In [46]:
```
## importing the required libraries
import numpy as np
import pandas as pd
import sklearn as sk
import matplotlib.pyplot as plt
from sklearn import linear_model
from sklearn.metrics import  mean_squared_error
from sklearn import datasets
diabetes=datasets.load_diabetes() ## importing the sklearn sample data called as diabetes
ram=diabetes.data   ### taking impit label as ram
print(); print(ram.shape);
sita=diabetes.data ## taking target as sita
print();print(sita.shape); ## getting the shape of data
```

```
(442, 10)

(442, 10)
```

In [12]:
```
diabetes_ram=diabetes.data[:,np.newaxis,2]
```

In [60]:
```
print(" diabetes_ram_data is ",diabetes_ram_test)
```

```
 diabetes_ram_data is  [[ 0.08540807]
 [-0.00081689]
 [ 0.00672779]
 [ 0.00888341]
 [ 0.08001901]
 [ 0.07139652]
 [-0.02452876]
 [-0.0547075 ]
 [-0.03638469]
 [ 0.0164281 ]
 [ 0.07786339]
 [-0.03961813]
 [ 0.01103904]
 [-0.04069594]
 [-0.03422907]
 [ 0.00564998]
 [ 0.08864151]
 [-0.03315126]
 [-0.05686312]
 [-0.03099563]
 [ 0.05522933]
 [-0.06009656]
 [ 0.00133873]
 [-0.02345095]
 [-0.07410811]
 [ 0.01966154]
 [-0.01590626]
 [-0.01590626]
 [ 0.03906215]
 [-0.0730303 ]]
```

In [63]:
```
print(" diabetes_sita_data is ",diabetes_sita_test)
```

```
 diabetes_sita_data is  [261. 113. 131. 174. 257.  55.  84.  42. 146. 212. 233.  91. 111. 152.
 120.  67. 310.  94. 183.  66. 173.  72.  49.  64.  48. 178. 104. 132.
 220.  57.]
```

In [14]:
```
diabetes_ram_train=diabetes_ram[:-30] ## selecting first 30 data of ram as test
diabetes_ram_test=diabetes_ram[-30:] ### selecting last 30 data of ram as test
```

In [58]:
```
diabestes_sita_train=diabetes.target[:-30]
diabetes_sita_test=diabetes.target[-30:]
model=linear_model.LinearRegression() ## calling the linear regression function
model.fit(diabetes_ram_train,diabestes_sita_train) ## fitting the model
diabetes_sita_predict= model.predict(diabetes_ram_test) ## predicting the trget
```

In [59]:
```
diabetes_sita_predict
```

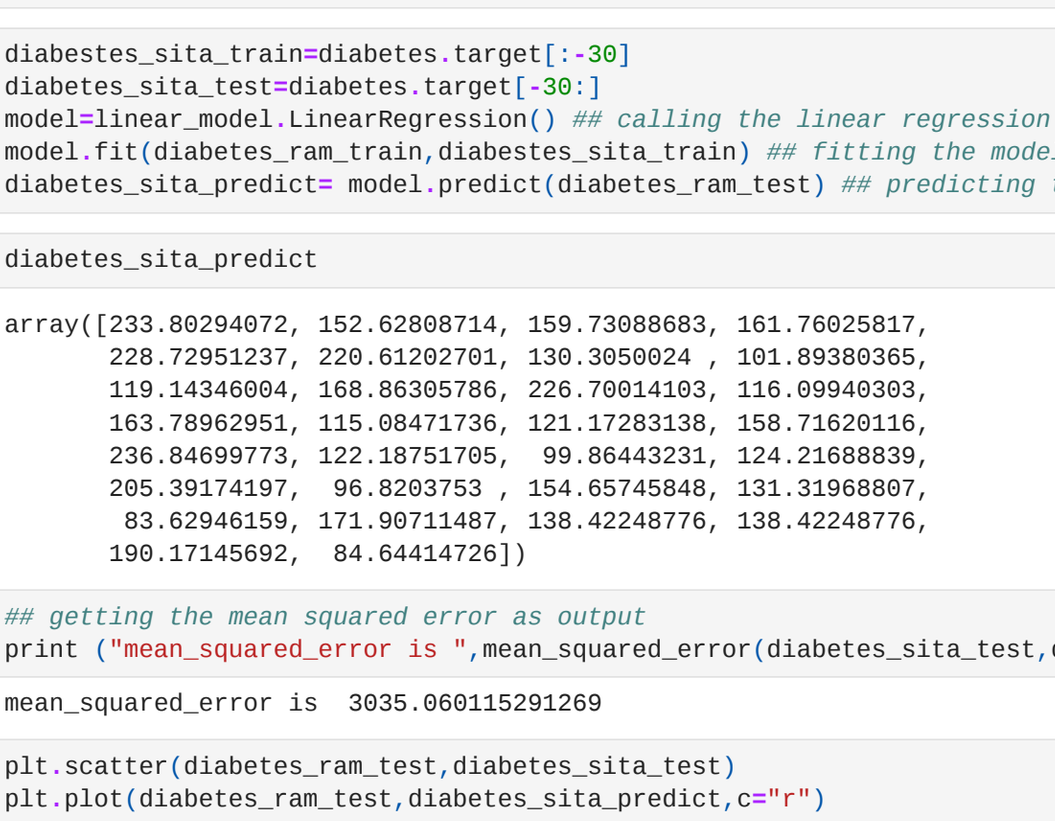
Out[59]:
```
array([233.80294072, 152.62808714, 159.73088683, 161.76025817,
       228.72951237, 220.61202701, 130.3050024 , 101.89380365,
       119.14346004, 168.86305786, 226.70014103, 116.09940303,
       163.78962951, 115.08471736, 121.17283138, 158.71620116,
       236.84699773, 122.18751705,  99.86443231, 124.21688839,
       205.39174197,  96.8203753 , 154.65745848, 131.31968807,
        83.62946159, 171.90711487, 138.42248776, 138.42248776,
       190.17145692,  84.64414726])
```

In [29]:
```
## getting the mean squared error as output
print ("mean_squared_error is ",mean_squared_error(diabetes_sita_test,diabetes_sita_predict))
```

```
mean_squared_error is  3035.060115291269
```

In [49]:
```
plt.scatter(diabetes_ram_test,diabetes_sita_test)
plt.plot(diabetes_ram_test,diabetes_sita_predict,c="r")
```

Out[49]:
```
[<matplotlib.lines.Line2D at 0x1fed1c530d0>]
```



In [56]:
```
print("intercenpt is :",model.intercept_)
```

```
intercenpt is : 153.39713623331644
```

In [57]:
```
print("weight of model is ",model.coef_)
```

```
weight of model is  [941.43097333]
```

In [61]:
```
print ("output_for_input_value =((.0164281 *941.43097333)+153.39713623331644)
```

In [62]:
```
output
```

Out[62]:
```
168.863058406279
```

In [ ]: