31 December

Null Hypothesis

# There is no difference between winter And Nov-

# No Halloween effect

$H_0: \mu_1 = \mu_2$

winter = summer Same

Alternative Hypothesis

$H_1: \mu_1 \neq \mu_2$

$\begin{cases} \mu_1 > \mu_2 \\ \mu_1 < \mu_2 \end{cases}$

There is a difference Halloween effect exist.

$\begin{cases} \text{Nov - April} = 1 \\ \text{May - Oct} = 0 \end{cases}$

Nov - April = 1
May - Oct = 0

$$y = \beta_0 + \beta_1 x_1 + e$$

Log Return = intercept ($\beta_0$) + $\beta_1$ * St_dumy

Why we need log Return. It gives better percentage difference.

Why log Return Not compound Return

Day1 Sale $ 50
Day2 Sale 45

Logaritmic Return

$$\log\left(\frac{45}{50}\right) \times 100$$

$$= \log(0.9) \times 100$$

$$= -10.53$$

Why F-Statistic

It is used to compare variance

The Higher - F statistic, the more variance explained

Z-Test: Compare sample with population parameter. Normal test

T-Test: When standard deviation is unknown, and sample is less than 30

F-Test: For compare multiple means, compare variance. Winter Vs Summer

Chi-Square Test: Categorical

Durbin-Watson: Residual Error

Breusch-Pagan : Standard-deviation

If p-value is less than 0.05 then we reject null hypothesis.

In here p-value (0.7176) which is greater than 0.05 that we fail to reject the null hypothesis
We accept null hypothesis. There is no significant difference.

If you flip coin Head and Tail.
p(Head) = ½ = 0.5
P(Tail) = ½ = 0.5

10 times 3,7 = We reject the null Hypothesis
10 times, 4,6 = We accept the null hypothesis

Null = Coin is fair
Alter = Coin is not fair

Reject
Coin is not fair
Flip the coin has