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Assignment - **2**

Logistic Regression

GitHub Link: rohitaryal/assignment2

Qn 1.

Ans: After the convergence, the following coefficients were observed,

theta_0 = **0.267**

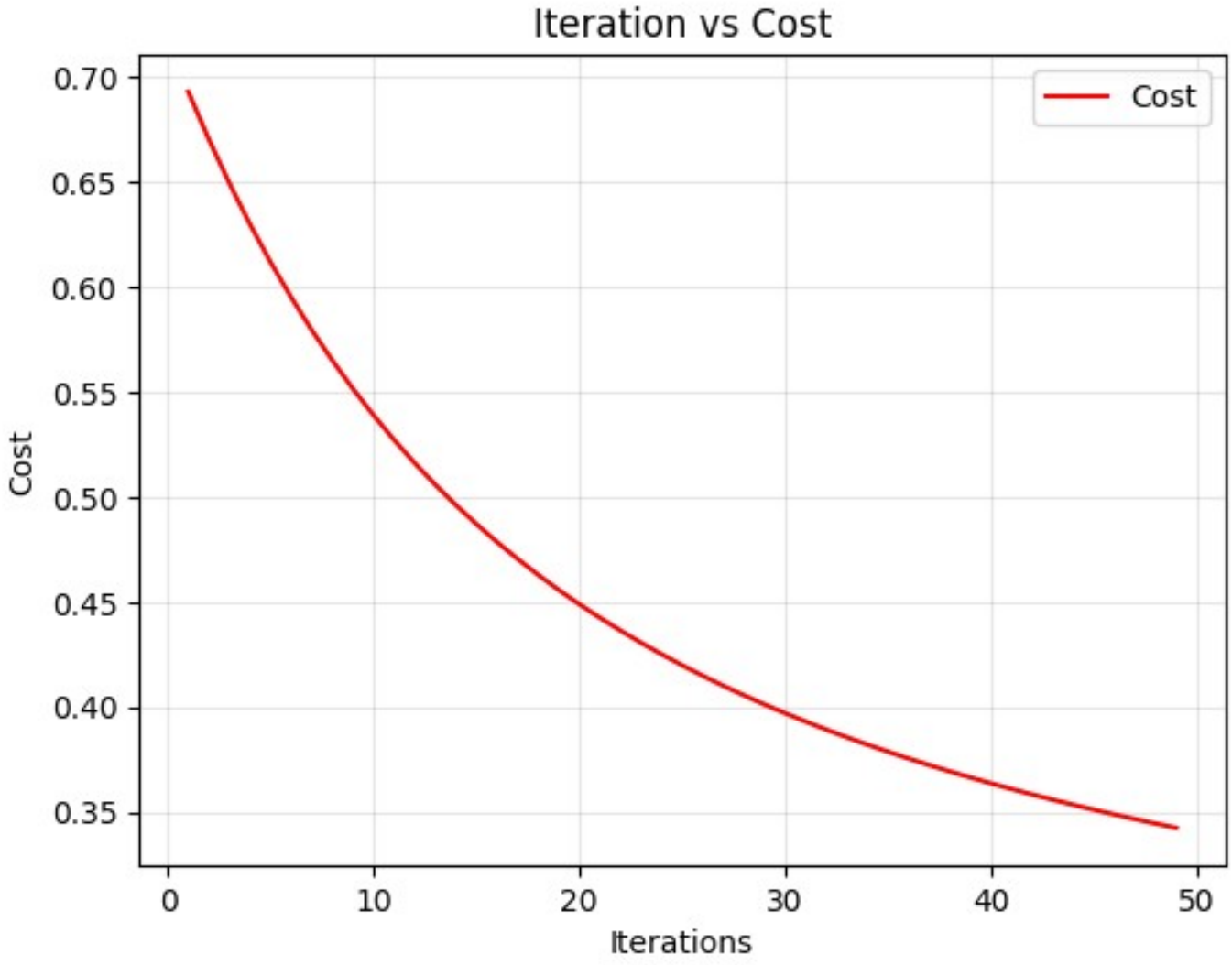
theta_1 = **2.229**

theta_2 = **-2.314**

Cost after convergence = **0.231**

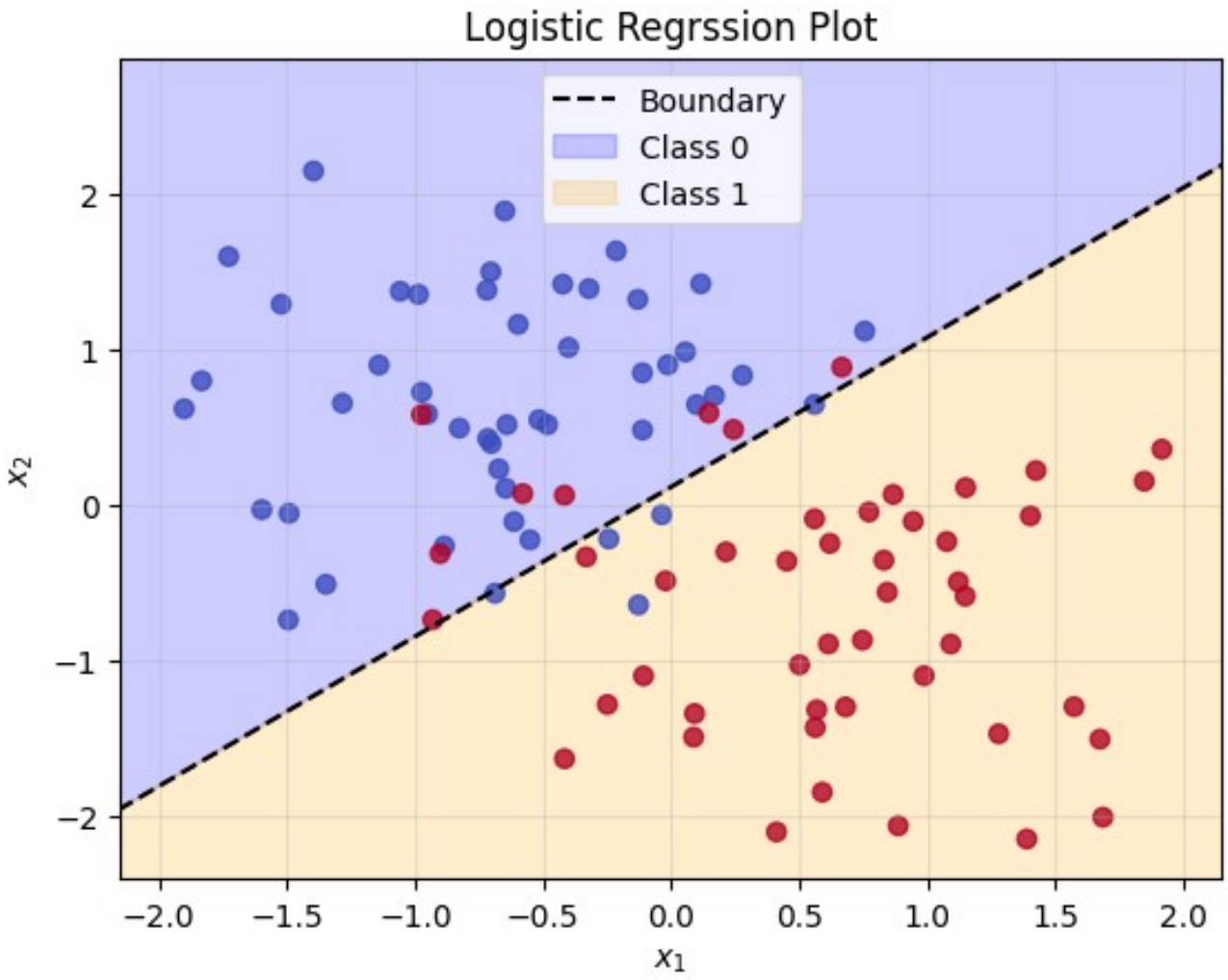
Qn 2.

Ans: The following pyplot represents Plot cost function v/s iteration graph for first **50** iterations,



Qn 3.

Ans: The following plot represents the decision boundary,



Qn 4.

Ans: After introducing 2 independent variables and setting their values equal to the square of original 2 variables and training the **Logistic Regression Model**, the following coefficients were obtained,

theta_0 = **0.222**

theta_1 = **2.322**

theta_2 = **-2.308**

theta_3 = **0.304**

theta_4 = **-0.187**

Final Cost after convergence = **0.228**

Qn 5.

Ans: The Coefficient Matrix for Qn 4 is:

PREDICTED

ACTUAL		True	False
	True	45	5
	False	8	42

The calculated metrics are:

a. Recall = **0.90**
b. Accuracy = **0.87**
c. F1 Score = **0.87**
d. Precision = **0.85**

Here metrics are calculated on training dataset only.