```
import pandas as pd
df=pd.read_csv("/content/German_Credit_Card_Dataset.csv")
df.info()
df.shape
df.head()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1000 entries, 0 to 999
Data columns (total 14 columns):
 #   Column             Non-Null Count  Dtype
---  ------             --------------  -----
 0   checkin_acc        1000 non-null   object
 1   duration           1000 non-null   int64
 2   credit_history     1000 non-null   object
 3   amount             1000 non-null   int64
 4   savings_acc        1000 non-null   object
 5   present_emp_since  1000 non-null   object
 6   inst_rate          1000 non-null   int64
 7   personal_status    1000 non-null   object
 8   residing_since     1000 non-null   int64
 9   age                1000 non-null   int64
 10  inst_plans         1000 non-null   object
 11  num_credits        1000 non-null   int64
 12  job                1000 non-null   object
 13  status             1000 non-null   int64
dtypes: int64(7), object(7)
memory usage: 109.5+ KB
```

	checkin_acc	duration	credit_history	amount	savings_acc	present_emp_since	inst_rate	personal_status	residing_since	age	i
0	A11	6	A34	1169	A65	A75	4	A93	4	67	
1	A12	48	A32	5951	A61	A73	2	A92	2	22	
2	A14	12	A34	2096	A61	A74	2	A93	3	49	
3	A11	42	A32	7882	A61	A74	2	A93	4	45	
4	A11	24	A33	4870	A61	A73	3	A93	4	53	

Double-click (or enter) to edit

```
df.iloc[0:5,0:7]
```

	checkin_acc	duration	credit_history	amount	savings_acc	present_emp_since	inst_rate
0	A11	6	A34	1169	A65	A75	4
1	A12	48	A32	5951	A61	A73	2
2	A14	12	A34	2096	A61	A74	2
3	A11	42	A32	7882	A61	A74	2
4	A11	24	A33	4870	A61	A73	3

```
df.iloc[0:5,0:17]
```

	checkin_acc	duration	credit_history	amount	savings_acc	present_emp_since	inst_rate	personal_status	residing_since	age	i
0	A11	6	A34	1169	A65	A75	4	A93	4	67	
1	A12	48	A32	5951	A61	A73	2	A92	2	22	
2	A14	12	A34	2096	A61	A74	2	A93	3	49	
3	A11	42	A32	7882	A61	A74	2	A93	4	45	
4	A11	24	A33	4870	A61	A73	3	A93	4	53	

```
df['checkin_acc'].unique()
```

```
array(['A11', 'A12', 'A14', 'A13'], dtype=object)
```

```
x_features=list(df.columns)
x_features.remove('status')
encoded_df = pd.get_dummies(df[x_features],drop_first=True)
print(list(encoded_df.columns))
```

```
['duration', 'amount', 'inst_rate', 'residing_since', 'age', 'num_credits', 'checkin_acc_A12', 'checkin_acc_A13', 'checkin_acc_A14',
```

```
x=encoded_df
y=df['status']


from sklearn.model_selection import train_test_split
x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=0.3,random_state=42)


from sklearn.tree import DecisionTreeClassifier
clf=DecisionTreeClassifier(criterion='gini',max_depth=3)
clf.fit(x_train,y_train)
```

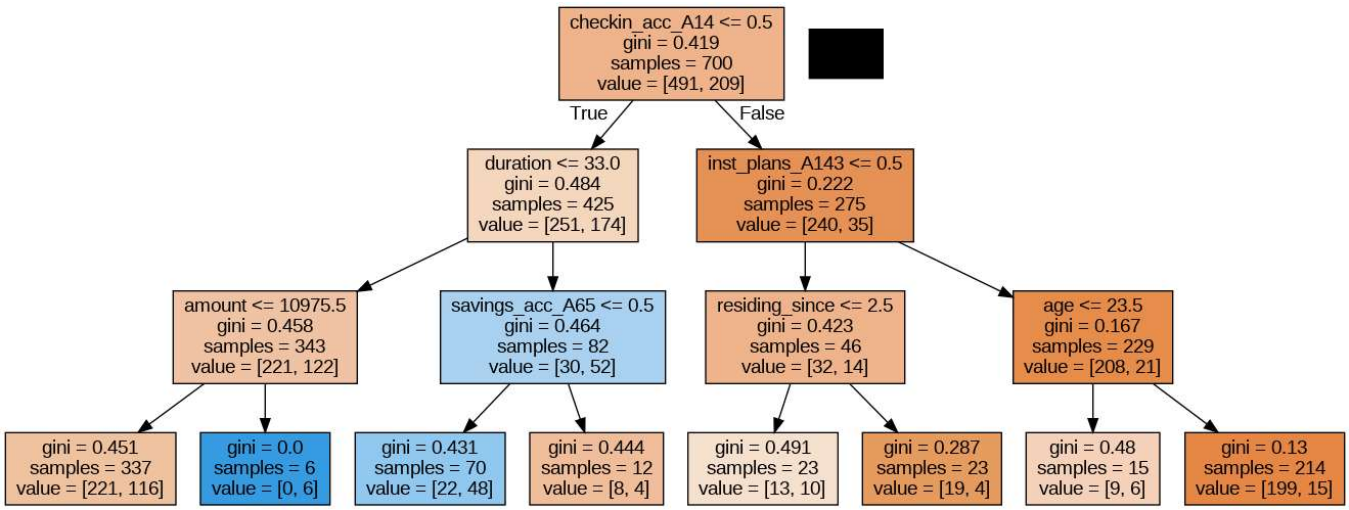
```
DecisionTreeClassifier
DecisionTreeClassifier(max_depth=3)
```

```
pred_y=clf.predict(x_test)


from sklearn import metrics
print("Confusion Matrix is\n",metrics.confusion_matrix(pred_y,y_test))
print("Accuracy is",metrics.accuracy_score(pred_y,y_test))
print("AUC Score is",metrics.roc_auc_score(pred_y,y_test))
```

```
Confusion Matrix is
 [[198  71]
 [ 11  20]]
Accuracy is 0.7266666666666667
AUC Score is 0.6906103849382419
```

```
from sklearn.tree import export_graphviz
import pydotplus as pdot
from IPython.display import Image
export_graphviz(clf,out_file="tree.dot",feature_names=x_train.columns,filled=True)
graph=pdot.graph_from_dot_file("tree.dot")
graph.write_png("tree.png")
Image(filename="tree.png")
```



Start coding or generate with AI.