```
import pandas as pd
from google.colab import files
uploaded = files.upload()
file_name = list(uploaded.keys())[0]
df = pd.read_csv(file_name)
df.head()
```

```
<IPython.core.display.HTML object>
```

```
Saving Cars.csv to Cars.csv
```


```
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{\n      \"column\": \"HP\",\n      \"properties\": {\n
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\"max\": 322,\n        \"num_unique_values\": 40,\n
\"samples\": [\n          93,\n          84,\n          103\
n        ],\n        \"semantic_type\": \"\",\n
\"description\": \"\"\n      }\n    },\n    {\n      \"column\":
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\"max\": 53.70068138,\n        \"num_unique_values\": 50,\n
\"samples\": [\n          38.31060597,\n          23.10317168,\n
27.85625194\n        ],\n        \"semantic_type\": \"\",\n
\"description\": \"\"\n      }\n    },\n    {\n      \"column\":
\"VOL\",\n      \"properties\": {\n        \"dtype\": \"number\",\n
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\"num_unique_values\": 34,\n        \"samples\": [\n          98,\n
102,\n          127\n        ],\n        \"semantic_type\": \"\",\n
\"description\": \"\"\n      }\n    },\n    {\n      \"column\":
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\"samples\": [\n          115.5765794,\n          113.8291446,\n
113.1853528\n        ],\n        \"semantic_type\": \"\",\n
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\"WT\",\n      \"properties\": {\n        \"dtype\": \"number\",\n
\"std\": 7.492812997393198,\n        \"min\": 15.71285853,\n
\"max\": 52.99775236,\n        \"num_unique_values\": 81,\n
\"samples\": [\n          37.04235003,\n          28.7620589,\n
32.6758277\n        ],\n        \"semantic_type\": \"\",\n
\"description\": \"\"\n      }\n    }\n  ]\
n}","type":"dataframe","variable_name":"df"}
```


```
import statsmodels.formula.api as smf
model = smf.ols('MPG~WT+VOL+SP+HP', data= df).fit()
```

```
print(model.params)
```

```
Intercept    30.677336
WT            0.400574
VOL          -0.336051
```

```
SP            0.395627
HP           -0.205444
dtype: float64
```

```
print(model.tvalues, '\n', model.pvalues)
```

```
Intercept    2.058841
WT           0.236541
VOL         -0.590970
SP           2.499880
HP          -5.238735
dtype: float64
 Intercept    0.042936
WT           0.813649
VOL          0.556294
SP           0.014579
HP           0.000001
dtype: float64
```

```
ml_v=smf.ols('MPG~WT+VOL+SP+HP', data= df).fit()
print(ml_v.tvalues, '\n', ml_v.pvalues)
```

```
Intercept    2.058841
WT           0.236541
VOL         -0.590970
SP           2.499880
HP          -5.238735
dtype: float64
 Intercept    0.042936
WT           0.813649
VOL          0.556294
SP           0.014579
HP           0.000001
dtype: float64
```

```
ml_v=smf.ols('MPG~VOL', data= df).fit()
print(ml_v.tvalues, '\n', ml_v.pvalues)
```

```
Intercept    14.106056
VOL          -5.541400
dtype: float64
 Intercept    2.753815e-23
VOL          3.822819e-07
dtype: float64
```

```
ml_v=smf.ols('MPG~WT', data= df).fit()
print(ml_v.tvalues, '\n', ml_v.pvalues)
```

```
Intercept    14.248923
WT           -5.508067
dtype: float64
```

```
 Intercept    1.550788e-23
WT           4.383467e-07
dtype: float64
```

```
ml_v=smf.ols('MPG~WT+VOL', data= df).fit()
print(ml_v.tvalues, '\n', ml_v.pvalues)
```

```
Intercept    12.545736
WT            0.489876
VOL          -0.709604
dtype: float64
 Intercept    2.141975e-20
WT           6.255966e-01
VOL          4.800657e-01
dtype: float64
```

```
ml_v.rsquared,ml_v.rsquared_adj
```

```
(0.2821095616445982, 0.2637021145072803)
```

```
ml_wv=smf.ols("MPG~WT+VOL", data=df).fit()
ml_wv.rsquared,ml_wv.rsquared_adj
```

```
(0.2821095616445982, 0.2637021145072803)
```

```
ml_wv=smf.ols("MPG~WT+VOL", data=df).fit()
print(ml_wv.tvalues, '\n', ml_wv.pvalues)
```

```
Intercept    12.545736
WT            0.489876
VOL          -0.709604
dtype: float64
 Intercept    2.141975e-20
WT           6.255966e-01
VOL          4.800657e-01
dtype: float64
```

```
(ml_wv.rsquared,ml_wv.rsquared_adj)
```

```
(0.2821095616445982, 0.2637021145072803)
```