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Reg # : SP20-BCS-044
Assignment #04

TASK # 01 :

Compare the efficiency of ordering from Cheezious to 14th Street pizza. Design a controlled experiment to this experiment

Independent variable :

Type of pizza stores i.e., Cheezious and 14th street pizza.

Dependent variable :

Time to order the pizza.

Null hypothesis :

No difference in time was observed while ordering the pizza from Cheezious and 14th street pizza.

Two tail hypothesis:

Difference in time has been observed.

Controlled variables:

Used laptops connected to the university wifi and ordered the same thing.

Cheezious Order	14th Street pizza order.
1) Navigate to Special pizza section	1) Original Half & Half - Serves 6-8
2) Select stuff crust pizza	2) Select quantity 4
3) add to cart	3) Go to customize your own pizza
4) Select Kebab	4) Step 1; Turkey chunks
5) Select size large	5) Step 2; Fiery
6) Select Cheese party	6) Step 3; Olives
7) Click on add to cart	7) Select stuffed crust
8) Click on cart	8) Click on add to cart
9) Click on Checkout	9) Click on create your own pizza.
10) Click on Order as Guest	10) Select Thin 2a 10-incher
11) fill the form	11) From customize your pizza; step 1; fiery chicken
12) Click on Place Order.	12) step 2; jalapeno 11) step 3; onions
	13) Click on add to cart
	14) Fill information & place order

TASK #02

Conduct a t-test to see whether your hypothesis was true or not

Student	Time in seconds (Cheezious)	Time in seconds (14 Street pizza)
Hammad Tufail	107	67
Kulsoom Khurshid	68	81
Anaiza Irfan	90	97
Mina Ilahi	110	73
Beenish Shakeel	102	95
Abdul Mateen	45	55
Farasat	41	62
Abdullah Butt	84	126
Sammi Gul	74	81
Hamza Shahid	59	98
Total:	780	835

T-value table

Mean of Cheezious = $\bar{x} = \frac{780}{10} = 78$

Mean of 14th Street pizza = $\bar{y} = \frac{835}{10} = 83.5$

Standard Deviation for Cheezious = 24.85

Standard Deviation for 14th Street pizza = 21.08

T-test value : $$\frac{|\bar{x} - \bar{y}|}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}} = \frac{|78 - 83.5|}{\sqrt{\frac{24.85^2}{10} + \frac{21.08^2}{10}}}$$

$$= 0.5337$$

Degree of freedom = $10 + 10 - 2 = 18$

P-value = 0.6

T-value is not greater than p-value

So, we won't reject the null hypothesis.