

#Program 1 - Read the dataset.

```
import pandas as pd
import matplotlib.pyplot as plt
df=pd.read_csv('mtcars.csv')
print(df)
```

#program 2 - Find the head of the dataset.

```
df.head()
```

#Program 3 - Find the Datatype of Dataset (each column).

```
datatypes=df.dtypes
print(datatypes)
```

#Program 4 - From the given dataset "mtcars.csv" plot a histogram

# to check the frequency distribution of the variable "mpg" (Miles per gallon).

# Extract the 'mpg' column

```
mpg_data = df['mpg']
```

# Plot the histogram

```
plt.hist(mpg_data, bins='auto', edgecolor='black')
```

# Set labels and title

```
plt.xlabel('Miles per Gallon (mpg)')
```

```
plt.ylabel('Frequency')
```

```
plt.title('Histogram of MPG Distribution')
```

# Display the histogram

```
plt.show()
```

#Program 5 - Find the highest frequency of interval.

```
mpg_data=df['mpg']  
print(mpg_data.mode)
```

# Find the highest frequency of interval.

```
# most frequent value in Team  
df['mpg'].value_counts().idxmax()
```

#Program 6

#Which can be inferred from scatter plot of mpg (Miles per gallon) vs

# wt (Weight of car) from the dataset mtcars.csv.

""""Negative correlation: The scatter plot shows a negative relationship between "mpg" and "wt."  
As the weight of the car increases, the miles per gallon tends to decrease.  
This suggests that lighter cars tend to have better fuel efficiency.""""

# Calculate the correlation between "mpg" and "wt"

```
correlation = df['mpg'].corr(df['wt'])
```

# Check if the correlation is negative

if correlation < 0:

```
    print("There is a negative correlation between 'mpg' and 'wt' in the mtcars dataset.")
```

else:

```
    print("There is no negative correlation between 'mpg' and 'wt' in the mtcars dataset.")
```

```
# Create the scatter plot
plt.scatter(df['wt'], df['mpg'])
plt.xlabel('Weight of Car')
plt.ylabel('Miles per Gallon')

# Set title and display the plot
plt.title('Scatter Plot of mpg vs wt')
plt.show()
```