Decision tree Classification

Decision tree Classification

```
import pandas as pd

df = pd.read_csv("/content/salaries.csv")
df.head()
```

	company	job	degree	salary_more_then_100k
0	google	sales executive	bachelors	0
1	google	sales executive	masters	0
2	google	business manager	bachelors	1
3	google	business manager	masters	1
4	google	computer programmer	bachelors	0

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```
inputs = df.drop('salary_more_then_100k',axis='columns')

target=df['salary_more_then_100k']

from sklearn.preprocessing import LabelEncoder
le_company = LabelEncoder()
le_job=LabelEncoder()
le_degree=LabelEncoder()

inputs['company_n']=le_company.fit_transform(inputs['company'])
inputs['job_n']=le_job.fit_transform(inputs['job'])
inputs['degree_n']=le_degree.fit_transform(inputs['degree'])

inputs
```

	company	job	degree	company_n	job_n	degree_n
0	google	sales executive	bachelors	2	2	0
1	google	sales executive	masters	2	2	1
2	google	business manager	bachelors	2	0	0
3	google	business manager	masters	2	0	1
4	google	computer programmer	bachelors	2	1	0
5	google	computer programmer	masters	2	1	1
6	abc pharma	sales executive	masters	0	2	1
7	abc pharma	computer programmer	bachelors	0	1	0
8	abc pharma	business manager	bachelors	0	0	0
9	abc pharma	business manager	masters	0	0	1
10	facebook	sales executive	bachelors	1	2	0
11	facebook	sales executive	masters	1	2	1
12	facebook	business manager	bachelors	1	0	0
13	facebook	business manager	masters	1	0	1
14	facebook	computer programmer	bachelors	1	1	0
15	facebook	computer programmer	masters	1	1	1

```
inputs_n=inputs.drop(['company','job','degree'],axis='columns')

inputs_n
```

	company_n	job_n	degree_n
0	2	2	0
1	2	2	1
2	2	0	0
3	2	0	1
4	2	1	0
5	2	1	1
6	0	2	1
7	0	1	0
8	0	0	0
9	0	0	1
10	1	2	0
11	1	2	1
12	1	0	0
13	1	0	1
14	1	1	0
15	1	1	1

```
target
```

```
0     0
1     0
2     1
3     1
4     0
5     1
6     0
7     0
8     0
9     1
10    1
11    1
12    1
13    1
14    1
15    1
Name: salary_more_then_100k, dtype: int64
```

```
from sklearn import tree
model=tree.DecisionTreeClassifier()
```

```
model.fit(inputs_n,target)
```

```
DecisionTreeClassifier
DecisionTreeClassifier()
```

```
model.score(inputs_n,target)
```

```
1.0
```

```
#Is salary of Google,Computer Engineer,Bachelors degree>100k?
model.predict([[2,1,0]])
```

```
/usr/local/lib/python3.10/dist-packages/sklearn/base.py:439: UserWarning: X does not have valid feature names, but DecisionTreeClassifie
  warnings.warn(
array([0])
```

```
model.predict([[2,1,1]])
```

```
/usr/local/lib/python3.10/dist-packages/sklearn/base.py:439: UserWarning: X does not have valid feature names, but DecisionTreeClassifie
  warnings.warn(
array([1])
```

```
#Is salary of Google,Computer Engineer,Masters degree>100k?
model.predict([[1,2,1]])
```

```
/usr/local/lib/python3.10/dist-packages/sklearn/base.py:439: UserWarning: X does not have valid feature names, but DecisionTreeClassifie
  warnings.warn(
array([1])
```