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Assignment- KNN for Regression

Index	age	Income(K)
1	21	60
2	20	55
3	22	60
4	22	61
5	23	65
6	21	62
7	25	65
8	30	70
9	31	68
10	22	?

Task-01

Your objective is to implement the K-Nearest Neighbors (KNN) algorithm with K=3. Use this algorithm to predict the income value, with the given input value X=22

Soln:

$ED_1 = \sqrt{(22-21)^2} = 1$

$ED_2 = \sqrt{(22-20)^2} = 2$

$ED_3 = \sqrt{(22-22)^2} = 0$

$ED_4 = \sqrt{(22-22)^2} = 0$

$ED_5 = \sqrt{(22-23)^2} = 1$

$ED_6 = \sqrt{(22-21)^2} = 1$

$ED_7 = \sqrt{(22-25)^2} = 3$

$ED_8 = \sqrt{(22-30)^2} = 8$

$ED_9 = \sqrt{(22-31)^2} = 9$

Index	age	Income(K)	Distance	
1	21	60	1	a
2	20	55	2	b
3	22	60	0	c
4	22	61	0	d
5	23	65	1	e
6	21	62	1	f
7	25	65	3	g
8	30	70	8	h
9	31	68	9	i
10	22	62		

c<d<a<f<a<b<g<h<i

Since K=3 so we will take the first three Income(K)'s value according to distance's ascending order.

P.T.O

Now,

Mean : (60+61+65)/3

∴ Mean = 62

So, Input value x=22 & the predict Income value = 62

Ans