In [ ]:

```
import numpy as np
```

In [33]:

```
import  matplotlib.pyplot as plt
```

In [ ]:

```
import sklearn
from sklearn import  datasets,linear_model
from sklearn.metrics import mean_squared_error
```

In [2]:

```
diabetes=datasets.load_diabetes()
```

In [4]:

```
print(diabetes.keys())
```

```
dict_keys(['data', 'target', 'DESCR', 'feature_names', 'data_filename', 'target_filename'])
```

In [41]:

```
#diabetes_X=diabetes.data[:,np.newaxis,2]
diabetes_X=diabetes.data
```

In [42]:

```
diabetes_X
```

Out[42]:

```
array([[ 0.03807591,  0.05068012,  0.06169621, ..., -0.00259226,
         0.01990842, -0.01764613],
       [-0.00188202, -0.04464164, -0.05147406, ..., -0.03949338,
        -0.06832974, -0.09220405],
       [ 0.08529891,  0.05068012,  0.04445121, ..., -0.00259226,
         0.00286377, -0.02593034],
       ...,
       [ 0.04170844,  0.05068012, -0.01590626, ..., -0.01107952,
        -0.04687948,  0.01549073],
       [-0.04547248, -0.04464164,  0.03906215, ...,  0.02655962,
         0.04452837, -0.02593034],
       [-0.04547248, -0.04464164, -0.0730303 , ..., -0.03949338,
        -0.00421986,  0.00306441]])
```

In [7]:

```
diabetes_X_train=diabetes_X[:-30] #last 30 features
```

In [22]:

```
diabetes_X_test=diabetes_X[-30:] #first 20
```

In [23]:

```
diabetes_Y_train=diabetes.target[:-30] #labels
```

In [ ]:

```
diabetes_Y_test=diabetes.target[-30:]
```

In [13]:

```
model=linear_model.LinearRegression()
```

In [14]:

```
model.fit(diabetes_X_train,diabetes_Y_train)
```

Out[14]:

```
LinearRegression(copy_X=True, fit_intercept=True, n_jobs=None, normalize=False)
```

In [24]:

```
diabetes_Y_predicted=model.predict(diabetes_X_test)
```

In [27]:

```
print("mean",mean_squared_error(diabetes_Y_test,diabetes_Y_predicted))
```

```
mean 3035.0601152912695
```

In [29]:

```
print("weights",model.coef_)
```

```
weights [941.43097333]
```

In [44]:

```
print("intercept",model.intercept_)
```

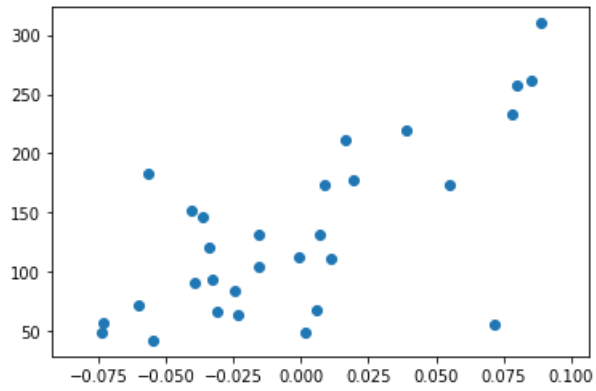
```
intercept 153.39713623331698
```

In [43]:

```
plt.scatter(diabetes_X_test,diabetes_Y_test)
```

Out[43]:

```
<matplotlib.collections.PathCollection at 0x1e26cc2ca08>
```



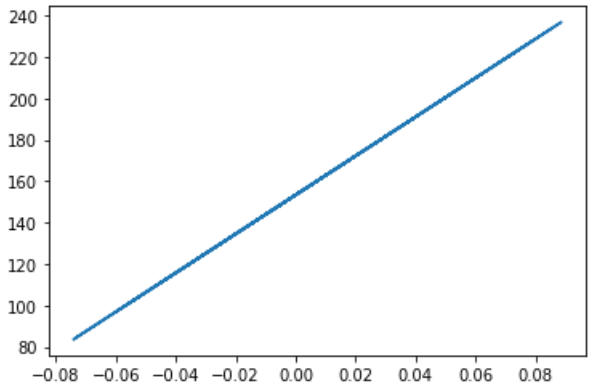
In [ ]:

```

```

In [39]:

```
plt.plot(diabetes_X_test,diabetes_Y_predicted)
plt.show()
```



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