A.I

LAB TASK 8

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QUESTION

Write a program to implement linear & logistic regression on following data:

x= [5,7,8,7,2,17,2,9,4,11,12,9,6]

y= [99,86,87,88,111,86,103,87,94,78,77,85,86]

CODE:

import numpy as np

import matplotlib.pyplot as plt

def estimate\_coef(x, y):

n = np.size(x)

m\_x = np.mean(x)

m\_y = np.mean(y)

SS\_xy = np.sum(y \* x) - n \* m\_y \* m\_x

SS\_xx = np.sum(x \* x) - n \* m\_x \* m\_x

b1 = SS\_xy / SS\_xx

b0 = m\_y - b1 \* m\_x

return (b0, b1)

def plot\_regression\_line(x, y, b):

plt.scatter(x, y, color="m", marker="o", s=30)

y\_pred = b[0] + b[1] \* x

plt.plot(x, y\_pred, color="g")

plt.xlabel('x')

plt.xlabel('y')

plt.show()

def main():

x = np.array([5, 7, 8, 7, 2, 17, 2, 9, 4, 11, 12, 9, 6])

y = np.array([99, 86, 87, 88, 111, 86, 103, 87, 94, 78, 77, 85, 86])

b = estimate\_coef(x, y)

print("Estimated coeefficient:\nb\_0 = {}\nb\_1 = {}".format(b[0], b[1]))

plot\_regression\_line(x, y, b)

if \_\_name\_\_ == "\_\_main\_\_":

main()

OUTPUT:

