

ASSIGNMENT -7

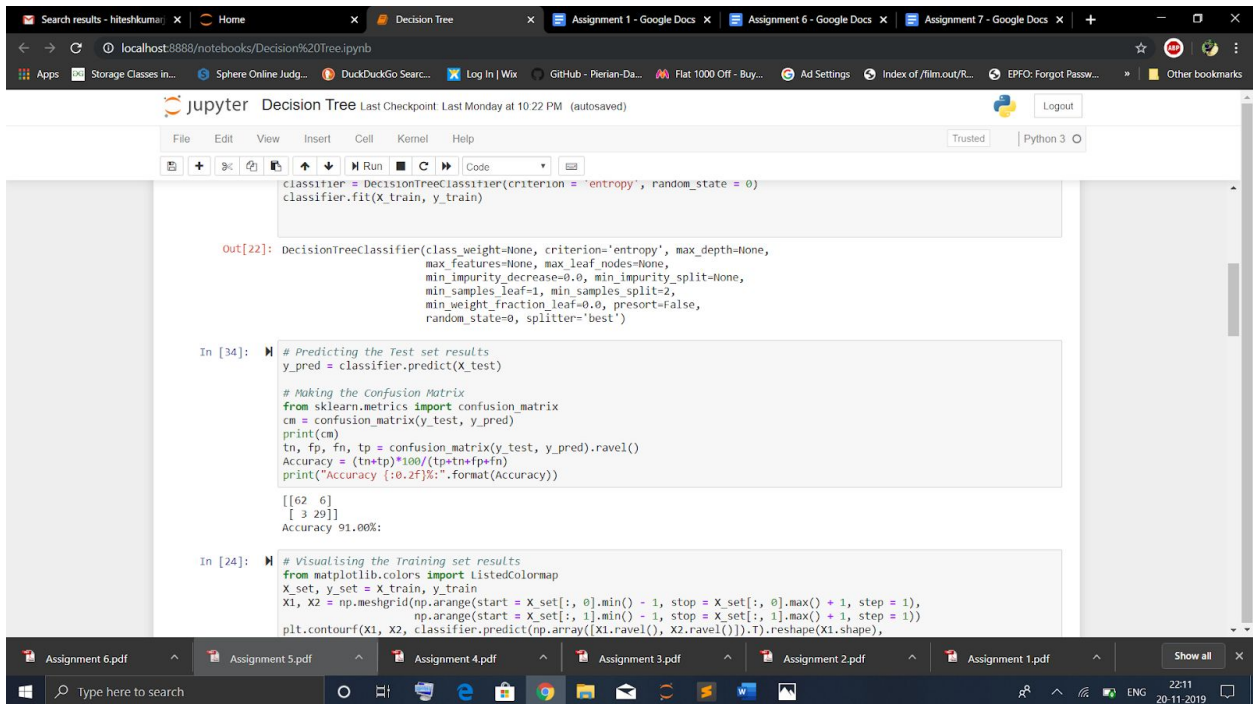
DECISION TREES

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classifier = DecisionTreeClassifier(criterion='entropy', random_state=0)
classifier.fit(X_train, y_train)

Out[22]: DecisionTreeClassifier(class_weight=None, criterion='entropy', max_depth=None,
max_features=None, max_leaf_nodes=None,
min_impurity_decrease=0.0, min_impurity_split=None,
min_samples_leaf=1, min_samples_split=2,
min_weight_fraction_leaf=0.0, presort=False,
random_state=0, splitter='best')

In [34]: # Predicting the Test set results
y_pred = classifier.predict(X_test)

# Making the Confusion Matrix
from sklearn.metrics import confusion_matrix
cm = confusion_matrix(y_test, y_pred)
print(cm)
tn, fp, fn, tp = confusion_matrix(y_test, y_pred).ravel()
Accuracy = (tn+tp)*100/(tp+tn+fp+fn)
print("Accuracy {:.2f}%".format(Accuracy))

[[62  6]
 [ 3 29]]
Accuracy 91.00%

In [24]: # Visualising the Training set results
from matplotlib.colors import ListedColormap
X_set, y_set = X_train, y_train
X1, X2 = np.meshgrid(np.arange(start = X_set[:, 0].min() - 1, stop = X_set[:, 0].max() + 1, step = 1),
np.arange(start = X_set[:, 1].min() - 1, stop = X_set[:, 1].max() + 1, step = 1))
plt.contourf(X1, X2, classifier.predict(np.array([X1.ravel(), X2.ravel()]).T).reshape(X1.shape),
```

