In [1]:

```
import re
from sklearn.datasets import load_digits
from sklearn.model_selection import train_test_split
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
from sklearn import metrics
%matplotlib inline
digits=load_digits()
```

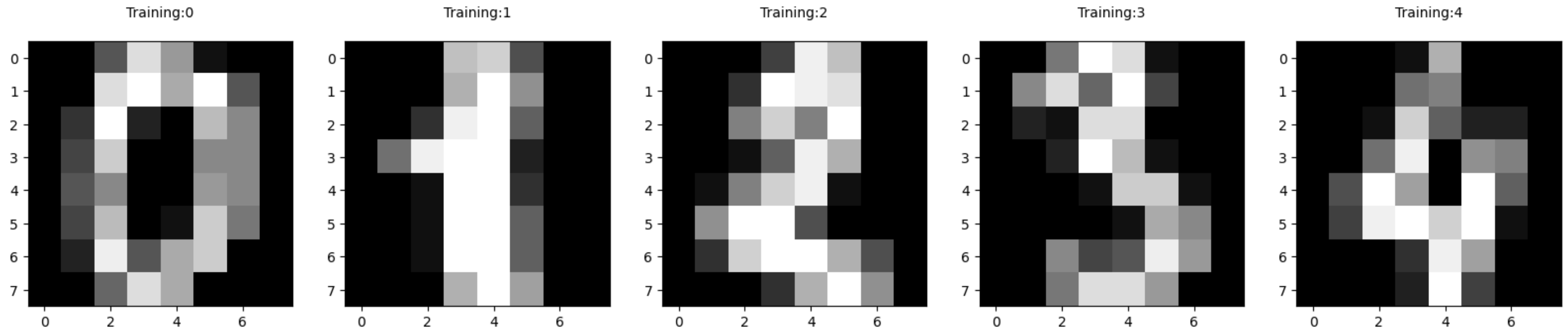
In [2]:

```
print("Image Data shape",digits.data.shape)
print("Label Data shape",digits.target.shape)
```

```
Image Data shape (1797, 64)
Label Data shape (1797,)
```

In [4]:

```
plt.figure(figsize=(20,4))
for index,(image,label)in enumerate(zip(digits.data[0:5],digits.target[0:5])):
    plt.subplot(1,5,index+1)
    plt.imshow(np.reshape(image,(8,8)),cmap=plt.cm.gray)
    plt.title('Training:%i\n'%label,fontsize=10)
```



In [11]:

```
from sklearn.model_selection import train_test_split
x_train,x_test,y_train,y_test=train_test_split(digits.data,digits.target,test_size=0.30,random_state=2)
```

In [12]:

```
print(x_train.shape)
```

```
(1257, 64)
```

In [13]:

```
print(y_train.shape)
```

```
(1257,)
```

In [14]:

```
print(x_test.shape)
```

```
(540, 64)
```

In [15]:

```
print(y_test.shape)
```

```
(540,)
```

In [16]:

```
from sklearn.linear_model import LogisticRegression
```

In [17]:

```
logisticRegr=LogisticRegression(max_iter=10000)
logisticRegr.fit(x_train,y_train)
```

Out[17]:

```
▾ LogisticRegression
LogisticRegression(max_iter=10000)
```