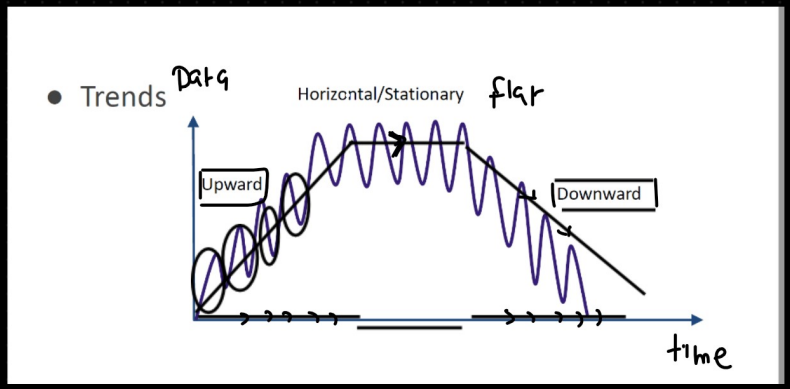
Time Series ⇒

1. Trend
2. Season
3. Cycle
4. Noise



trend ⇒

1. Upward
2. Downward
3. flat (horizontal)

- Seasonal factor

Season ⇒ frequent repetation (Daily, Yearly) monthly, hourly

ex:-

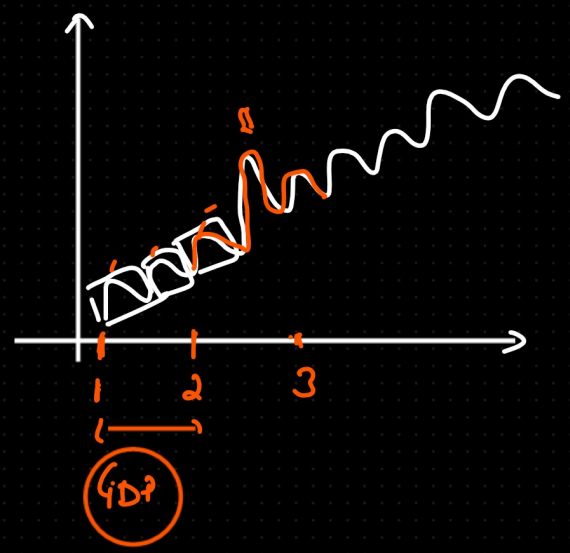
1. Sales of the ice creame in Summer
2. traffic at 5 Pm in my Area
3. tourist in goa at the end of year (Dec, Jan)

Cycle ⇒ = time Series behaviour over the long time

(cyclice Pattern)

cycle ⇒ Season + Noise (fluctuation)

Ex:- Stock Price ⇒ fxyz



1. economics ⇒ GDP
2. Politics ⇒

Stock → election

xyz ⟷ xyz

1 5

Noise ⇒ Some uncertainty or some randomness in my data because of unpredictable reason.

Unpredictable reason ⇒ Pandemic, war, report, current News

Corona | Ukrain/Russian | Hindenberg | famous personality saying something

Stock Price =>

Trend => ① Upward ② Downward trend
③ Flat trend

Season => most frequent thing, repetation over the time (Day, hour, month, Year)

cycle => long time Period => Season + Noise

Noise => fluaction, randomness, error
Uncertain or unpredictable thing

$Y_t = T \times S \times N$ → multiplicative

$Y_t = T + S + N$ ⇒ additive

Day 1	50
Day 2	60
Day 3	70
Day 4	80
Day 5	90

AdditiveTS ⇒ ① it will be linear over the time
② it will be having constant var.

multiplicativeTS ⇒ ① non linear
② non constant var

- trend
- Seasonality
- Noise