Name : Niket Ralebhat

Section : 2

Scholar Number : 211112268

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| **import** pandas **as** pd  **from** sklearn **import** preprocessing  **from** sklearn.model\_selection **import** train\_test\_split **from** sklearn.metrics **import** confusion\_matrix **from** sklearn.tree **import** DecisionTreeClassifier **from** sklearn **import** tree  **from** matplotlib **import** pyplot **as** plt  data**=**pd**.**read\_csv('PlayTennis.csv') le **=** preprocessing**.**LabelEncoder() data\_train\_df **=** pd**.**DataFrame(data)  data\_train\_df\_encoded **=** data\_train\_df**.**apply(le**.**fit\_transform) x**=**data\_train\_df\_encoded[["Outlook","Temperature","Humidity","Wind"]] y**=**data\_train\_df\_encoded["Play Tennis"]  *#x.train,x.test,y.train,y.test=train\_test\_split(x,y,test\_size=0.3,random\_* DTmodel**=**DecisionTreeClassifier()  DTmodel**.**fit(x,y)  *#print(confusion\_matrix(y.test,y\_pred))* text\_representation **=** tree**.**export\_text(DTmodel)  print(text\_representation) fig **=** plt**.**figure(figsize**=**(10,10))  tree**.**plot\_tree(DTmodel, feature\_names**=**["Outlook","Temperature","Humidity" |

In [ ]:

|--- feature\_0 <= 0.50

| |--- class: 1

|--- feature\_0 > 0.50

| |--- feature\_2 <= 0.50

| | |--- feature\_0 <= 1.50

| | | |--- feature\_3 <= 0.50

| | | | |--- class: 0

| | | |--- feature\_3 > 0.50

| | | | |--- class: 1

| | |--- feature\_0 > 1.50

| | | |--- class: 0

| |--- feature\_2 > 0.50

| | |--- feature\_3 <= 0.50

| | | |--- feature\_0 <= 1.50

| | | | |--- class: 0

| | | |--- feature\_0 > 1.50

| | | | |--- class: 1

| | |--- feature\_3 > 0.50

| | | |--- class: 1

Out[ ]: [Text(0.4444444444444444, 0.9, 'Outlook <= 0.5\ngini = 0.459\nsamples =

14\nvalue = [5, 9]\nclass = NO'),

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nclass = NO'),

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\nvalue = [4, 1]\nclass = YES'),

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lue = [1, 1]\nclass = YES'),

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nclass = YES'),

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nvalue = [1, 1]\nclass = YES'),

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nclass = YES'),

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nclass = NO'),

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nclass = NO')]

