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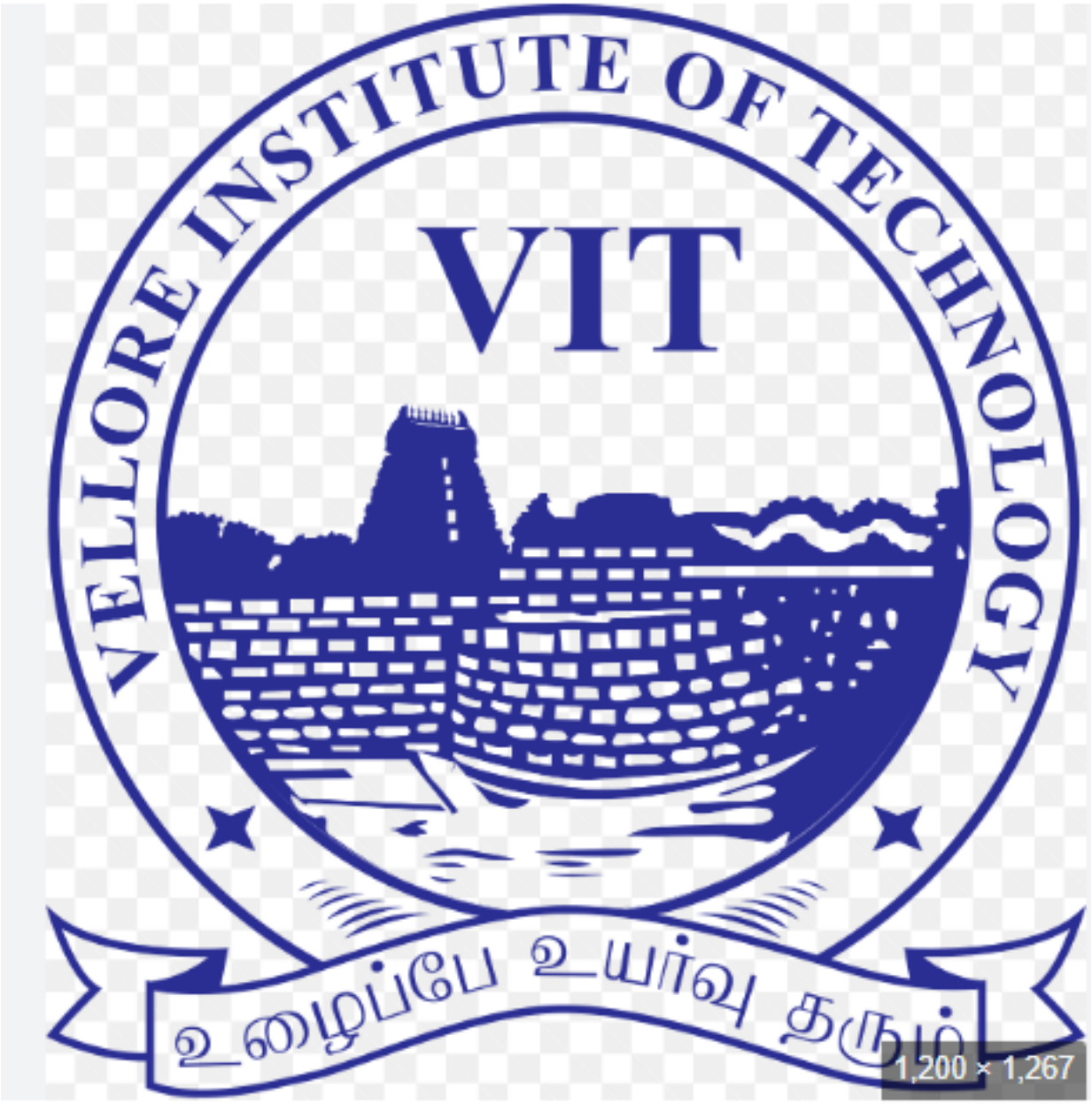
REGISTRATION NUMBER : 21BDS0014

DATE : 22/11/2024



DIGITAL ASSIGNMENT – 1

https://github.com/mrinal-boop/Digital-Assignment-1.git

```
import pandas as pd
```

```
df = pd.read_csv('auto-mpg.csv')
```

```
print(f"Dataset Dimensions: {df.shape}")
df.head()
```

```
Dataset Dimensions: (398, 9)
```

	mpg	cylinders	displacement	horsepower	weight	acceleration	model year	origin	car name
0	18.0	8	307.0	130	3504	12.0	70	1	chevrolet chevelle malibu
1	15.0	8	350.0	165	3693	11.5	70	1	buick skylark 320
2	18.0	8	318.0	150	3436	11.0	70	1	plymouth satellite
3	16.0	8	304.0	150	3433	12.0	70	1	amc rebel sst
4	17.0	8	302.0	140	3449	10.5	70	1	ford torino

```
print(f"Rows: {df.shape[0]}, Columns: {df.shape[1]}")
```

```
Rows: 398, Columns: 9
```

```
print(df.describe())
```

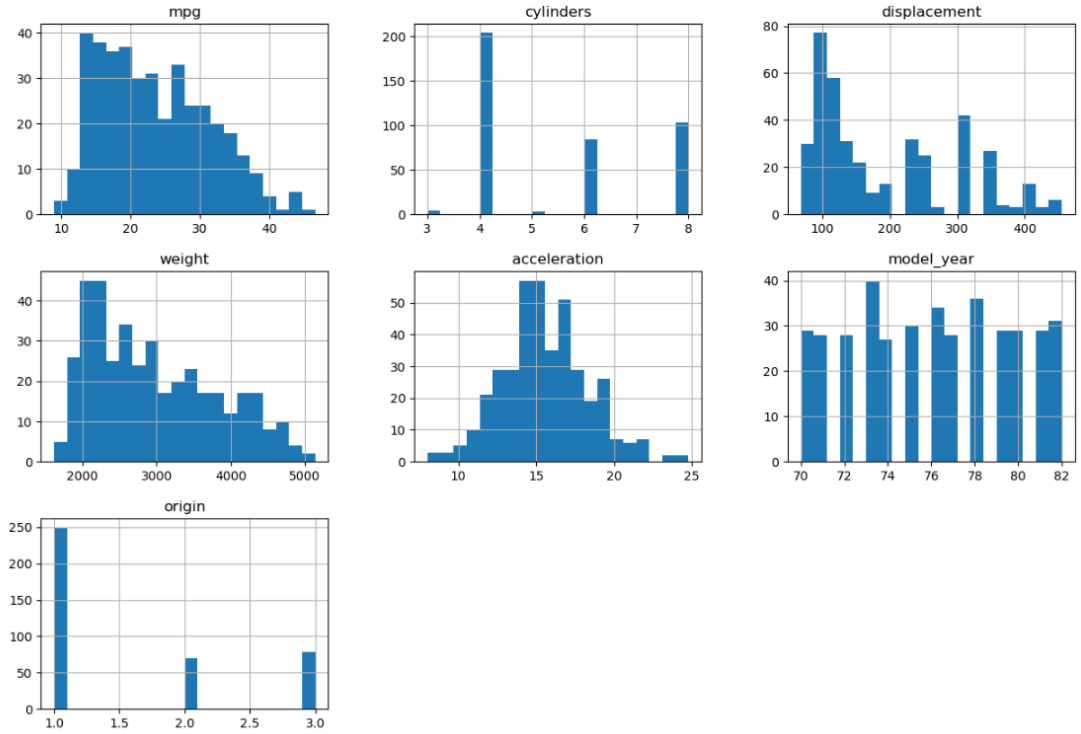
```
              mpg   cylinders  displacement       weight  acceleration  \
count  398.000000  398.000000    398.000000   398.000000    398.000000
mean    23.514573    5.454774    193.425879  2970.424623     15.568090
std      7.815984    1.701004    104.269838   846.841774      2.757689
min      9.000000    3.000000     68.000000  1613.000000      8.000000
25%     17.500000    4.000000    104.250000  2223.750000     13.825000
50%     23.000000    4.000000    148.500000  2803.500000     15.500000
75%     29.000000    8.000000    262.000000  3608.000000     17.175000
max     46.600000    8.000000    455.000000  5140.000000     24.800000

          . .             . .
```

[14]:
```
print(df.describe())
```

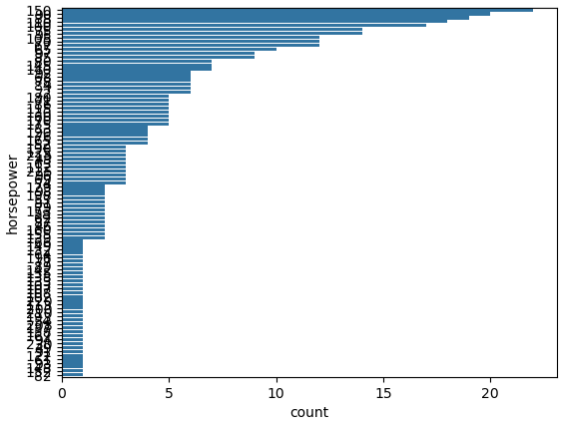
```
              mpg   cylinders  displacement       weight  acceleration  \
count  398.000000  398.000000    398.000000   398.000000    398.000000
mean    23.514573    5.454774    193.425879  2970.424623     15.568090
std      7.815984    1.701004    104.269838   846.841774      2.757689
min      9.000000    3.000000     68.000000  1613.000000      8.000000
25%     17.500000    4.000000    104.250000  2223.750000     13.825000
50%     23.000000    4.000000    148.500000  2803.500000     15.500000
75%     29.000000    8.000000    262.000000  3608.000000     17.175000
max     46.600000    8.000000    455.000000  5140.000000     24.800000

       model year      origin
count  398.000000  398.000000
mean    76.010050    1.572864
std      3.697627    0.802055
min     70.000000    1.000000
25%     73.000000    1.000000
50%     76.000000    1.000000
75%     79.000000    2.000000
max     82.000000    3.000000
```

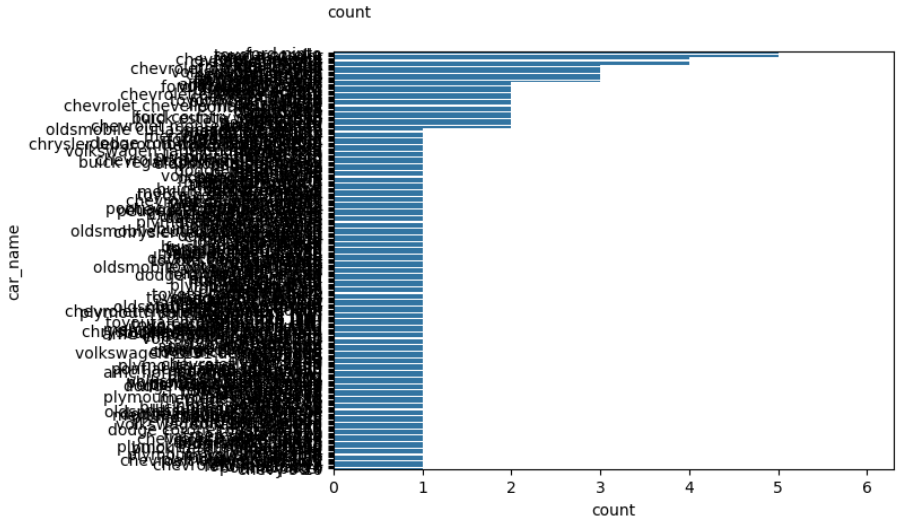
[16]:
```
print(df.info())
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 398 entries, 0 to 397
Data columns (total 9 columns):
 #   Column        Non-Null Count  Dtype
---  ------        --------------  -----
 0   mpg           398 non-null    float64
 1   cylinders     398 non-null    int64
 2   displacement  398 non-null    float64
 3   horsepower    398 non-null    object
 4   weight        398 non-null    int64
 5   acceleration  398 non-null    float64
 6   model year    398 non-null    int64
 7   origin        398 non-null    int64
 8   car name      398 non-null    object
dtypes: float64(3), int64(4), object(2)
memory usage: 28.1+ KB
None
```

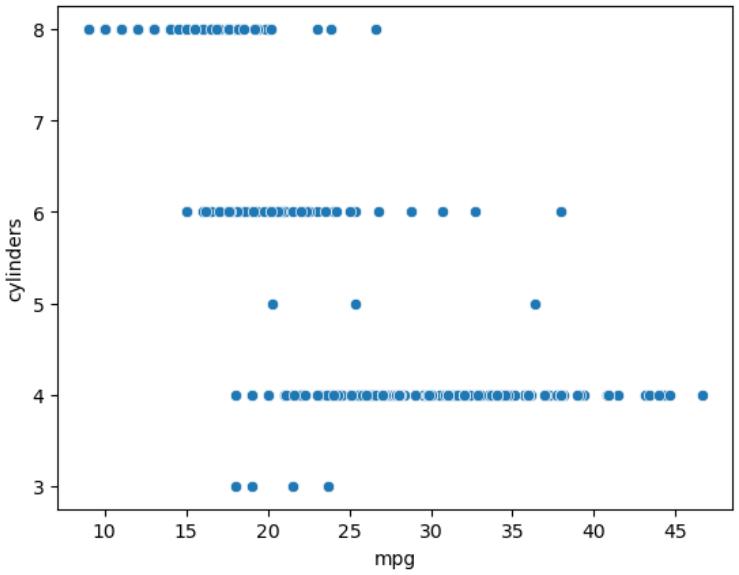



```
categorical_cols = df.select_dtypes(include='object').columns
for col in categorical_cols:
    sns.countplot(y=df[col], order=df[col].value_counts().index)
    plt.show()
```






```
sns.scatterplot(data=df, x='mpg', y='cylinders')
plt.show()
```



```
sns.pairplot(df, hue='mpg')
plt.show()
```