

CPS 480 - 580 summer 2020: Artificial Intelligence.

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Final Project.

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Libraries used for Dataset Preprocessing and Math Operations:

- NUMPY
- PANDAS

IDE: Pycharm.

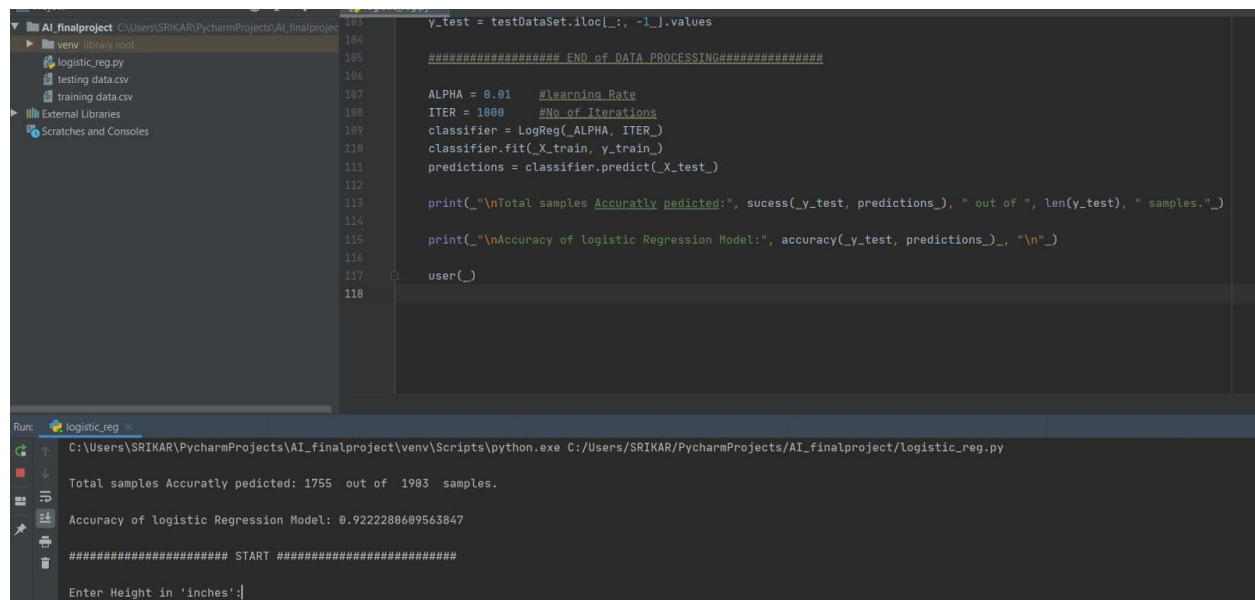
Project Running Instructions:

- DataSet is edited for Data Preprocessing, only use In folder dataset.
- Project is done in a single file for both Training and Testing dataset.
- User Input can be given after running the project for testing.

Observations:

Total samples accurately predicted by the model is 1755 out of 1903 given testing samples.

Total Prediction accuracy achieved is 92%



The screenshot displays the PyCharm IDE interface. On the left, the project structure shows a folder named 'AI_finalproject' containing files like 'logistic_reg.py', 'testing_data.csv', and 'training_data.csv'. The main editor window shows the Python code for 'logistic_reg.py', which includes data preprocessing steps, model training with 'LogReg' using 'ALPHA = 0.01' and 'ITER = 1000', and prediction on test data. The terminal window at the bottom shows the execution output: 'Total samples Accurately predicted: 1755 out of 1903 samples.' and 'Accuracy of logistic Regression Model: 0.922280609563847'. It also shows a 'START' message and a prompt 'Enter Height in 'inches':'.

```
183 y_test = testDataSet.iloc[:, -1].values
184
185 ##### END of DATA PROCESSING#####
186
187 ALPHA = 0.01 #learning_Rate
188 ITER = 1000 #No of Iterations
189 classifier = LogReg(ALPHA, ITER_)
190 classifier.fit(X_train, y_train_)
191 predictions = classifier.predict(X_test_)
192
193 print("\nTotal samples Accurately predicted:", success(y_test, predictions), " out of ", len(y_test), " samples.")
194
195 print("\nAccuracy of logistic Regression Model:", accuracy(y_test, predictions_), "\n")
196
197 user_()
```

Run: logistic_reg.py
C:\Users\SRIKAR\PycharmProjects\AI_finalproject\venv\Scripts\python.exe C:\Users\SRIKAR\PycharmProjects\AI_finalproject\logistic_reg.py

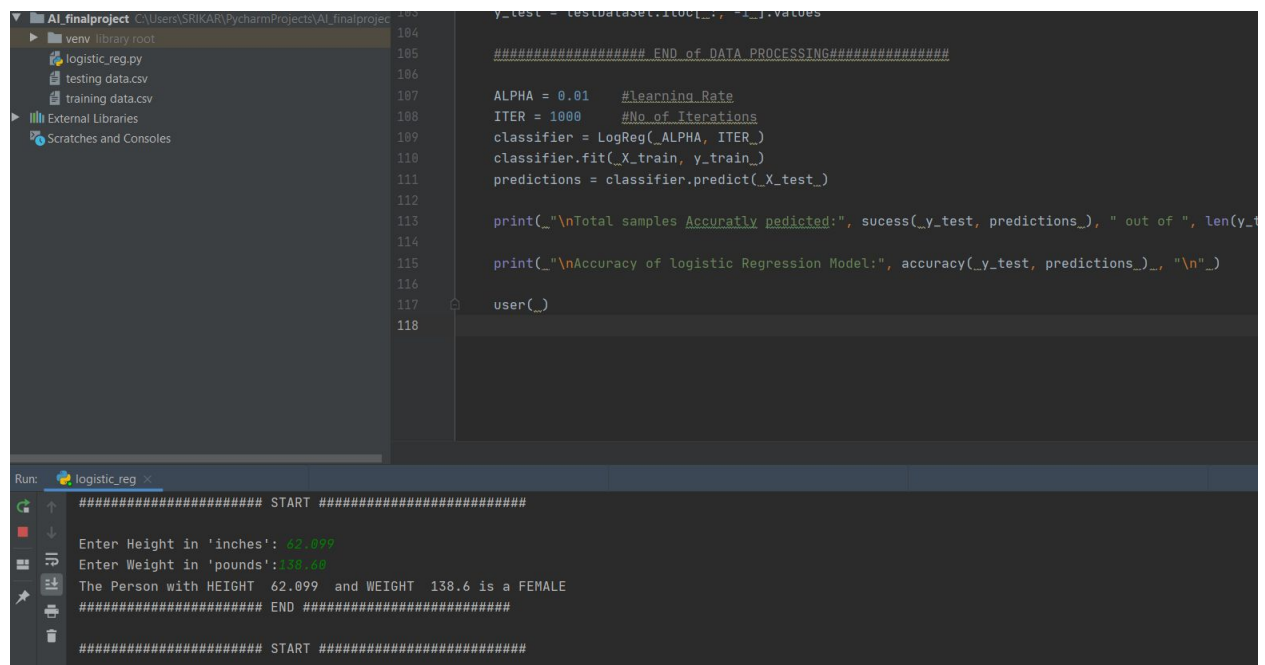
Total samples Accurately predicted: 1755 out of 1903 samples.

Accuracy of logistic Regression Model: 0.922280609563847

START

Enter Height in 'inches':

Prediction with User given Input:



The screenshot displays a PyCharm IDE with a project named 'AI_finalproject'. The file explorer on the left shows files: 'logistic_reg.py', 'testing_data.csv', and 'training_data.csv'. The main editor window shows the code for 'logistic_reg.py' with line numbers 103 to 118. The code includes data processing, model training with a learning rate of 0.01 and 1000 iterations, and prediction logic. The output console at the bottom shows the execution results, including user input for height and weight, and the model's prediction of 'FEMALE'.

```
103 y_test = testdataset.iloc[:, -1].values
104
105 ##### END of DATA PROCESSING#####
106
107 ALPHA = 0.01 #learning Rate
108 ITER = 1000 #No. of Iterations
109 classifier = LogReg(_ALPHA, ITER_)
110 classifier.fit(_X_train, y_train_)
111 predictions = classifier.predict(_X_test_)
112
113 print("\nTotal samples Accurately predicted:", success(_y_test, predictions_), " out of ", len(y_test))
114
115 print("\nAccuracy of logistic Regression Model:", accuracy(_y_test, predictions_), "\n")
116
117 user(_)
118
```

Run: logistic_reg

```
##### START #####
Enter Height in 'inches': 62.099
Enter Weight in 'pounds': 138.60
The Person with HEIGHT 62.099 and WEIGHT 138.6 is a FEMALE
##### END #####
##### START #####
```

END