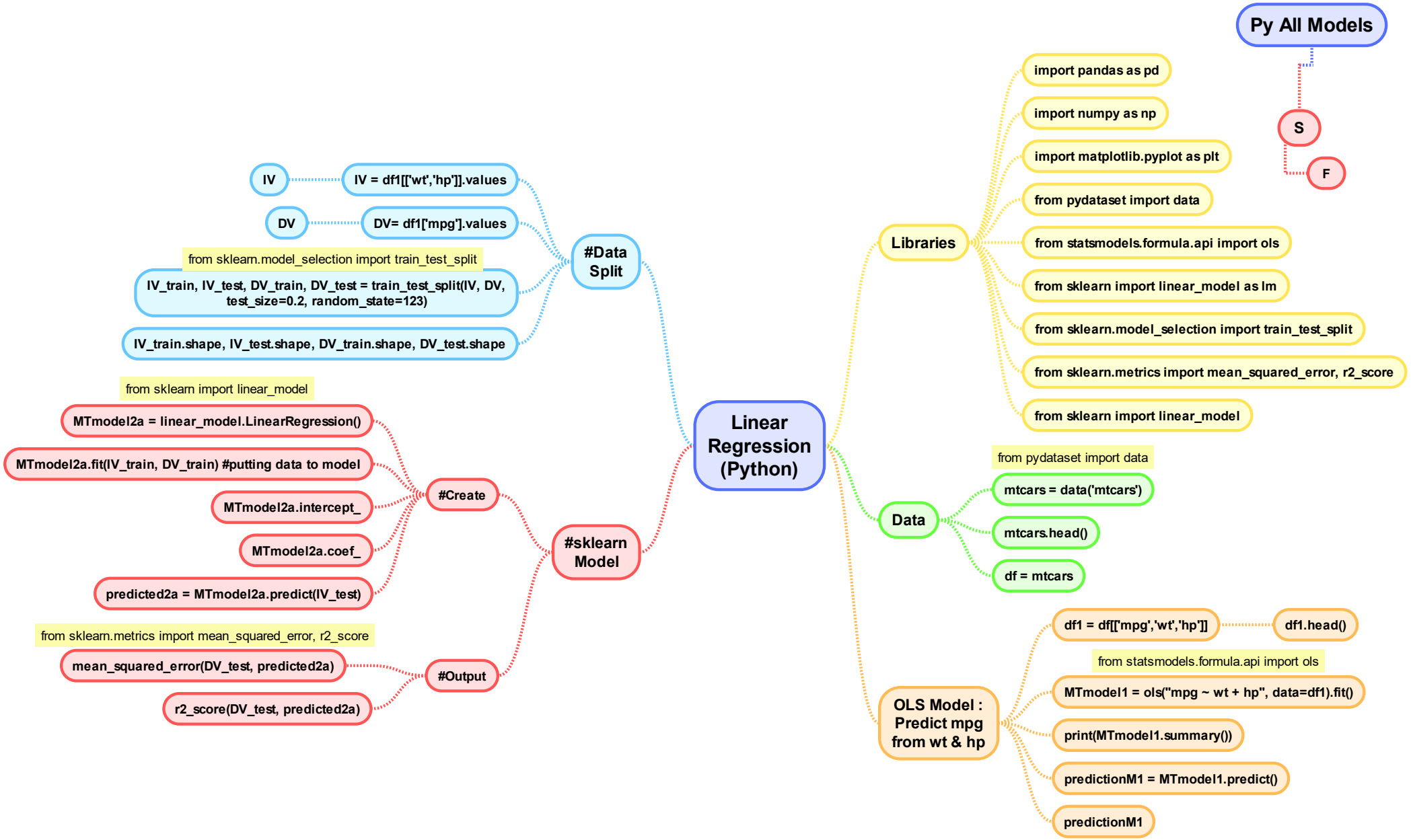
Linear Regression (Python)
Libraries
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
from pydataset import data
from statsmodels.formula.api import ols
from sklearn import linear_model as lm
from sklearn.model_selection import train_test_split
from sklearn.metrics import mean_squared_error, r2_score
from sklearn import linear_model
Py All Models
S
F
Data
from pydataset import data
mtcars = data('mtcars')
mtcars.head()
df = mtcars
OLS Model : Predict mpg from wt & hp
df1 = df[['mpg','wt','hp']]
df1.head()
from statsmodels.formula.api import ols
MTmodel1 = ols("mpg ~ wt + hp", data=df1).fit()
print(MTmodel1.summary())
predictionM1 = MTmodel1.predict()
predictionM1
#sklearn Model
#Data Split
IV
IV = df1[['wt','hp']].values
DV
DV= df1['mpg'].values
from sklearn.model_selection import train_test_split
IV_train, IV_test, DV_train, DV_test = train_test_split(IV, DV, test_size=0.2, random_state=123)
IV_train.shape, IV_test.shape, DV_train.shape, DV_test.shape
#Create
from sklearn import linear_model
MTmodel2a = linear_model.LinearRegression()
MTmodel2a.fit(IV_train, DV_train) #putting data to model
MTmodel2a.intercept_
MTmodel2a.coef_
predicted2a = MTmodel2a.predict(IV_test)
#Output
from sklearn.metrics import mean_squared_error, r2_score
mean_squared_error(DV_test, predicted2a)
r2_score(DV_test, predicted2a)