.85	216.00	215.15
1	2018-10-05	217.00	218.60	205.90	210.25	209.20
2	2018-10-04	223.50	227.80	216.15	217.25	218.20
3	2018-10-03	230.00	237.50	225.75	226.45	227.60
4	2018-10-01	234.55	234.60	221.05	230.30	230.90

Forecasting Sales

Date	Holiday?	Weekend?	Discount	Offer	Unit_sold
01/12	1	yes	10%	1	21
02/12	1	yes	12%	1	14
03/12	1	no	50%	0	60
04/12	0	no	1%	0	32
05/12	1	no	0%	1	48

Forecasting # of Bookings

Month	#Passengers
1949-01	112
1949-02	118
1949-03	132
1949-04	129
1949-05	121
1949-06	135
1949-07	148
1949-08	148
1949-09	136
1949-10	119
1949-11	104

Selecting the Forecasting Duration?

How to Decide Forecasting Duration?

- Forecasting the demand of dairy products for supermarket

Next two weeks

Next two months

Next year

How to Decide Forecasting Duration?

- Forecasting the demand of dairy products for supermarket

Next two weeks

Next two months

Next year

How to Decide Forecasting Duration?

- Forecasting the demand of dairy products for supermarket
- Forecast demand of soft drinks for supermarket

Next two weeks

Next two months

Next year

How to Decide Forecasting Duration?

- Forecasting the demand of dairy products for supermarket
- Forecast demand of soft drinks for supermarket

Next two weeks

Next two months

Next year

How to Decide Forecasting Duration?

- Forecasting the demand of dairy products for supermarket
- Forecast demand of soft drinks for supermarket
- Forecast demand of soft drinks to optimize the manufacturing process

Next two weeks

Next two months

Next year

How to Decide Forecasting Duration?

- Forecasting the demand of dairy products for supermarket
- Forecast demand of soft drinks for supermarket
- Forecast demand of soft drinks to optimize the manufacturing process

Next two weeks

Next two months

Next year

Selecting the Forecasting Duration?

Selecting the Forecasting Duration?

- Forecasting Duration will depend on
 - Domain

Weather Forecast

Stock Market

Product Sales

Airlines
Booking

e-learning

Selecting the Forecasting Duration?

- Forecasting Duration will depend on
 - Domain
 - Purpose



Selecting the Forecasting Duration?

- Forecasting Duration will depend on
 - Domain
 - Purpose
- Discuss with the stakeholders



Steps Involved in Forecasting Tasks

Steps Involved in Forecasting Tasks

1

Defining the Problem Statement

Steps Involved in Forecasting Tasks

1 Defining the Problem Statement

2 Data Exploration

Steps Involved in Forecasting Tasks

1 Defining the Problem Statement

2 Data Exploration

3 Data Preprocessing

Steps Involved in Forecasting Tasks

1 Defining the Problem Statement

2 Data Exploration

3 Data Preprocessing

4 Selecting Evaluation Metric

Steps Involved in Forecasting Tasks

1 Defining the Problem Statement

2 Data Exploration

3 Data Preprocessing

4 Selecting Evaluation Metric

5 Building & evaluating Models

Thank You

Defining Problem Statement

Defining the Problem Statement

1 Defining the Problem Statement

2 Data Exploration

3 Data Preprocessing

4 Selecting Evaluation Metric

5 Building & evaluating Models

Defining the Problem Statement

JetRail

- Uses Jet propulsion technology to run rail
- Over the years, number of passengers travelling in jetrail has increased

Defining the Problem Statement

JetRail

- Uses Jet propulsion technology to run rail
- Over the years, number of passengers travelling in jetrail has increased

Business Problem

- Maintaining the traffic count with limited manpower and resources is challenging

Defining the Problem Statement

JetRail

- Uses Jet propulsion technology to run rail
- Over the years, number of passengers travelling in jetrail has increased

Business Problem

- Maintaining the traffic count with limited manpower and resources is challenging

Business Objective

- Forecast the count of passengers expected to travel on jetrail

Defining the Problem Statement



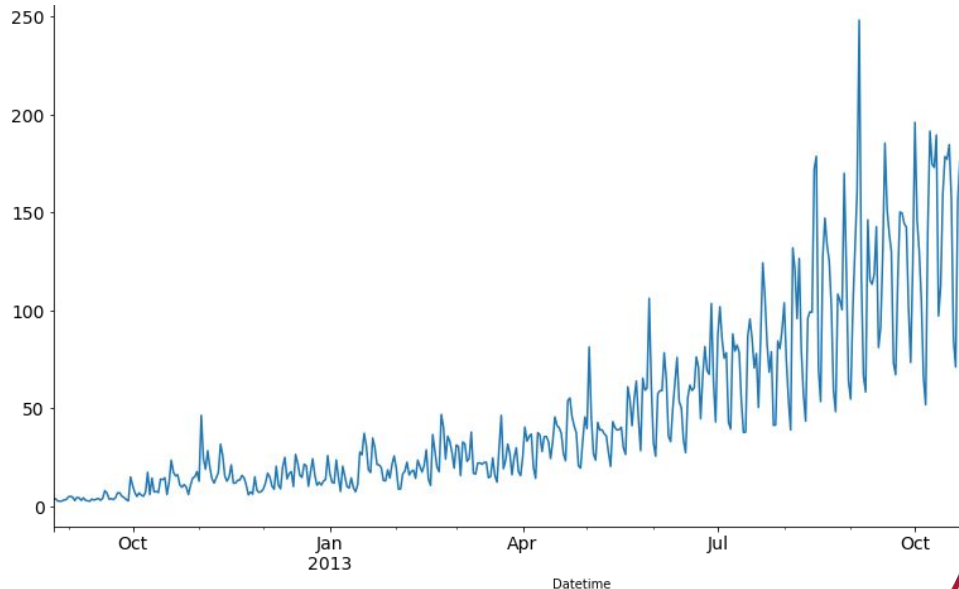
Historical Data

Defining the Problem Statement

Problem Statement: Forecast the number of passengers who will onboard the jetrail day in the next two quarter.



Historical Data



Steps Involved in Forecasting Tasks

1 Defining the Problem Statement

2 Data Exploration

3 Data Preprocessing

4 Selecting Evaluation Metric

5 Building & evaluating Models

Thank You