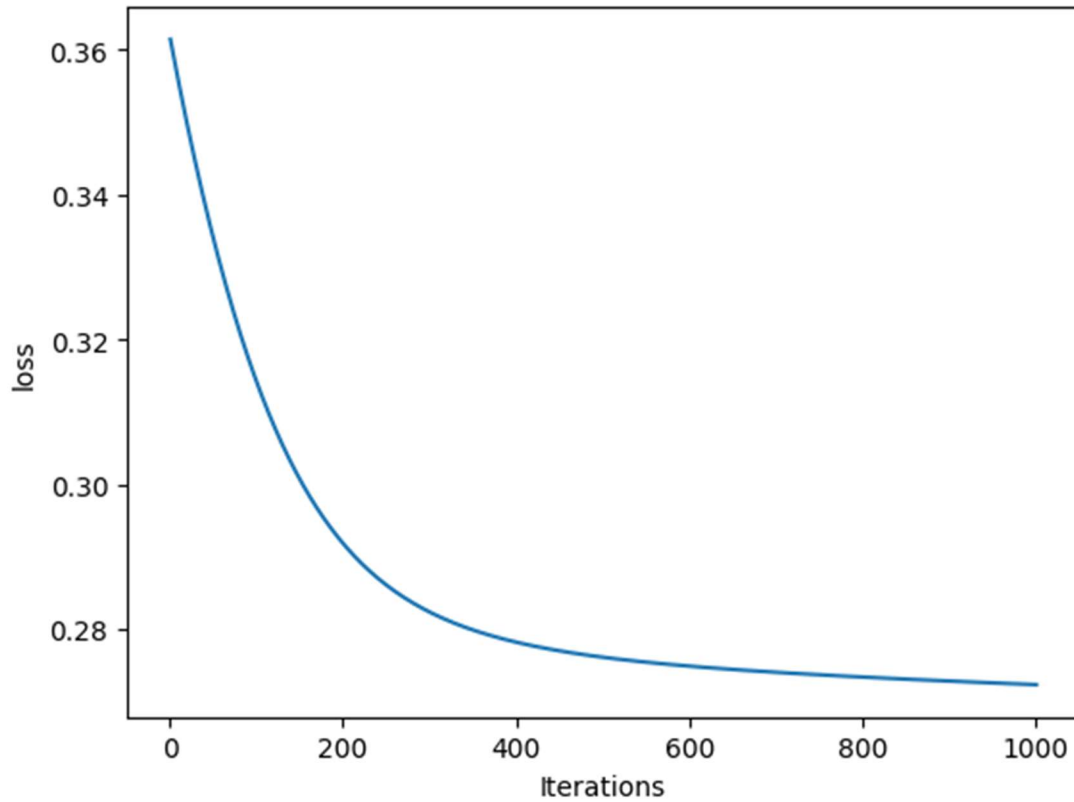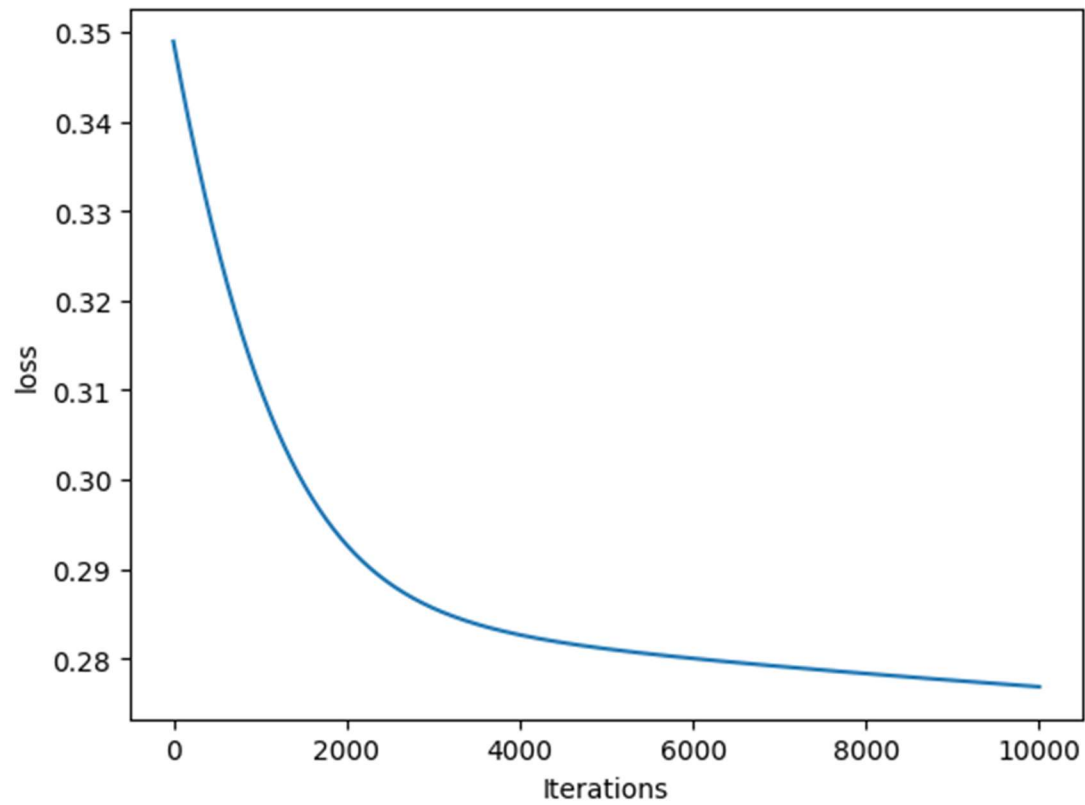# PENGUINS DATASET - LOGISTIC REGRESSION

Best accuracy : 86%

Loss Graph :

Iteration1:

- Correct predictions : 43
- Incorrect predictions : 26
- weight [-0.43644849 -0.31200497 0.48173602 0.65854481 0.09974323 0.87812694   ]
- Accuracy with lr = 0.01 and 1000 iterations : 62

Iteration 2:

- Correct predictions : 3
- Incorrect predictions : 26
- weight [-0.4252357 -0.14670681 0.69305872 0.0794824   0.32872377 0.65664958   ]
- Accuracy with lr = 0.001 and 10000 iteration1:62
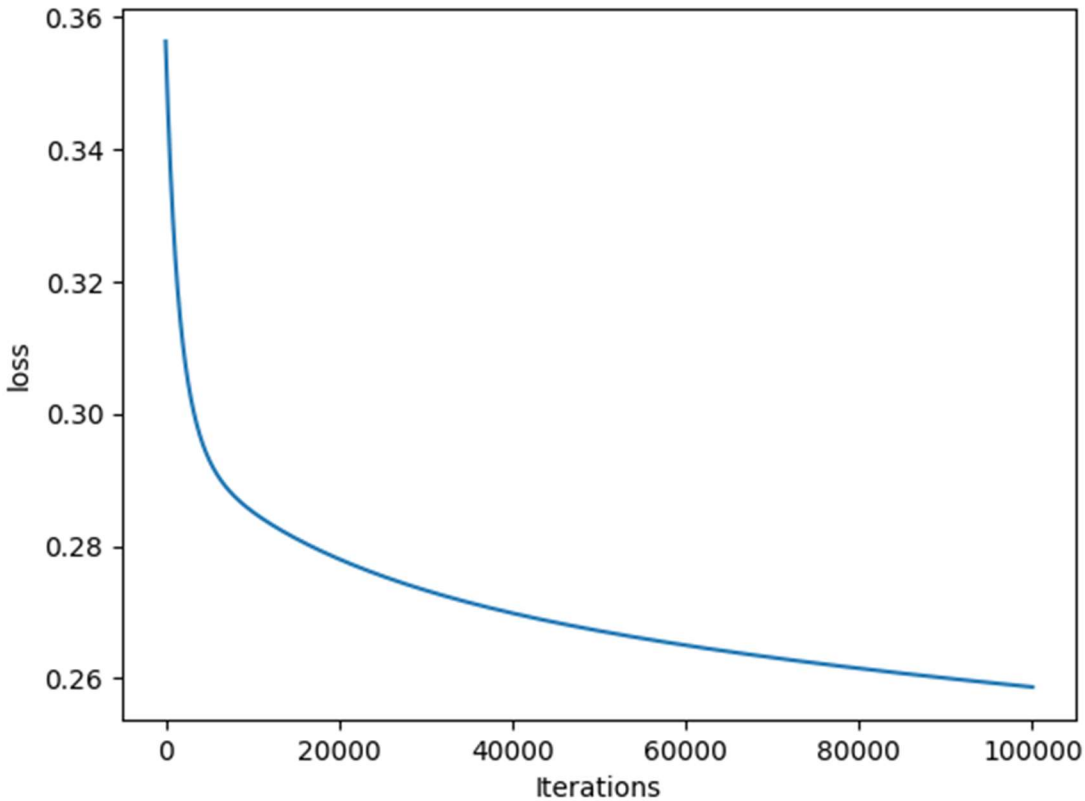
Iteration 3:

- Correct predictions : 59
- Incorrect predictions : 10
- weight [-0.96305775 -0.67409477 1.06986703 0.70413531 0.09266983 1.94218155   ]
- Accuracy with lr = 0.001 and 100000 iteration3 : 86

From the loss graph it is analyzed that when the iterations increases the loss decreases. So we could infer that the hyperparameters were appropriate and its fitted properly

INFERENCE :

- While giving the appropriate hyperparameters the weights got adjusted.
- As the weights gets adjusted and tends to appropriate value, the accuracy is increased.
- If the learning rate / iterations is less then it will lead to underfitting
- If the learning rate / iterations is more then it will lead to overfitting
- As the accuracy increased as when increasing the iterations and decreasing the learning rate, the final hyperparameter is considered