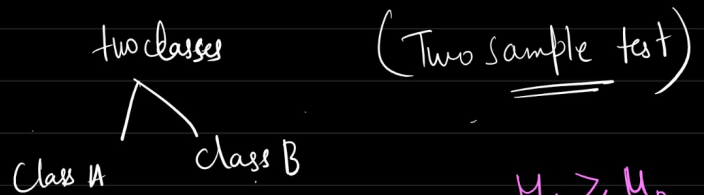$H_0: \mu_{age} = 45 \text{ years}$

$H_A: \mu_{age} \neq 45 \text{ years}$ one Sample $\rightarrow$ One Sample test.

two classes   (Two sample test)

Class A   class B

$\mu_A \geqslant \mu_B$

Claim $\rightarrow$ Class A   is   comparable/better. Class B.

$\mu_A < \mu_B$

$H_0:$ μ_{marks} of class A $\geqslant$ μ_{marks} of class B

$H_A:$ μ_{marks} of class A $<$ μ_{marks} of class B

two sample test

$\downarrow$

t test.

radius of tomato		f_1	F_2
	$\overline{X}$	1.3 m	1.6 m
	S.D (Sample)	0.5 m	0.3 m
	N	150	170

Step-1 $H_0: \mu_{f_1} = \mu_{f_2}$

$H_A: \mu_{f_1} \neq \mu_{f_2}$

Step-2   alpha $= 5\%$, $\alpha = 0.025$ (since two tail test)

Step-3   t-test $\rightarrow$

$$t_{statistic} = \frac{\overline{X}_1 - \overline{X}_2}{\sqrt{S_1^2/n_1 + \frac{S_2^2}{n_2}}}$$

$$= \frac{1.3 - 1.6}{\sqrt{\frac{0.5^2}{150} + \frac{0.3^2}{170}}} = -6.52$$

Step-4 $t_{critical} (\alpha, dof)$ $\alpha = 0.025$
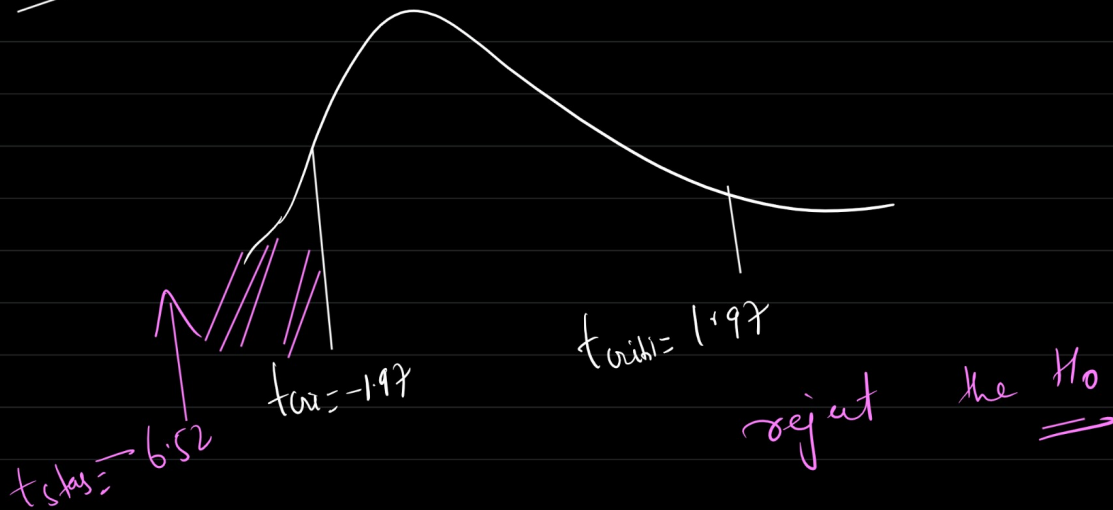
In case of two sample t test dof will
be lowest Sample Size -1

$$dof = 10 - 1 = 149$$

$$t_{critical} = 1.97$$

Step-5

$t_{crih} = 1.97$

$t_{cri} = -1.97$

reject the H_0

$t_{stat} = -6.52$

---

* Two Sample Z test

$$Z_{stats} = \frac{\bar{X}_1 - \bar{X}_2}{\sigma \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

A|B testing (Practical implementation of two sample test)
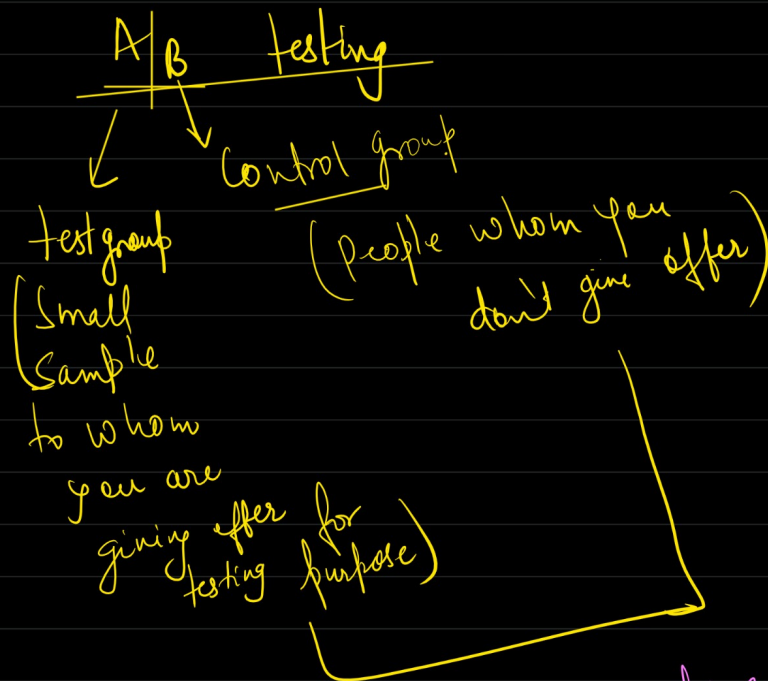
* if 10% off on an item is given, then
  sales increases ↑

Rahul

10% off ⟹ 1 produc Now he will buy 2 item

Previous → 1 product ——→ 20 rs ✓ (profit)

Now → 10% off < 1 (20Rs) ——→ 18Rs
                  2 (20.Rs) ——→ 18Rs] → 36Rs
                                           Profit

→ if the customer don't buy two products
              ↳ there will be less

Tata Salt ——→ 30Rs → 5Rs → 25Rs

A/B testing

test group
(Small
Sample
to whom
you are
giving offer for
testing purpose)

Control group
(People whom you
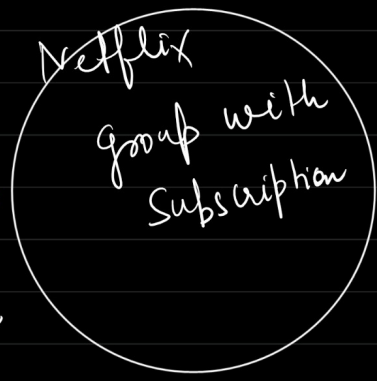don't give offer)

then compare the Change in
avg sales from both of the
                        Customer group

* Netflix knows their subscription price is slightly higher
    for Indian people.

CEO
* reduce the price of Netflix membership → thinking no of
                                              Subscription
    In India   2 out of 10 people will pay.   will
                                                  increase.

✓ G_1

Netflix
Group with
Subscription

G_2

Netflix Group2
without
Subscription
but they
watch Netflix

10% discont
on subscription

It was 10 00
→ 900

Scen-1 → Salaried class people

(No impact)
(target is salaried
class)

100Rs → 5 subty

Scen-2 → G_2 → Students.

↳ 100Rs → 900Rs
(Students will any way use
others subscriptn)

* Pwskill website   ↓   Older   Beta

MS team → Classic   New teams.