```
import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
import seaborn as sns
import warnings
warnings.filterwarnings('ignore')

df = pd.read_csv('/content/drive/MyDrive/Dataset/Diwali sales/Diwali Sales Data.csv', encoding='latin-1')
```

Data **Cleaning**

```
df.head()
```

ıe	Product_ID	Gender	Age Group	Age	Marital_Status	State	Zone	Occupation	Product_Category	Or
iti	P00125942	F	26-35	28	0	Maharashtra	Western	Healthcare	Auto	
ik	P00110942	F	26-35	35	1	Andhra Pradesh	Southern	Govt	Auto	
lu	P00118542	F	26-35	35	1	Uttar Pradesh	Central	Automobile	Auto	
vi	P00237842	M	0-17	16	0	Karnataka	Southern	Construction	Auto	
ni	P00057942	M	26-35	28	1	Gujarat	Western	Food Processing	Auto	

Next steps: Generate code with df View recommended plots New interactive sheet

```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 11251 entries, 0 to 11250
Data columns (total 15 columns):
 #   Column            Non-Null Count  Dtype
---  ------            --------------  -----
 0   User_ID           11251 non-null  int64
 1   Cust_name         11251 non-null  object
 2   Product_ID        11251 non-null  object
 3   Gender            11251 non-null  object
 4   Age Group         11251 non-null  object
 5   Age               11251 non-null  int64
 6   Marital_Status    11251 non-null  int64
 7   State             11251 non-null  object
 8   Zone              11251 non-null  object
 9   Occupation        11251 non-null  object
 10  Product_Category  11251 non-null  object
 11  Orders            11251 non-null  int64
 12  Amount            11239 non-null  float64
 13  Status            0 non-null      float64
 14  unnamed1          0 non-null      float64
dtypes: float64(3), int64(4), object(8)
memory usage: 1.3+ MB
```

```
df.drop(['Status', 'unnamed1'], axis = 1, inplace = True)
df.head()
```

	User_ID	Cust_name	Product_ID	Gender	Age Group	Age	Marital_Status	State	Zone	Occupation	Product_Category	O
0	1002903	Sanskriti	P00125942	F	26-35	28	0	Maharashtra	Western	Healthcare	Auto	
1	1000732	Kartik	P00110942	F	26-35	35	1	Andhra Pradesh	Southern	Govt	Auto	
2	1001990	Bindu	P00118542	F	26-35	35	1	Uttar Pradesh	Central	Automobile	Auto	
3	1001425	Sudevi	P00237842	M	0-17	16	0	Karnataka	Southern	Construction	Auto	
4	1000588	Joni	P00057942	M	26-35	28	1	Gujarat	Western	Food Processing	Auto	

Next steps: Generate code with df View recommended plots New interactive sheet

```
pd.isnull(df).sum()
```

```
User_ID             0
Cust_name           0
Product_ID          0
Gender              0
Age Group           0
Age                 0
Marital_Status      0
State               0
Zone                0
Occupation          0
Product_Category    0
Orders              0
Amount             12
dtype: int64
```

```
df.dropna(inplace = True)
df['Amount'] = df['Amount'].astype('int')
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
Index: 11239 entries, 0 to 11250
Data columns (total 13 columns):
 #   Column            Non-Null Count  Dtype 
---  ------            --------------  ----- 
 0   User_ID           11239 non-null  int64 
 1   Cust_name         11239 non-null  object
 2   Product_ID        11239 non-null  object
 3   Gender            11239 non-null  object
 4   Age Group         11239 non-null  object
 5   Age               11239 non-null  int64 
 6   Marital_Status    11239 non-null  int64 
 7   State             11239 non-null  object
 8   Zone              11239 non-null  object
 9   Occupation        11239 non-null  object
 10  Product_Category  11239 non-null  object
 11  Orders            11239 non-null  int64 
 12  Amount            11239 non-null  int64 
dtypes: int64(5), object(8)
memory usage: 1.2+ MB
```

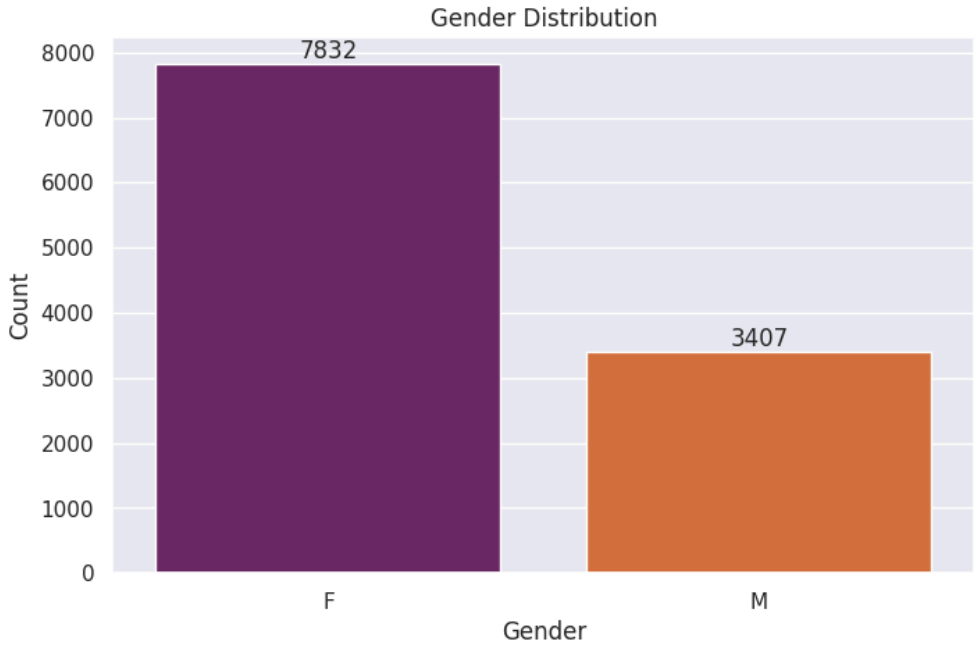
```
df['Marital_Status'] = df['Marital_Status'].replace({'1' : 'Marreid', '0' : 'Unmarried'})
df.head()
```

	User_ID	Cust_name	Product_ID	Gender	Age Group	Age	Marital_Status	State	Zone	Occupation	Product_Category	O
0	1002903	Sanskriti	P00125942	F	26-35	28	Unmarried	Maharashtra	Western	Healthcare	Auto	
1	1000732	Kartik	P00110942	F	26-35	35	Married	Andhra Pradesh	Southern	Govt	Auto	
2	1001990	Bindu	P00118542	F	26-35	35	Married	Uttar Pradesh	Central	Automobile	Auto	
3	1001425	Sudevi	P00237842	M	0-17	16	Unmarried	Karnataka	Southern	Construction	Auto	
4	1000588	Joni	P00057942	M	26-35	28	Married	Gujarat	Western	Food Processing	Auto	

Next steps: Generate code with df | View recommended plots | New interactive sheet

Gender Plots

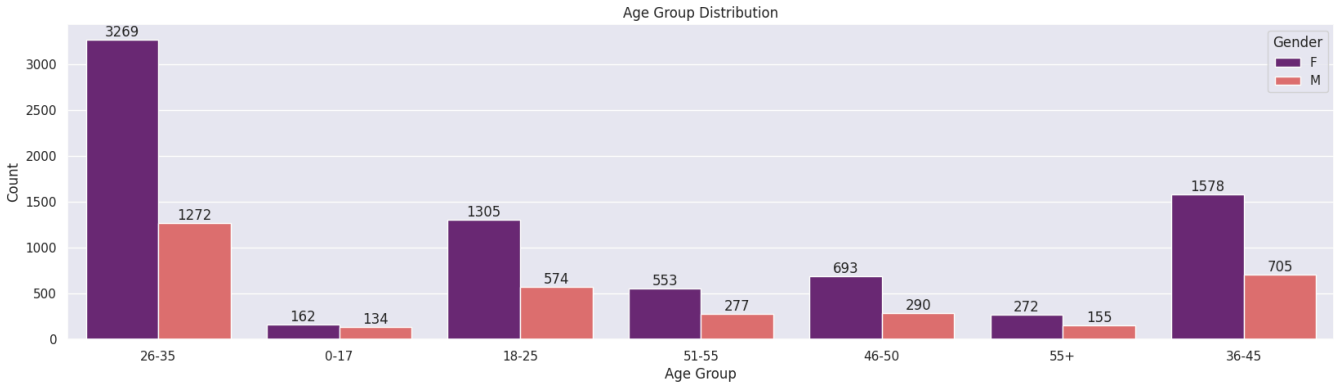
```
plt.figure(figsize = (8,5)  , dpi = 100)
bar = sns.countplot(x = 'Gender', data = df, palette = 'inferno')
plt.xlabel('Gender')
plt.ylabel('Count')
plt.title('Gender Distribution')
for bars in bar.containers:
  bar.bar_label(bars)
```



Age

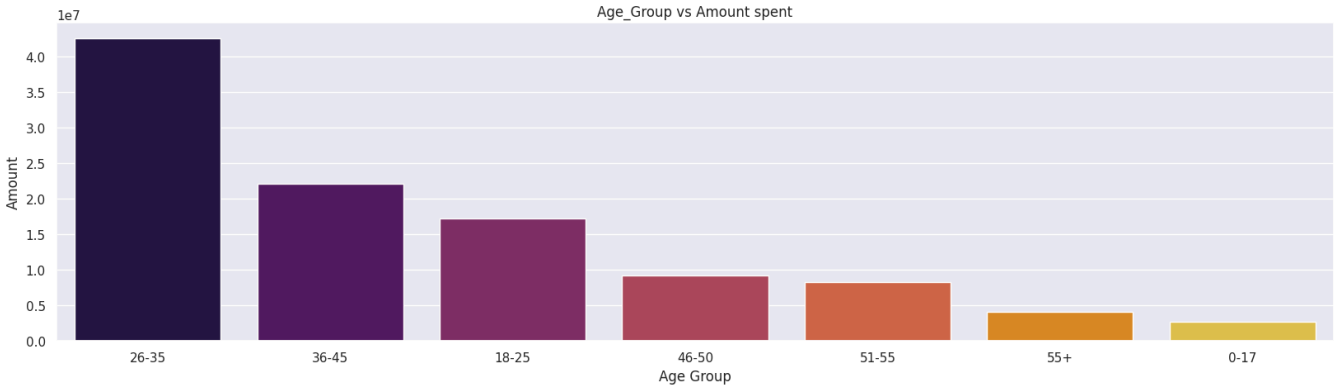
```
ageBar = sns.countplot(x = 'Age Group', data = df, hue = 'Gender', palette = 'magma')

#adding labels
for count in ageBar.containers:
  ageBar.bar_label(count)

#title and axes labels
plt.title('Age Group Distribution')
plt.xlabel('Age Group')
plt.ylabel('Count')
```

```
Text(0, 0.5, 'Count')
```




```
#Age_Group vs Amount spent
amount = df.groupby(['Age Group'], as_index = False)['Amount'].sum().sort_values(by = 'Amount', ascending = False)
sns.barplot(x = 'Age Group', y = 'Amount', data = amount, palette = 'inferno')
plt.title('Age_Group vs Amount spent')
```

```
Text(0.5, 1.0, 'Age_Group vs Amount spent')
```

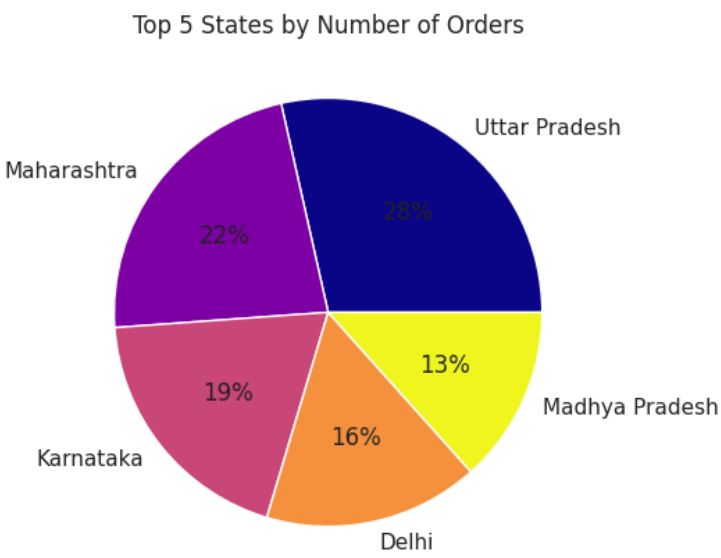


State

```
df.columns
```

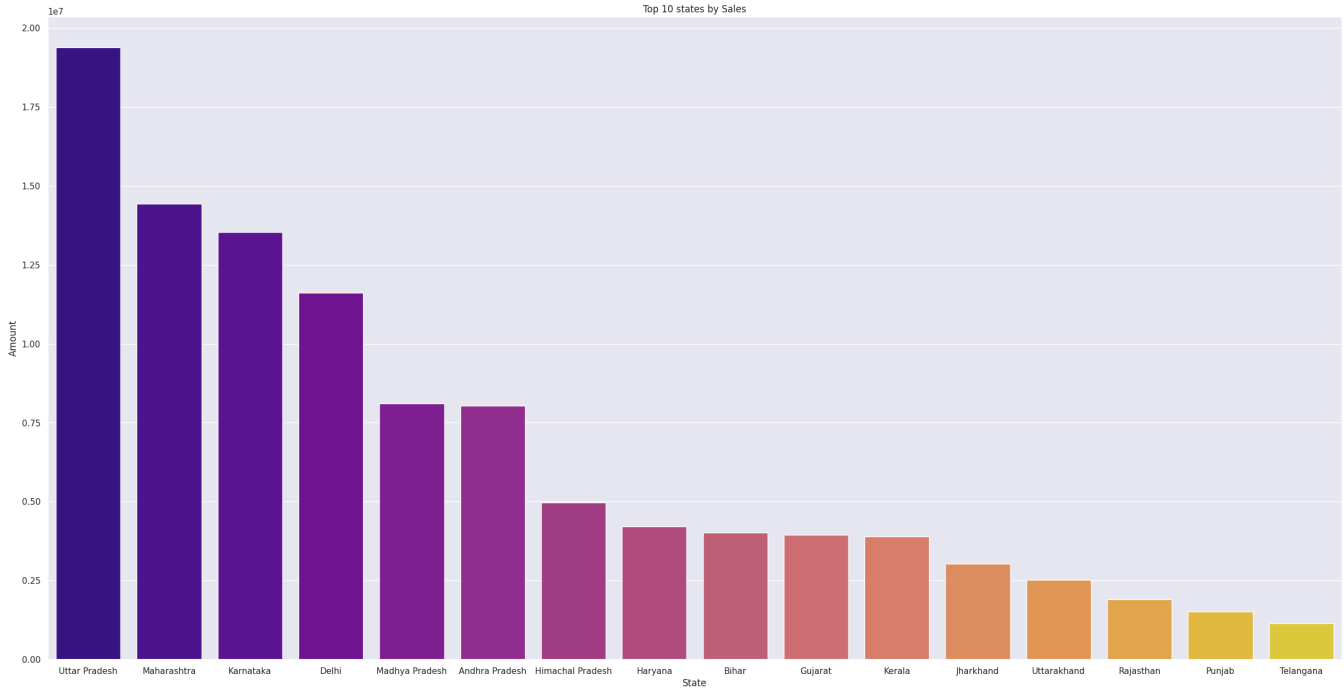
```
Index(['User_ID', 'Cust_name', 'Product_ID', 'Gender', 'Age Group', 'Age',
       'Marital_Status', 'State', 'Zone', 'Occupation', 'Product_Category',
       'Orders', 'Amount'],
      dtype='object')
```

```
# Pie chart for State vs the number of orders and show the top 5 only

order_state = df.groupby(['State'], as_index = False)['Orders'].sum().sort_values(by = 'Orders', ascending = False).head(5)
plt.pie(order_state['Orders'], labels = order_state['State'], autopct = '%1d%%', colors = plt.cm.plasma(np.linspace(0,1,5)))
plt.get_cmap('plasma')
plt.title('Top 5 States by Number of Orders')
plt.show()
```



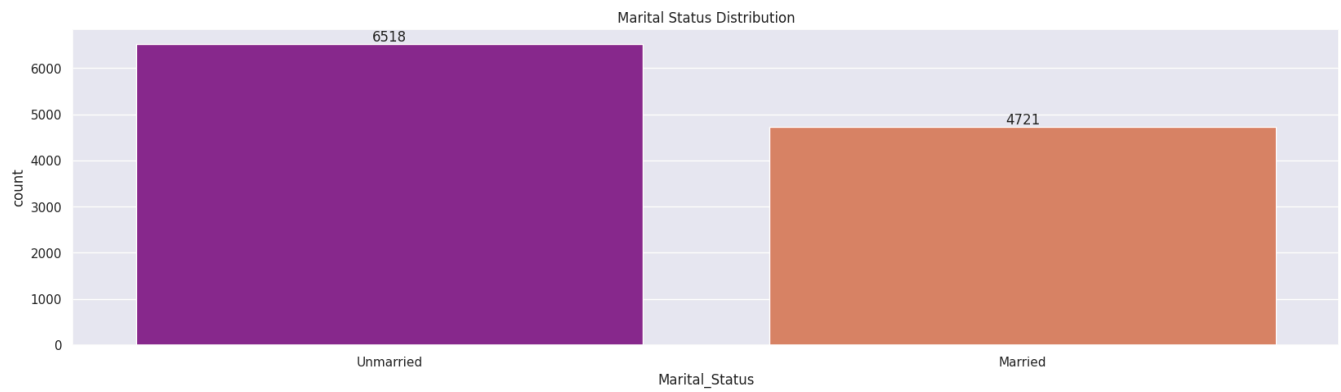

```
# Top 10 states by Sales
plt.figure(figsize = (30,15))
sales_state = df.groupby(['State'], as_index = False)['Amount'].sum().sort_values(by = 'Amount', ascending = False)
sns.barplot(x = 'State', y = 'Amount', data = sales_state, palette = 'plasma')
plt.title('Top 10 states by Sales')
```

```
Text(0.5, 1.0, 'Top 10 states by Sales')
```



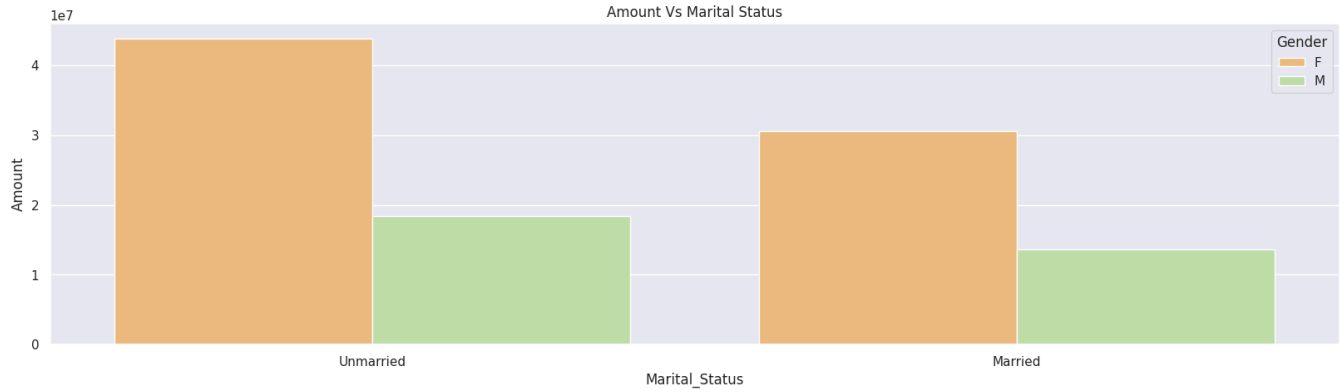
Marital **Status**

```
marraigeData = sns.countplot(x = 'Marital_Status', data = df, palette = 'plasma')
plt.title('Marital Status Distribution')
for cnt in marraigeData.containers:
  marraigeData.bar_label(cnt)
```




```
#Amount Vs Marital Status
ax = df.groupby(['Marital_Status', 'Gender'], as_index = False)['Amount'].sum().sort_values(by = 'Amount', ascending = False)
sns.barplot(x = 'Marital_Status', y = 'Amount', hue = 'Gender', data = ax, palette = 'Spectral')
plt.title('Amount Vs Marital Status')
```

```
Text(0.5, 1.0, 'Amount Vs Marital Status')
```



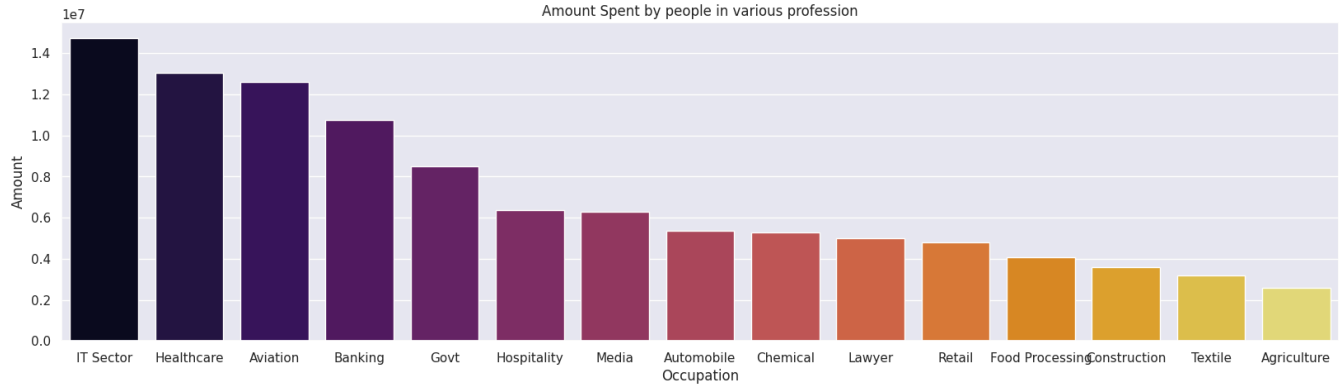
Occupation

```
#Number of people in various profession
ax = sns.countplot(x = 'Occupation', data = df, palette = 'plasma')

for cnt in ax.containers:
  ax.bar_label(cnt)

plt.title('Number of people in various profession')
```

```
Text(0.5, 1.0, 'Number of people in various profession')
```

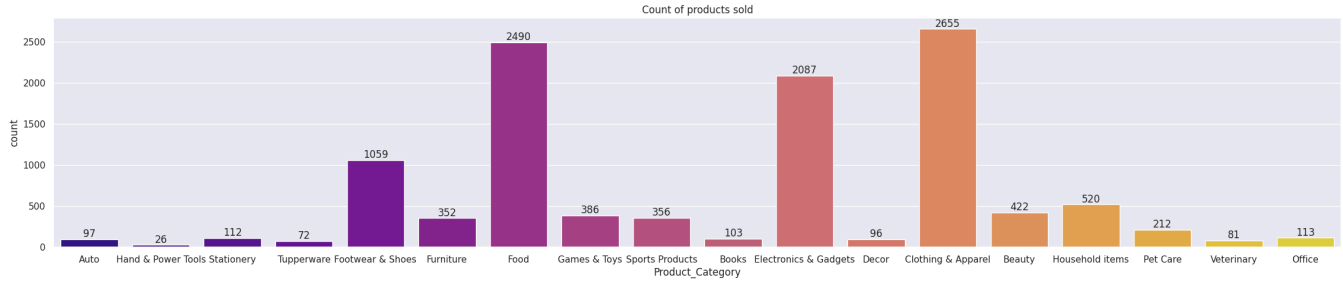

```
#Amount Spent by people in various profession
ay = df.groupby(['Occupation'], as_index = False)['Amount'].sum().sort_values(by = 'Amount', ascending = False)
sns.barplot(x = 'Occupation', y = 'Amount', data = ax, palette = 'inferno')
plt.title('Amount Spent by people in various profession')
```

```
Text(0.5, 1.0, 'Amount Spent by people in various profession')
```



Product **Catagory**

```
#Count of products sold
plt.figure(figsize = (28,5))
ax = sns.countplot(x = 'Product_Category', data = df, palette = 'plasma')
plt.title('Count of products sold')
for cnt in ax.containers:
  ax.bar_label(cnt)
```



Suggested code may be subject to a license | Kiransangamnere22/Dewali_Sales_Analysis_Using_python

```
#Amount vs Occupation
plt.figure(figsize = (25,5))
ax = df.groupby(['Product_Category'], as_index = False)['Amount'].sum().sort_values(by = 'Amount', ascending = False).head(10)
sns.barplot(x = 'Product_Category', y = 'Amount', data = ax, palette = 'plasma')
plt.title('Amount vs Occupation')
```

```
:(0.5, 1.0, 'Amount vs Occupation')
```