Report for the programming assignment3

I have included 3 classes along with README file, requirements.txt, report, and output.txt (output file)
1. LogisticRegression.py
2. Main.py
3. Plot.py

LogisticRegression.py includes the logistic regression library which contains all the required methods like sigmoid, net_input (Computes the weighted sum of inputs), probability(calculates the probability that an instance belongs to a particular class), cost_function(computes the cost function for all the training samples), gradient(Computes the gradient of the cost function at the point theta), fit(fits a model for the given input and features), predict(returns the probability of an input belonging to a particular class), accuracy(returns the accuracy of the model). I have used the optimization function scipy.optimize.minimize(self.cost_function, theta, method='BFGS', jac=self.gradient, args=(x, y.flatten()))

Plot.py includes all the essential methods that we can use to plot the dataset and the final decision boundary.

Main.py includes the main function to call the implemented LogisticRegressionWithOptimization library. On running the Main.py, we get the following output:
"initial_plot.png" and "final_plot.png" are auto-generated
==
Initial cost_function value: 0.6931471805599453
==
==
Optimal Parameters:
==
optimal cost function: 0.2034977015894438
Optimal theta values: [-25.16133284   0.2062317   0.2014716]

Total number of iterations to reach the optimal value: 23
==
The accuracy of the model in percentage is 89.0
==
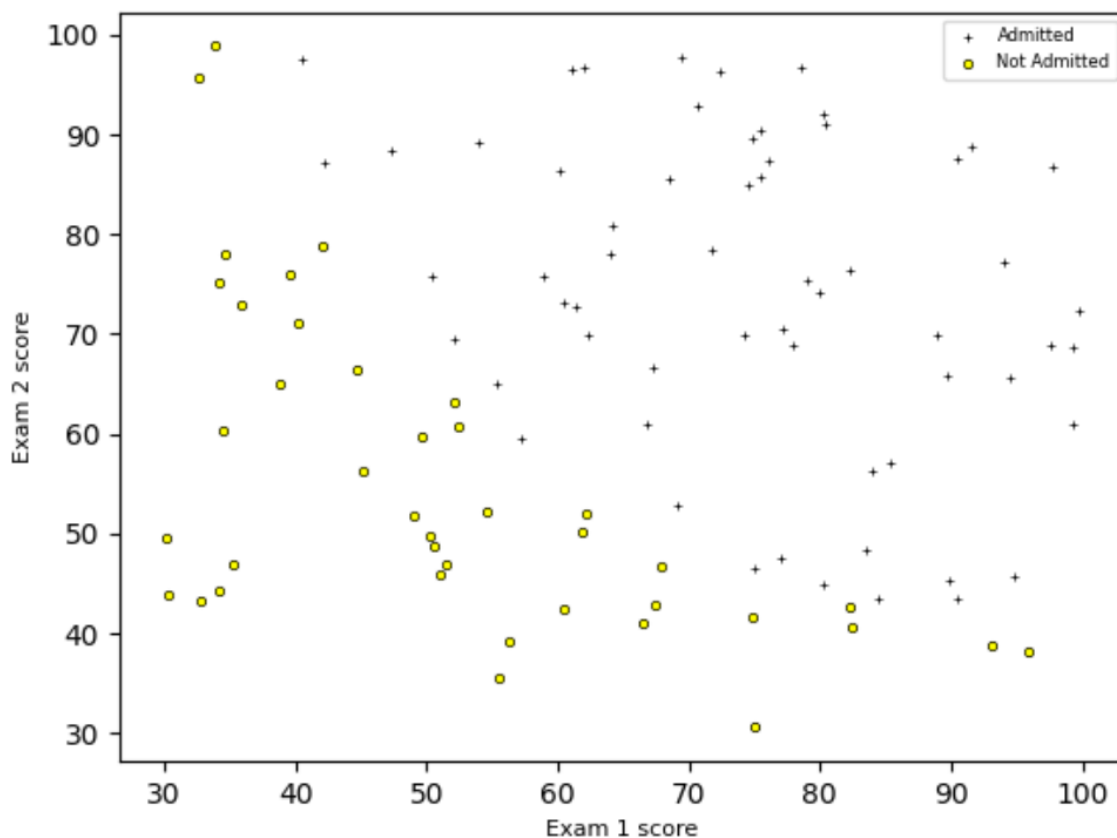
Excepted probability of getting admission for a student with an Exam 1 score of 45 and an Exam 2 score of 85: [0.77629072]
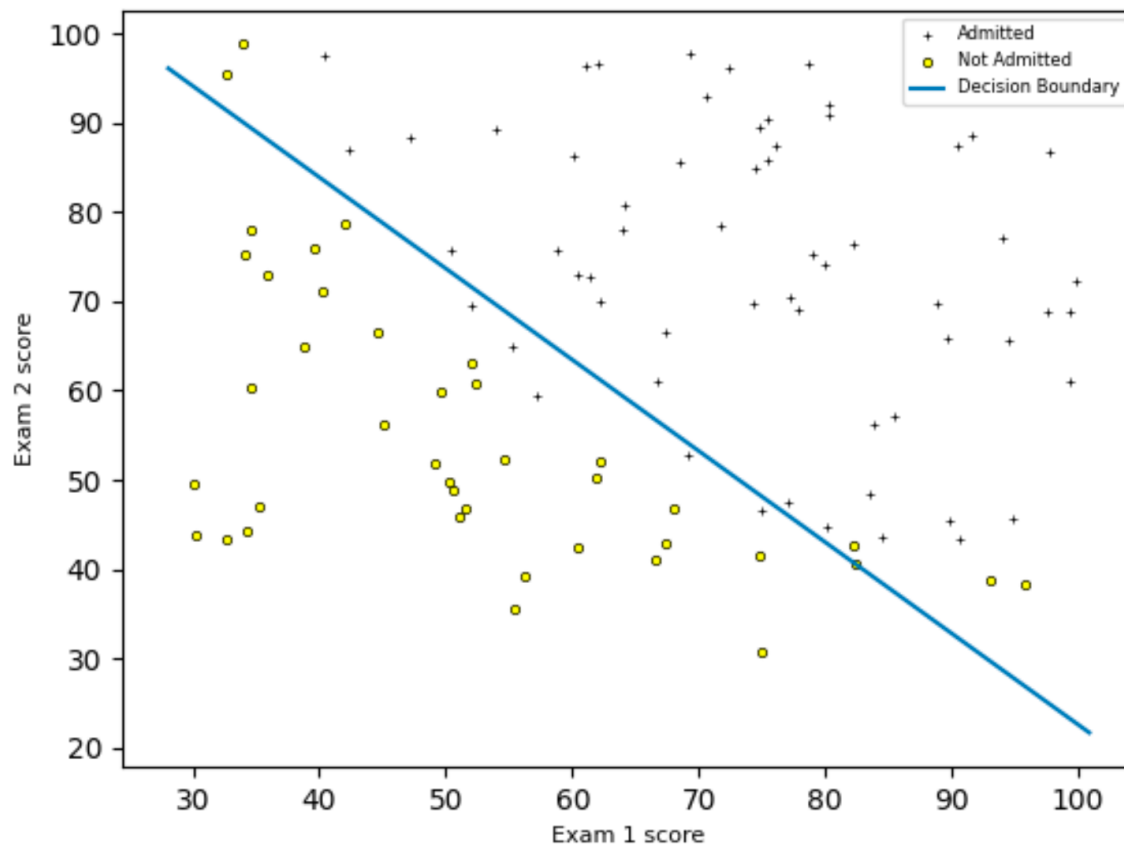==

requirements.txt includes all the required libraries

Initial plot to visualize the dataset

Final plot with the decision boundary

Please refer **README.txt** to run the program

I have tested the program on my local machine.