Topic Name: Linear Regnession Math

Date:

Atice H)

35

60

20

50

50

55

60

2

4

5

Task1: Your objective is to manually compute the slop wish (X) (m) and y-intercept (c) using Ordinary least square Linear Regression. Once determined, apply these values predict the price when the vegetable weight is 6. input features. Siegi Same

Solution: Fore simple linear Regression

120

290

We know, - + 1 mm + 1 mm = + : 110128011000 1100111 of

that leave to transition = 1 = 6 m + c | Herre n= 6 min - Fine = M

	199011	istal = 0	
n	7000	× mico	2
2	35	70	4
4	60	240	16
5	2000	elwcookhe	2500
13	50 11	22150 or 6	19 1
ь	50 _	300 (RO	36 oh
5	55	275	25
7	6 6	420 \$ (See	49 h
Ñ= 4.571	4/A7.1A2	MY 222 42	(2) P. A.L

we know,

$$M = \frac{\pi y}{(\pi)^{2} - (\pi)} = \frac{\pi y}{(\pi)^{2}} = 20.90$$

215.49 - 222.142 and the purdicted values generale

= 2.634 losed a norm no sed studental read is

CETY-MY

110002 more = 47142-2,634 × 4.571

= 12M = 35,102

Total cost: Sum up the squared difference between wast the got (mean rea lah) : Y = 6x2.634+35.162

= 50.906

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Taskoz: compute the residuals for each data point

		1 (V) 3 + 1200		
~	7	Aredict y = 2.634 m + 35.162	mesiduals (Y-YP)	
2	35	40.37	-5.37	No.
4	60	45. 638	14.362	
5	20	48.272	- 28.272	
3	50	43.004	6.996	
6	50	50.9053	-0.9059	16
5	55	48.272	6.728	
7	60	53.539	6.461	

Task 03: calculate both the mean squared entror (mse) and (mae)

We know,