```
import numpy as np
import pandas as pd
import seaborn as sns
from sklearn.model_selection import train_test_split
from sklearn import svm
from sklearn.metrics import accuracy_score
```

```
loan_dataset=pd.read_csv('/datas.csv')
```

```
loan_dataset.head()
```

	Loan_ID	Gender	Married	Dependents	Education	Self_Employed	ApplicantIncome	CoapplicantIncome	LoanAmount	Loan_Am
0	LP001002	Male	No	0	Graduate	No	5849	0.0	NaN	
1	LP001003	Male	Yes	1	Graduate	No	4583	1508.0	128.0	
2	LP001005	Male	Yes	0	Graduate	Yes	3000	0.0	66.0	
3	LP001006	Male	Yes	0	Not Graduate	No	2583	2358.0	120.0	
4	LP001008	Male	No	0	Graduate	No	6000	0.0	141.0	

```
loan_dataset.shape
```

```
(614, 13)
```

```
loan_dataset.describe()
```

	ApplicantIncome	CoapplicantIncome	LoanAmount	Loan_Amount_Term	Credit_History
count	614.000000	614.000000	592.000000	600.00000	564.000000
mean	5403.459283	1621.245798	146.412162	342.00000	0.842199
std	6109.041673	2926.248369	85.587325	65.12041	0.364878
min	150.000000	0.000000	9.000000	12.00000	0.000000
25%	2877.500000	0.000000	100.000000	360.00000	1.000000
50%	3812.500000	1188.500000	128.000000	360.00000	1.000000
75%	5795.000000	2297.250000	168.000000	360.00000	1.000000
max	81000.000000	41667.000000	700.000000	480.00000	1.000000

```
loan_dataset.isnull().sum()
```

```
Loan_ID               0
Gender               13
Married               3
Dependents           15
Education             0
Self_Employed        32
ApplicantIncome       0
CoapplicantIncome     0
LoanAmount           22
Loan_Amount_Term     14
Credit_History       50
Property_Area         0
Loan_Status           0
dtype: int64
```

```
loan_dataset=loan_dataset.dropna()
```

```
loan_dataset.isnull().sum()
```

```
Loan_ID              0
Gender               0
Married              0
Dependents           0
Education            0
Self_Employed        0
ApplicantIncome      0
CoapplicantIncome    0
LoanAmount           0
Loan_Amount_Term     0
```

```
Credit_History       0
Property_Area        0
Loan_Status          0
dtype: int64
```

Double-click (or enter) to edit

```
loan_dataset.replace({"Loan_Status":{'N':0,'Y':1}},inplace=True)
```

```
loan_dataset.head()
```

	Loan_ID	Gender	Married	Dependents	Education	Self_Employed	ApplicantIncome	CoapplicantIncome	LoanAmount	Loan_Am
1	LP001003	Male	Yes	1	Graduate	No	4583	1508.0	128.0	
2	LP001005	Male	Yes	0	Graduate	Yes	3000	0.0	66.0	
3	LP001006	Male	Yes	0	Not Graduate	No	2583	2358.0	120.0	
4	LP001008	Male	No	0	Graduate	No	6000	0.0	141.0	
5	LP001011	Male	Yes	2	Graduate	Yes	5417	4196.0	267.0	

```
loan_dataset['Dependents'].value_counts()
```

```
Dependents
0     274
2      85
1      80
3+     41
Name: count, dtype: int64
```

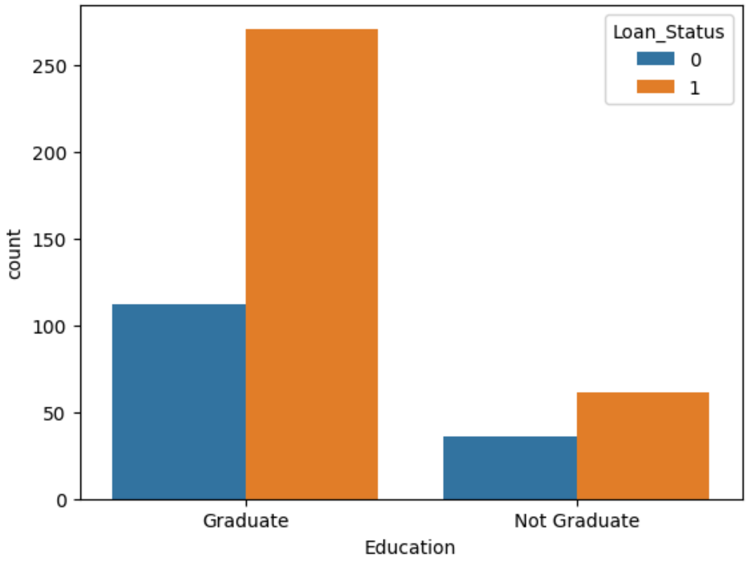
```
loan_dataset=loan_dataset.replace(to_replace ='3+',value=4)
```

```
loan_dataset['Dependents'].value_counts()
```

```
Dependents
0    274
2     85
1     80
4     41
Name: count, dtype: int64
```

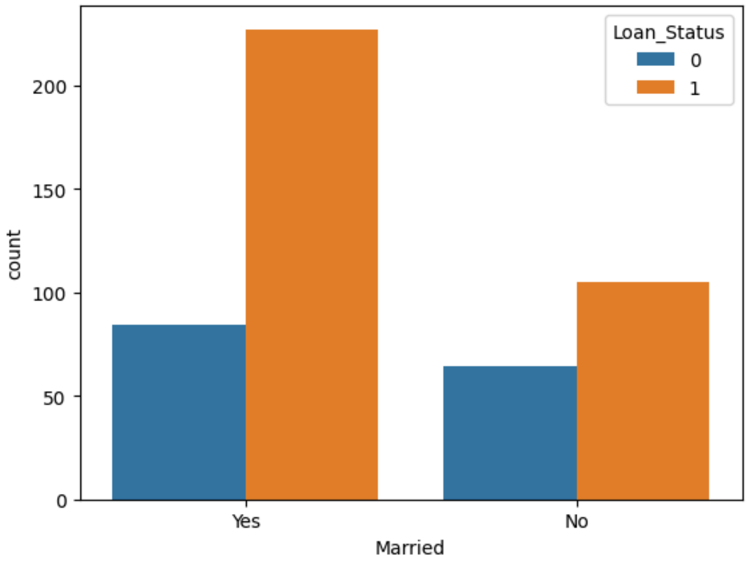
```
sns.countplot(x='Education',hue='Loan_Status',data=loan_dataset)
```

```
<Axes: xlabel='Education', ylabel='count'>
```



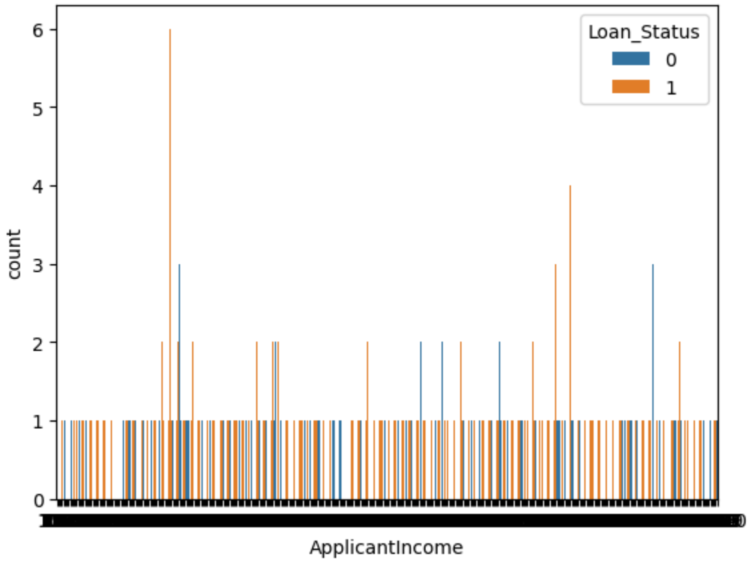
```
sns.countplot(x='Married',hue='Loan_Status',data=loan_dataset)
```

```
<Axes: xlabel='Married', ylabel='count'>
```



```
sns.countplot(x='ApplicantIncome',hue='Loan_Status',data=loan_dataset)
```

```
<Axes: xlabel='ApplicantIncome', ylabel='count'>
```



```
loan_dataset.head()
```

	Loan_ID	Gender	Married	Dependents	Education	Self_Employed	ApplicantIncome	CoapplicantIncome	LoanAmount	Loan_Am
1	LP001003	Male	Yes	1	Graduate	No	4583	1508.0	128.0	
2	LP001005	Male	Yes	0	Graduate	Yes	3000	0.0	66.0	
3	LP001006	Male	Yes	0	Not Graduate	No	2583	2358.0	120.0	
4	LP001008	Male	No	0	Graduate	No	6000	0.0	141.0	
5	LP001011	Male	Yes	2	Graduate	Yes	5417	4196.0	267.0	

```
loan_dataset.replace({"Married":{'No':0,'Yes':1},"Gender":{'Male':1,'Female':0},"Education":{'Graduate':1,'Not Graduate':0},
```

```
loan_dataset.head()
```

	Loan_ID	Gender	Married	Dependents	Education	Self_Employed	ApplicantIncome	CoapplicantIncome	LoanAmount	Loan_Am
1	LP001003	1	1	1	1	0	4583	1508.0	128.0	
2	LP001005	1	1	0	1	1	3000	0.0	66.0	
3	LP001006	1	1	0	0	0	2583	2358.0	120.0	
4	LP001008	1	0	0	1	0	6000	0.0	141.0	
5	LP001011	1	1	2	1	1	5417	4196.0	267.0	

```
X=loan_dataset.drop(columns=['Loan_ID','Loan_Status'],axis=1)
Y=loan_dataset['Loan_Status']
```

```
X_train,X_test,Y_train,Y_test=train_test_split(X,Y,test_size=0.1,stratify=Y,random_state=2)
```

```
classifier=svm.SVC(kernel='linear')
```

```
classifier.fit(X_train,Y_train)
```

```
▾       SVC
SVC(kernel='linear')
```

```
X_train_predicition=classifier.predict(X_train)
training_data_accuracy=accuracy_score(X_train_predicition,Y_train)
```

```
print(training_data_accuracy)
```

```
0.7986111111111112
```

```
X_test_prediction=classifier.predict(X_test)
test_data_accuracy=accuracy_score(X_test_prediction,Y_test)
print(test_data_accuracy)
```

```
0.8333333333333334
```

Start coding or generate with AI.