In [259]:

```python
import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
import torch
import torch.nn as nn
from torch.autograd import Variable
from sklearn.preprocessing import MinMaxScaler
import datetime
```

In [292]:

```python
class LSTM(nn.Module):

    def __init__(self, num_classes, input_size, hidden_size, num_layers):
        super(LSTM, self).__init__()

        self.num_classes = num_classes
        self.num_layers = num_layers
        self.input_size = input_size
        self.hidden_size = hidden_size
        self.seq_length = seq_length

        self.lstm = nn.LSTM(input_size=input_size, hidden_size=hidden_size,
                            num_layers=num_layers, batch_first=True)

        self.fc = nn.Linear(hidden_size, num_classes)

    def forward(self, x):
        h_0 = Variable(torch.zeros(
            self.num_layers, x.size(0), self.hidden_size))

        c_0 = Variable(torch.zeros(
            self.num_layers, x.size(0), self.hidden_size))

        # Propagate input through LSTM
        ula, (h_out, _) = self.lstm(x, (h_0, c_0))

        h_out = h_out.view(-1, self.hidden_size)

        out = self.fc(h_out)

        return out
```

In [293]:

```python
class Logger:
    file = None
    def __init__(self,file):
        self.file = open(file,"a")
        self.file.write("--------------------NEW LOG--------------------\n")
        self.file.write("Logger started at: "+self.timestamp()+"\n")

    def log(self,message):
        self.file.write(message+"\n")

    def timestamp(self):
        stamp = datetime.datetime.now()
        year = str(stamp.year)
        month = str(stamp.month)
        day = str(stamp.day)
        hour = str(stamp.hour)
        minute = str(stamp.minute)
        seconds = str(stamp.second)

        return year+"-"+month+"-"+day+" "+hour+":"+minute+":"+seconds

    def stop(self):
        self.file.close()
```

In [294]:

```python
def RMSE(data_predict,dataY_plot):
    c = 0
    for i in range(len(data_predict)):
        c = c + abs(data_predict[i][0] - dataY_plot[i][0]) ** 2

    return (c ** 0.5)/len(data_predict)
```

In [295]:

```python
dataset = pd.read_csv('./datasets/model-1/training-1.csv')
```

In [296]:

```python
for store in range(1,21):
    training_set = dataset[dataset["SCRUB_STORE_NO"] == store]

    training_set = training_set.iloc[:,2:3].values

    plt.plot(training_set, label = 'Sales')
    plt.suptitle('Sales of Store - {}'.format(store))
    plt.show()

    sc = MinMaxScaler()
    training_data = sc.fit_transform(training_set)

    seq_length = 14
    x, y = sliding_windows(training_data, seq_length)

    train_size = int(len(y) * 0.67)
    test_size = len(y) - train_size

    dataX = Variable(torch.Tensor(np.array(x)))
    dataY = Variable(torch.Tensor(np.array(y)))

    trainX = Variable(torch.Tensor(np.array(x[0:train_size])))
    trainY = Variable(torch.Tensor(np.array(y[0:train_size])))

    testX = Variable(torch.Tensor(np.array(x[train_size:len(x)])))
    testY = Variable(torch.Tensor(np.array(y[train_size:len(y)])))

    '''----------------------------------------------------------------------
------------------------------------'''

    logger = Logger("./logs/model-1/training_log_store_{}.txt".format(store))

    PATH='./saved-models/model-1/saved_model_store_{}.pth'.format(store)

    num_epochs = 4000
    learning_rate = 0.01

    input_size = 1
    hidden_size = 15
    num_layers = 1

    num_classes = 1

    lstm = LSTM(num_classes, input_size, hidden_size, num_layers)

    criterion = torch.nn.MSELoss()    # mean-squared error for regression
    optimizer = torch.optim.Adam(lstm.parameters(), lr=learning_rate)
    #optimizer = torch.optim.SGD(lstm.parameters(), lr=learning_rate)

    min_valid_loss = np.inf

    current_threshold = 0
    cutoff_threshold = 2000

    '''Logging the parameters'''
    logger.log("\tNumber of epochs :\t{}".format(num_epochs))
    logger.log("\tLearning Rate :\t{}".format(learning_rate))
    logger.log("\tInput size : {}".format(input_size))
    logger.log("\tNumber of layers : {}".format(num_layers))
```

```python
    logger.log("\tNumber of classes : {}".format(num_classes))
    logger.log("\tLoss function : {}".format("MSE"))
    logger.log("\tOptimizer : {}".format("ADAM"))

    # Train the model

    logger.log("\t :Training model\n-----------------")
    for epoch in range(num_epochs):
        '''---training---'''
        train_loss = 0.0
        outputs = lstm(trainX)
        optimizer.zero_grad()

        # obtain the loss function
        loss = criterion(outputs, trainY)

        loss.backward()

        optimizer.step()

        train_loss = loss.item()

        '''---validation---'''
        valid_loss = 0.0
        lstm.eval()

        outputs = lstm(testX)

        loss = criterion(outputs,testY)

        valid_loss += loss.item()

        if (epoch + 1) % 100 == 0:
            print('Epoch %d \t\t Training Loss: %1.5f \t\t Validation Loss: %1.5
f'%(epoch+1,train_loss,valid_loss))
            logger.log('Epoch %d \t\t Training Loss: %1.5f \t\t Validation Loss:
%1.5f'%(epoch+1,train_loss,valid_loss))

        if min_valid_loss > valid_loss:
            current_threshold = 0
            print(f'Validation Loss Decreased({min_valid_loss:1.5f}--->{valid_lo
ss:1.5f}) \t Saving The Model')
            logger.log(f'Validation Loss Decreased({min_valid_loss:1.5f}--->{val
id_loss:1.5f}) \t Saving The Model')
            min_valid_loss = valid_loss

            # Saving State Dict
            torch.save(lstm.state_dict(), PATH)
        else:
            current_threshold += 1

            if current_threshold == cutoff_threshold:
                print("Stopping the training early\t\tModel saved")
                print("\tTraining Loss: ",train_loss)
                print("\tValidation Loss: ",min_valid_loss)

                logger.log("Stopping the training early\t\tModel saved")
                logger.log("\tTraining Loss: {}".format(train_loss))
                logger.log("\tValidation Loss: {}".format(min_valid_loss))
                logger.log("\n\n\n")
```

```python
            break


    lstm = LSTM(num_classes, input_size, hidden_size, num_layers)
    lstm.load_state_dict(torch.load(PATH))
    lstm.eval()

    train_predict = lstm(testX)

    data_predict = train_predict.data.numpy()
    dataY_plot = testY.data.numpy()

    data_predict = sc.inverse_transform(data_predict)
    dataY_plot = sc.inverse_transform(dataY_plot)

    plt.figure(figsize=(10,6))

    plt.axvline(x=train_size, c='r', linestyle='--')

    plt.plot(dataY_plot)
    plt.plot(data_predict)
    plt.suptitle('Prediction')
    plt.show()

    print("RMSE of validation set: {}".format(RMSE(data_predict,dataY_plot)))
    logger.log("RMSE of validation set: {}".format(RMSE(data_predict,dataY_plot
)))

    train_predict = lstm(dataX)

    data_predict = train_predict.data.numpy()
    dataY_plot = dataY.data.numpy()

    data_predict = sc.inverse_transform(data_predict)
    dataY_plot = sc.inverse_transform(dataY_plot)

    print("RMSE of entire data set: {}".format(RMSE(data_predict,dataY_plot)))
    logger.log("RMSE of entire data set: {}".format(RMSE(data_predict,dataY_plot
)))

    logger.log("\n\n\n")
    logger.stop()
```

Sales of Store - 1

```
Validation Loss Decreased(inf--->0.06894)        Saving The Model
Validation Loss Decreased(0.06894--->0.04081)    Saving The Model
Validation Loss Decreased(0.04081--->0.02182)    Saving The Model
Validation Loss Decreased(0.02182--->0.01309)    Saving The Model
Validation Loss Decreased(0.01309--->0.01253)    Saving The Model
Validation Loss Decreased(0.01253--->0.01211)    Saving The Model
Validation Loss Decreased(0.01211--->0.01188)    Saving The Model
Validation Loss Decreased(0.01188--->0.01180)    Saving The Model
Validation Loss Decreased(0.01180--->0.01172)    Saving The Model
Validation Loss Decreased(0.01172--->0.01158)    Saving The Model
Validation Loss Decreased(0.01158--->0.01146)    Saving The Model
Validation Loss Decreased(0.01146--->0.01137)    Saving The Model
Validation Loss Decreased(0.01137--->0.01135)    Saving The Model
Validation Loss Decreased(0.01135--->0.01134)    Saving The Model
Validation Loss Decreased(0.01134--->0.01122)    Saving The Model
Validation Loss Decreased(0.01122--->0.01108)    Saving The Model
Validation Loss Decreased(0.01108--->0.01094)    Saving The Model
Validation Loss Decreased(0.01094--->0.01082)    Saving The Model
Validation Loss Decreased(0.01082--->0.01072)    Saving The Model
Validation Loss Decreased(0.01072--->0.01063)    Saving The Model
Validation Loss Decreased(0.01063--->0.01056)    Saving The Model
Validation Loss Decreased(0.01056--->0.01050)    Saving The Model
Validation Loss Decreased(0.01050--->0.01045)    Saving The Model
Validation Loss Decreased(0.01045--->0.01039)    Saving The Model
Validation Loss Decreased(0.01039--->0.01034)    Saving The Model
Validation Loss Decreased(0.01034--->0.01028)    Saving The Model
Validation Loss Decreased(0.01028--->0.01023)    Saving The Model
Validation Loss Decreased(0.01023--->0.01019)    Saving The Model
Validation Loss Decreased(0.01019--->0.01015)    Saving The Model
Validation Loss Decreased(0.01015--->0.01011)    Saving The Model
Validation Loss Decreased(0.01011--->0.01008)    Saving The Model
Validation Loss Decreased(0.01008--->0.01005)    Saving The Model
Validation Loss Decreased(0.01005--->0.01001)    Saving The Model
Validation Loss Decreased(0.01001--->0.00995)    Saving The Model
Validation Loss Decreased(0.00995--->0.00989)    Saving The Model
Validation Loss Decreased(0.00989--->0.00982)    Saving The Model
Validation Loss Decreased(0.00982--->0.00974)    Saving The Model
Validation Loss Decreased(0.00974--->0.00965)    Saving The Model
Validation Loss Decreased(0.00965--->0.00957)    Saving The Model
Validation Loss Decreased(0.00957--->0.00949)    Saving The Model
Validation Loss Decreased(0.00949--->0.00941)    Saving The Model
Validation Loss Decreased(0.00941--->0.00934)    Saving The Model
Validation Loss Decreased(0.00934--->0.00927)    Saving The Model
Validation Loss Decreased(0.00927--->0.00920)    Saving The Model
Validation Loss Decreased(0.00920--->0.00913)    Saving The Model
Validation Loss Decreased(0.00913--->0.00906)    Saving The Model
Validation Loss Decreased(0.00906--->0.00900)    Saving The Model
Validation Loss Decreased(0.00900--->0.00894)    Saving The Model
Validation Loss Decreased(0.00894--->0.00888)    Saving The Model
Validation Loss Decreased(0.00888--->0.00881)    Saving The Model
Validation Loss Decreased(0.00881--->0.00875)    Saving The Model
Validation Loss Decreased(0.00875--->0.00867)    Saving The Model
Validation Loss Decreased(0.00867--->0.00860)    Saving The Model
Validation Loss Decreased(0.00860--->0.00852)    Saving The Model
Validation Loss Decreased(0.00852--->0.00843)    Saving The Model
Validation Loss Decreased(0.00843--->0.00834)    Saving The Model
Validation Loss Decreased(0.00834--->0.00825)    Saving The Model
Validation Loss Decreased(0.00825--->0.00816)    Saving The Model
Validation Loss Decreased(0.00816--->0.00808)    Saving The Model
Validation Loss Decreased(0.00808--->0.00799)    Saving The Model
Validation Loss Decreased(0.00799--->0.00791)    Saving The Model
```

```
Validation Loss Decreased(0.00791--->0.00783)    Saving The Model
Validation Loss Decreased(0.00783--->0.00774)    Saving The Model
Validation Loss Decreased(0.00774--->0.00766)    Saving The Model
Validation Loss Decreased(0.00766--->0.00758)    Saving The Model
Validation Loss Decreased(0.00758--->0.00750)    Saving The Model
Validation Loss Decreased(0.00750--->0.00742)    Saving The Model
Validation Loss Decreased(0.00742--->0.00734)    Saving The Model
Validation Loss Decreased(0.00734--->0.00728)    Saving The Model
Validation Loss Decreased(0.00728--->0.00722)    Saving The Model
Epoch 100              Training Loss: 0.00796                Val
idation Loss: 0.00718
Validation Loss Decreased(0.00722--->0.00718)    Saving The Model
Validation Loss Decreased(0.00718--->0.00715)    Saving The Model
Validation Loss Decreased(0.00715--->0.00714)    Saving The Model
Validation Loss Decreased(0.00714--->0.00712)    Saving The Model
Validation Loss Decreased(0.00712--->0.00711)    Saving The Model
Validation Loss Decreased(0.00711--->0.00711)    Saving The Model
Validation Loss Decreased(0.00711--->0.00711)    Saving The Model
Validation Loss Decreased(0.00711--->0.00711)    Saving The Model
Validation Loss Decreased(0.00711--->0.00710)    Saving The Model
Validation Loss Decreased(0.00710--->0.00710)    Saving The Model
Epoch 200              Training Loss: 0.00754                Val
idation Loss: 0.00715
Epoch 300              Training Loss: 0.00727                Val
idation Loss: 0.00749
Epoch 400              Training Loss: 0.00683                Val
idation Loss: 0.00722
Epoch 500              Training Loss: 0.00656                Val
idation Loss: 0.00719
Epoch 600              Training Loss: 0.00641                Val
idation Loss: 0.00723
Epoch 700              Training Loss: 0.00642                Val
idation Loss: 0.00738
Epoch 800              Training Loss: 0.00611                Val
idation Loss: 0.00762
Epoch 900              Training Loss: 0.00578                Val
idation Loss: 0.00806
Epoch 1000             Training Loss: 0.00554                Val
idation Loss: 0.00813
Epoch 1100             Training Loss: 0.00536                Val
idation Loss: 0.00874
Epoch 1200             Training Loss: 0.00523                Val
idation Loss: 0.00921
Epoch 1300             Training Loss: 0.00499                Val
idation Loss: 0.01009
Epoch 1400             Training Loss: 0.00502                Val
idation Loss: 0.00993
Epoch 1500             Training Loss: 0.00543                Val
idation Loss: 0.00791
Epoch 1600             Training Loss: 0.00501                Val
idation Loss: 0.00801
Epoch 1700             Training Loss: 0.00448                Val
idation Loss: 0.00903
Epoch 1800             Training Loss: 0.00459                Val
idation Loss: 0.01028
Epoch 1900             Training Loss: 0.00463                Val
idation Loss: 0.00872
Epoch 2000             Training Loss: 0.00403                Val
idation Loss: 0.00906
Epoch 2100             Training Loss: 0.00414                Val
idation Loss: 0.01006
```

```
Stopping the training early               Model saved
       Training Loss:  0.0032794480212032795
       Validation Loss:  0.007103180047124624
```

Prediction
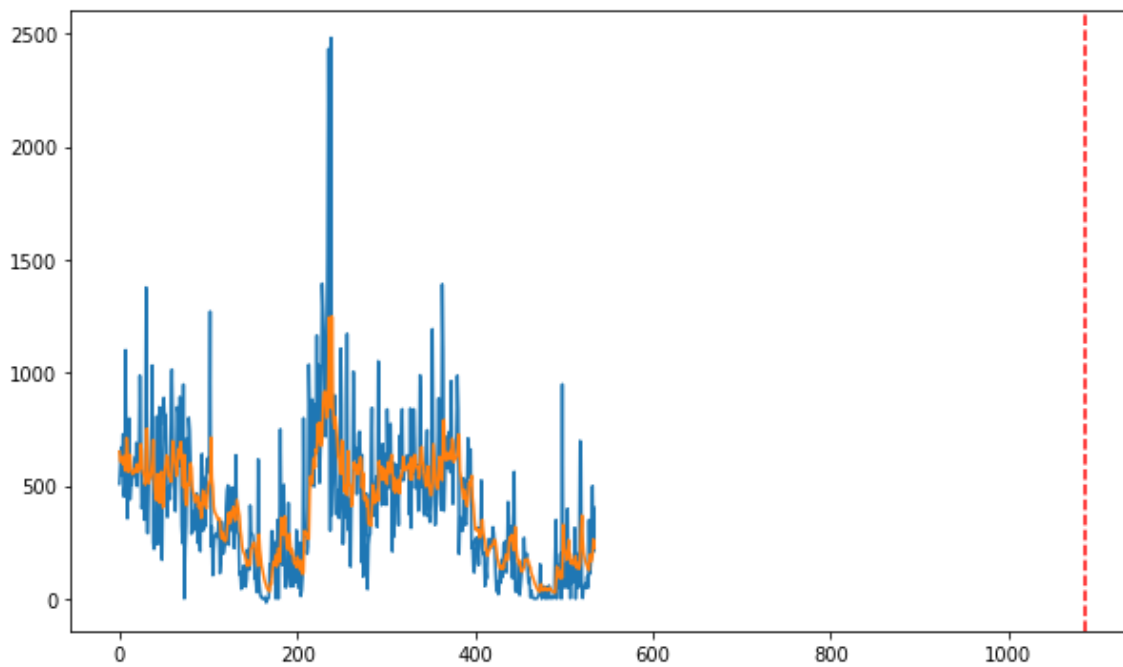

```
RMSE of validation set: 10.246247816004521
RMSE of entire data set: 6.053503111738154
```

Sales of Store - 2
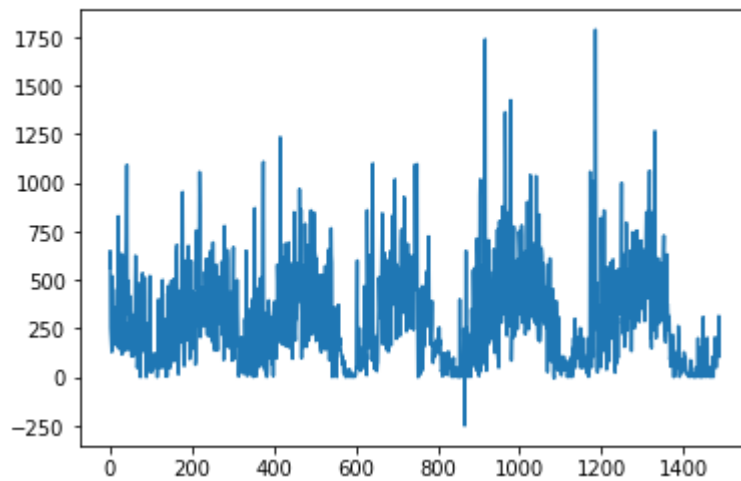
```
Validation Loss Decreased(inf--->0.01625)        Saving The Model
Validation Loss Decreased(0.01625--->0.01535)    Saving The Model
Validation Loss Decreased(0.01535--->0.01439)    Saving The Model
Validation Loss Decreased(0.01439--->0.01417)    Saving The Model
Validation Loss Decreased(0.01417--->0.01404)    Saving The Model
Validation Loss Decreased(0.01404--->0.01374)    Saving The Model
Validation Loss Decreased(0.01374--->0.01348)    Saving The Model
Validation Loss Decreased(0.01348--->0.01343)    Saving The Model
Validation Loss Decreased(0.01343--->0.01332)    Saving The Model
Validation Loss Decreased(0.01332--->0.01291)    Saving The Model
Validation Loss Decreased(0.01291--->0.01246)    Saving The Model
Validation Loss Decreased(0.01246--->0.01214)    Saving The Model
Validation Loss Decreased(0.01214--->0.01191)    Saving The Model
Validation Loss Decreased(0.01191--->0.01162)    Saving The Model
Validation Loss Decreased(0.01162--->0.01130)    Saving The Model
Validation Loss Decreased(0.01130--->0.01109)    Saving The Model
Validation Loss Decreased(0.01109--->0.01092)    Saving The Model
Validation Loss Decreased(0.01092--->0.01048)    Saving The Model
Validation Loss Decreased(0.01048--->0.00995)    Saving The Model
Validation Loss Decreased(0.00995--->0.00963)    Saving The Model
Validation Loss Decreased(0.00963--->0.00923)    Saving The Model
Validation Loss Decreased(0.00923--->0.00905)    Saving The Model
Validation Loss Decreased(0.00905--->0.00885)    Saving The Model
Validation Loss Decreased(0.00885--->0.00859)    Saving The Model
Validation Loss Decreased(0.00859--->0.00851)    Saving The Model
Validation Loss Decreased(0.00851--->0.00848)    Saving The Model
Validation Loss Decreased(0.00848--->0.00846)    Saving The Model
Validation Loss Decreased(0.00846--->0.00843)    Saving The Model
Validation Loss Decreased(0.00843--->0.00838)    Saving The Model
Validation Loss Decreased(0.00838--->0.00829)    Saving The Model
Validation Loss Decreased(0.00829--->0.00823)    Saving The Model
Validation Loss Decreased(0.00823--->0.00815)    Saving The Model
Validation Loss Decreased(0.00815--->0.00804)    Saving The Model
Validation Loss Decreased(0.00804--->0.00798)    Saving The Model
Validation Loss Decreased(0.00798--->0.00796)    Saving The Model
Validation Loss Decreased(0.00796--->0.00791)    Saving The Model
Validation Loss Decreased(0.00791--->0.00789)    Saving The Model
Validation Loss Decreased(0.00789--->0.00787)    Saving The Model
Validation Loss Decreased(0.00787--->0.00785)    Saving The Model
Validation Loss Decreased(0.00785--->0.00785)    Saving The Model
Validation Loss Decreased(0.00785--->0.00784)    Saving The Model
Validation Loss Decreased(0.00784--->0.00782)    Saving The Model
Validation Loss Decreased(0.00782--->0.00779)    Saving The Model
Validation Loss Decreased(0.00779--->0.00775)    Saving The Model
Validation Loss Decreased(0.00775--->0.00772)    Saving The Model
Epoch 100              Training Loss: 0.00845                    Val
idation Loss: 0.00768
Validation Loss Decreased(0.00772--->0.00768)    Saving The Model
Validation Loss Decreased(0.00768--->0.00764)    Saving The Model
Validation Loss Decreased(0.00764--->0.00759)    Saving The Model
Validation Loss Decreased(0.00759--->0.00755)    Saving The Model
Validation Loss Decreased(0.00755--->0.00750)    Saving The Model
Validation Loss Decreased(0.00750--->0.00745)    Saving The Model
Validation Loss Decreased(0.00745--->0.00741)    Saving The Model
Validation Loss Decreased(0.00741--->0.00737)    Saving The Model
Validation Loss Decreased(0.00737--->0.00733)    Saving The Model
Validation Loss Decreased(0.00733--->0.00729)    Saving The Model
Validation Loss Decreased(0.00729--->0.00726)    Saving The Model
Validation Loss Decreased(0.00726--->0.00722)    Saving The Model
Validation Loss Decreased(0.00722--->0.00718)    Saving The Model
Validation Loss Decreased(0.00718--->0.00715)    Saving The Model
```

```
Validation Loss Decreased(0.00715--->0.00712)    Saving The Model
Validation Loss Decreased(0.00712--->0.00709)    Saving The Model
Validation Loss Decreased(0.00709--->0.00708)    Saving The Model
Validation Loss Decreased(0.00708--->0.00707)    Saving The Model
Validation Loss Decreased(0.00707--->0.00706)    Saving The Model
Validation Loss Decreased(0.00706--->0.00705)    Saving The Model
Validation Loss Decreased(0.00705--->0.00703)    Saving The Model
Validation Loss Decreased(0.00703--->0.00703)    Saving The Model
Validation Loss Decreased(0.00703--->0.00702)    Saving The Model
Validation Loss Decreased(0.00702--->0.00700)    Saving The Model
Validation Loss Decreased(0.00700--->0.00699)    Saving The Model
Validation Loss Decreased(0.00699--->0.00699)    Saving The Model
Validation Loss Decreased(0.00699--->0.00698)    Saving The Model
Validation Loss Decreased(0.00698--->0.00698)    Saving The Model
Validation Loss Decreased(0.00698--->0.00698)    Saving The Model
Validation Loss Decreased(0.00698--->0.00696)    Saving The Model
Validation Loss Decreased(0.00696--->0.00695)    Saving The Model
Validation Loss Decreased(0.00695--->0.00695)    Saving The Model
Validation Loss Decreased(0.00695--->0.00692)    Saving The Model
Validation Loss Decreased(0.00692--->0.00691)    Saving The Model
Validation Loss Decreased(0.00691--->0.00691)    Saving The Model
Validation Loss Decreased(0.00691--->0.00691)    Saving The Model
Validation Loss Decreased(0.00691--->0.00690)    Saving The Model
Validation Loss Decreased(0.00690--->0.00689)    Saving The Model
Validation Loss Decreased(0.00689--->0.00689)    Saving The Model
Validation Loss Decreased(0.00689--->0.00688)    Saving The Model
Validation Loss Decreased(0.00688--->0.00687)    Saving The Model
Validation Loss Decreased(0.00687--->0.00687)    Saving The Model
Validation Loss Decreased(0.00687--->0.00686)    Saving The Model
Validation Loss Decreased(0.00686--->0.00686)    Saving The Model
Validation Loss Decreased(0.00686--->0.00685)    Saving The Model
Validation Loss Decreased(0.00685--->0.00685)    Saving The Model
Validation Loss Decreased(0.00685--->0.00685)    Saving The Model
Validation Loss Decreased(0.00685--->0.00685)    Saving The Model
Validation Loss Decreased(0.00685--->0.00684)    Saving The Model
Validation Loss Decreased(0.00684--->0.00684)    Saving The Model
Validation Loss Decreased(0.00684--->0.00683)    Saving The Model
Validation Loss Decreased(0.00683--->0.00683)    Saving The Model
Validation Loss Decreased(0.00683--->0.00682)    Saving The Model
Validation Loss Decreased(0.00682--->0.00682)    Saving The Model
Validation Loss Decreased(0.00682--->0.00682)    Saving The Model
Validation Loss Decreased(0.00682--->0.00682)    Saving The Model
Validation Loss Decreased(0.00682--->0.00681)    Saving The Model
Validation Loss Decreased(0.00681--->0.00681)    Saving The Model
Validation Loss Decreased(0.00681--->0.00681)    Saving The Model
Validation Loss Decreased(0.00681--->0.00681)    Saving The Model
Validation Loss Decreased(0.00681--->0.00681)    Saving The Model
Validation Loss Decreased(0.00681--->0.00681)    Saving The Model
Validation Loss Decreased(0.00681--->0.00680)    Saving The Model
Validation Loss Decreased(0.00680--->0.00680)    Saving The Model
Validation Loss Decreased(0.00680--->0.00680)    Saving The Model
Validation Loss Decreased(0.00680--->0.00680)    Saving The Model
Validation Loss Decreased(0.00680--->0.00680)    Saving The Model
Validation Loss Decreased(0.00680--->0.00680)    Saving The Model
Epoch 200              Training Loss: 0.00762                Val
idation Loss: 0.00679
Validation Loss Decreased(0.00680--->0.00679)    Saving The Model
Validation Loss Decreased(0.00679--->0.00679)    Saving The Model
Validation Loss Decreased(0.00679--->0.00679)    Saving The Model
Validation Loss Decreased(0.00679--->0.00679)    Saving The Model
Validation Loss Decreased(0.00679--->0.00679)    Saving The Model
```

```
Validation Loss Decreased(0.00679--->0.00679)    Saving The Model
Validation Loss Decreased(0.00679--->0.00679)    Saving The Model
Validation Loss Decreased(0.00679--->0.00679)    Saving The Model
Validation Loss Decreased(0.00679--->0.00678)    Saving The Model
Validation Loss Decreased(0.00678--->0.00678)    Saving The Model
Validation Loss Decreased(0.00678--->0.00678)    Saving The Model
Validation Loss Decreased(0.00678--->0.00678)    Saving The Model
Validation Loss Decreased(0.00678--->0.00677)    Saving The Model
Validation Loss Decreased(0.00677--->0.00677)    Saving The Model
Validation Loss Decreased(0.00677--->0.00677)    Saving The Model
Validation Loss Decreased(0.00677--->0.00677)    Saving The Model
Validation Loss Decreased(0.00677--->0.00676)    Saving The Model
Validation Loss Decreased(0.00676--->0.00675)    Saving The Model
Validation Loss Decreased(0.00675--->0.00675)    Saving The Model
Validation Loss Decreased(0.00675--->0.00674)    Saving The Model
Validation Loss Decreased(0.00674--->0.00673)    Saving The Model
Validation Loss Decreased(0.00673--->0.00672)    Saving The Model
Validation Loss Decreased(0.00672--->0.00672)    Saving The Model
Validation Loss Decreased(0.00672--->0.00672)    Saving The Model
Validation Loss Decreased(0.00672--->0.00671)    Saving The Model
Validation Loss Decreased(0.00671--->0.00671)    Saving The Model
Validation Loss Decreased(0.00671--->0.00670)    Saving The Model
Validation Loss Decreased(0.00670--->0.00670)    Saving The Model
Validation Loss Decreased(0.00670--->0.00670)    Saving The Model
Validation Loss Decreased(0.00670--->0.00670)    Saving The Model
Validation Loss Decreased(0.00670--->0.00669)    Saving The Model
Validation Loss Decreased(0.00669--->0.00669)    Saving The Model
Validation Loss Decreased(0.00669--->0.00669)    Saving The Model
Validation Loss Decreased(0.00669--->0.00669)    Saving The Model
Epoch 300              Training Loss: 0.00697                Val
idation Loss: 0.00673
Epoch 400              Training Loss: 0.00625                Val
idation Loss: 0.00734
Epoch 500              Training Loss: 0.00586                Val
idation Loss: 0.00755
Epoch 600              Training Loss: 0.00524                Val
idation Loss: 0.00777
Epoch 700              Training Loss: 0.00486                Val
idation Loss: 0.00849
Epoch 800              Training Loss: 0.00443                Val
idation Loss: 0.00946
Epoch 900              Training Loss: 0.00424                Val
idation Loss: 0.01033
Epoch 1000             Training Loss: 0.00398                Val
idation Loss: 0.01106
Epoch 1100             Training Loss: 0.00373                Val
idation Loss: 0.01093
Epoch 1200             Training Loss: 0.00350                Val
idation Loss: 0.01080
Epoch 1300             Training Loss: 0.00336                Val
idation Loss: 0.01240
Epoch 1400             Training Loss: 0.00313                Val
idation Loss: 0.01204
Epoch 1500             Training Loss: 0.00293                Val
idation Loss: 0.01292
Epoch 1600             Training Loss: 0.00292                Val
idation Loss: 0.01348
Epoch 1700             Training Loss: 0.00280                Val
idation Loss: 0.01333
Epoch 1800             Training Loss: 0.00294                Val
idation Loss: 0.01254
```

Epoch 1900   Training Loss: 0.00267   Val
idation Loss: 0.01488
Epoch 2000   Training Loss: 0.00252   Val
idation Loss: 0.01502
Epoch 2100   Training Loss: 0.00248   Val
idation Loss: 0.01515
Epoch 2200   Training Loss: 0.00253   Val
idation Loss: 0.01549
Stopping the training early   Model saved
        Training Loss: 0.002650092588737607
        Validation Loss: 0.006686780136078596

Prediction

RMSE of validation set: 7.551760802855157
RMSE of entire data set: 4.4551281337976425

Sales of Store - 3
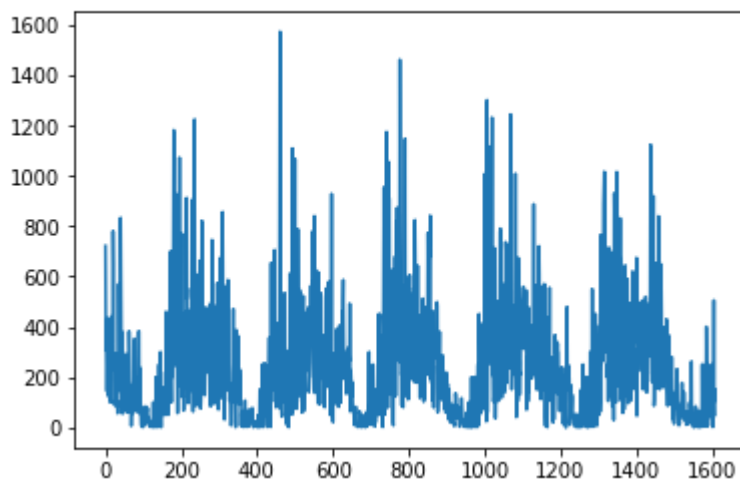
```
Validation Loss Decreased(inf--->0.10071)       Saving The Model
Validation Loss Decreased(0.10071--->0.06660)   Saving The Model
Validation Loss Decreased(0.06660--->0.04011)   Saving The Model
Validation Loss Decreased(0.04011--->0.02208)   Saving The Model
Validation Loss Decreased(0.02208--->0.01505)   Saving The Model
Validation Loss Decreased(0.01505--->0.01492)   Saving The Model
Validation Loss Decreased(0.01492--->0.01481)   Saving The Model
Validation Loss Decreased(0.01481--->0.01473)   Saving The Model
Validation Loss Decreased(0.01473--->0.01467)   Saving The Model
Validation Loss Decreased(0.01467--->0.01464)   Saving The Model
Validation Loss Decreased(0.01464--->0.01461)   Saving The Model
Validation Loss Decreased(0.01461--->0.01458)   Saving The Model
Validation Loss Decreased(0.01458--->0.01454)   Saving The Model
Validation Loss Decreased(0.01454--->0.01449)   Saving The Model
Validation Loss Decreased(0.01449--->0.01443)   Saving The Model
Validation Loss Decreased(0.01443--->0.01436)   Saving The Model
Validation Loss Decreased(0.01436--->0.01429)   Saving The Model
Validation Loss Decreased(0.01429--->0.01423)   Saving The Model
Validation Loss Decreased(0.01423--->0.01417)   Saving The Model
Validation Loss Decreased(0.01417--->0.01412)   Saving The Model
Validation Loss Decreased(0.01412--->0.01408)   Saving The Model
Validation Loss Decreased(0.01408--->0.01405)   Saving The Model
Validation Loss Decreased(0.01405--->0.01402)   Saving The Model
Validation Loss Decreased(0.01402--->0.01399)   Saving The Model
Validation Loss Decreased(0.01399--->0.01395)   Saving The Model
Validation Loss Decreased(0.01395--->0.01389)   Saving The Model
Validation Loss Decreased(0.01389--->0.01383)   Saving The Model
Validation Loss Decreased(0.01383--->0.01376)   Saving The Model
Validation Loss Decreased(0.01376--->0.01368)   Saving The Model
Validation Loss Decreased(0.01368--->0.01360)   Saving The Model
Validation Loss Decreased(0.01360--->0.01352)   Saving The Model
Validation Loss Decreased(0.01352--->0.01345)   Saving The Model
Validation Loss Decreased(0.01345--->0.01338)   Saving The Model
Validation Loss Decreased(0.01338--->0.01331)   Saving The Model
Validation Loss Decreased(0.01331--->0.01325)   Saving The Model
Validation Loss Decreased(0.01325--->0.01319)   Saving The Model
Validation Loss Decreased(0.01319--->0.01313)   Saving The Model
Validation Loss Decreased(0.01313--->0.01306)   Saving The Model
Validation Loss Decreased(0.01306--->0.01300)   Saving The Model
Validation Loss Decreased(0.01300--->0.01294)   Saving The Model
Validation Loss Decreased(0.01294--->0.01288)   Saving The Model
Validation Loss Decreased(0.01288--->0.01283)   Saving The Model
Validation Loss Decreased(0.01283--->0.01277)   Saving The Model
Validation Loss Decreased(0.01277--->0.01272)   Saving The Model
Validation Loss Decreased(0.01272--->0.01267)   Saving The Model
Validation Loss Decreased(0.01267--->0.01261)   Saving The Model
Validation Loss Decreased(0.01261--->0.01256)   Saving The Model
Validation Loss Decreased(0.01256--->0.01250)   Saving The Model
Validation Loss Decreased(0.01250--->0.01244)   Saving The Model
Validation Loss Decreased(0.01244--->0.01237)   Saving The Model
Validation Loss Decreased(0.01237--->0.01231)   Saving The Model
Validation Loss Decreased(0.01231--->0.01225)   Saving The Model
Validation Loss Decreased(0.01225--->0.01220)   Saving The Model
Validation Loss Decreased(0.01220--->0.01214)   Saving The Model
Validation Loss Decreased(0.01214--->0.01209)   Saving The Model
Validation Loss Decreased(0.01209--->0.01204)   Saving The Model
Validation Loss Decreased(0.01204--->0.01199)   Saving The Model
Validation Loss Decreased(0.01199--->0.01194)   Saving The Model
Validation Loss Decreased(0.01194--->0.01190)   Saving The Model
Validation Loss Decreased(0.01190--->0.01186)   Saving The Model
Validation Loss Decreased(0.01186--->0.01182)   Saving The Model
```

```
Validation Loss Decreased(0.01182--->0.01178)    Saving The Model
Validation Loss Decreased(0.01178--->0.01174)    Saving The Model
Validation Loss Decreased(0.01174--->0.01171)    Saving The Model
Validation Loss Decreased(0.01171--->0.01167)    Saving The Model
Epoch 100                 Training Loss: 0.01602                   Val
idation Loss: 0.01163
Validation Loss Decreased(0.01167--->0.01163)    Saving The Model
Validation Loss Decreased(0.01163--->0.01160)    Saving The Model
Validation Loss Decreased(0.01160--->0.01157)    Saving The Model
Validation Loss Decreased(0.01157--->0.01154)    Saving The Model
Validation Loss Decreased(0.01154--->0.01151)    Saving The Model
Validation Loss Decreased(0.01151--->0.01148)    Saving The Model
Validation Loss Decreased(0.01148--->0.01146)    Saving The Model
Validation Loss Decreased(0.01146--->0.01144)    Saving The Model
Validation Loss Decreased(0.01144--->0.01142)    Saving The Model
Validation Loss Decreased(0.01142--->0.01140)    Saving The Model
Validation Loss Decreased(0.01140--->0.01138)    Saving The Model
Validation Loss Decreased(0.01138--->0.01136)    Saving The Model
Validation Loss Decreased(0.01136--->0.01134)    Saving The Model
Validation Loss Decreased(0.01134--->0.01132)    Saving The Model
Validation Loss Decreased(0.01132--->0.01130)    Saving The Model
Validation Loss Decreased(0.01130--->0.01129)    Saving The Model
Validation Loss Decreased(0.01129--->0.01127)    Saving The Model
Validation Loss Decreased(0.01127--->0.01125)    Saving The Model
Validation Loss Decreased(0.01125--->0.01124)    Saving The Model
Validation Loss Decreased(0.01124--->0.01122)    Saving The Model
Validation Loss Decreased(0.01122--->0.01121)    Saving The Model
Validation Loss Decreased(0.01121--->0.01120)    Saving The Model
Validation Loss Decreased(0.01120--->0.01118)    Saving The Model
Validation Loss Decreased(0.01118--->0.01117)    Saving The Model
Validation Loss Decreased(0.01117--->0.01115)    Saving The Model
Validation Loss Decreased(0.01115--->0.01114)    Saving The Model
Validation Loss Decreased(0.01114--->0.01112)    Saving The Model
Validation Loss Decreased(0.01112--->0.01111)    Saving The Model
Validation Loss Decreased(0.01111--->0.01110)    Saving The Model
Validation Loss Decreased(0.01110--->0.01108)    Saving The Model
Validation Loss Decreased(0.01108--->0.01107)    Saving The Model
Validation Loss Decreased(0.01107--->0.01106)    Saving The Model
Validation Loss Decreased(0.01106--->0.01105)    Saving The Model
Validation Loss Decreased(0.01105--->0.01104)    Saving The Model
Validation Loss Decreased(0.01104--->0.01103)    Saving The Model
Validation Loss Decreased(0.01103--->0.01101)    Saving The Model
Validation Loss Decreased(0.01101--->0.01100)    Saving The Model
Validation Loss Decreased(0.01100--->0.01099)    Saving The Model
Validation Loss Decreased(0.01099--->0.01099)    Saving The Model
Validation Loss Decreased(0.01099--->0.01098)    Saving The Model
Validation Loss Decreased(0.01098--->0.01097)    Saving The Model
Validation Loss Decreased(0.01097--->0.01097)    Saving The Model
Validation Loss Decreased(0.01097--->0.01096)    Saving The Model
Validation Loss Decreased(0.01096--->0.01096)    Saving The Model
Validation Loss Decreased(0.01096--->0.01095)    Saving The Model
Validation Loss Decreased(0.01095--->0.01095)    Saving The Model
Validation Loss Decreased(0.01095--->0.01095)    Saving The Model
Validation Loss Decreased(0.01095--->0.01095)    Saving The Model
Validation Loss Decreased(0.01095--->0.01095)    Saving The Model
Validation Loss Decreased(0.01095--->0.01095)    Saving The Model
Validation Loss Decreased(0.01095--->0.01094)    Saving The Model
Validation Loss Decreased(0.01094--->0.01094)    Saving The Model
Validation Loss Decreased(0.01094--->0.01094)    Saving The Model
Validation Loss Decreased(0.01094--->0.01094)    Saving The Model
Validation Loss Decreased(0.01094--->0.01094)    Saving The Model
```
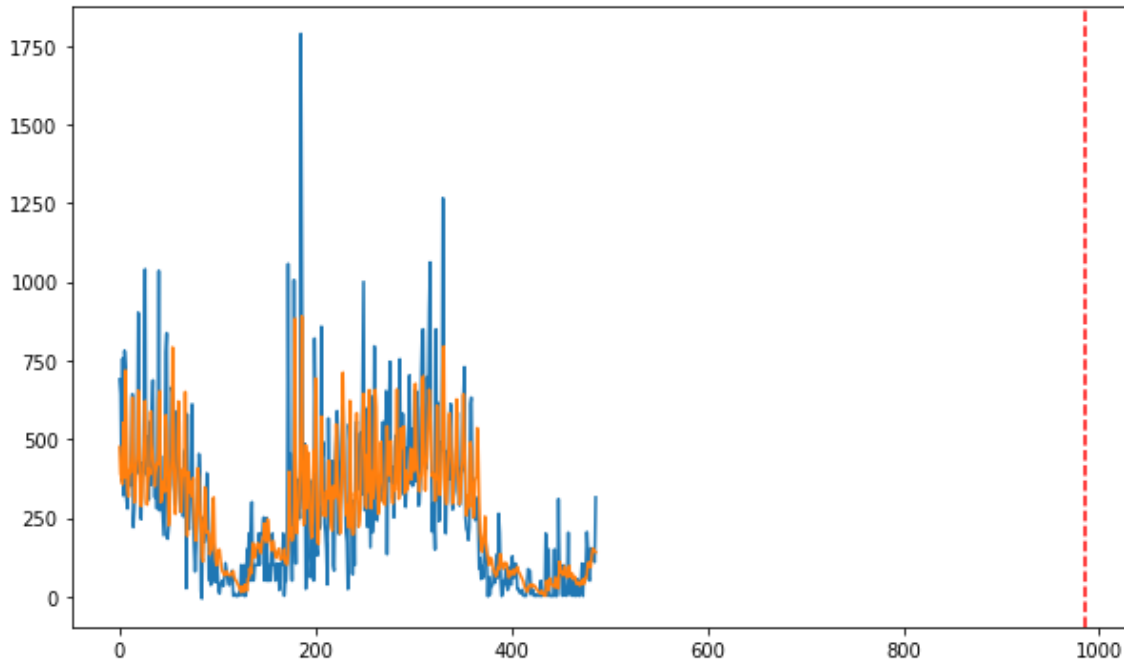
```
Validation Loss Decreased(0.01094--->0.01094)      Saving The Model
Validation Loss Decreased(0.01094--->0.01094)      Saving The Model
Validation Loss Decreased(0.01094--->0.01094)      Saving The Model
Validation Loss Decreased(0.01094--->0.01094)      Saving The Model
Validation Loss Decreased(0.01094--->0.01094)      Saving The Model
Validation Loss Decreased(0.01094--->0.01094)      Saving The Model
Validation Loss Decreased(0.01094--->0.01094)      Saving The Model
Validation Loss Decreased(0.01094--->0.01094)      Saving The Model
Validation Loss Decreased(0.01094--->0.01093)      Saving The Model
Validation Loss Decreased(0.01093--->0.01093)      Saving The Model
Validation Loss Decreased(0.01093--->0.01093)      Saving The Model
Validation Loss Decreased(0.01093--->0.01093)      Saving The Model
Validation Loss Decreased(0.01093--->0.01092)      Saving The Model
Validation Loss Decreased(0.01092--->0.01092)      Saving The Model
Validation Loss Decreased(0.01092--->0.01092)      Saving The Model
Validation Loss Decreased(0.01092--->0.01092)      Saving The Model
Validation Loss Decreased(0.01092--->0.01091)      Saving The Model
Validation Loss Decreased(0.01091--->0.01091)      Saving The Model
Validation Loss Decreased(0.01091--->0.01090)      Saving The Model
Validation Loss Decreased(0.01090--->0.01090)      Saving The Model
Validation Loss Decreased(0.01090--->0.01090)      Saving The Model
Validation Loss Decreased(0.01090--->0.01089)      Saving The Model
Validation Loss Decreased(0.01089--->0.01089)      Saving The Model
Validation Loss Decreased(0.01089--->0.01088)      Saving The Model
Validation Loss Decreased(0.01088--->0.01088)      Saving The Model
Validation Loss Decreased(0.01088--->0.01087)      Saving The Model
Validation Loss Decreased(0.01087--->0.01087)      Saving The Model
Validation Loss Decreased(0.01087--->0.01086)      Saving The Model
Validation Loss Decreased(0.01086--->0.01086)      Saving The Model
Validation Loss Decreased(0.01086--->0.01085)      Saving The Model
Validation Loss Decreased(0.01085--->0.01085)      Saving The Model
Validation Loss Decreased(0.01085--->0.01084)      Saving The Model
Validation Loss Decreased(0.01084--->0.01084)      Saving The Model
Validation Loss Decreased(0.01084--->0.01083)      Saving The Model
Validation Loss Decreased(0.01083--->0.01083)      Saving The Model
Validation Loss Decreased(0.01083--->0.01082)      Saving The Model
Validation Loss Decreased(0.01082--->0.01082)      Saving The Model
Validation Loss Decreased(0.01082--->0.01081)      Saving The Model
Validation Loss Decreased(0.01081--->0.01081)      Saving The Model
Validation Loss Decreased(0.01081--->0.01080)      Saving The Model
Validation Loss Decreased(0.01080--->0.01080)      Saving The Model
Epoch 200              Training Loss: 0.01490                    Val
idation Loss: 0.01079
Validation Loss Decreased(0.01080--->0.01079)      Saving The Model
Validation Loss Decreased(0.01079--->0.01079)      Saving The Model
Validation Loss Decreased(0.01079--->0.01078)      Saving The Model
Validation Loss Decreased(0.01078--->0.01078)      Saving The Model
Validation Loss Decreased(0.01078--->0.01077)      Saving The Model
Validation Loss Decreased(0.01077--->0.01077)      Saving The Model
Validation Loss Decreased(0.01077--->0.01076)      Saving The Model
Validation Loss Decreased(0.01076--->0.01076)      Saving The Model
Validation Loss Decreased(0.01076--->0.01075)      Saving The Model
Validation Loss Decreased(0.01075--->0.01075)      Saving The Model
Validation Loss Decreased(0.01075--->0.01074)      Saving The Model
Validation Loss Decreased(0.01074--->0.01074)      Saving The Model
Validation Loss Decreased(0.01074--->0.01073)      Saving The Model
Validation Loss Decreased(0.01073--->0.01073)      Saving The Model
Validation Loss Decreased(0.01073--->0.01072)      Saving The Model
Validation Loss Decreased(0.01072--->0.01071)      Saving The Model
Validation Loss Decreased(0.01071--->0.01071)      Saving The Model
Validation Loss Decreased(0.01071--->0.01070)      Saving The Model
```

```
Validation Loss Decreased(0.01070--->0.01070)      Saving The Model
Validation Loss Decreased(0.01070--->0.01069)      Saving The Model
Validation Loss Decreased(0.01069--->0.01069)      Saving The Model
Validation Loss Decreased(0.01069--->0.01068)      Saving The Model
Validation Loss Decreased(0.01068--->0.01068)      Saving The Model
Validation Loss Decreased(0.01068--->0.01067)      Saving The Model
Validation Loss Decreased(0.01067--->0.01067)      Saving The Model
Validation Loss Decreased(0.01067--->0.01066)      Saving The Model
Validation Loss Decreased(0.01066--->0.01066)      Saving The Model
Validation Loss Decreased(0.01066--->0.01066)      Saving The Model
Validation Loss Decreased(0.01066--->0.01065)      Saving The Model
Validation Loss Decreased(0.01065--->0.01065)      Saving The Model
Validation Loss Decreased(0.01065--->0.01064)      Saving The Model
Validation Loss Decreased(0.01064--->0.01064)      Saving The Model
Validation Loss Decreased(0.01064--->0.01063)      Saving The Model
Validation Loss Decreased(0.01063--->0.01063)      Saving The Model
Validation Loss Decreased(0.01063--->0.01062)      Saving The Model
Validation Loss Decreased(0.01062--->0.01062)      Saving The Model
Validation Loss Decreased(0.01062--->0.01062)      Saving The Model
Validation Loss Decreased(0.01062--->0.01061)      Saving The Model
Validation Loss Decreased(0.01061--->0.01061)      Saving The Model
Validation Loss Decreased(0.01061--->0.01061)      Saving The Model
Validation Loss Decreased(0.01061--->0.01060)      Saving The Model
Validation Loss Decreased(0.01060--->0.01060)      Saving The Model
Validation Loss Decreased(0.01060--->0.01060)      Saving The Model
Validation Loss Decreased(0.01060--->0.01059)      Saving The Model
Validation Loss Decreased(0.01059--->0.01059)      Saving The Model
Validation Loss Decreased(0.01059--->0.01059)      Saving The Model
Validation Loss Decreased(0.01059--->0.01059)      Saving The Model
Validation Loss Decreased(0.01059--->0.01058)      Saving The Model
Validation Loss Decreased(0.01058--->0.01058)      Saving The Model
Validation Loss Decreased(0.01058--->0.01058)      Saving The Model
Validation Loss Decreased(0.01058--->0.01058)      Saving The Model
Validation Loss Decreased(0.01058--->0.01057)      Saving The Model
Validation Loss Decreased(0.01057--->0.01057)      Saving The Model
Validation Loss Decreased(0.01057--->0.01057)      Saving The Model
Validation Loss Decreased(0.01057--->0.01057)      Saving The Model
Validation Loss Decreased(0.01057--->0.01056)      Saving The Model
Validation Loss Decreased(0.01056--->0.01056)      Saving The Model
Validation Loss Decreased(0.01056--->0.01056)      Saving The Model
Validation Loss Decreased(0.01056--->0.01056)      Saving The Model
Validation Loss Decreased(0.01056--->0.01055)      Saving The Model
Validation Loss Decreased(0.01055--->0.01055)      Saving The Model
Validation Loss Decreased(0.01055--->0.01055)      Saving The Model
Validation Loss Decreased(0.01055--->0.01055)      Saving The Model
Validation Loss Decreased(0.01055--->0.01055)      Saving The Model
Validation Loss Decreased(0.01055--->0.01054)      Saving The Model
Validation Loss Decreased(0.01054--->0.01054)      Saving The Model
Validation Loss Decreased(0.01054--->0.01054)      Saving The Model
Validation Loss Decreased(0.01054--->0.01053)      Saving The Model
Validation Loss Decreased(0.01053--->0.01049)      Saving The Model
Validation Loss Decreased(0.01049--->0.01049)      Saving The Model
Validation Loss Decreased(0.01049--->0.01047)      Saving The Model
Epoch 300                  Training Loss: 0.01419                      Val
idation Loss: 0.01045
Validation Loss Decreased(0.01047--->0.01045)      Saving The Model
Validation Loss Decreased(0.01045--->0.01044)      Saving The Model
Validation Loss Decreased(0.01044--->0.01043)      Saving The Model
Validation Loss Decreased(0.01043--->0.01040)      Saving The Model
Validation Loss Decreased(0.01040--->0.01036)      Saving The Model
Epoch 400                  Training Loss: 0.01400                      Val
```

```
        idation Loss: 0.01046
        Epoch 500                  Training Loss: 0.01389                  Val
        idation Loss: 0.01043
        Validation Loss Decreased(0.01036--->0.01036)     Saving The Model
        Validation Loss Decreased(0.01036--->0.01036)     Saving The Model
        Validation Loss Decreased(0.01036--->0.01036)     Saving The Model
        Validation Loss Decreased(0.01036--->0.01036)     Saving The Model
        Validation Loss Decreased(0.01036--->0.01036)     Saving The Model
        Validation Loss Decreased(0.01036--->0.01036)     Saving The Model
        Validation Loss Decreased(0.01036--->0.01036)     Saving The Model
        Validation Loss Decreased(0.01036--->0.01036)     Saving The Model
        Epoch 600                  Training Loss: 0.01379                  Val
        idation Loss: 0.01036
        Validation Loss Decreased(0.01036--->0.01036)     Saving The Model
        Validation Loss Decreased(0.01036--->0.01036)     Saving The Model
        Validation Loss Decreased(0.01036--->0.01035)     Saving The Model
        Validation Loss Decreased(0.01035--->0.01035)     Saving The Model
        Validation Loss Decreased(0.01035--->0.01035)     Saving The Model
        Validation Loss Decreased(0.01035--->0.01035)     Saving The Model
        Validation Loss Decreased(0.01035--->0.01035)     Saving The Model
        Validation Loss Decreased(0.01035--->0.01035)     Saving The Model
        Validation Loss Decreased(0.01035--->0.01035)     Saving The Model
        Validation Loss Decreased(0.01035--->0.01035)     Saving The Model
        Validation Loss Decreased(0.01035--->0.01035)     Saving The Model
        Validation Loss Decreased(0.01035--->0.01035)     Saving The Model
        Validation Loss Decreased(0.01035--->0.01034)     Saving The Model
        Validation Loss Decreased(0.01034--->0.01034)     Saving The Model
        Validation Loss Decreased(0.01034--->0.01034)     Saving The Model
        Validation Loss Decreased(0.01034--->0.01034)     Saving The Model
        Validation Loss Decreased(0.01034--->0.01034)     Saving The Model
        Validation Loss Decreased(0.01034--->0.01034)     Saving The Model
        Validation Loss Decreased(0.01034--->0.01034)     Saving The Model
        Validation Loss Decreased(0.01034--->0.01034)     Saving The Model
        Validation Loss Decreased(0.01034--->0.01034)     Saving The Model
        Validation Loss Decreased(0.01034--->0.01033)     Saving The Model
        Validation Loss Decreased(0.01033--->0.01033)     Saving The Model
        Validation Loss Decreased(0.01033--->0.01033)     Saving The Model
        Validation Loss Decreased(0.01033--->0.01033)     Saving The Model
        Validation Loss Decreased(0.01033--->0.01033)     Saving The Model
        Validation Loss Decreased(0.01033--->0.01033)     Saving The Model
        Validation Loss Decreased(0.01033--->0.01033)     Saving The Model
        Validation Loss Decreased(0.01033--->0.01033)     Saving The Model
        Validation Loss Decreased(0.01033--->0.01032)     Saving The Model
        Validation Loss Decreased(0.01032--->0.01032)     Saving The Model
        Validation Loss Decreased(0.01032--->0.01032)     Saving The Model
        Validation Loss Decreased(0.01032--->0.01032)     Saving The Model
        Validation Loss Decreased(0.01032--->0.01032)     Saving The Model
        Validation Loss Decreased(0.01032--->0.01032)     Saving The Model
        Validation Loss Decreased(0.01032--->0.01032)     Saving The Model
        Validation Loss Decreased(0.01032--->0.01031)     Saving The Model
        Validation Loss Decreased(0.01031--->0.01031)     Saving The Model
        Validation Loss Decreased(0.01031--->0.01031)     Saving The Model
        Validation Loss Decreased(0.01031--->0.01031)     Saving The Model
        Validation Loss Decreased(0.01031--->0.01031)     Saving The Model
        Validation Loss Decreased(0.01031--->0.01031)     Saving The Model
        Validation Loss Decreased(0.01031--->0.01030)     Saving The Model
        Validation Loss Decreased(0.01030--->0.01030)     Saving The Model
        Validation Loss Decreased(0.01030--->0.01030)     Saving The Model
        Validation Loss Decreased(0.01030--->0.01030)     Saving The Model
        Validation Loss Decreased(0.01030--->0.01030)     Saving The Model
        Validation Loss Decreased(0.01030--->0.01030)     Saving The Model
```

```
Validation Loss Decreased(0.01030--->0.01029)    Saving The Model
Validation Loss Decreased(0.01029--->0.01029)    Saving The Model
Validation Loss Decreased(0.01029--->0.01029)    Saving The Model
Validation Loss Decreased(0.01029--->0.01029)    Saving The Model
Validation Loss Decreased(0.01029--->0.01029)    Saving The Model
Validation Loss Decreased(0.01029--->0.01029)    Saving The Model
Validation Loss Decreased(0.01029--->0.01028)    Saving The Model
Validation Loss Decreased(0.01028--->0.01028)    Saving The Model
Validation Loss Decreased(0.01028--->0.01028)    Saving The Model
Validation Loss Decreased(0.01028--->0.01028)    Saving The Model
Validation Loss Decreased(0.01028--->0.01028)    Saving The Model
Validation Loss Decreased(0.01028--->0.01027)    Saving The Model
Validation Loss Decreased(0.01027--->0.01027)    Saving The Model
Validation Loss Decreased(0.01027--->0.01027)    Saving The Model
Validation Loss Decreased(0.01027--->0.01027)    Saving The Model
Validation Loss Decreased(0.01027--->0.01027)    Saving The Model
Validation Loss Decreased(0.01027--->0.01026)    Saving The Model
Validation Loss Decreased(0.01026--->0.01026)    Saving The Model
Validation Loss Decreased(0.01026--->0.01026)    Saving The Model
Validation Loss Decreased(0.01026--->0.01026)    Saving The Model
Validation Loss Decreased(0.01026--->0.01026)    Saving The Model
Validation Loss Decreased(0.01026--->0.01025)    Saving The Model
Validation Loss Decreased(0.01025--->0.01025)    Saving The Model
Validation Loss Decreased(0.01025--->0.01025)    Saving The Model
Validation Loss Decreased(0.01025--->0.01025)    Saving The Model
Validation Loss Decreased(0.01025--->0.01025)    Saving The Model
Validation Loss Decreased(0.01025--->0.01024)    Saving The Model
Validation Loss Decreased(0.01024--->0.01024)    Saving The Model
Validation Loss Decreased(0.01024--->0.01024)    Saving The Model
Validation Loss Decreased(0.01024--->0.01024)    Saving The Model
Validation Loss Decreased(0.01024--->0.01023)    Saving The Model
Validation Loss Decreased(0.01023--->0.01023)    Saving The Model
Validation Loss Decreased(0.01023--->0.01023)    Saving The Model
Validation Loss Decreased(0.01023--->0.01022)    Saving The Model
Validation Loss Decreased(0.01022--->0.01022)    Saving The Model
Validation Loss Decreased(0.01022--->0.01022)    Saving The Model
Validation Loss Decreased(0.01022--->0.01021)    Saving The Model
Validation Loss Decreased(0.01021--->0.01021)    Saving The Model
Validation Loss Decreased(0.01021--->0.01021)    Saving The Model
Validation Loss Decreased(0.01021--->0.01021)    Saving The Model
Epoch 700            Training Loss: 0.01281                    Val
idation Loss: 0.01033
Validation Loss Decreased(0.01021--->0.01018)    Saving The Model
Epoch 800            Training Loss: 0.01212                    Val
idation Loss: 0.01072
Epoch 900            Training Loss: 0.01017                    Val
idation Loss: 0.01233
Epoch 1000           Training Loss: 0.00851                    Val
idation Loss: 0.01330
Epoch 1100           Training Loss: 0.00803                    Val
idation Loss: 0.01443
Epoch 1200           Training Loss: 0.00683                    Val
idation Loss: 0.01492
Epoch 1300           Training Loss: 0.00661                    Val
idation Loss: 0.01587
Epoch 1400           Training Loss: 0.00541                    Val
idation Loss: 0.01638
Epoch 1500           Training Loss: 0.00534                    Val
idation Loss: 0.01686
Epoch 1600           Training Loss: 0.00468                    Val
idation Loss: 0.01792
```

```
Epoch 1700                    Training Loss: 0.00490                    Val
idation Loss: 0.01872
Epoch 1800                    Training Loss: 0.00463                    Val
idation Loss: 0.01938
Epoch 1900                    Training Loss: 0.00463                    Val
idation Loss: 0.01944
Epoch 2000                    Training Loss: 0.00363                    Val
idation Loss: 0.02065
Epoch 2100                    Training Loss: 0.00334                    Val
idation Loss: 0.02045
Epoch 2200                    Training Loss: 0.00415                    Val
idation Loss: 0.01944
Epoch 2300                    Training Loss: 0.00278                    Val
idation Loss: 0.02200
Epoch 2400                    Training Loss: 0.00264                    Val
idation Loss: 0.02224
Epoch 2500                    Training Loss: 0.00252                    Val
idation Loss: 0.02234
Epoch 2600                    Training Loss: 0.00243                    Val
idation Loss: 0.02264
Epoch 2700                    Training Loss: 0.00238                    Val
idation Loss: 0.02290
Stopping the training early              Model saved
        Training Loss:  0.0022899999748915434
        Validation Loss:  0.010183952748775482
```

Prediction


```
RMSE of validation set: 6.921401613192229
RMSE of entire data set: 4.253841302853254
```

Sales of Store - 4
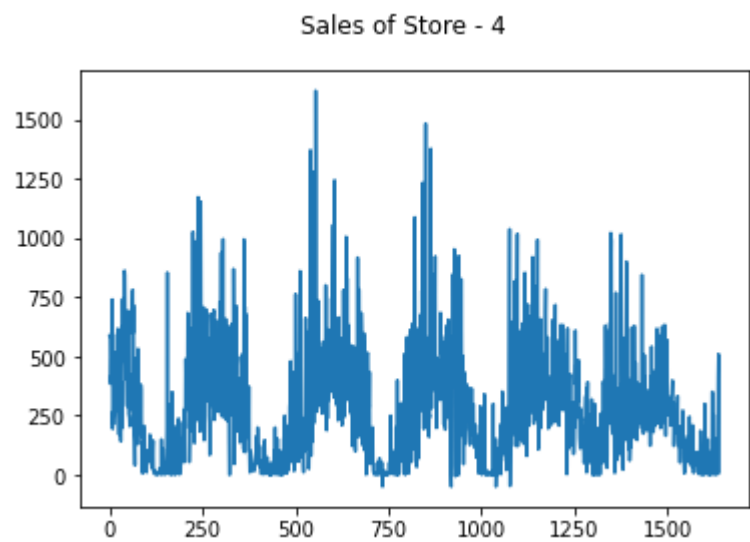
```
Validation Loss Decreased(inf--->0.08376)        Saving The Model
Validation Loss Decreased(0.08376--->0.04905)    Saving The Model
Validation Loss Decreased(0.04905--->0.02415)    Saving The Model
Validation Loss Decreased(0.02415--->0.01261)    Saving The Model
Validation Loss Decreased(0.01261--->0.01221)    Saving The Model
Validation Loss Decreased(0.01221--->0.01186)    Saving The Model
Validation Loss Decreased(0.01186--->0.01161)    Saving The Model
Validation Loss Decreased(0.01161--->0.01136)    Saving The Model
Validation Loss Decreased(0.01136--->0.01115)    Saving The Model
Validation Loss Decreased(0.01115--->0.01107)    Saving The Model
Validation Loss Decreased(0.01107--->0.01105)    Saving The Model
Validation Loss Decreased(0.01105--->0.01093)    Saving The Model
Validation Loss Decreased(0.01093--->0.01080)    Saving The Model
Validation Loss Decreased(0.01080--->0.01071)    Saving The Model
Validation Loss Decreased(0.01071--->0.01066)    Saving The Model
Validation Loss Decreased(0.01066--->0.01061)    Saving The Model
Validation Loss Decreased(0.01061--->0.01047)    Saving The Model
Validation Loss Decreased(0.01047--->0.01033)    Saving The Model
Validation Loss Decreased(0.01033--->0.01022)    Saving The Model
Validation Loss Decreased(0.01022--->0.01013)    Saving The Model
Validation Loss Decreased(0.01013--->0.01007)    Saving The Model
Validation Loss Decreased(0.01007--->0.01003)    Saving The Model
Validation Loss Decreased(0.01003--->0.00998)    Saving The Model
Validation Loss Decreased(0.00998--->0.00993)    Saving The Model
Validation Loss Decreased(0.00993--->0.00988)    Saving The Model
Validation Loss Decreased(0.00988--->0.00983)    Saving The Model
Validation Loss Decreased(0.00983--->0.00979)    Saving The Model
Validation Loss Decreased(0.00979--->0.00976)    Saving The Model
Validation Loss Decreased(0.00976--->0.00975)    Saving The Model
Validation Loss Decreased(0.00975--->0.00973)    Saving The Model
Validation Loss Decreased(0.00973--->0.00971)    Saving The Model
Validation Loss Decreased(0.00971--->0.00966)    Saving The Model
Validation Loss Decreased(0.00966--->0.00959)    Saving The Model
Validation Loss Decreased(0.00959--->0.00951)    Saving The Model
Validation Loss Decreased(0.00951--->0.00943)    Saving The Model
Validation Loss Decreased(0.00943--->0.00937)    Saving The Model
Validation Loss Decreased(0.00937--->0.00931)    Saving The Model
Validation Loss Decreased(0.00931--->0.00927)    Saving The Model
Validation Loss Decreased(0.00927--->0.00923)    Saving The Model
Validation Loss Decreased(0.00923--->0.00919)    Saving The Model
Validation Loss Decreased(0.00919--->0.00915)    Saving The Model
Validation Loss Decreased(0.00915--->0.00912)    Saving The Model
Validation Loss Decreased(0.00912--->0.00910)    Saving The Model
Validation Loss Decreased(0.00910--->0.00908)    Saving The Model
Validation Loss Decreased(0.00908--->0.00906)    Saving The Model
Validation Loss Decreased(0.00906--->0.00903)    Saving The Model
Validation Loss Decreased(0.00903--->0.00899)    Saving The Model
Validation Loss Decreased(0.00899--->0.00896)    Saving The Model
Validation Loss Decreased(0.00896--->0.00893)    Saving The Model
Validation Loss Decreased(0.00893--->0.00892)    Saving The Model
Validation Loss Decreased(0.00892--->0.00891)    Saving The Model
Validation Loss Decreased(0.00891--->0.00890)    Saving The Model
Validation Loss Decreased(0.00890--->0.00890)    Saving The Model
Epoch 100              Training Loss: 0.01335                    Val
idation Loss: 0.00895
Validation Loss Decreased(0.00890--->0.00889)    Saving The Model
Validation Loss Decreased(0.00889--->0.00888)    Saving The Model
Validation Loss Decreased(0.00888--->0.00886)    Saving The Model
Validation Loss Decreased(0.00886--->0.00885)    Saving The Model
Validation Loss Decreased(0.00885--->0.00883)    Saving The Model
Validation Loss Decreased(0.00883--->0.00882)    Saving The Model
```

```
Validation Loss Decreased(0.00882--->0.00881)    Saving The Model
Validation Loss Decreased(0.00881--->0.00881)    Saving The Model
Validation Loss Decreased(0.00881--->0.00880)    Saving The Model
Validation Loss Decreased(0.00880--->0.00879)    Saving The Model
Validation Loss Decreased(0.00879--->0.00879)    Saving The Model
Validation Loss Decreased(0.00879--->0.00878)    Saving The Model
Validation Loss Decreased(0.00878--->0.00877)    Saving The Model
Validation Loss Decreased(0.00877--->0.00877)    Saving The Model
Validation Loss Decreased(0.00877--->0.00876)    Saving The Model
Validation Loss Decreased(0.00876--->0.00876)    Saving The Model
Validation Loss Decreased(0.00876--->0.00876)    Saving The Model
Validation Loss Decreased(0.00876--->0.00875)    Saving The Model
Validation Loss Decreased(0.00875--->0.00875)    Saving The Model
Validation Loss Decreased(0.00875--->0.00875)    Saving The Model
Validation Loss Decreased(0.00875--->0.00875)    Saving The Model
Validation Loss Decreased(0.00875--->0.00874)    Saving The Model
Validation Loss Decreased(0.00874--->0.00874)    Saving The Model
Validation Loss Decreased(0.00874--->0.00874)    Saving The Model
Validation Loss Decreased(0.00874--->0.00874)    Saving The Model
Validation Loss Decreased(0.00874--->0.00874)    Saving The Model
Validation Loss Decreased(0.00874--->0.00873)    Saving The Model
Validation Loss Decreased(0.00873--->0.00873)    Saving The Model
Validation Loss Decreased(0.00873--->0.00873)    Saving The Model
Validation Loss Decreased(0.00873--->0.00873)    Saving The Model
Validation Loss Decreased(0.00873--->0.00873)    Saving The Model
Validation Loss Decreased(0.00873--->0.00872)    Saving The Model
Validation Loss Decreased(0.00872--->0.00872)    Saving The Model
Validation Loss Decreased(0.00872--->0.00872)    Saving The Model
Validation Loss Decreased(0.00872--->0.00871)    Saving The Model
Validation Loss Decreased(0.00871--->0.00871)    Saving The Model
Validation Loss Decreased(0.00871--->0.00870)    Saving The Model
Validation Loss Decreased(0.00870--->0.00870)    Saving The Model
Validation Loss Decreased(0.00870--->0.00869)    Saving The Model
Validation Loss Decreased(0.00869--->0.00869)    Saving The Model
Validation Loss Decreased(0.00869--->0.00869)    Saving The Model
Validation Loss Decreased(0.00869--->0.00868)    Saving The Model
Validation Loss Decreased(0.00868--->0.00868)    Saving The Model
Validation Loss Decreased(0.00868--->0.00867)    Saving The Model
Validation Loss Decreased(0.00867--->0.00867)    Saving The Model
Validation Loss Decreased(0.00867--->0.00867)    Saving The Model
Validation Loss Decreased(0.00867--->0.00867)    Saving The Model
Validation Loss Decreased(0.00867--->0.00867)    Saving The Model
Validation Loss Decreased(0.00867--->0.00866)    Saving The Model
Validation Loss Decreased(0.00866--->0.00866)    Saving The Model
Validation Loss Decreased(0.00866--->0.00866)    Saving The Model
Validation Loss Decreased(0.00866--->0.00866)    Saving The Model
Validation Loss Decreased(0.00866--->0.00866)    Saving The Model
Validation Loss Decreased(0.00866--->0.00866)    Saving The Model
Validation Loss Decreased(0.00866--->0.00866)    Saving The Model
Validation Loss Decreased(0.00866--->0.00866)    Saving The Model
Validation Loss Decreased(0.00866--->0.00866)    Saving The Model
Validation Loss Decreased(0.00866--->0.00865)    Saving The Model
Validation Loss Decreased(0.00865--->0.00865)    Saving The Model
Validation Loss Decreased(0.00865--->0.00865)    Saving The Model
Validation Loss Decreased(0.00865--->0.00865)    Saving The Model
Validation Loss Decreased(0.00865--->0.00865)    Saving The Model
Validation Loss Decreased(0.00865--->0.00864)    Saving The Model
Validation Loss Decreased(0.00864--->0.00864)    Saving The Model
Validation Loss Decreased(0.00864--->0.00864)    Saving The Model
Validation Loss Decreased(0.00864--->0.00864)    Saving The Model
Validation Loss Decreased(0.00864--->0.00864)    Saving The Model
```

```
Validation Loss Decreased(0.00864--->0.00864)    Saving The Model
Validation Loss Decreased(0.00864--->0.00864)    Saving The Model
Validation Loss Decreased(0.00864--->0.00863)    Saving The Model
Validation Loss Decreased(0.00863--->0.00863)    Saving The Model
Validation Loss Decreased(0.00863--->0.00863)    Saving The Model
Validation Loss Decreased(0.00863--->0.00863)    Saving The Model
Validation Loss Decreased(0.00863--->0.00863)    Saving The Model
Validation Loss Decreased(0.00863--->0.00863)    Saving The Model
Validation Loss Decreased(0.00863--->0.00863)    Saving The Model
Validation Loss Decreased(0.00863--->0.00863)    Saving The Model
Validation Loss Decreased(0.00863--->0.00863)    Saving The Model
Validation Loss Decreased(0.00863--->0.00863)    Saving The Model
Validation Loss Decreased(0.00863--->0.00863)    Saving The Model
Validation Loss Decreased(0.00863--->0.00863)    Saving The Model
Validation Loss Decreased(0.00863--->0.00862)    Saving The Model
Validation Loss Decreased(0.00862--->0.00862)    Saving The Model
Validation Loss Decreased(0.00862--->0.00862)    Saving The Model
Validation Loss Decreased(0.00862--->0.00862)    Saving The Model
Validation Loss Decreased(0.00862--->0.00862)    Saving The Model
Validation Loss Decreased(0.00862--->0.00862)    Saving The Model
Validation Loss Decreased(0.00862--->0.00862)    Saving The Model
Epoch 200            Training Loss: 0.01270                Val
idation Loss: 0.00862
Validation Loss Decreased(0.00862--->0.00862)    Saving The Model
Validation Loss Decreased(0.00862--->0.00862)    Saving The Model
Validation Loss Decreased(0.00862--->0.00862)    Saving The Model
Validation Loss Decreased(0.00862--->0.00862)    Saving The Model
Validation Loss Decreased(0.00862--->0.00861)    Saving The Model
Validation Loss Decreased(0.00861--->0.00861)    Saving The Model
Validation Loss Decreased(0.00861--->0.00861)    Saving The Model
Validation Loss Decreased(0.00861--->0.00861)    Saving The Model
Validation Loss Decreased(0.00861--->0.00861)    Saving The Model
Validation Loss Decreased(0.00861--->0.00861)    Saving The Model
Validation Loss Decreased(0.00861--->0.00861)    Saving The Model
Validation Loss Decreased(0.00861--->0.00861)    Saving The Model
Validation Loss Decreased(0.00861--->0.00860)    Saving The Model
Validation Loss Decreased(0.00860--->0.00860)    Saving The Model
Validation Loss Decreased(0.00860--->0.00860)    Saving The Model
Validation Loss Decreased(0.00860--->0.00860)    Saving The Model
Validation Loss Decreased(0.00860--->0.00860)    Saving The Model
Validation Loss Decreased(0.00860--->0.00860)    Saving The Model
Validation Loss Decreased(0.00860--->0.00860)    Saving The Model
Validation Loss Decreased(0.00860--->0.00859)    Saving The Model
Validation Loss Decreased(0.00859--->0.00859)    Saving The Model
Validation Loss Decreased(0.00859--->0.00859)    Saving The Model
Validation Loss Decreased(0.00859--->0.00859)    Saving The Model
Validation Loss Decreased(0.00859--->0.00859)    Saving The Model
Validation Loss Decreased(0.00859--->0.00859)    Saving The Model
Validation Loss Decreased(0.00859--->0.00859)    Saving The Model
Validation Loss Decreased(0.00859--->0.00858)    Saving The Model
Validation Loss Decreased(0.00858--->0.00858)    Saving The Model
Validation Loss Decreased(0.00858--->0.00858)    Saving The Model
Validation Loss Decreased(0.00858--->0.00858)    Saving The Model
Validation Loss Decreased(0.00858--->0.00858)    Saving The Model
Validation Loss Decreased(0.00858--->0.00858)    Saving The Model
Validation Loss Decreased(0.00858--->0.00857)    Saving The Model
Validation Loss Decreased(0.00857--->0.00857)    Saving The Model
Validation Loss Decreased(0.00857--->0.00857)    Saving The Model
Validation Loss Decreased(0.00857--->0.00857)    Saving The Model
Validation Loss Decreased(0.00857--->0.00857)    Saving The Model
```

```
Validation Loss Decreased(0.00857--->0.00856)     Saving The Model
Validation Loss Decreased(0.00856--->0.00856)     Saving The Model
Validation Loss Decreased(0.00856--->0.00856)     Saving The Model
Validation Loss Decreased(0.00856--->0.00856)     Saving The Model
Validation Loss Decreased(0.00856--->0.00856)     Saving The Model
Validation Loss Decreased(0.00856--->0.00856)     Saving The Model
Validation Loss Decreased(0.00856--->0.00855)     Saving The Model
Validation Loss Decreased(0.00855--->0.00855)     Saving The Model
Validation Loss Decreased(0.00855--->0.00855)     Saving The Model
Validation Loss Decreased(0.00855--->0.00855)     Saving The Model
Validation Loss Decreased(0.00855--->0.00855)     Saving The Model
Validation Loss Decreased(0.00855--->0.00854)     Saving The Model
Validation Loss Decreased(0.00854--->0.00854)     Saving The Model
Validation Loss Decreased(0.00854--->0.00854)     Saving The Model
Validation Loss Decreased(0.00854--->0.00854)     Saving The Model
Validation Loss Decreased(0.00854--->0.00854)     Saving The Model
Validation Loss Decreased(0.00854--->0.00853)     Saving The Model
Validation Loss Decreased(0.00853--->0.00853)     Saving The Model
Validation Loss Decreased(0.00853--->0.00853)     Saving The Model
Validation Loss Decreased(0.00853--->0.00853)     Saving The Model
Validation Loss Decreased(0.00853--->0.00852)     Saving The Model
Validation Loss Decreased(0.00852--->0.00852)     Saving The Model
Validation Loss Decreased(0.00852--->0.00852)     Saving The Model
Validation Loss Decreased(0.00852--->0.00852)     Saving The Model
Validation Loss Decreased(0.00852--->0.00852)     Saving The Model
Validation Loss Decreased(0.00852--->0.00851)     Saving The Model
Validation Loss Decreased(0.00851--->0.00851)     Saving The Model
Validation Loss Decreased(0.00851--->0.00851)     Saving The Model
Validation Loss Decreased(0.00851--->0.00851)     Saving The Model
Validation Loss Decreased(0.00851--->0.00850)     Saving The Model
Validation Loss Decreased(0.00850--->0.00850)     Saving The Model
Validation Loss Decreased(0.00850--->0.00850)     Saving The Model
Validation Loss Decreased(0.00850--->0.00850)     Saving The Model
Validation Loss Decreased(0.00850--->0.00850)     Saving The Model
Validation Loss Decreased(0.00850--->0.00849)     Saving The Model
Validation Loss Decreased(0.00849--->0.00849)     Saving The Model
Validation Loss Decreased(0.00849--->0.00849)     Saving The Model
Validation Loss Decreased(0.00849--->0.00849)     Saving The Model
Validation Loss Decreased(0.00849--->0.00848)     Saving The Model
Validation Loss Decreased(0.00848--->0.00848)     Saving The Model
Validation Loss Decreased(0.00848--->0.00848)     Saving The Model
Validation Loss Decreased(0.00848--->0.00848)     Saving The Model
Validation Loss Decreased(0.00848--->0.00847)     Saving The Model
Validation Loss Decreased(0.00847--->0.00847)     Saving The Model
Validation Loss Decreased(0.00847--->0.00847)     Saving The Model
Validation Loss Decreased(0.00847--->0.00847)     Saving The Model
Validation Loss Decreased(0.00847--->0.00846)     Saving The Model
Validation Loss Decreased(0.00846--->0.00846)     Saving The Model
Validation Loss Decreased(0.00846--->0.00846)     Saving The Model
Validation Loss Decreased(0.00846--->0.00846)     Saving The Model
Validation Loss Decreased(0.00846--->0.00846)     Saving The Model
Validation Loss Decreased(0.00846--->0.00845)     Saving The Model
Validation Loss Decreased(0.00845--->0.00845)     Saving The Model
Validation Loss Decreased(0.00845--->0.00845)     Saving The Model
Validation Loss Decreased(0.00845--->0.00845)     Saving The Model
Validation Loss Decreased(0.00845--->0.00844)     Saving The Model
Validation Loss Decreased(0.00844--->0.00844)     Saving The Model
Validation Loss Decreased(0.00844--->0.00844)     Saving The Model
Validation Loss Decreased(0.00844--->0.00844)     Saving The Model
Validation Loss Decreased(0.00844--->0.00843)     Saving The Model
Validation Loss Decreased(0.00843--->0.00843)     Saving The Model
```

```
Validation Loss Decreased(0.00843--->0.00843)     Saving The Model
Epoch 300                Training Loss: 0.01243               Val
idation Loss: 0.00843
Validation Loss Decreased(0.00843--->0.00843)     Saving The Model
Validation Loss Decreased(0.00843--->0.00842)     Saving The Model
Validation Loss Decreased(0.00842--->0.00842)     Saving The Model
Validation Loss Decreased(0.00842--->0.00842)     Saving The Model
Validation Loss Decreased(0.00842--->0.00842)     Saving The Model
Validation Loss Decreased(0.00842--->0.00842)     Saving The Model
Validation Loss Decreased(0.00842--->0.00841)     Saving The Model
Validation Loss Decreased(0.00841--->0.00841)     Saving The Model
Validation Loss Decreased(0.00841--->0.00841)     Saving The Model
Validation Loss Decreased(0.00841--->0.00841)     Saving The Model
Validation Loss Decreased(0.00841--->0.00841)     Saving The Model
Validation Loss Decreased(0.00841--->0.00840)     Saving The Model
Validation Loss Decreased(0.00840--->0.00840)     Saving The Model
Validation Loss Decreased(0.00840--->0.00840)     Saving The Model
Validation Loss Decreased(0.00840--->0.00840)     Saving The Model
Validation Loss Decreased(0.00840--->0.00840)     Saving The Model
Validation Loss Decreased(0.00840--->0.00839)     Saving The Model
Validation Loss Decreased(0.00839--->0.00839)     Saving The Model
Validation Loss Decreased(0.00839--->0.00839)     Saving The Model
Validation Loss Decreased(0.00839--->0.00839)     Saving The Model
Validation Loss Decreased(0.00839--->0.00839)     Saving The Model
Validation Loss Decreased(0.00839--->0.00838)     Saving The Model
Validation Loss Decreased(0.00838--->0.00838)     Saving The Model
Validation Loss Decreased(0.00838--->0.00838)     Saving The Model
Validation Loss Decreased(0.00838--->0.00838)     Saving The Model
Validation Loss Decreased(0.00838--->0.00838)     Saving The Model
Validation Loss Decreased(0.00838--->0.00837)     Saving The Model
Validation Loss Decreased(0.00837--->0.00837)     Saving The Model
Validation Loss Decreased(0.00837--->0.00837)     Saving The Model
Validation Loss Decreased(0.00837--->0.00837)     Saving The Model
Validation Loss Decreased(0.00837--->0.00837)     Saving The Model
Validation Loss Decreased(0.00837--->0.00837)     Saving The Model
Validation Loss Decreased(0.00837--->0.00836)     Saving The Model
Validation Loss Decreased(0.00836--->0.00836)     Saving The Model
Validation Loss Decreased(0.00836--->0.00836)     Saving The Model
Validation Loss Decreased(0.00836--->0.00836)     Saving The Model
Validation Loss Decreased(0.00836--->0.00836)     Saving The Model
Validation Loss Decreased(0.00836--->0.00835)     Saving The Model
Validation Loss Decreased(0.00835--->0.00835)     Saving The Model
Validation Loss Decreased(0.00835--->0.00835)     Saving The Model
Validation Loss Decreased(0.00835--->0.00835)     Saving The Model
Validation Loss Decreased(0.00835--->0.00835)     Saving The Model
Validation Loss Decreased(0.00835--->0.00835)     Saving The Model
Validation Loss Decreased(0.00835--->0.00834)     Saving The Model
Validation Loss Decreased(0.00834--->0.00834)     Saving The Model
Validation Loss Decreased(0.00834--->0.00834)     Saving The Model
Validation Loss Decreased(0.00834--->0.00834)     Saving The Model
Validation Loss Decreased(0.00834--->0.00834)     Saving The Model
Validation Loss Decreased(0.00834--->0.00834)     Saving The Model
Validation Loss Decreased(0.00834--->0.00833)     Saving The Model
Validation Loss Decreased(0.00833--->0.00833)     Saving The Model
Validation Loss Decreased(0.00833--->0.00833)     Saving The Model
Validation Loss Decreased(0.00833--->0.00833)     Saving The Model
idation Loss Decreased(0.00833--->0.00833)     Saving The Model
Validation Loss Decreased(0.00833--->0.00833)     Saving The Model
Validation Loss Decreased(0.00833--->0.00832)     Saving The Model
Validation Loss Decreased(0.00832--->0.00832)     Saving The Model
Validation Loss Decreased(0.00832--->0.00832)     Saving The Model
```

```
Validation Loss Decreased(0.00832--->0.00832)    Saving The Model
Validation Loss Decreased(0.00832--->0.00832)    Saving The Model
Validation Loss Decreased(0.00832--->0.00832)    Saving The Model
Validation Loss Decreased(0.00832--->0.00831)    Saving The Model
Validation Loss Decreased(0.00831--->0.00831)    Saving The Model
Validation Loss Decreased(0.00831--->0.00831)    Saving The Model
Validation Loss Decreased(0.00831--->0.00831)    Saving The Model
Validation Loss Decreased(0.00831--->0.00831)    Saving The Model
Validation Loss Decreased(0.00831--->0.00830)    Saving The Model
Validation Loss Decreased(0.00830--->0.00830)    Saving The Model
Validation Loss Decreased(0.00830--->0.00830)    Saving The Model
Validation Loss Decreased(0.00830--->0.00830)    Saving The Model
Validation Loss Decreased(0.00830--->0.00830)    Saving The Model
Validation Loss Decreased(0.00830--->0.00829)    Saving The Model
Validation Loss Decreased(0.00829--->0.00829)    Saving The Model
Validation Loss Decreased(0.00829--->0.00829)    Saving The Model
Validation Loss Decreased(0.00829--->0.00829)    Saving The Model
Validation Loss Decreased(0.00829--->0.00828)    Saving The Model
Validation Loss Decreased(0.00828--->0.00828)    Saving The Model
Validation Loss Decreased(0.00828--->0.00828)    Saving The Model
Validation Loss Decreased(0.00828--->0.00828)    Saving The Model
Validation Loss Decreased(0.00828--->0.00827)    Saving The Model
Validation Loss Decreased(0.00827--->0.00827)    Saving The Model
Validation Loss Decreased(0.00827--->0.00827)    Saving The Model
Validation Loss Decreased(0.00827--->0.00827)    Saving The Model
Validation Loss Decreased(0.00827--->0.00826)    Saving The Model
Validation Loss Decreased(0.00826--->0.00826)    Saving The Model
Validation Loss Decreased(0.00826--->0.00826)    Saving The Model
Validation Loss Decreased(0.00826--->0.00825)    Saving The Model
Validation Loss Decreased(0.00825--->0.00825)    Saving The Model
Validation Loss Decreased(0.00825--->0.00825)    Saving The Model
Validation Loss Decreased(0.00825--->0.00824)    Saving The Model
Validation Loss Decreased(0.00824--->0.00824)    Saving The Model
Validation Loss Decreased(0.00824--->0.00824)    Saving The Model
Validation Loss Decreased(0.00824--->0.00823)    Saving The Model
Validation Loss Decreased(0.00823--->0.00823)    Saving The Model
Validation Loss Decreased(0.00823--->0.00822)    Saving The Model
Validation Loss Decreased(0.00822--->0.00822)    Saving The Model
Validation Loss Decreased(0.00822--->0.00822)    Saving The Model
Validation Loss Decreased(0.00822--->0.00821)    Saving The Model
Validation Loss Decreased(0.00821--->0.00821)    Saving The Model
Validation Loss Decreased(0.00821--->0.00820)    Saving The Model
Epoch 400                Training Loss: 0.01216                      Val
idation Loss: 0.00820
Validation Loss Decreased(0.00820--->0.00820)    Saving The Model
Validation Loss Decreased(0.00820--->0.00820)    Saving The Model
Validation Loss Decreased(0.00820--->0.00819)    Saving The Model
Validation Loss Decreased(0.00819--->0.00819)    Saving The Model
Validation Loss Decreased(0.00819--->0.00818)    Saving The Model
Validation Loss Decreased(0.00818--->0.00818)    Saving The Model
Validation Loss Decreased(0.00818--->0.00817)    Saving The Model
Validation Loss Decreased(0.00817--->0.00817)    Saving The Model
Validation Loss Decreased(0.00817--->0.00816)    Saving The Model
Validation Loss Decreased(0.00816--->0.00816)    Saving The Model
Validation Loss Decreased(0.00816--->0.00815)    Saving The Model
Validation Loss Decreased(0.00815--->0.00815)    Saving The Model
Validation Loss Decreased(0.00815--->0.00814)    Saving The Model
Validation Loss Decreased(0.00814--->0.00814)    Saving The Model
Validation Loss Decreased(0.00814--->0.00814)    Saving The Model
Validation Loss Decreased(0.00814--->0.00813)    Saving The Model
Validation Loss Decreased(0.00813--->0.00813)    Saving The Model
```
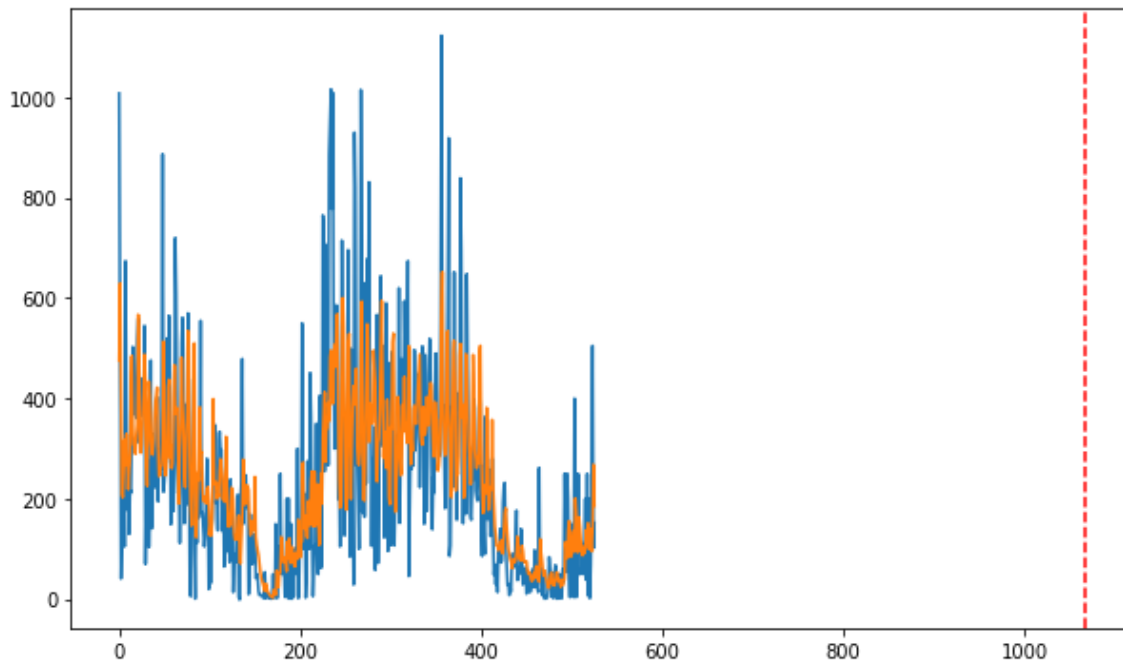
```
Validation Loss Decreased(0.00813--->0.00812)     Saving The Model
Validation Loss Decreased(0.00812--->0.00811)     Saving The Model
Validation Loss Decreased(0.00811--->0.00811)     Saving The Model
Validation Loss Decreased(0.00811--->0.00810)     Saving The Model
Validation Loss Decreased(0.00810--->0.00810)     Saving The Model
Validation Loss Decreased(0.00810--->0.00809)     Saving The Model
Validation Loss Decreased(0.00809--->0.00809)     Saving The Model
Validation Loss Decreased(0.00809--->0.00808)     Saving The Model
Validation Loss Decreased(0.00808--->0.00808)     Saving The Model
Validation Loss Decreased(0.00808--->0.00807)     Saving The Model
Validation Loss Decreased(0.00807--->0.00807)     Saving The Model
Validation Loss Decreased(0.00807--->0.00806)     Saving The Model
Validation Loss Decreased(0.00806--->0.00806)     Saving The Model
Validation Loss Decreased(0.00806--->0.00805)     Saving The Model
Validation Loss Decreased(0.00805--->0.00805)     Saving The Model
Validation Loss Decreased(0.00805--->0.00803)     Saving The Model
Validation Loss Decreased(0.00803--->0.00797)     Saving The Model
Validation Loss Decreased(0.00797--->0.00796)     Saving The Model
Validation Loss Decreased(0.00796--->0.00795)     Saving The Model
Validation Loss Decreased(0.00795--->0.00794)     Saving The Model
Validation Loss Decreased(0.00794--->0.00794)     Saving The Model
Validation Loss Decreased(0.00794--->0.00793)     Saving The Model
Validation Loss Decreased(0.00793--->0.00793)     Saving The Model
Validation Loss Decreased(0.00793--->0.00792)     Saving The Model
Epoch 500                 Training Loss: 0.01185                    Val
idation Loss: 0.00794
Validation Loss Decreased(0.00792--->0.00792)     Saving The Model
Validation Loss Decreased(0.00792--->0.00791)     Saving The Model
Validation Loss Decreased(0.00791--->0.00790)     Saving The Model
Validation Loss Decreased(0.00790--->0.00790)     Saving The Model
Validation Loss Decreased(0.00790--->0.00790)     Saving The Model
Validation Loss Decreased(0.00790--->0.00789)     Saving The Model
Validation Loss Decreased(0.00789--->0.00788)     Saving The Model
Validation Loss Decreased(0.00788--->0.00788)     Saving The Model
Validation Loss Decreased(0.00788--->0.00787)     Saving The Model
Validation Loss Decreased(0.00787--->0.00787)     Saving The Model
Validation Loss Decreased(0.00787--->0.00786)     Saving The Model
Validation Loss Decreased(0.00786--->0.00786)     Saving The Model
Validation Loss Decreased(0.00786--->0.00785)     Saving The Model
Validation Loss Decreased(0.00785--->0.00785)     Saving The Model
Validation Loss Decreased(0.00785--->0.00785)     Saving The Model
Validation Loss Decreased(0.00785--->0.00784)     Saving The Model
Validation Loss Decreased(0.00784--->0.00784)     Saving The Model
Validation Loss Decreased(0.00784--->0.00784)     Saving The Model
Validation Loss Decreased(0.00784--->0.00784)     Saving The Model
Validation Loss Decreased(0.00784--->0.00783)     Saving The Model
Validation Loss Decreased(0.00783--->0.00782)     Saving The Model
Validation Loss Decreased(0.00782--->0.00782)     Saving The Model
Validation Loss Decreased(0.00782--->0.00781)     Saving The Model
Validation Loss Decreased(0.00781--->0.00781)     Saving The Model
Validation Loss Decreased(0.00781--->0.00781)     Saving The Model
Validation Loss Decreased(0.00781--->0.00780)     Saving The Model
Validation Loss Decreased(0.00780--->0.00780)     Saving The Model
Validation Loss Decreased(0.00780--->0.00779)     Saving The Model
Validation Loss Decreased(0.00779--->0.00779)     Saving The Model
Validation Loss Decreased(0.00779--->0.00779)     Saving The Model
Validation Loss Decreased(0.00779--->0.00778)     Saving The Model
Validation Loss Decreased(0.00778--->0.00778)     Saving The Model
Validation Loss Decreased(0.00778--->0.00778)     Saving The Model
Validation Loss Decreased(0.00778--->0.00777)     Saving The Model
Validation Loss Decreased(0.00777--->0.00777)     Saving The Model
```

```
Validation Loss Decreased(0.00777--->0.00775)    Saving The Model
Validation Loss Decreased(0.00775--->0.00773)    Saving The Model
Validation Loss Decreased(0.00773--->0.00770)    Saving The Model
Validation Loss Decreased(0.00770--->0.00770)    Saving The Model
Validation Loss Decreased(0.00770--->0.00769)    Saving The Model
Epoch 600              Training Loss: 0.01162                Val
idation Loss: 0.00769
Validation Loss Decreased(0.00769--->0.00769)    Saving The Model
Validation Loss Decreased(0.00769--->0.00769)    Saving The Model
Validation Loss Decreased(0.00769--->0.00768)    Saving The Model
Validation Loss Decreased(0.00768--->0.00767)    Saving The Model
Validation Loss Decreased(0.00767--->0.00765)    Saving The Model
Validation Loss Decreased(0.00765--->0.00765)    Saving The Model
Validation Loss Decreased(0.00765--->0.00764)    Saving The Model
Validation Loss Decreased(0.00764--->0.00764)    Saving The Model
Validation Loss Decreased(0.00764--->0.00763)    Saving The Model
Validation Loss Decreased(0.00763--->0.00762)    Saving The Model
Validation Loss Decreased(0.00762--->0.00761)    Saving The Model
Validation Loss Decreased(0.00761--->0.00760)    Saving The Model
Validation Loss Decreased(0.00760--->0.00758)    Saving The Model
Validation Loss Decreased(0.00758--->0.00756)    Saving The Model
Validation Loss Decreased(0.00756--->0.00756)    Saving The Model
Validation Loss Decreased(0.00756--->0.00756)    Saving The Model
Validation Loss Decreased(0.00756--->0.00756)    Saving The Model
Validation Loss Decreased(0.00756--->0.00755)    Saving The Model
Validation Loss Decreased(0.00755--->0.00755)    Saving The Model
Validation Loss Decreased(0.00755--->0.00754)    Saving The Model
Validation Loss Decreased(0.00754--->0.00754)    Saving The Model
Epoch 700              Training Loss: 0.01121                Val
idation Loss: 0.00764
Validation Loss Decreased(0.00754--->0.00754)    Saving The Model
Epoch 800              Training Loss: 0.01110                Val
idation Loss: 0.00767
Validation Loss Decreased(0.00754--->0.00754)    Saving The Model
Epoch 900              Training Loss: 0.01098                Val
idation Loss: 0.00815
Epoch 1000             Training Loss: 0.01047                Val
idation Loss: 0.00802
Epoch 1100             Training Loss: 0.01011                Val
idation Loss: 0.00929
Epoch 1200             Training Loss: 0.00994                Val
idation Loss: 0.00876
Epoch 1300             Training Loss: 0.00976                Val
idation Loss: 0.00821
Validation Loss Decreased(0.00754--->0.00751)    Saving The Model
Validation Loss Decreased(0.00751--->0.00742)    Saving The Model
Epoch 1400             Training Loss: 0.01037                Val
idation Loss: 0.00795
Epoch 1500             Training Loss: 0.00953                Val
idation Loss: 0.00816
Epoch 1600             Training Loss: 0.00947                Val
idation Loss: 0.00817
Epoch 1700             Training Loss: 0.00940                Val
idation Loss: 0.00856
Epoch 1800             Training Loss: 0.01050                Val
idation Loss: 0.00775
Epoch 1900             Training Loss: 0.00912                Val
idation Loss: 0.00823
Epoch 2000             Training Loss: 0.00892                Val
idation Loss: 0.00847
Epoch 2100             Training Loss: 0.00885                Val
```

idation Loss: 0.00979
Epoch 2200   Training Loss: 0.01024   Val
idation Loss: 0.00835
Epoch 2300   Training Loss: 0.00832   Val
idation Loss: 0.00877
Epoch 2400   Training Loss: 0.00886   Val
idation Loss: 0.00893
Epoch 2500   Training Loss: 0.00925   Val
idation Loss: 0.00941
Epoch 2600   Training Loss: 0.00719   Val
idation Loss: 0.00967
Epoch 2700   Training Loss: 0.00688   Val
idation Loss: 0.01028
Epoch 2800   Training Loss: 0.00680   Val
idation Loss: 0.01010
Epoch 2900   Training Loss: 0.00605   Val
idation Loss: 0.01100
Epoch 3000   Training Loss: 0.00855   Val
idation Loss: 0.01067
Epoch 3100   Training Loss: 0.00642   Val
idation Loss: 0.01165
Epoch 3200   Training Loss: 0.00536   Val
idation Loss: 0.01307
Epoch 3300   Training Loss: 0.00525   Val
idation Loss: 0.01331
Stopping the training early   Model saved
          Training Loss: 0.004882204346358776
          Validation Loss: 0.0074157314375042915

Prediction

RMSE of validation set: 6.217070592350798
RMSE of entire data set: 4.099188850918594

Sales of Store - 5
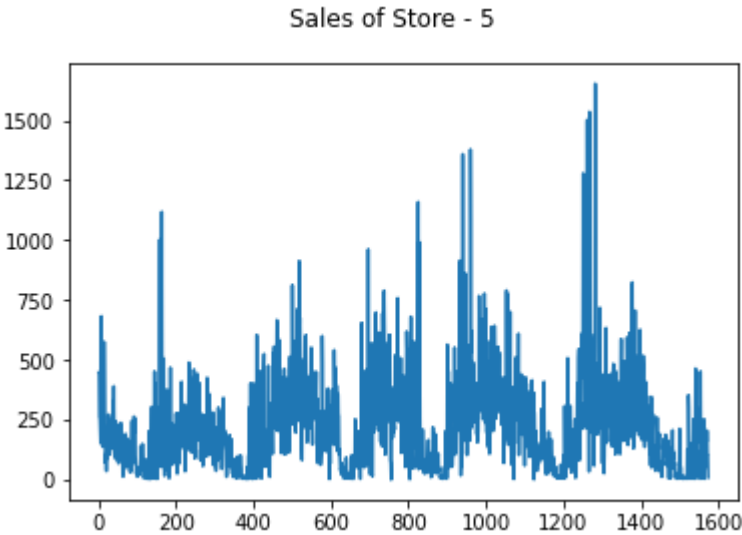
```
Validation Loss Decreased(inf--->0.02386)           Saving The Model
Validation Loss Decreased(0.02386--->0.01810)       Saving The Model
Validation Loss Decreased(0.01810--->0.01619)       Saving The Model
Validation Loss Decreased(0.01619--->0.01607)       Saving The Model
Validation Loss Decreased(0.01607--->0.01565)       Saving The Model
Validation Loss Decreased(0.01565--->0.01558)       Saving The Model
Validation Loss Decreased(0.01558--->0.01558)       Saving The Model
Validation Loss Decreased(0.01558--->0.01533)       Saving The Model
Validation Loss Decreased(0.01533--->0.01509)       Saving The Model
Validation Loss Decreased(0.01509--->0.01491)       Saving The Model
Validation Loss Decreased(0.01491--->0.01481)       Saving The Model
Validation Loss Decreased(0.01481--->0.01478)       Saving The Model
Validation Loss Decreased(0.01478--->0.01477)       Saving The Model
Validation Loss Decreased(0.01477--->0.01465)       Saving The Model
Validation Loss Decreased(0.01465--->0.01446)       Saving The Model
Validation Loss Decreased(0.01446--->0.01423)       Saving The Model
Validation Loss Decreased(0.01423--->0.01400)       Saving The Model
Validation Loss Decreased(0.01400--->0.01381)       Saving The Model
Validation Loss Decreased(0.01381--->0.01366)       Saving The Model
Validation Loss Decreased(0.01366--->0.01352)       Saving The Model
Validation Loss Decreased(0.01352--->0.01336)       Saving The Model
Validation Loss Decreased(0.01336--->0.01314)       Saving The Model
Validation Loss Decreased(0.01314--->0.01284)       Saving The Model
Validation Loss Decreased(0.01284--->0.01248)       Saving The Model
Validation Loss Decreased(0.01248--->0.01212)       Saving The Model
Validation Loss Decreased(0.01212--->0.01180)       Saving The Model
Validation Loss Decreased(0.01180--->0.01143)       Saving The Model
Validation Loss Decreased(0.01143--->0.01084)       Saving The Model
Validation Loss Decreased(0.01084--->0.01015)       Saving The Model
Validation Loss Decreased(0.01015--->0.00976)       Saving The Model
Validation Loss Decreased(0.00976--->0.00942)       Saving The Model
Validation Loss Decreased(0.00942--->0.00942)       Saving The Model
Validation Loss Decreased(0.00942--->0.00939)       Saving The Model
Epoch 100              Training Loss: 0.00869                    Val
idation Loss: 0.00946
Epoch 200              Training Loss: 0.00862                    Val
idation Loss: 0.00943
Epoch 300              Training Loss: 0.00860                    Val
idation Loss: 0.00943
Epoch 400              Training Loss: 0.00857                    Val
idation Loss: 0.00943
Epoch 500              Training Loss: 0.00853                    Val
idation Loss: 0.00946
Epoch 600              Training Loss: 0.00845                    Val
idation Loss: 0.00941
Epoch 700              Training Loss: 0.00830                    Val
idation Loss: 0.00945
Validation Loss Decreased(0.00939--->0.00932)       Saving The Model
Validation Loss Decreased(0.00932--->0.00931)       Saving The Model
Validation Loss Decreased(0.00931--->0.00929)       Saving The Model
Validation Loss Decreased(0.00929--->0.00925)       Saving The Model
Epoch 800              Training Loss: 0.00853                    Val
idation Loss: 0.01129
Validation Loss Decreased(0.00925--->0.00920)       Saving The Model
Validation Loss Decreased(0.00920--->0.00918)       Saving The Model
Epoch 900              Training Loss: 0.00819                    Val
idation Loss: 0.00929
Epoch 1000             Training Loss: 0.00759                    Val
idation Loss: 0.01028
Epoch 1100             Training Loss: 0.00755                    Val
idation Loss: 0.01008
```

```
Epoch 1200              Training Loss: 0.00605                Val
idation Loss: 0.01054
Epoch 1300              Training Loss: 0.00534                Val
idation Loss: 0.01264
Epoch 1400              Training Loss: 0.00485                Val
idation Loss: 0.01292
Epoch 1500              Training Loss: 0.00406                Val
idation Loss: 0.01344
Epoch 1600              Training Loss: 0.00316                Val
idation Loss: 0.01383
Epoch 1700              Training Loss: 0.00267                Val
idation Loss: 0.01535
Epoch 1800              Training Loss: 0.00258                Val
idation Loss: 0.01462
Epoch 1900              Training Loss: 0.00169                Val
idation Loss: 0.01709
Epoch 2000              Training Loss: 0.00153                Val
idation Loss: 0.01769
Epoch 2100              Training Loss: 0.00139                Val
idation Loss: 0.01822
Epoch 2200              Training Loss: 0.00118                Val
idation Loss: 0.01856
Epoch 2300              Training Loss: 0.00115                Val
idation Loss: 0.01929
Epoch 2400              Training Loss: 0.00106                Val
idation Loss: 0.01980
Epoch 2500              Training Loss: 0.00105                Val
idation Loss: 0.02021
Epoch 2600              Training Loss: 0.00092                Val
idation Loss: 0.02065
Epoch 2700              Training Loss: 0.00092                Val
idation Loss: 0.02124
Epoch 2800              Training Loss: 0.00085                Val
idation Loss: 0.02127
Stopping the training early          Model saved
        Training Loss:  0.0009042596211656928
        Validation Loss:  0.009175633080303669
```

Prediction
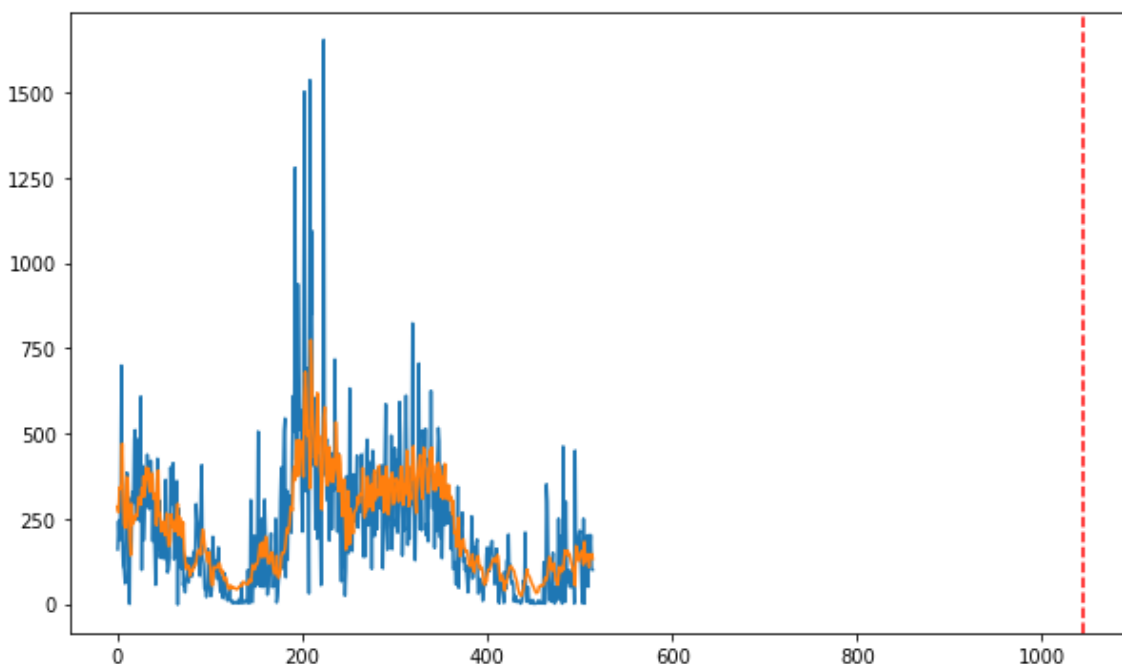
```
RMSE of validation set: 6.994181697410434
RMSE of entire data set: 3.8898370735431493
```


Sales of Store - 6

```
Validation Loss Decreased(inf--->0.01607)        Saving The Model
Validation Loss Decreased(0.01607--->0.00437)    Saving The Model
Validation Loss Decreased(0.00437--->0.00408)    Saving The Model
Validation Loss Decreased(0.00408--->0.00309)    Saving The Model
Validation Loss Decreased(0.00309--->0.00308)    Saving The Model
Validation Loss Decreased(0.00308--->0.00305)    Saving The Model
Validation Loss Decreased(0.00305--->0.00304)    Saving The Model
Validation Loss Decreased(0.00304--->0.00302)    Saving The Model
Validation Loss Decreased(0.00302--->0.00301)    Saving The Model
Validation Loss Decreased(0.00301--->0.00300)    Saving The Model
Validation Loss Decreased(0.00300--->0.00300)    Saving The Model
Validation Loss Decreased(0.00300--->0.00298)    Saving The Model
Validation Loss Decreased(0.00298--->0.00297)    Saving The Model
Validation Loss Decreased(0.00297--->0.00297)    Saving The Model
Validation Loss Decreased(0.00297--->0.00296)    Saving The Model
Validation Loss Decreased(0.00296--->0.00296)    Saving The Model
Validation Loss Decreased(0.00296--->0.00296)    Saving The Model
Validation Loss Decreased(0.00296--->0.00296)    Saving The Model
Validation Loss Decreased(0.00296--->0.00295)    Saving The Model
Validation Loss Decreased(0.00295--->0.00294)    Saving The Model
Validation Loss Decreased(0.00294--->0.00293)    Saving The Model
Validation Loss Decreased(0.00293--->0.00293)    Saving The Model
Validation Loss Decreased(0.00293--->0.00292)    Saving The Model
Validation Loss Decreased(0.00292--->0.00292)    Saving The Model
Validation Loss Decreased(0.00292--->0.00292)    Saving The Model
Validation Loss Decreased(0.00292--->0.00292)    Saving The Model
Validation Loss Decreased(0.00292--->0.00291)    Saving The Model
Validation Loss Decreased(0.00291--->0.00291)    Saving The Model
Validation Loss Decreased(0.00291--->0.00290)    Saving The Model
Validation Loss Decreased(0.00290--->0.00290)    Saving The Model
Validation Loss Decreased(0.00290--->0.00289)    Saving The Model
Validation Loss Decreased(0.00289--->0.00289)    Saving The Model
Validation Loss Decreased(0.00289--->0.00289)    Saving The Model
Validation Loss Decreased(0.00289--->0.00289)    Saving The Model
Epoch 100               Training Loss: 0.00135                    Val
idation Loss: 0.00288
Validation Loss Decreased(0.00289--->0.00288)    Saving The Model
Validation Loss Decreased(0.00288--->0.00288)    Saving The Model
Validation Loss Decreased(0.00288--->0.00288)    Saving The Model
Validation Loss Decreased(0.00288--->0.00288)    Saving The Model
Validation Loss Decreased(0.00288--->0.00288)    Saving The Model
Validation Loss Decreased(0.00288--->0.00288)    Saving The Model
Validation Loss Decreased(0.00288--->0.00288)    Saving The Model
Validation Loss Decreased(0.00288--->0.00287)    Saving The Model
Validation Loss Decreased(0.00287--->0.00287)    Saving The Model
Validation Loss Decreased(0.00287--->0.00287)    Saving The Model
Validation Loss Decreased(0.00287--->0.00286)    Saving The Model
Validation Loss Decreased(0.00286--->0.00286)    Saving The Model
Validation Loss Decreased(0.00286--->0.00286)    Saving The Model
Validation Loss Decreased(0.00286--->0.00285)    Saving The Model
Validation Loss Decreased(0.00285--->0.00285)    Saving The Model
Validation Loss Decreased(0.00285--->0.00285)    Saving The Model
Validation Loss Decreased(0.00285--->0.00285)    Saving The Model
Validation Loss Decreased(0.00285--->0.00285)    Saving The Model
Validation Loss Decreased(0.00285--->0.00285)    Saving The Model
Validation Loss Decreased(0.00285--->0.00285)    Saving The Model
Validation Loss Decreased(0.00285--->0.00284)    Saving The Model
Validation Loss Decreased(0.00284--->0.00284)    Saving The Model
Validation Loss Decreased(0.00284--->0.00284)    Saving The Model
Validation Loss Decreased(0.00284--->0.00284)    Saving The Model
Validation Loss Decreased(0.00284--->0.00283)    Saving The Model
```

```
Validation Loss Decreased(0.00283--->0.00283)    Saving The Model
Validation Loss Decreased(0.00283--->0.00283)    Saving The Model
Validation Loss Decreased(0.00283--->0.00283)    Saving The Model
Validation Loss Decreased(0.00283--->0.00283)    Saving The Model
Validation Loss Decreased(0.00283--->0.00282)    Saving The Model
Validation Loss Decreased(0.00282--->0.00282)    Saving The Model
Validation Loss Decreased(0.00282--->0.00282)    Saving The Model
Validation Loss Decreased(0.00282--->0.00282)    Saving The Model
Validation Loss Decreased(0.00282--->0.00282)    Saving The Model
Validation Loss Decreased(0.00282--->0.00282)    Saving The Model
Validation Loss Decreased(0.00282--->0.00281)    Saving The Model
Validation Loss Decreased(0.00281--->0.00281)    Saving The Model
Validation Loss Decreased(0.00281--->0.00281)    Saving The Model
Validation Loss Decreased(0.00281--->0.00281)    Saving The Model
Validation Loss Decreased(0.00281--->0.00281)    Saving The Model
Validation Loss Decreased(0.00281--->0.00280)    Saving The Model
Validation Loss Decreased(0.00280--->0.00280)    Saving The Model
Validation Loss Decreased(0.00280--->0.00280)    Saving The Model
Validation Loss Decreased(0.00280--->0.00280)    Saving The Model
Validation Loss Decreased(0.00280--->0.00280)    Saving The Model
Validation Loss Decreased(0.00280--->0.00280)    Saving The Model
Validation Loss Decreased(0.00280--->0.00280)    Saving The Model
Validation Loss Decreased(0.00280--->0.00279)    Saving The Model
Validation Loss Decreased(0.00279--->0.00279)    Saving The Model
Validation Loss Decreased(0.00279--->0.00279)    Saving The Model
Validation Loss Decreased(0.00279--->0.00279)    Saving The Model
Validation Loss Decreased(0.00279--->0.00279)    Saving The Model
Validation Loss Decreased(0.00279--->0.00279)    Saving The Model
Validation Loss Decreased(0.00279--->0.00279)    Saving The Model
Validation Loss Decreased(0.00279--->0.00278)    Saving The Model
Validation Loss Decreased(0.00278--->0.00278)    Saving The Model
Validation Loss Decreased(0.00278--->0.00278)    Saving The Model
Validation Loss Decreased(0.00278--->0.00278)    Saving The Model
Validation Loss Decreased(0.00278--->0.00278)    Saving The Model
Validation Loss Decreased(0.00278--->0.00278)    Saving The Model
Validation Loss Decreased(0.00278--->0.00278)    Saving The Model
Validation Loss Decreased(0.00278--->0.00278)    Saving The Model
Validation Loss Decreased(0.00278--->0.00277)    Saving The Model
Validation Loss Decreased(0.00277--->0.00277)    Saving The Model
Validation Loss Decreased(0.00277--->0.00277)    Saving The Model
Validation Loss Decreased(0.00277--->0.00277)    Saving The Model
Validation Loss Decreased(0.00277--->0.00277)    Saving The Model
Validation Loss Decreased(0.00277--->0.00277)    Saving The Model
Validation Loss Decreased(0.00277--->0.00277)    Saving The Model
Validation Loss Decreased(0.00277--->0.00277)    Saving The Model
Validation Loss Decreased(0.00277--->0.00277)    Saving The Model
Validation Loss Decreased(0.00277--->0.00276)    Saving The Model
Validation Loss Decreased(0.00276--->0.00276)    Saving The Model
Validation Loss Decreased(0.00276--->0.00276)    Saving The Model
Validation Loss Decreased(0.00276--->0.00276)    Saving The Model
Validation Loss Decreased(0.00276--->0.00276)    Saving The Model
Validation Loss Decreased(0.00276--->0.00276)    Saving The Model
Validation Loss Decreased(0.00276--->0.00276)    Saving The Model
Validation Loss Decreased(0.00276--->0.00276)    Saving The Model
Validation Loss Decreased(0.00276--->0.00276)    Saving The Model
Validation Loss Decreased(0.00276--->0.00276)    Saving The Model
Validation Loss Decreased(0.00276--->0.00276)    Saving The Model
Validation Loss Decreased(0.00276--->0.00276)    Saving The Model
Validation Loss Decreased(0.00276--->0.00276)    Saving The Model
Validation Loss Decreased(0.00276--->0.00275)    Saving The Model
```
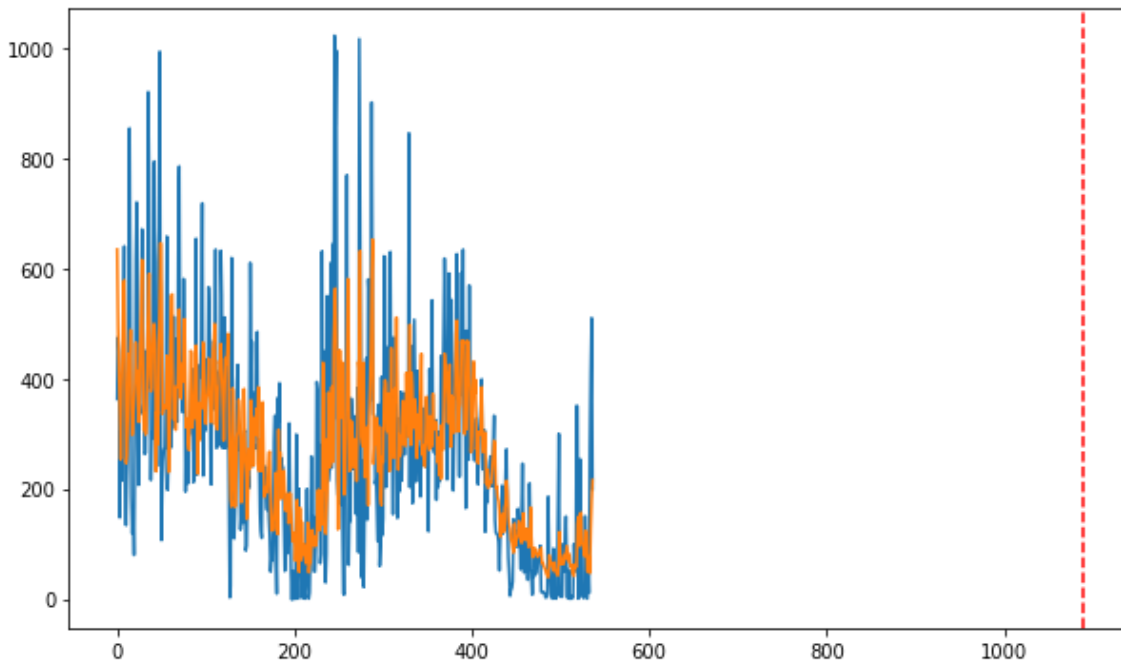
```
Validation Loss Decreased(0.00275--->0.00275)        Saving The Model
Validation Loss Decreased(0.00275--->0.00275)        Saving The Model
Validation Loss Decreased(0.00275--->0.00275)        Saving The Model
Validation Loss Decreased(0.00275--->0.00275)        Saving The Model
Validation Loss Decreased(0.00275--->0.00275)        Saving The Model
Validation Loss Decreased(0.00275--->0.00275)        Saving The Model
Validation Loss Decreased(0.00275--->0.00275)        Saving The Model
Validation Loss Decreased(0.00275--->0.00275)        Saving The Model
Validation Loss Decreased(0.00275--->0.00275)        Saving The Model
Validation Loss Decreased(0.00275--->0.00275)        Saving The Model
Validation Loss Decreased(0.00275--->0.00275)        Saving The Model
Validation Loss Decreased(0.00275--->0.00275)        Saving The Model
Validation Loss Decreased(0.00275--->0.00275)        Saving The Model
Validation Loss Decreased(0.00275--->0.00275)        Saving The Model
Epoch 200               Training Loss: 0.00119                    Val
idation Loss: 0.00275
Validation Loss Decreased(0.00275--->0.00275)        Saving The Model
Validation Loss Decreased(0.00275--->0.00275)        Saving The Model
Validation Loss Decreased(0.00275--->0.00275)        Saving The Model
Validation Loss Decreased(0.00275--->0.00275)        Saving The Model
Validation Loss Decreased(0.00275--->0.00275)        Saving The Model
Validation Loss Decreased(0.00275--->0.00275)        Saving The Model
Validation Loss Decreased(0.00275--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
Validation Loss Decreased(0.00274--->0.00274)        Saving The Model
```

```
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00274)     Saving The Model
Validation Loss Decreased(0.00274--->0.00273)     Saving The Model
Validation Loss Decreased(0.00273--->0.00273)     Saving The Model
Validation Loss Decreased(0.00273--->0.00273)     Saving The Model
Validation Loss Decreased(0.00273--->0.00273)     Saving The Model
Validation Loss Decreased(0.00273--->0.00273)     Saving The Model
Validation Loss Decreased(0.00273--->0.00273)     Saving The Model
Validation Loss Decreased(0.00273--->0.00273)     Saving The Model
Validation Loss Decreased(0.00273--->0.00273)     Saving The Model
Epoch 300              Training Loss: 0.00116                    Val
idation Loss: 0.00273
Validation Loss Decreased(0.00273--->0.00273)     Saving The Model
Validation Loss Decreased(0.00273--->0.00273)     Saving The Model
Validation Loss Decreased(0.00273--->0.00273)     Saving The Model
Validation Loss Decreased(0.00273--->0.00273)     Saving The Model
```

```
Validation Loss Decreased(0.00273--->0.00273)    Saving The Model
Validation Loss Decreased(0.00273--->0.00273)    Saving The Model
Validation Loss Decreased(0.00273--->0.00273)    Saving The Model
Validation Loss Decreased(0.00273--->0.00273)    Saving The Model
Validation Loss Decreased(0.00273--->0.00273)    Saving The Model
Validation Loss Decreased(0.00273--->0.00273)    Saving The Model
Validation Loss Decreased(0.00273--->0.00273)    Saving The Model
Validation Loss Decreased(0.00273--->0.00273)    Saving The Model
Validation Loss Decreased(0.00273--->0.00273)    Saving The Model
Validation Loss Decreased(0.00273--->0.00273)    Saving The Model
Validation Loss Decreased(0.00273--->0.00273)    Saving The Model
Validation Loss Decreased(0.00273--->0.00273)    Saving The Model
Validation Loss Decreased(0.00273--->0.00273)    Saving The Model
Validation Loss Decreased(0.00273--->0.00273)    Saving The Model
Validation Loss Decreased(0.00273--->0.00273)    Saving The Model
Validation Loss Decreased(0.00273--->0.00273)    Saving The Model
Validation Loss Decreased(0.00273--->0.00273)    Saving The Model
Validation Loss Decreased(0.00273--->0.00273)    Saving The Model
Validation Loss Decreased(0.00273--->0.00273)    Saving The Model
Validation Loss Decreased(0.00273--->0.00273)    Saving The Model
Validation Loss Decreased(0.00273--->0.00273)    Saving The Model
Validation Loss Decreased(0.00273--->0.00272)    Saving The Model
Validation Loss Decreased(0.00272--->0.00272)    Saving The Model
Validation Loss Decreased(0.00272--->0.00272)    Saving The Model
Validation Loss Decreased(0.00272--->0.00272)    Saving The Model
Validation Loss Decreased(0.00272--->0.00272)    Saving The Model
Validation Loss Decreased(0.00272--->0.00272)    Saving The Model
Validation Loss Decreased(0.00272--->0.00272)    Saving The Model
Validation Loss Decreased(0.00272--->0.00272)    Saving The Model
Validation Loss Decreased(0.00272--->0.00272)    Saving The Model
Validation Loss Decreased(0.00272--->0.00272)    Saving The Model
Validation Loss Decreased(0.00272--->0.00272)    Saving The Model
Validation Loss Decreased(0.00272--->0.00272)    Saving The Model
Validation Loss Decreased(0.00272--->0.00272)    Saving The Model
Validation Loss Decreased(0.00272--->0.00272)    Saving The Model
Validation Loss Decreased(0.00272--->0.00272)    Saving The Model
Validation Loss Decreased(0.00272--->0.00272)    Saving The Model
Validation Loss Decreased(0.00272--->0.00272)    Saving The Model
Validation Loss Decreased(0.00272--->0.00272)    Saving The Model
Validation Loss Decreased(0.00272--->0.00272)    Saving The Model
Validation Loss Decreased(0.00272--->0.00271)    Saving The Model
Validation Loss Decreased(0.00271--->0.00271)    Saving The Model
Validation Loss Decreased(0.00271--->0.00271)    Saving The Model
Validation Loss Decreased(0.00271--->0.00271)    Saving The Model
Validation Loss Decreased(0.00271--->0.00271)    Saving The Model
Validation Loss Decreased(0.00271--->0.00271)    Saving The Model
Validation Loss Decreased(0.00271--->0.00271)    Saving The Model
Validation Loss Decreased(0.00271--->0.00271)    Saving The Model
Validation Loss Decreased(0.00271--->0.00271)    Saving The Model
Validation Loss Decreased(0.00271--->0.00271)    Saving The Model
Validation Loss Decreased(0.00271--->0.00271)    Saving The Model
Validation Loss Decreased(0.00271--->0.00271)    Saving The Model
Validation Loss Decreased(0.00271--->0.00271)    Saving The Model
Validation Loss Decreased(0.00271--->0.00271)    Saving The Model
```

```
Validation Loss Decreased(0.00271--->0.00271)     Saving The Model
Validation Loss Decreased(0.00271--->0.00271)     Saving The Model
Validation Loss Decreased(0.00271--->0.00271)     Saving The Model
Validation Loss Decreased(0.00271--->0.00271)     Saving The Model
Validation Loss Decreased(0.00271--->0.00271)     Saving The Model
Validation Loss Decreased(0.00271--->0.00271)     Saving The Model
Validation Loss Decreased(0.00271--->0.00270)     Saving The Model
Validation Loss Decreased(0.00270--->0.00270)     Saving The Model
Validation Loss Decreased(0.00270--->0.00270)     Saving The Model
Validation Loss Decreased(0.00270--->0.00270)     Saving The Model
Validation Loss Decreased(0.00270--->0.00270)     Saving The Model
Validation Loss Decreased(0.00270--->0.00270)     Saving The Model
Validation Loss Decreased(0.00270--->0.00270)     Saving The Model
Validation Loss Decreased(0.00270--->0.00270)     Saving The Model
Validation Loss Decreased(0.00270--->0.00270)     Saving The Model
Validation Loss Decreased(0.00270--->0.00270)     Saving The Model
Validation Loss Decreased(0.00270--->0.00270)     Saving The Model
Validation Loss Decreased(0.00270--->0.00270)     Saving The Model
Validation Loss Decreased(0.00270--->0.00270)     Saving The Model
Validation Loss Decreased(0.00270--->0.00270)     Saving The Model
Validation Loss Decreased(0.00270--->0.00270)     Saving The Model
Validation Loss Decreased(0.00270--->0.00270)     Saving The Model
Validation Loss Decreased(0.00270--->0.00270)     Saving The Model
Validation Loss Decreased(0.00270--->0.00269)     Saving The Model
Validation Loss Decreased(0.00269--->0.00269)     Saving The Model
Validation Loss Decreased(0.00269--->0.00269)     Saving The Model
Validation Loss Decreased(0.00269--->0.00269)     Saving The Model
Validation Loss Decreased(0.00269--->0.00269)     Saving The Model
Validation Loss Decreased(0.00269--->0.00269)     Saving The Model
Validation Loss Decreased(0.00269--->0.00269)     Saving The Model
Validation Loss Decreased(0.00269--->0.00269)     Saving The Model
Validation Loss Decreased(0.00269--->0.00269)     Saving The Model
Validation Loss Decreased(0.00269--->0.00269)     Saving The Model
Validation Loss Decreased(0.00269--->0.00269)     Saving The Model
Epoch 400              Training Loss: 0.00115                    Val
idation Loss: 0.00269
Validation Loss Decreased(0.00269--->0.00269)     Saving The Model
Validation Loss Decreased(0.00269--->0.00269)     Saving The Model
Validation Loss Decreased(0.00269--->0.00269)     Saving The Model
Validation Loss Decreased(0.00269--->0.00269)     Saving The Model
Validation Loss Decreased(0.00269--->0.00269)     Saving The Model
Validation Loss Decreased(0.00269--->0.00269)     Saving The Model
Validation Loss Decreased(0.00269--->0.00269)     Saving The Model
Validation Loss Decreased(0.00269--->0.00268)     Saving The Model
Validation Loss Decreased(0.00268--->0.00268)     Saving The Model
Validation Loss Decreased(0.00268--->0.00268)     Saving The Model
Validation Loss Decreased(0.00268--->0.00268)     Saving The Model
Validation Loss Decreased(0.00268--->0.00268)     Saving The Model
Validation Loss Decreased(0.00268--->0.00268)     Saving The Model
Validation Loss Decreased(0.00268--->0.00268)     Saving The Model
Validation Loss Decreased(0.00268--->0.00268)     Saving The Model
Validation Loss Decreased(0.00268--->0.00268)     Saving The Model
Validation Loss Decreased(0.00268--->0.00268)     Saving The Model
Validation Loss Decreased(0.00268--->0.00268)     Saving The Model
Validation Loss Decreased(0.00268--->0.00268)     Saving The Model
Validation Loss Decreased(0.00268--->0.00268)     Saving The Model
Validation Loss Decreased(0.00268--->0.00268)     Saving The Model
Validation Loss Decreased(0.00268--->0.00268)     Saving The Model
Validation Loss Decreased(0.00268--->0.00267)     Saving The Model
```

```
Validation Loss Decreased(0.00267--->0.00267)    Saving The Model
Validation Loss Decreased(0.00267--->0.00267)    Saving The Model
Validation Loss Decreased(0.00267--->0.00267)    Saving The Model
Validation Loss Decreased(0.00267--->0.00267)    Saving The Model
Validation Loss Decreased(0.00267--->0.00267)    Saving The Model
Validation Loss Decreased(0.00267--->0.00267)    Saving The Model
Validation Loss Decreased(0.00267--->0.00267)    Saving The Model
Validation Loss Decreased(0.00267--->0.00267)    Saving The Model
Validation Loss Decreased(0.00267--->0.00267)    Saving The Model
Validation Loss Decreased(0.00267--->0.00267)    Saving The Model
Validation Loss Decreased(0.00267--->0.00267)    Saving The Model
Validation Loss Decreased(0.00267--->0.00267)    Saving The Model
Validation Loss Decreased(0.00267--->0.00267)    Saving The Model
Validation Loss Decreased(0.00267--->0.00267)    Saving The Model
Validation Loss Decreased(0.00267--->0.00267)    Saving The Model
Validation Loss Decreased(0.00267--->0.00266)    Saving The Model
Validation Loss Decreased(0.00266--->0.00266)    Saving The Model
Validation Loss Decreased(0.00266--->0.00266)    Saving The Model
Validation Loss Decreased(0.00266--->0.00266)    Saving The Model
Validation Loss Decreased(0.00266--->0.00266)    Saving The Model
Validation Loss Decreased(0.00266--->0.00266)    Saving The Model
Validation Loss Decreased(0.00266--->0.00266)    Saving The Model
Validation Loss Decreased(0.00266--->0.00266)    Saving The Model
Validation Loss Decreased(0.00266--->0.00266)    Saving The Model
Validation Loss Decreased(0.00266--->0.00266)    Saving The Model
Validation Loss Decreased(0.00266--->0.00266)    Saving The Model
Validation Loss Decreased(0.00266--->0.00266)    Saving The Model
Validation Loss Decreased(0.00266--->0.00266)    Saving The Model
Validation Loss Decreased(0.00266--->0.00266)    Saving The Model
Validation Loss Decreased(0.00266--->0.00265)    Saving The Model
Validation Loss Decreased(0.00265--->0.00265)    Saving The Model
Validation Loss Decreased(0.00265--->0.00265)    Saving The Model
Validation Loss Decreased(0.00265--->0.00265)    Saving The Model
Validation Loss Decreased(0.00265--->0.00265)    Saving The Model
Validation Loss Decreased(0.00265--->0.00265)    Saving The Model
Validation Loss Decreased(0.00265--->0.00265)    Saving The Model
Validation Loss Decreased(0.00265--->0.00265)    Saving The Model
Validation Loss Decreased(0.00265--->0.00265)    Saving The Model
Validation Loss Decreased(0.00265--->0.00265)    Saving The Model
Validation Loss Decreased(0.00265--->0.00265)    Saving The Model
Validation Loss Decreased(0.00265--->0.00265)    Saving The Model
Validation Loss Decreased(0.00265--->0.00265)    Saving The Model
Validation Loss Decreased(0.00265--->0.00265)    Saving The Model
Validation Loss Decreased(0.00265--->0.00264)    Saving The Model
Validation Loss Decreased(0.00264--->0.00264)    Saving The Model
Validation Loss Decreased(0.00264--->0.00264)    Saving The Model
Validation Loss Decreased(0.00264--->0.00264)    Saving The Model
Validation Loss Decreased(0.00264--->0.00264)    Saving The Model
Validation Loss Decreased(0.00264--->0.00264)    Saving The Model
Validation Loss Decreased(0.00264--->0.00264)    Saving The Model
Validation Loss Decreased(0.00264--->0.00264)    Saving The Model
Validation Loss Decreased(0.00264--->0.00264)    Saving The Model
Validation Loss Decreased(0.00264--->0.00264)    Saving The Model
Validation Loss Decreased(0.00264--->0.00264)    Saving The Model
Validation Loss Decreased(0.00264--->0.00264)    Saving The Model
Validation Loss Decreased(0.00264--->0.00264)    Saving The Model
Validation Loss Decreased(0.00264--->0.00263)    Saving The Model
Validation Loss Decreased(0.00263--->0.00263)    Saving The Model
```

```
Validation Loss Decreased(0.00263--->0.00263)     Saving The Model
Validation Loss Decreased(0.00263--->0.00263)     Saving The Model
Validation Loss Decreased(0.00263--->0.00263)     Saving The Model
Validation Loss Decreased(0.00263--->0.00263)     Saving The Model
Validation Loss Decreased(0.00263--->0.00263)     Saving The Model
Validation Loss Decreased(0.00263--->0.00263)     Saving The Model
Validation Loss Decreased(0.00263--->0.00263)     Saving The Model
Validation Loss Decreased(0.00263--->0.00263)     Saving The Model
Validation Loss Decreased(0.00263--->0.00263)     Saving The Model
Validation Loss Decreased(0.00263--->0.00263)     Saving The Model
Validation Loss Decreased(0.00263--->0.00263)     Saving The Model
Validation Loss Decreased(0.00263--->0.00263)     Saving The Model
Validation Loss Decreased(0.00263--->0.00263)     Saving The Model
Validation Loss Decreased(0.00263--->0.00262)     Saving The Model
Validation Loss Decreased(0.00262--->0.00262)     Saving The Model
Epoch 500              Training Loss: 0.00113                    Val
idation Loss: 0.00262
Validation Loss Decreased(0.00262--->0.00262)     Saving The Model
Validation Loss Decreased(0.00262--->0.00262)     Saving The Model
Validation Loss Decreased(0.00262--->0.00262)     Saving The Model
Validation Loss Decreased(0.00262--->0.00262)     Saving The Model
Validation Loss Decreased(0.00262--->0.00262)     Saving The Model
Validation Loss Decreased(0.00262--->0.00262)     Saving The Model
Validation Loss Decreased(0.00262--->0.00262)     Saving The Model
Validation Loss Decreased(0.00262--->0.00262)     Saving The Model
Validation Loss Decreased(0.00262--->0.00262)     Saving The Model
Validation Loss Decreased(0.00262--->0.00262)     Saving The Model
Validation Loss Decreased(0.00262--->0.00262)     Saving The Model
Validation Loss Decreased(0.00262--->0.00262)     Saving The Model
Validation Loss Decreased(0.00262--->0.00262)     Saving The Model
Validation Loss Decreased(0.00262--->0.00261)     Saving The Model
Validation Loss Decreased(0.00261--->0.00261)     Saving The Model
Validation Loss Decreased(0.00261--->0.00261)     Saving The Model
Validation Loss Decreased(0.00261--->0.00261)     Saving The Model
Validation Loss Decreased(0.00261--->0.00261)     Saving The Model
Validation Loss Decreased(0.00261--->0.00261)     Saving The Model
Validation Loss Decreased(0.00261--->0.00261)     Saving The Model
Validation Loss Decreased(0.00261--->0.00261)     Saving The Model
Validation Loss Decreased(0.00261--->0.00261)     Saving The Model
Validation Loss Decreased(0.00261--->0.00261)     Saving The Model
Validation Loss Decreased(0.00261--->0.00261)     Saving The Model
Validation Loss Decreased(0.00261--->0.00261)     Saving The Model
Validation Loss Decreased(0.00261--->0.00261)     Saving The Model
Validation Loss Decreased(0.00261--->0.00261)     Saving The Model
Validation Loss Decreased(0.00261--->0.00261)     Saving The Model
Validation Loss Decreased(0.00261--->0.00261)     Saving The Model
Validation Loss Decreased(0.00261--->0.00260)     Saving The Model
Validation Loss Decreased(0.00260--->0.00260)     Saving The Model
Validation Loss Decreased(0.00260--->0.00260)     Saving The Model
Validation Loss Decreased(0.00260--->0.00260)     Saving The Model
Validation Loss Decreased(0.00260--->0.00260)     Saving The Model
Validation Loss Decreased(0.00260--->0.00260)     Saving The Model
Validation Loss Decreased(0.00260--->0.00260)     Saving The Model
Validation Loss Decreased(0.00260--->0.00260)     Saving The Model
Validation Loss Decreased(0.00260--->0.00260)     Saving The Model
Validation Loss Decreased(0.00260--->0.00260)     Saving The Model
Validation Loss Decreased(0.00260--->0.00260)     Saving The Model
Validation Loss Decreased(0.00260--->0.00260)     Saving The Model
```

```
Validation Loss Decreased(0.00260--->0.00260)    Saving The Model
Validation Loss Decreased(0.00260--->0.00260)    Saving The Model
Validation Loss Decreased(0.00260--->0.00260)    Saving The Model
Validation Loss Decreased(0.00260--->0.00260)    Saving The Model
Validation Loss Decreased(0.00260--->0.00260)    Saving The Model
Validation Loss Decreased(0.00260--->0.00260)    Saving The Model
Validation Loss Decreased(0.00260--->0.00260)    Saving The Model
Validation Loss Decreased(0.00260--->0.00260)    Saving The Model
Validation Loss Decreased(0.00260--->0.00260)    Saving The Model
Validation Loss Decreased(0.00260--->0.00260)    Saving The Model
Validation Loss Decreased(0.00260--->0.00260)    Saving The Model
Validation Loss Decreased(0.00260--->0.00260)    Saving The Model
Validation Loss Decreased(0.00260--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Epoch 600              Training Loss: 0.00110                    Val
idation Loss: 0.00259
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
```
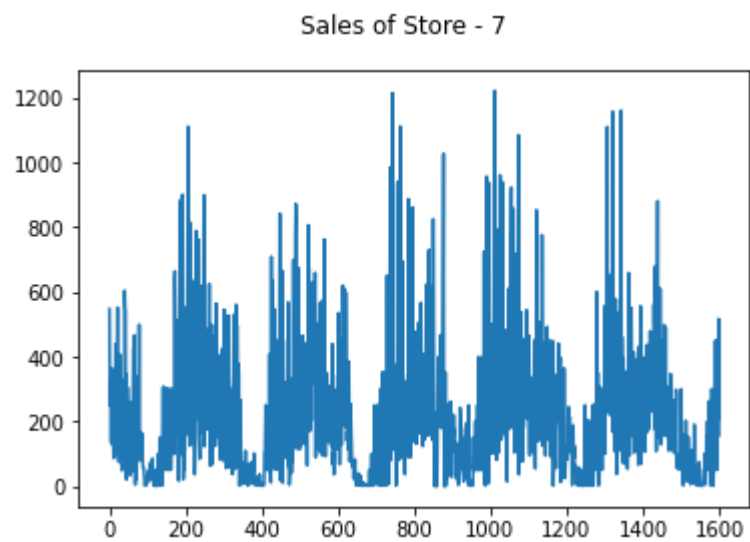
```
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00259)    Saving The Model
Validation Loss Decreased(0.00259--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Epoch 700              Training Loss: 0.00109                    Val
idation Loss: 0.00259
Epoch 800              Training Loss: 0.00109                    Val
idation Loss: 0.00260
Epoch 900              Training Loss: 0.00109                    Val
idation Loss: 0.00259
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
```

```
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Epoch 1000              Training Loss: 0.00108                    Val
idation Loss: 0.00258
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00258)    Saving The Model
Validation Loss Decreased(0.00258--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
```

```
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00257)    Saving The Model
Validation Loss Decreased(0.00257--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00256)    Saving The Model
Validation Loss Decreased(0.00256--->0.00255)    Saving The Model
Validation Loss Decreased(0.00255--->0.00255)    Saving The Model
Validation Loss Decreased(0.00255--->0.00255)    Saving The Model
Validation Loss Decreased(0.00255--->0.00255)    Saving The Model
Epoch 1100            Training Loss: 0.00107                   Val
idation Loss: 0.00255
Validation Loss Decreased(0.00255--->0.00255)    Saving The Model
Validation Loss Decreased(0.00255--->0.00255)    Saving The Model
Validation Loss Decreased(0.00255--->0.00255)    Saving The Model
Validation Loss Decreased(0.00255--->0.00255)    Saving The Model
```

```
Validation Loss Decreased(0.00255--->0.00255)    Saving The Model
Validation Loss Decreased(0.00255--->0.00255)    Saving The Model
Validation Loss Decreased(0.00255--->0.00255)    Saving The Model
Validation Loss Decreased(0.00255--->0.00255)    Saving The Model
Validation Loss Decreased(0.00255--->0.00255)    Saving The Model
Validation Loss Decreased(0.00255--->0.00255)    Saving The Model
Validation Loss Decreased(0.00255--->0.00255)    Saving The Model
Validation Loss Decreased(0.00255--->0.00255)    Saving The Model
Validation Loss Decreased(0.00255--->0.00255)    Saving The Model
Validation Loss Decreased(0.00255--->0.00255)    Saving The Model
Validation Loss Decreased(0.00255--->0.00255)    Saving The Model
Validation Loss Decreased(0.00255--->0.00255)    Saving The Model
Validation Loss Decreased(0.00255--->0.00255)    Saving The Model
Validation Loss Decreased(0.00255--->0.00255)    Saving The Model
Validation Loss Decreased(0.00255--->0.00255)    Saving The Model
Validation Loss Decreased(0.00255--->0.00255)    Saving The Model
Validation Loss Decreased(0.00255--->0.00255)    Saving The Model
Validation Loss Decreased(0.00255--->0.00254)    Saving The Model
Validation Loss Decreased(0.00254--->0.00254)    Saving The Model
Validation Loss Decreased(0.00254--->0.00254)    Saving The Model
Validation Loss Decreased(0.00254--->0.00254)    Saving The Model
Validation Loss Decreased(0.00254--->0.00254)    Saving The Model
Validation Loss Decreased(0.00254--->0.00254)    Saving The Model
Validation Loss Decreased(0.00254--->0.00254)    Saving The Model
Validation Loss Decreased(0.00254--->0.00254)    Saving The Model
Validation Loss Decreased(0.00254--->0.00254)    Saving The Model
Validation Loss Decreased(0.00254--->0.00254)    Saving The Model
Validation Loss Decreased(0.00254--->0.00254)    Saving The Model
Validation Loss Decreased(0.00254--->0.00254)    Saving The Model
Validation Loss Decreased(0.00254--->0.00254)    Saving The Model
Validation Loss Decreased(0.00254--->0.00254)    Saving The Model
Validation Loss Decreased(0.00254--->0.00254)    Saving The Model
Validation Loss Decreased(0.00254--->0.00254)    Saving The Model
Validation Loss Decreased(0.00254--->0.00253)    Saving The Model
Validation Loss Decreased(0.00253--->0.00253)    Saving The Model
Validation Loss Decreased(0.00253--->0.00253)    Saving The Model
Validation Loss Decreased(0.00253--->0.00253)    Saving The Model
Validation Loss Decreased(0.00253--->0.00253)    Saving The Model
Validation Loss Decreased(0.00253--->0.00253)    Saving The Model
Validation Loss Decreased(0.00253--->0.00253)    Saving The Model
Validation Loss Decreased(0.00253--->0.00253)    Saving The Model
Validation Loss Decreased(0.00253--->0.00253)    Saving The Model
Validation Loss Decreased(0.00253--->0.00253)    Saving The Model
Validation Loss Decreased(0.00253--->0.00253)    Saving The Model
Validation Loss Decreased(0.00253--->0.00252)    Saving The Model
Validation Loss Decreased(0.00252--->0.00252)    Saving The Model
Validation Loss Decreased(0.00252--->0.00252)    Saving The Model
Validation Loss Decreased(0.00252--->0.00252)    Saving The Model
Validation Loss Decreased(0.00252--->0.00252)    Saving The Model
Validation Loss Decreased(0.00252--->0.00252)    Saving The Model
Validation Loss Decreased(0.00252--->0.00252)    Saving The Model
Validation Loss Decreased(0.00252--->0.00252)    Saving The Model
Validation Loss Decreased(0.00252--->0.00251)    Saving The Model
Validation Loss Decreased(0.00251--->0.00251)    Saving The Model
Validation Loss Decreased(0.00251--->0.00251)    Saving The Model
Validation Loss Decreased(0.00251--->0.00251)    Saving The Model
Validation Loss Decreased(0.00251--->0.00251)    Saving The Model
```

Validation Loss Decreased(0.00251--->0.00251)   Saving The Model
Validation Loss Decreased(0.00251--->0.00250)   Saving The Model
Validation Loss Decreased(0.00250--->0.00250)   Saving The Model
Validation Loss Decreased(0.00250--->0.00250)   Saving The Model
Validation Loss Decreased(0.00250--->0.00250)   Saving The Model
Validation Loss Decreased(0.00250--->0.00250)   Saving The Model
Validation Loss Decreased(0.00250--->0.00250)   Saving The Model
Validation Loss Decreased(0.00250--->0.00249)   Saving The Model
Validation Loss Decreased(0.00249--->0.00249)   Saving The Model
Validation Loss Decreased(0.00249--->0.00249)   Saving The Model
Validation Loss Decreased(0.00249--->0.00249)   Saving The Model
Validation Loss Decreased(0.00249--->0.00249)   Saving The Model
Validation Loss Decreased(0.00249--->0.00249)   Saving The Model
Validation Loss Decreased(0.00249--->0.00248)   Saving The Model
Validation Loss Decreased(0.00248--->0.00248)   Saving The Model
Validation Loss Decreased(0.00248--->0.00248)   Saving The Model
Validation Loss Decreased(0.00248--->0.00248)   Saving The Model
Validation Loss Decreased(0.00248--->0.00248)   Saving The Model
Validation Loss Decreased(0.00248--->0.00248)   Saving The Model
Validation Loss Decreased(0.00248--->0.00248)   Saving The Model
Validation Loss Decreased(0.00248--->0.00248)   Saving The Model
Validation Loss Decreased(0.00248--->0.00248)   Saving The Model
Validation Loss Decreased(0.00248--->0.00248)   Saving The Model
Validation Loss Decreased(0.00248--->0.00248)   Saving The Model
Validation Loss Decreased(0.00248--->0.00247)   Saving The Model
Validation Loss Decreased(0.00247--->0.00247)   Saving The Model
Validation Loss Decreased(0.00247--->0.00247)   Saving The Model
Validation Loss Decreased(0.00247--->0.00247)   Saving The Model
Validation Loss Decreased(0.00247--->0.00247)   Saving The Model
Validation Loss Decreased(0.00247--->0.00247)   Saving The Model
Validation Loss Decreased(0.00247--->0.00247)   Saving The Model
Validation Loss Decreased(0.00247--->0.00247)   Saving The Model
Validation Loss Decreased(0.00247--->0.00247)   Saving The Model
Epoch 1200   Training Loss: 0.00101   Val
idation Loss: 0.00247
Validation Loss Decreased(0.00247--->0.00247)   Saving The Model
Validation Loss Decreased(0.00247--->0.00247)   Saving The Model
Validation Loss Decreased(0.00247--->0.00247)   Saving The Model
Validation Loss Decreased(0.00247--->0.00247)   Saving The Model
Validation Loss Decreased(0.00247--->0.00247)   Saving The Model
Validation Loss Decreased(0.00247--->0.00247)   Saving The Model
Validation Loss Decreased(0.00247--->0.00247)   Saving The Model
Validation Loss Decreased(0.00247--->0.00247)   Saving The Model
Validation Loss Decreased(0.00247--->0.00247)   Saving The Model
Validation Loss Decreased(0.00247--->0.00247)   Saving The Model
Validation Loss Decreased(0.00247--->0.00247)   Saving The Model
Validation Loss Decreased(0.00247--->0.00247)   Saving The Model
Validation Loss Decreased(0.00247--->0.00247)   Saving The Model
Validation Loss Decreased(0.00247--->0.00247)   Saving The Model
Validation Loss Decreased(0.00247--->0.00247)   Saving The Model
Validation Loss Decreased(0.00247--->0.00247)   Saving The Model
Validation Loss Decreased(0.00247--->0.00247)   Saving The Model
Validation Loss Decreased(0.00247--->0.00247)   Saving The Model
Validation Loss Decreased(0.00247--->0.00246)   Saving The Model
Validation Loss Decreased(0.00246--->0.00246)   Saving The Model
Epoch 1300   Training Loss: 0.00098   Val
idation Loss: 0.00250
Epoch 1400   Training Loss: 0.00098   Val
idation Loss: 0.00261

```
    Epoch 1500               Training Loss: 0.00095                    Val
    idation Loss: 0.00270
    Epoch 1600               Training Loss: 0.00096                    Val
    idation Loss: 0.00272
    Epoch 1700               Training Loss: 0.00105                    Val
    idation Loss: 0.00278
    Validation Loss Decreased(0.00246--->0.00246)    Saving The Model
    Validation Loss Decreased(0.00246--->0.00245)    Saving The Model
    Validation Loss Decreased(0.00245--->0.00245)    Saving The Model
    Validation Loss Decreased(0.00245--->0.00245)    Saving The Model
    Validation Loss Decreased(0.00245--->0.00245)    Saving The Model
    Epoch 1800               Training Loss: 0.00095                    Val
    idation Loss: 0.00255
    Epoch 1900               Training Loss: 0.00112                    Val
    idation Loss: 0.00260
    Validation Loss Decreased(0.00245--->0.00245)    Saving The Model
    Validation Loss Decreased(0.00245--->0.00244)    Saving The Model
    Validation Loss Decreased(0.00244--->0.00244)    Saving The Model
    Validation Loss Decreased(0.00244--->0.00244)    Saving The Model
    Validation Loss Decreased(0.00244--->0.00244)    Saving The Model
    Validation Loss Decreased(0.00244--->0.00244)    Saving The Model
    Validation Loss Decreased(0.00244--->0.00244)    Saving The Model
    Validation Loss Decreased(0.00244--->0.00244)    Saving The Model
    Validation Loss Decreased(0.00244--->0.00244)    Saving The Model
    Validation Loss Decreased(0.00244--->0.00243)    Saving The Model
    Validation Loss Decreased(0.00243--->0.00243)    Saving The Model
    Validation Loss Decreased(0.00243--->0.00243)    Saving The Model
    Validation Loss Decreased(0.00243--->0.00243)    Saving The Model
    Validation Loss Decreased(0.00243--->0.00243)    Saving The Model
    Validation Loss Decreased(0.00243--->0.00243)    Saving The Model
    Validation Loss Decreased(0.00243--->0.00243)    Saving The Model
    Validation Loss Decreased(0.00243--->0.00243)    Saving The Model
    Validation Loss Decreased(0.00243--->0.00242)    Saving The Model
    Validation Loss Decreased(0.00242--->0.00242)    Saving The Model
    Validation Loss Decreased(0.00242--->0.00242)    Saving The Model
    Validation Loss Decreased(0.00242--->0.00242)    Saving The Model
    Validation Loss Decreased(0.00242--->0.00242)    Saving The Model
    Validation Loss Decreased(0.00242--->0.00242)    Saving The Model
    Validation Loss Decreased(0.00242--->0.00242)    Saving The Model
    Validation Loss Decreased(0.00242--->0.00242)    Saving The Model
    Validation Loss Decreased(0.00242--->0.00242)    Saving The Model
    Validation Loss Decreased(0.00242--->0.00242)    Saving The Model
    Validation Loss Decreased(0.00242--->0.00242)    Saving The Model
    Validation Loss Decreased(0.00242--->0.00242)    Saving The Model
    Validation Loss Decreased(0.00242--->0.00242)    Saving The Model
    Validation Loss Decreased(0.00242--->0.00242)    Saving The Model
    Validation Loss Decreased(0.00242--->0.00241)    Saving The Model
    Validation Loss Decreased(0.00241--->0.00241)    Saving The Model
    Validation Loss Decreased(0.00241--->0.00241)    Saving The Model
    Validation Loss Decreased(0.00241--->0.00241)    Saving The Model
    Validation Loss Decreased(0.00241--->0.00241)    Saving The Model
    Validation Loss Decreased(0.00241--->0.00241)    Saving The Model
    Validation Loss Decreased(0.00241--->0.00241)    Saving The Model
    Validation Loss Decreased(0.00241--->0.00241)    Saving The Model
    Validation Loss Decreased(0.00241--->0.00241)    Saving The Model
    Validation Loss Decreased(0.00241--->0.00241)    Saving The Model
    Epoch 2000               Training Loss: 0.00098                    Val
    idation Loss: 0.00241
    Validation Loss Decreased(0.00241--->0.00241)    Saving The Model
```
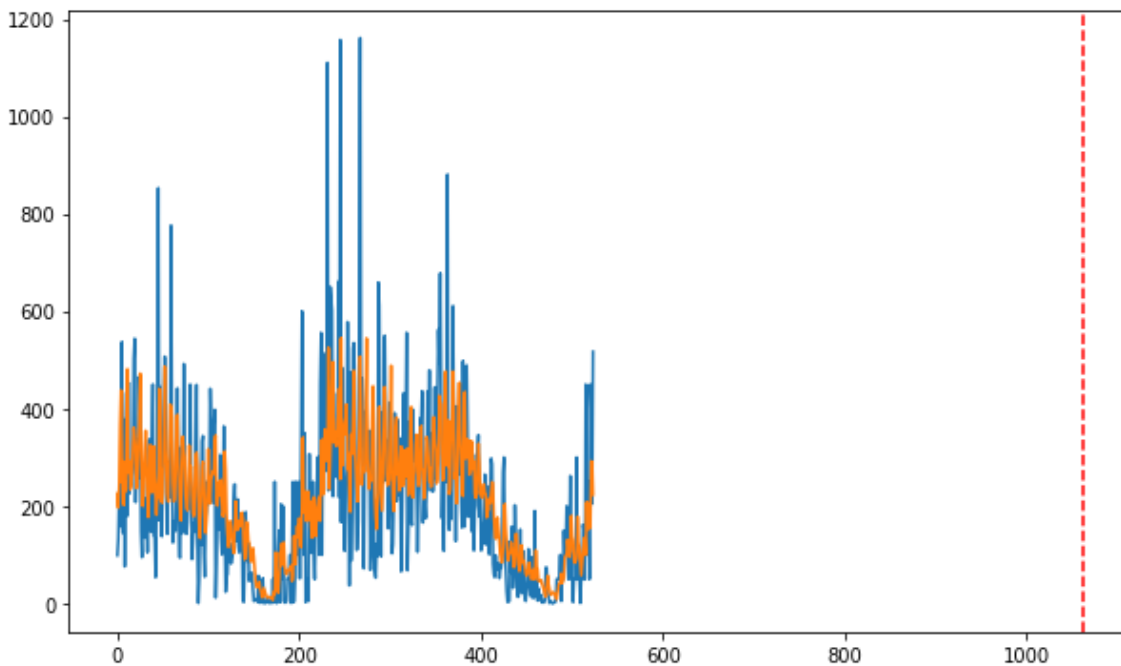
```
Validation Loss Decreased(0.00241--->0.00241)    Saving The Model
Validation Loss Decreased(0.00241--->0.00241)    Saving The Model
Validation Loss Decreased(0.00241--->0.00240)    Saving The Model
Validation Loss Decreased(0.00240--->0.00240)    Saving The Model
Validation Loss Decreased(0.00240--->0.00240)    Saving The Model
Validation Loss Decreased(0.00240--->0.00240)    Saving The Model
Validation Loss Decreased(0.00240--->0.00240)    Saving The Model
Validation Loss Decreased(0.00240--->0.00240)    Saving The Model
Validation Loss Decreased(0.00240--->0.00240)    Saving The Model
Validation Loss Decreased(0.00240--->0.00240)    Saving The Model
Validation Loss Decreased(0.00240--->0.00240)    Saving The Model
Validation Loss Decreased(0.00240--->0.00240)    Saving The Model
Validation Loss Decreased(0.00240--->0.00240)    Saving The Model
Validation Loss Decreased(0.00240--->0.00240)    Saving The Model
Validation Loss Decreased(0.00240--->0.00240)    Saving The Model
Validation Loss Decreased(0.00240--->0.00239)    Saving The Model
Validation Loss Decreased(0.00239--->0.00239)    Saving The Model
Validation Loss Decreased(0.00239--->0.00239)    Saving The Model
Validation Loss Decreased(0.00239--->0.00239)    Saving The Model
Validation Loss Decreased(0.00239--->0.00239)    Saving The Model
Validation Loss Decreased(0.00239--->0.00239)    Saving The Model
Validation Loss Decreased(0.00239--->0.00239)    Saving The Model
Validation Loss Decreased(0.00239--->0.00239)    Saving The Model
Validation Loss Decreased(0.00239--->0.00239)    Saving The Model
Validation Loss Decreased(0.00239--->0.00239)    Saving The Model
Validation Loss Decreased(0.00239--->0.00238)    Saving The Model
Validation Loss Decreased(0.00238--->0.00238)    Saving The Model
Validation Loss Decreased(0.00238--->0.00238)    Saving The Model
Validation Loss Decreased(0.00238--->0.00238)    Saving The Model
Validation Loss Decreased(0.00238--->0.00238)    Saving The Model
Validation Loss Decreased(0.00238--->0.00238)    Saving The Model
Validation Loss Decreased(0.00238--->0.00238)    Saving The Model
Validation Loss Decreased(0.00238--->0.00238)    Saving The Model
Validation Loss Decreased(0.00238--->0.00237)    Saving The Model
Validation Loss Decreased(0.00237--->0.00237)    Saving The Model
Validation Loss Decreased(0.00237--->0.00237)    Saving The Model
Validation Loss Decreased(0.00237--->0.00237)    Saving The Model
Validation Loss Decreased(0.00237--->0.00237)    Saving The Model
Validation Loss Decreased(0.00237--->0.00237)    Saving The Model
Validation Loss Decreased(0.00237--->0.00236)    Saving The Model
Validation Loss Decreased(0.00236--->0.00236)    Saving The Model
Validation Loss Decreased(0.00236--->0.00236)    Saving The Model
Validation Loss Decreased(0.00236--->0.00236)    Saving The Model
Validation Loss Decreased(0.00236--->0.00236)    Saving The Model
Validation Loss Decreased(0.00236--->0.00236)    Saving The Model
Validation Loss Decreased(0.00236--->0.00236)    Saving The Model
Validation Loss Decreased(0.00236--->0.00235)    Saving The Model
Validation Loss Decreased(0.00235--->0.00235)    Saving The Model
Validation Loss Decreased(0.00235--->0.00235)    Saving The Model
Validation Loss Decreased(0.00235--->0.00235)    Saving The Model
Validation Loss Decreased(0.00235--->0.00235)    Saving The Model
Validation Loss Decreased(0.00235--->0.00235)    Saving The Model
Validation Loss Decreased(0.00235--->0.00235)    Saving The Model
Validation Loss Decreased(0.00235--->0.00234)    Saving The Model
Validation Loss Decreased(0.00234--->0.00234)    Saving The Model
Validation Loss Decreased(0.00234--->0.00234)    Saving The Model
Validation Loss Decreased(0.00234--->0.00234)    Saving The Model
Validation Loss Decreased(0.00234--->0.00234)    Saving The Model
Validation Loss Decreased(0.00234--->0.00234)    Saving The Model
Validation Loss Decreased(0.00234--->0.00234)    Saving The Model
Validation Loss Decreased(0.00234--->0.00233)    Saving The Model
```

```
Validation Loss Decreased(0.00233--->0.00233)     Saving The Model
Validation Loss Decreased(0.00233--->0.00233)     Saving The Model
Validation Loss Decreased(0.00233--->0.00233)     Saving The Model
Validation Loss Decreased(0.00233--->0.00233)     Saving The Model
Validation Loss Decreased(0.00233--->0.00233)     Saving The Model
Validation Loss Decreased(0.00233--->0.00233)     Saving The Model
Validation Loss Decreased(0.00233--->0.00233)     Saving The Model
Validation Loss Decreased(0.00233--->0.00232)     Saving The Model
Validation Loss Decreased(0.00232--->0.00232)     Saving The Model
Validation Loss Decreased(0.00232--->0.00232)     Saving The Model
Validation Loss Decreased(0.00232--->0.00232)     Saving The Model
Validation Loss Decreased(0.00232--->0.00232)     Saving The Model
Validation Loss Decreased(0.00232--->0.00232)     Saving The Model
Validation Loss Decreased(0.00232--->0.00232)     Saving The Model
Validation Loss Decreased(0.00232--->0.00232)     Saving The Model
Validation Loss Decreased(0.00232--->0.00232)     Saving The Model
Validation Loss Decreased(0.00232--->0.00232)     Saving The Model
Validation Loss Decreased(0.00232--->0.00232)     Saving The Model
Validation Loss Decreased(0.00232--->0.00232)     Saving The Model
Validation Loss Decreased(0.00232--->0.00231)     Saving The Model
Validation Loss Decreased(0.00231--->0.00231)     Saving The Model
Validation Loss Decreased(0.00231--->0.00231)     Saving The Model
Validation Loss Decreased(0.00231--->0.00231)     Saving The Model
Validation Loss Decreased(0.00231--->0.00231)     Saving The Model
Validation Loss Decreased(0.00231--->0.00231)     Saving The Model
Validation Loss Decreased(0.00231--->0.00231)     Saving The Model
Validation Loss Decreased(0.00231--->0.00231)     Saving The Model
Validation Loss Decreased(0.00231--->0.00231)     Saving The Model
Validation Loss Decreased(0.00231--->0.00231)     Saving The Model
Validation Loss Decreased(0.00231--->0.00231)     Saving The Model
Validation Loss Decreased(0.00231--->0.00231)     Saving The Model
Validation Loss Decreased(0.00231--->0.00231)     Saving The Model
Validation Loss Decreased(0.00231--->0.00231)     Saving The Model
Validation Loss Decreased(0.00231--->0.00231)     Saving The Model
Validation Loss Decreased(0.00231--->0.00231)     Saving The Model
Validation Loss Decreased(0.00231--->0.00231)     Saving The Model
Epoch 2100              Training Loss: 0.00091                    Val
idation Loss: 0.00231
Validation Loss Decreased(0.00231--->0.00231)     Saving The Model
Validation Loss Decreased(0.00231--->0.00231)     Saving The Model
Validation Loss Decreased(0.00231--->0.00231)     Saving The Model
Validation Loss Decreased(0.00231--->0.00231)     Saving The Model
Validation Loss Decreased(0.00231--->0.00231)     Saving The Model
Validation Loss Decreased(0.00231--->0.00231)     Saving The Model
Validation Loss Decreased(0.00231--->0.00231)     Saving The Model
Validation Loss Decreased(0.00231--->0.00231)     Saving The Model
Validation Loss Decreased(0.00231--->0.00231)     Saving The Model
Epoch 2200              Training Loss: 0.00088                    Val
idation Loss: 0.00239
Epoch 2300              Training Loss: 0.00084                    Val
idation Loss: 0.00258
Epoch 2400              Training Loss: 0.00081                    Val
idation Loss: 0.00259
Epoch 2500              Training Loss: 0.00076                    Val
idation Loss: 0.00242
Validation Loss Decreased(0.00231--->0.00231)     Saving The Model
Validation Loss Decreased(0.00231--->0.00231)     Saving The Model
Validation Loss Decreased(0.00231--->0.00230)     Saving The Model
```

```
Validation Loss Decreased(0.00230--->0.00230)    Saving The Model
Epoch 2600                 Training Loss: 0.00073                    Val
idation Loss: 0.00231
Validation Loss Decreased(0.00230--->0.00229)    Saving The Model
Validation Loss Decreased(0.00229--->0.00228)    Saving The Model
Validation Loss Decreased(0.00228--->0.00228)    Saving The Model
Validation Loss Decreased(0.00228--->0.00227)    Saving The Model
Validation Loss Decreased(0.00227--->0.00226)    Saving The Model
Validation Loss Decreased(0.00226--->0.00225)    Saving The Model
Validation Loss Decreased(0.00225--->0.00225)    Saving The Model
Epoch 2700                 Training Loss: 0.00074                    Val
idation Loss: 0.00231
Epoch 2800                 Training Loss: 0.00066                    Val
idation Loss: 0.00248
Epoch 2900                 Training Loss: 0.00065                    Val
idation Loss: 0.00248
Epoch 3000                 Training Loss: 0.00063                    Val
idation Loss: 0.00261
Epoch 3100                 Training Loss: 0.00063                    Val
idation Loss: 0.00246
Epoch 3200                 Training Loss: 0.00083                    Val
idation Loss: 0.00249
Epoch 3300                 Training Loss: 0.00064                    Val
idation Loss: 0.00259
Epoch 3400                 Training Loss: 0.00061                    Val
idation Loss: 0.00243
Epoch 3500                 Training Loss: 0.00073                    Val
idation Loss: 0.00257
Epoch 3600                 Training Loss: 0.00057                    Val
idation Loss: 0.00258
Epoch 3700                 Training Loss: 0.00056                    Val
idation Loss: 0.00257
Epoch 3800                 Training Loss: 0.00058                    Val
idation Loss: 0.00239
Validation Loss Decreased(0.00225--->0.00223)    Saving The Model
Validation Loss Decreased(0.00223--->0.00220)    Saving The Model
Validation Loss Decreased(0.00220--->0.00214)    Saving The Model
Epoch 3900                 Training Loss: 0.00050                    Val
idation Loss: 0.00274
Epoch 4000                 Training Loss: 0.00050                    Val
idation Loss: 0.00283
```

Prediction
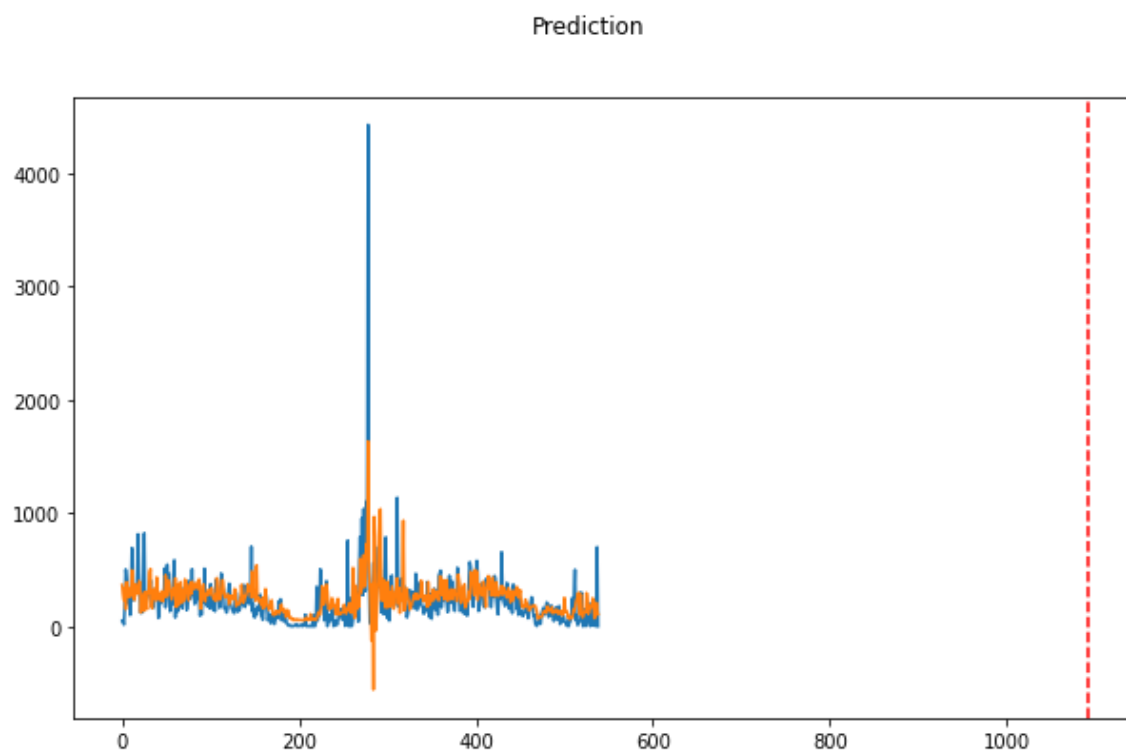

```
RMSE of validation set: 8.857123968424967
RMSE of entire data set: 3.853313693717503
```

Sales of Store - 7

```
Validation Loss Decreased(inf--->0.04104)        Saving The Model
Validation Loss Decreased(0.04104--->0.02630)    Saving The Model
Validation Loss Decreased(0.02630--->0.02027)    Saving The Model
Validation Loss Decreased(0.02027--->0.02021)    Saving The Model
Validation Loss Decreased(0.02021--->0.01964)    Saving The Model
Validation Loss Decreased(0.01964--->0.01941)    Saving The Model
Validation Loss Decreased(0.01941--->0.01915)    Saving The Model
Validation Loss Decreased(0.01915--->0.01898)    Saving The Model
Validation Loss Decreased(0.01898--->0.01896)    Saving The Model
Validation Loss Decreased(0.01896--->0.01896)    Saving The Model
Validation Loss Decreased(0.01896--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01841)    Saving The Model
Validation Loss Decreased(0.01841--->0.01822)    Saving The Model
Validation Loss Decreased(0.01822--->0.01809)    Saving The Model
Validation Loss Decreased(0.01809--->0.01800)    Saving The Model
Validation Loss Decreased(0.01800--->0.01792)    Saving The Model
Validation Loss Decreased(0.01792--->0.01785)    Saving The Model
Validation Loss Decreased(0.01785--->0.01778)    Saving The Model
Validation Loss Decreased(0.01778--->0.01771)    Saving The Model
Validation Loss Decreased(0.01771--->0.01765)    Saving The Model
Validation Loss Decreased(0.01765--->0.01759)    Saving The Model
Validation Loss Decreased(0.01759--->0.01756)    Saving The Model
Validation Loss Decreased(0.01756--->0.01755)    Saving The Model
Validation Loss Decreased(0.01755--->0.01755)    Saving The Model
Validation Loss Decreased(0.01755--->0.01751)    Saving The Model
Validation Loss Decreased(0.01751--->0.01743)    Saving The Model
Validation Loss Decreased(0.01743--->0.01731)    Saving The Model
Validation Loss Decreased(0.01731--->0.01716)    Saving The Model
Validation Loss Decreased(0.01716--->0.01701)    Saving The Model
Validation Loss Decreased(0.01701--->0.01685)    Saving The Model
Validation Loss Decreased(0.01685--->0.01671)    Saving The Model
Validation Loss Decreased(0.01671--->0.01659)    Saving The Model
Validation Loss Decreased(0.01659--->0.01648)    Saving The Model
Validation Loss Decreased(0.01648--->0.01639)    Saving The Model
Validation Loss Decreased(0.01639--->0.01630)    Saving The Model
Validation Loss Decreased(0.01630--->0.01622)    Saving The Model
Validation Loss Decreased(0.01622--->0.01614)    Saving The Model
Validation Loss Decreased(0.01614--->0.01608)    Saving The Model
Validation Loss Decreased(0.01608--->0.01602)    Saving The Model
Validation Loss Decreased(0.01602--->0.01596)    Saving The Model
Validation Loss Decreased(0.01596--->0.01590)    Saving The Model
Validation Loss Decreased(0.01590--->0.01582)    Saving The Model
Validation Loss Decreased(0.01582--->0.01573)    Saving The Model
Validation Loss Decreased(0.01573--->0.01561)    Saving The Model
Validation Loss Decreased(0.01561--->0.01550)    Saving The Model
Validation Loss Decreased(0.01550--->0.01539)    Saving The Model
Validation Loss Decreased(0.01539--->0.01530)    Saving The Model
Validation Loss Decreased(0.01530--->0.01522)    Saving The Model
Validation Loss Decreased(0.01522--->0.01514)    Saving The Model
Validation Loss Decreased(0.01514--->0.01508)    Saving The Model
Validation Loss Decreased(0.01508--->0.01502)    Saving The Model
Validation Loss Decreased(0.01502--->0.01497)    Saving The Model
Validation Loss Decreased(0.01497--->0.01492)    Saving The Model
Validation Loss Decreased(0.01492--->0.01487)    Saving The Model
Validation Loss Decreased(0.01487--->0.01481)    Saving The Model
Validation Loss Decreased(0.01481--->0.01475)    Saving The Model
Validation Loss Decreased(0.01475--->0.01469)    Saving The Model
Validation Loss Decreased(0.01469--->0.01464)    Saving The Model
Validation Loss Decreased(0.01464--->0.01460)    Saving The Model
Validation Loss Decreased(0.01460--->0.01456)    Saving The Model
Validation Loss Decreased(0.01456--->0.01453)    Saving The Model
```

```
Validation Loss Decreased(0.01453--->0.01450)    Saving The Model
Validation Loss Decreased(0.01450--->0.01447)    Saving The Model
Validation Loss Decreased(0.01447--->0.01443)    Saving The Model
Validation Loss Decreased(0.01443--->0.01439)    Saving The Model
Validation Loss Decreased(0.01439--->0.01435)    Saving The Model
Validation Loss Decreased(0.01435--->0.01431)    Saving The Model
Validation Loss Decreased(0.01431--->0.01427)    Saving The Model
Validation Loss Decreased(0.01427--->0.01424)    Saving The Model
Validation Loss Decreased(0.01424--->0.01421)    Saving The Model
Validation Loss Decreased(0.01421--->0.01419)    Saving The Model
Validation Loss Decreased(0.01419--->0.01415)    Saving The Model
Validation Loss Decreased(0.01415--->0.01410)    Saving The Model
Validation Loss Decreased(0.01410--->0.01406)    Saving The Model
Validation Loss Decreased(0.01406--->0.01401)    Saving The Model
Epoch 100             Training Loss: 0.02174            Val
idation Loss: 0.01397
Validation Loss Decreased(0.01401--->0.01397)    Saving The Model
Validation Loss Decreased(0.01397--->0.01394)    Saving The Model
Validation Loss Decreased(0.01394--->0.01391)    Saving The Model
Validation Loss Decreased(0.01391--->0.01388)    Saving The Model
Validation Loss Decreased(0.01388--->0.01384)    Saving The Model
Validation Loss Decreased(0.01384--->0.01381)    Saving The Model
Validation Loss Decreased(0.01381--->0.01378)    Saving The Model
Validation Loss Decreased(0.01378--->0.01377)    Saving The Model
Validation Loss Decreased(0.01377--->0.01377)    Saving The Model
Validation Loss Decreased(0.01377--->0.01377)    Saving The Model
Validation Loss Decreased(0.01377--->0.01376)    Saving The Model
Validation Loss Decreased(0.01376--->0.01374)    Saving The Model
Validation Loss Decreased(0.01374--->0.01374)    Saving The Model
Epoch 200             Training Loss: 0.02019            Val
idation Loss: 0.01391
Validation Loss Decreased(0.01374--->0.01372)    Saving The Model
Validation Loss Decreased(0.01372--->0.01370)    Saving The Model
Validation Loss Decreased(0.01370--->0.01368)    Saving The Model
Validation Loss Decreased(0.01368--->0.01366)    Saving The Model
Validation Loss Decreased(0.01366--->0.01363)    Saving The Model
Validation Loss Decreased(0.01363--->0.01360)    Saving The Model
Validation Loss Decreased(0.01360--->0.01357)    Saving The Model
Validation Loss Decreased(0.01357--->0.01355)    Saving The Model
Validation Loss Decreased(0.01355--->0.01353)    Saving The Model
Validation Loss Decreased(0.01353--->0.01352)    Saving The Model
Validation Loss Decreased(0.01352--->0.01351)    Saving The Model
Validation Loss Decreased(0.01351--->0.01345)    Saving The Model
Validation Loss Decreased(0.01345--->0.01340)    Saving The Model
Validation Loss Decreased(0.01340--->0.01338)    Saving The Model
Epoch 300             Training Loss: 0.01757             Val
idation Loss: 0.01369
Epoch 400             Training Loss: 0.01597             Val
idation Loss: 0.01505
Epoch 500             Training Loss: 0.01499             Val
idation Loss: 0.01598
Epoch 600             Training Loss: 0.01400             Val
idation Loss: 0.01610
Epoch 700             Training Loss: 0.01279             Val
idation Loss: 0.01724
Epoch 800             Training Loss: 0.01149             Val
idation Loss: 0.01703
Epoch 900             Training Loss: 0.01000             Val
idation Loss: 0.01812
Epoch 1000            Training Loss: 0.00863             Val
idation Loss: 0.01970
```

Epoch 1100   Training Loss: 0.00738   Val
idation Loss: 0.02044
Epoch 1200   Training Loss: 0.00674   Val
idation Loss: 0.02145
Epoch 1300   Training Loss: 0.00573   Val
idation Loss: 0.02181
Epoch 1400   Training Loss: 0.00574   Val
idation Loss: 0.02307
Epoch 1500   Training Loss: 0.00435   Val
idation Loss: 0.02313
Epoch 1600   Training Loss: 0.00370   Val
idation Loss: 0.02430
Epoch 1700   Training Loss: 0.00319   Val
idation Loss: 0.02590
Epoch 1800   Training Loss: 0.00279   Val
idation Loss: 0.02589
Epoch 1900   Training Loss: 0.00262   Val
idation Loss: 0.02581
Epoch 2000   Training Loss: 0.00230   Val
idation Loss: 0.02566
Epoch 2100   Training Loss: 0.00223   Val
idation Loss: 0.02711
Epoch 2200   Training Loss: 0.00198   Val
idation Loss: 0.02735
Stopping the training early   Model saved
          Training Loss: 0.002061421750113368
          Validation Loss: 0.01338492427021265

Prediction

 RMSE of validation set: 6.186196489067741
 RMSE of entire data set: 3.9537313855157787

Sales of Store - 8
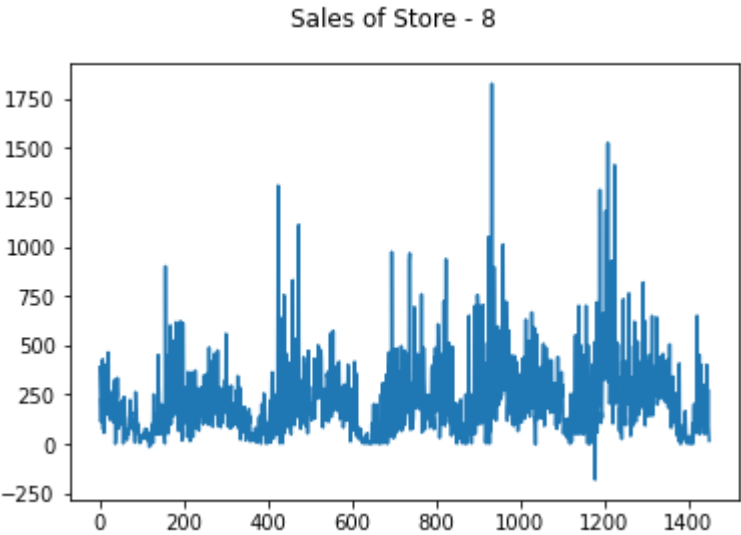
```
Validation Loss Decreased(inf--->0.14876)        Saving The Model
Validation Loss Decreased(0.14876--->0.11399)    Saving The Model
Validation Loss Decreased(0.11399--->0.08300)    Saving The Model
Validation Loss Decreased(0.08300--->0.05525)    Saving The Model
Validation Loss Decreased(0.05525--->0.03141)    Saving The Model
Validation Loss Decreased(0.03141--->0.01411)    Saving The Model
Validation Loss Decreased(0.01411--->0.00881)    Saving The Model
Validation Loss Decreased(0.00881--->0.00870)    Saving The Model
Epoch 100              Training Loss: 0.00741                    Val
idation Loss: 0.00875
Validation Loss Decreased(0.00870--->0.00870)    Saving The Model
Validation Loss Decreased(0.00870--->0.00869)    Saving The Model
Validation Loss Decreased(0.00869--->0.00868)    Saving The Model
Validation Loss Decreased(0.00868--->0.00867)    Saving The Model
Validation Loss Decreased(0.00867--->0.00865)    Saving The Model
Validation Loss Decreased(0.00865--->0.00864)    Saving The Model
Validation Loss Decreased(0.00864--->0.00863)    Saving The Model
Validation Loss Decreased(0.00863--->0.00862)    Saving The Model
Validation Loss Decreased(0.00862--->0.00861)    Saving The Model
Validation Loss Decreased(0.00861--->0.00860)    Saving The Model
Validation Loss Decreased(0.00860--->0.00859)    Saving The Model
Validation Loss Decreased(0.00859--->0.00858)    Saving The Model
Validation Loss Decreased(0.00858--->0.00857)    Saving The Model
Validation Loss Decreased(0.00857--->0.00857)    Saving The Model
Validation Loss Decreased(0.00857--->0.00856)    Saving The Model
Validation Loss Decreased(0.00856--->0.00856)    Saving The Model
Validation Loss Decreased(0.00856--->0.00855)    Saving The Model
Validation Loss Decreased(0.00855--->0.00855)    Saving The Model
Validation Loss Decreased(0.00855--->0.00854)    Saving The Model
Validation Loss Decreased(0.00854--->0.00853)    Saving The Model
Validation Loss Decreased(0.00853--->0.00852)    Saving The Model
Validation Loss Decreased(0.00852--->0.00851)    Saving The Model
Validation Loss Decreased(0.00851--->0.00850)    Saving The Model
Validation Loss Decreased(0.00850--->0.00849)    Saving The Model
Validation Loss Decreased(0.00849--->0.00848)    Saving The Model
Validation Loss Decreased(0.00848--->0.00847)    Saving The Model
Validation Loss Decreased(0.00847--->0.00846)    Saving The Model
Validation Loss Decreased(0.00846--->0.00846)    Saving The Model
Validation Loss Decreased(0.00846--->0.00845)    Saving The Model
Validation Loss Decreased(0.00845--->0.00844)    Saving The Model
Validation Loss Decreased(0.00844--->0.00843)    Saving The Model
Validation Loss Decreased(0.00843--->0.00842)    Saving The Model
Validation Loss Decreased(0.00842--->0.00842)    Saving The Model
Validation Loss Decreased(0.00842--->0.00841)    Saving The Model
Validation Loss Decreased(0.00841--->0.00840)    Saving The Model
Validation Loss Decreased(0.00840--->0.00840)    Saving The Model
Validation Loss Decreased(0.00840--->0.00839)    Saving The Model
Validation Loss Decreased(0.00839--->0.00838)    Saving The Model
Validation Loss Decreased(0.00838--->0.00837)    Saving The Model
Validation Loss Decreased(0.00837--->0.00836)    Saving The Model
Validation Loss Decreased(0.00836--->0.00835)    Saving The Model
Validation Loss Decreased(0.00835--->0.00834)    Saving The Model
Validation Loss Decreased(0.00834--->0.00833)    Saving The Model
Validation Loss Decreased(0.00833--->0.00832)    Saving The Model
Validation Loss Decreased(0.00832--->0.00831)    Saving The Model
Validation Loss Decreased(0.00831--->0.00830)    Saving The Model
Validation Loss Decreased(0.00830--->0.00830)    Saving The Model
Validation Loss Decreased(0.00830--->0.00829)    Saving The Model
Validation Loss Decreased(0.00829--->0.00828)    Saving The Model
Validation Loss Decreased(0.00828--->0.00827)    Saving The Model
Validation Loss Decreased(0.00827--->0.00826)    Saving The Model
```
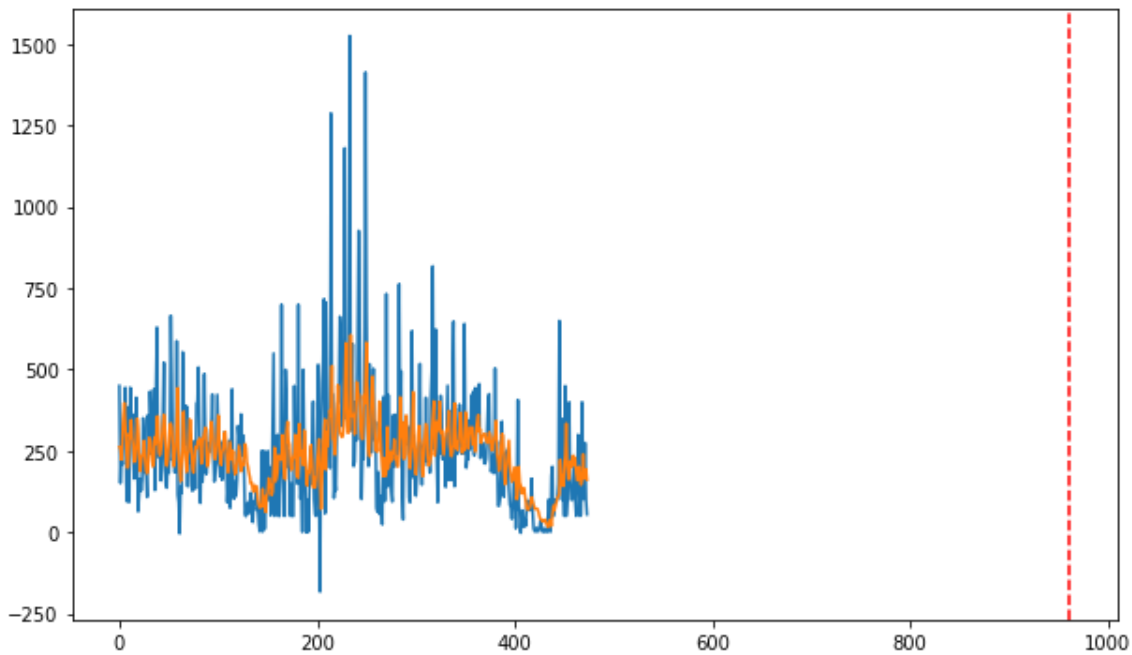
```
Validation Loss Decreased(0.00826--->0.00826)     Saving The Model
Validation Loss Decreased(0.00826--->0.00825)     Saving The Model
Validation Loss Decreased(0.00825--->0.00824)     Saving The Model
Validation Loss Decreased(0.00824--->0.00823)     Saving The Model
Validation Loss Decreased(0.00823--->0.00822)     Saving The Model
Validation Loss Decreased(0.00822--->0.00821)     Saving The Model
Validation Loss Decreased(0.00821--->0.00820)     Saving The Model
Validation Loss Decreased(0.00820--->0.00819)     Saving The Model
Validation Loss Decreased(0.00819--->0.00818)     Saving The Model
Validation Loss Decreased(0.00818--->0.00817)     Saving The Model
Validation Loss Decreased(0.00817--->0.00816)     Saving The Model
Validation Loss Decreased(0.00816--->0.00815)     Saving The Model
Validation Loss Decreased(0.00815--->0.00814)     Saving The Model
Validation Loss Decreased(0.00814--->0.00814)     Saving The Model
Validation Loss Decreased(0.00814--->0.00813)     Saving The Model
Validation Loss Decreased(0.00813--->0.00812)     Saving The Model
Validation Loss Decreased(0.00812--->0.00811)     Saving The Model
Validation Loss Decreased(0.00811--->0.00810)     Saving The Model
Validation Loss Decreased(0.00810--->0.00809)     Saving The Model
Validation Loss Decreased(0.00809--->0.00808)     Saving The Model
Validation Loss Decreased(0.00808--->0.00807)     Saving The Model
Validation Loss Decreased(0.00807--->0.00806)     Saving The Model
Validation Loss Decreased(0.00806--->0.00805)     Saving The Model
Validation Loss Decreased(0.00805--->0.00804)     Saving The Model
Validation Loss Decreased(0.00804--->0.00803)     Saving The Model
Validation Loss Decreased(0.00803--->0.00802)     Saving The Model
Validation Loss Decreased(0.00802--->0.00801)     Saving The Model
Validation Loss Decreased(0.00801--->0.00800)     Saving The Model
Validation Loss Decreased(0.00800--->0.00799)     Saving The Model
Validation Loss Decreased(0.00799--->0.00798)     Saving The Model
Validation Loss Decreased(0.00798--->0.00797)     Saving The Model
Validation Loss Decreased(0.00797--->0.00796)     Saving The Model
Validation Loss Decreased(0.00796--->0.00795)     Saving The Model
Validation Loss Decreased(0.00795--->0.00794)     Saving The Model
Validation Loss Decreased(0.00794--->0.00793)     Saving The Model
Validation Loss Decreased(0.00793--->0.00792)     Saving The Model
Validation Loss Decreased(0.00792--->0.00791)     Saving The Model
Epoch 200              Training Loss: 0.00677                     Val
idation Loss: 0.00790
Validation Loss Decreased(0.00791--->0.00790)     Saving The Model
Validation Loss Decreased(0.00790--->0.00789)     Saving The Model
Validation Loss Decreased(0.00789--->0.00787)     Saving The Model
Validation Loss Decreased(0.00787--->0.00786)     Saving The Model
Validation Loss Decreased(0.00786--->0.00785)     Saving The Model
Validation Loss Decreased(0.00785--->0.00784)     Saving The Model
Validation Loss Decreased(0.00784--->0.00783)     Saving The Model
Validation Loss Decreased(0.00783--->0.00782)     Saving The Model
Validation Loss Decreased(0.00782--->0.00781)     Saving The Model
Validation Loss Decreased(0.00781--->0.00780)     Saving The Model
Validation Loss Decreased(0.00780--->0.00779)     Saving The Model
Validation Loss Decreased(0.00779--->0.00778)     Saving The Model
Validation Loss Decreased(0.00778--->0.00777)     Saving The Model
Validation Loss Decreased(0.00777--->0.00776)     Saving The Model
Validation Loss Decreased(0.00776--->0.00775)     Saving The Model
Validation Loss Decreased(0.00775--->0.00773)     Saving The Model
Validation Loss Decreased(0.00773--->0.00772)     Saving The Model
Validation Loss Decreased(0.00772--->0.00771)     Saving The Model
Validation Loss Decreased(0.00771--->0.00770)     Saving The Model
Validation Loss Decreased(0.00770--->0.00769)     Saving The Model
Validation Loss Decreased(0.00769--->0.00769)     Saving The Model
Validation Loss Decreased(0.00769--->0.00768)     Saving The Model
```

```
Validation Loss Decreased(0.00768--->0.00767)    Saving The Model
Validation Loss Decreased(0.00767--->0.00766)    Saving The Model
Validation Loss Decreased(0.00766--->0.00765)    Saving The Model
Validation Loss Decreased(0.00765--->0.00764)    Saving The Model
Validation Loss Decreased(0.00764--->0.00763)    Saving The Model
Validation Loss Decreased(0.00763--->0.00763)    Saving The Model
Validation Loss Decreased(0.00763--->0.00762)    Saving The Model
Validation Loss Decreased(0.00762--->0.00761)    Saving The Model
Validation Loss Decreased(0.00761--->0.00761)    Saving The Model
Validation Loss Decreased(0.00761--->0.00760)    Saving The Model
Validation Loss Decreased(0.00760--->0.00760)    Saving The Model
Validation Loss Decreased(0.00760--->0.00759)    Saving The Model
Validation Loss Decreased(0.00759--->0.00758)    Saving The Model
Validation Loss Decreased(0.00758--->0.00758)    Saving The Model
Validation Loss Decreased(0.00758--->0.00757)    Saving The Model
Validation Loss Decreased(0.00757--->0.00757)    Saving The Model
Validation Loss Decreased(0.00757--->0.00756)    Saving The Model
Validation Loss Decreased(0.00756--->0.00756)    Saving The Model
Validation Loss Decreased(0.00756--->0.00755)    Saving The Model
Validation Loss Decreased(0.00755--->0.00755)    Saving The Model
Validation Loss Decreased(0.00755--->0.00754)    Saving The Model
Validation Loss Decreased(0.00754--->0.00754)    Saving The Model
Validation Loss Decreased(0.00754--->0.00753)    Saving The Model
Validation Loss Decreased(0.00753--->0.00753)    Saving The Model
Validation Loss Decreased(0.00753--->0.00752)    Saving The Model
Validation Loss Decreased(0.00752--->0.00752)    Saving The Model
Validation Loss Decreased(0.00752--->0.00751)    Saving The Model
Validation Loss Decreased(0.00751--->0.00751)    Saving The Model
Validation Loss Decreased(0.00751--->0.00750)    Saving The Model
Validation Loss Decreased(0.00750--->0.00750)    Saving The Model
Validation Loss Decreased(0.00750--->0.00750)    Saving The Model
Validation Loss Decreased(0.00750--->0.00749)    Saving The Model
Validation Loss Decreased(0.00749--->0.00749)    Saving The Model
Validation Loss Decreased(0.00749--->0.00748)    Saving The Model
Validation Loss Decreased(0.00748--->0.00748)    Saving The Model
Validation Loss Decreased(0.00748--->0.00747)    Saving The Model
Validation Loss Decreased(0.00747--->0.00747)    Saving The Model
Validation Loss Decreased(0.00747--->0.00746)    Saving The Model
Validation Loss Decreased(0.00746--->0.00746)    Saving The Model
Validation Loss Decreased(0.00746--->0.00746)    Saving The Model
Validation Loss Decreased(0.00746--->0.00745)    Saving The Model
Validation Loss Decreased(0.00745--->0.00745)    Saving The Model
Validation Loss Decreased(0.00745--->0.00744)    Saving The Model
Validation Loss Decreased(0.00744--->0.00744)    Saving The Model
Validation Loss Decreased(0.00744--->0.00743)    Saving The Model
Validation Loss Decreased(0.00743--->0.00743)    Saving The Model
Validation Loss Decreased(0.00743--->0.00743)    Saving The Model
Validation Loss Decreased(0.00743--->0.00742)    Saving The Model
Validation Loss Decreased(0.00742--->0.00742)    Saving The Model
Validation Loss Decreased(0.00742--->0.00741)    Saving The Model
Validation Loss Decreased(0.00741--->0.00741)    Saving The Model
Validation Loss Decreased(0.00741--->0.00741)    Saving The Model
Validation Loss Decreased(0.00741--->0.00740)    Saving The Model
Validation Loss Decreased(0.00740--->0.00740)    Saving The Model
Validation Loss Decreased(0.00740--->0.00739)    Saving The Model
Validation Loss Decreased(0.00739--->0.00739)    Saving The Model
Validation Loss Decreased(0.00739--->0.00739)    Saving The Model
Validation Loss Decreased(0.00739--->0.00738)    Saving The Model
Validation Loss Decreased(0.00738--->0.00738)    Saving The Model
Validation Loss Decreased(0.00738--->0.00738)    Saving The Model
Validation Loss Decreased(0.00738--->0.00737)    Saving The Model
```

```
Validation Loss Decreased(0.00737--->0.00737)     Saving The Model
Validation Loss Decreased(0.00737--->0.00737)     Saving The Model
Validation Loss Decreased(0.00737--->0.00736)     Saving The Model
Validation Loss Decreased(0.00736--->0.00736)     Saving The Model
Validation Loss Decreased(0.00736--->0.00736)     Saving The Model
Validation Loss Decreased(0.00736--->0.00735)     Saving The Model
Validation Loss Decreased(0.00735--->0.00735)     Saving The Model
Validation Loss Decreased(0.00735--->0.00735)     Saving The Model
Validation Loss Decreased(0.00735--->0.00735)     Saving The Model
Validation Loss Decreased(0.00735--->0.00735)     Saving The Model
Validation Loss Decreased(0.00735--->0.00734)     Saving The Model
Validation Loss Decreased(0.00734--->0.00734)     Saving The Model
Validation Loss Decreased(0.00734--->0.00734)     Saving The Model
Validation Loss Decreased(0.00734--->0.00734)     Saving The Model
Validation Loss Decreased(0.00734--->0.00734)     Saving The Model
Validation Loss Decreased(0.00734--->0.00734)     Saving The Model
Validation Loss Decreased(0.00734--->0.00734)     Saving The Model
Epoch 300              Training Loss: 0.00630                   Val
idation Loss: 0.00734
Validation Loss Decreased(0.00734--->0.00734)     Saving The Model
Validation Loss Decreased(0.00734--->0.00733)     Saving The Model
Validation Loss Decreased(0.00733--->0.00733)     Saving The Model
Validation Loss Decreased(0.00733--->0.00733)     Saving The Model
Validation Loss Decreased(0.00733--->0.00733)     Saving The Model
Validation Loss Decreased(0.00733--->0.00733)     Saving The Model
Validation Loss Decreased(0.00733--->0.00733)     Saving The Model
Epoch 400              Training Loss: 0.00618                   Val
idation Loss: 0.00736
Epoch 500              Training Loss: 0.00611                   Val
idation Loss: 0.00736
Validation Loss Decreased(0.00733--->0.00733)     Saving The Model
Validation Loss Decreased(0.00733--->0.00733)     Saving The Model
Validation Loss Decreased(0.00733--->0.00733)     Saving The Model
Validation Loss Decreased(0.00733--->0.00733)     Saving The Model
Validation Loss Decreased(0.00733--->0.00733)     Saving The Model
Validation Loss Decreased(0.00733--->0.00732)     Saving The Model
Validation Loss Decreased(0.00732--->0.00732)     Saving The Model
Validation Loss Decreased(0.00732--->0.00732)     Saving The Model
Validation Loss Decreased(0.00732--->0.00732)     Saving The Model
Validation Loss Decreased(0.00732--->0.00732)     Saving The Model
Validation Loss Decreased(0.00732--->0.00731)     Saving The Model
Validation Loss Decreased(0.00731--->0.00731)     Saving The Model
Validation Loss Decreased(0.00731--->0.00731)     Saving The Model
Validation Loss Decreased(0.00731--->0.00731)     Saving The Model
Validation Loss Decreased(0.00731--->0.00731)     Saving The Model
Validation Loss Decreased(0.00731--->0.00730)     Saving The Model
Validation Loss Decreased(0.00730--->0.00730)     Saving The Model
Validation Loss Decreased(0.00730--->0.00730)     Saving The Model
Validation Loss Decreased(0.00730--->0.00730)     Saving The Model
Validation Loss Decreased(0.00730--->0.00729)     Saving The Model
Validation Loss Decreased(0.00729--->0.00729)     Saving The Model
Validation Loss Decreased(0.00729--->0.00729)     Saving The Model
Validation Loss Decreased(0.00729--->0.00728)     Saving The Model
Validation Loss Decreased(0.00728--->0.00728)     Saving The Model
Validation Loss Decreased(0.00728--->0.00727)     Saving The Model
Validation Loss Decreased(0.00727--->0.00727)     Saving The Model
Validation Loss Decreased(0.00727--->0.00726)     Saving The Model
Validation Loss Decreased(0.00726--->0.00726)     Saving The Model
Validation Loss Decreased(0.00726--->0.00725)     Saving The Model
Validation Loss Decreased(0.00725--->0.00725)     Saving The Model
Validation Loss Decreased(0.00725--->0.00724)     Saving The Model
```

```
Validation Loss Decreased(0.00724--->0.00724)    Saving The Model
Validation Loss Decreased(0.00724--->0.00723)    Saving The Model
Validation Loss Decreased(0.00723--->0.00723)    Saving The Model
Validation Loss Decreased(0.00723--->0.00722)    Saving The Model
Validation Loss Decreased(0.00722--->0.00722)    Saving The Model
Validation Loss Decreased(0.00722--->0.00721)    Saving The Model
Validation Loss Decreased(0.00721--->0.00721)    Saving The Model
Validation Loss Decreased(0.00721--->0.00721)    Saving The Model
Validation Loss Decreased(0.00721--->0.00721)    Saving The Model
Validation Loss Decreased(0.00721--->0.00720)    Saving The Model
Validation Loss Decreased(0.00720--->0.00720)    Saving The Model
Validation Loss Decreased(0.00720--->0.00720)    Saving The Model
Validation Loss Decreased(0.00720--->0.00720)    Saving The Model
Validation Loss Decreased(0.00720--->0.00719)    Saving The Model
Validation Loss Decreased(0.00719--->0.00719)    Saving The Model
Validation Loss Decreased(0.00719--->0.00719)    Saving The Model
Validation Loss Decreased(0.00719--->0.00719)    Saving The Model
Validation Loss Decreased(0.00719--->0.00718)    Saving The Model
Validation Loss Decreased(0.00718--->0.00718)    Saving The Model
Validation Loss Decreased(0.00718--->0.00718)    Saving The Model
Validation Loss Decreased(0.00718--->0.00717)    Saving The Model
Epoch 600            Training Loss: 0.00616                    Val
idation Loss: 0.00720
Validation Loss Decreased(0.00717--->0.00716)    Saving The Model
Validation Loss Decreased(0.00716--->0.00715)    Saving The Model
Validation Loss Decreased(0.00715--->0.00715)    Saving The Model
Validation Loss Decreased(0.00715--->0.00714)    Saving The Model
Validation Loss Decreased(0.00714--->0.00714)    Saving The Model
Validation Loss Decreased(0.00714--->0.00714)    Saving The Model
Validation Loss Decreased(0.00714--->0.00714)    Saving The Model
Validation Loss Decreased(0.00714--->0.00714)    Saving The Model
Validation Loss Decreased(0.00714--->0.00714)    Saving The Model
Validation Loss Decreased(0.00714--->0.00713)    Saving The Model
Validation Loss Decreased(0.00713--->0.00713)    Saving The Model
Validation Loss Decreased(0.00713--->0.00713)    Saving The Model
Validation Loss Decreased(0.00713--->0.00713)    Saving The Model
Validation Loss Decreased(0.00713--->0.00713)    Saving The Model
Epoch 700            Training Loss: 0.00584                    Val
idation Loss: 0.00713
Epoch 800            Training Loss: 0.00579                    Val
idation Loss: 0.00722
Epoch 900            Training Loss: 0.00571                    Val
idation Loss: 0.00741
Epoch 1000           Training Loss: 0.00562                    Val
idation Loss: 0.00757
Epoch 1100           Training Loss: 0.00548                    Val
idation Loss: 0.00781
Epoch 1200           Training Loss: 0.00523                    Val
idation Loss: 0.00774
Epoch 1300           Training Loss: 0.00486                    Val
idation Loss: 0.00775
Epoch 1400           Training Loss: 0.00620                    Val
idation Loss: 0.00758
Epoch 1500           Training Loss: 0.00599                    Val
idation Loss: 0.00747
Epoch 1600           Training Loss: 0.00586                    Val
idation Loss: 0.00754
Epoch 1700           Training Loss: 0.00597                    Val
idation Loss: 0.00728
Epoch 1800           Training Loss: 0.00580                    Val
idation Loss: 0.00735
```

Epoch 1900   Training Loss: 0.00565   Val
idation Loss: 0.00741
Epoch 2000   Training Loss: 0.00557   Val
idation Loss: 0.00745
Epoch 2100   Training Loss: 0.00548   Val
idation Loss: 0.00750
Epoch 2200   Training Loss: 0.00537   Val
idation Loss: 0.00770
Epoch 2300   Training Loss: 0.00530   Val
idation Loss: 0.00779
Epoch 2400   Training Loss: 0.00521   Val
idation Loss: 0.00826
Epoch 2500   Training Loss: 0.00581   Val
idation Loss: 0.00759
Epoch 2600   Training Loss: 0.00566   Val
idation Loss: 0.00778
Stopping the training early   Model saved
        Training Loss: 0.005542431026697159
        Validation Loss: 0.007127998862415552

Prediction

RMSE of validation set: 7.794543336266561
RMSE of entire data set: 4.202181918924574

Sales of Store - 9

```
Validation Loss Decreased(inf--->0.08298)        Saving The Model
Validation Loss Decreased(0.08298--->0.05001)    Saving The Model
Validation Loss Decreased(0.05001--->0.02655)    Saving The Model
Validation Loss Decreased(0.02655--->0.01759)    Saving The Model
Validation Loss Decreased(0.01759--->0.01758)    Saving The Model
Validation Loss Decreased(0.01758--->0.01751)    Saving The Model
Validation Loss Decreased(0.01751--->0.01675)    Saving The Model
Validation Loss Decreased(0.01675--->0.01643)    Saving The Model
Validation Loss Decreased(0.01643--->0.01643)    Saving The Model
Validation Loss Decreased(0.01643--->0.01633)    Saving The Model
Validation Loss Decreased(0.01633--->0.01610)    Saving The Model
Validation Loss Decreased(0.01610--->0.01593)    Saving The Model
Validation Loss Decreased(0.01593--->0.01590)    Saving The Model
Validation Loss Decreased(0.01590--->0.01582)    Saving The Model
Validation Loss Decreased(0.01582--->0.01549)    Saving The Model
Validation Loss Decreased(0.01549--->0.01522)    Saving The Model
Validation Loss Decreased(0.01522--->0.01502)    Saving The Model
Validation Loss Decreased(0.01502--->0.01488)    Saving The Model
Validation Loss Decreased(0.01488--->0.01479)    Saving The Model
Validation Loss Decreased(0.01479--->0.01471)    Saving The Model
Validation Loss Decreased(0.01471--->0.01463)    Saving The Model
Validation Loss Decreased(0.01463--->0.01457)    Saving The Model
Validation Loss Decreased(0.01457--->0.01452)    Saving The Model
Validation Loss Decreased(0.01452--->0.01450)    Saving The Model
Validation Loss Decreased(0.01450--->0.01448)    Saving The Model
Validation Loss Decreased(0.01448--->0.01438)    Saving The Model
Validation Loss Decreased(0.01438--->0.01424)    Saving The Model
Validation Loss Decreased(0.01424--->0.01409)    Saving The Model
Validation Loss Decreased(0.01409--->0.01393)    Saving The Model
Validation Loss Decreased(0.01393--->0.01379)    Saving The Model
Validation Loss Decreased(0.01379--->0.01367)    Saving The Model
Validation Loss Decreased(0.01367--->0.01356)    Saving The Model
Validation Loss Decreased(0.01356--->0.01348)    Saving The Model
Validation Loss Decreased(0.01348--->0.01340)    Saving The Model
Validation Loss Decreased(0.01340--->0.01334)    Saving The Model
Validation Loss Decreased(0.01334--->0.01329)    Saving The Model
Validation Loss Decreased(0.01329--->0.01325)    Saving The Model
Validation Loss Decreased(0.01325--->0.01321)    Saving The Model
Validation Loss Decreased(0.01321--->0.01318)    Saving The Model
Validation Loss Decreased(0.01318--->0.01314)    Saving The Model
Validation Loss Decreased(0.01314--->0.01309)    Saving The Model
Validation Loss Decreased(0.01309--->0.01302)    Saving The Model
Validation Loss Decreased(0.01302--->0.01293)    Saving The Model
Validation Loss Decreased(0.01293--->0.01283)    Saving The Model
Validation Loss Decreased(0.01283--->0.01273)    Saving The Model
Validation Loss Decreased(0.01273--->0.01263)    Saving The Model
Validation Loss Decreased(0.01263--->0.01254)    Saving The Model
Validation Loss Decreased(0.01254--->0.01247)    Saving The Model
Validation Loss Decreased(0.01247--->0.01240)    Saving The Model
Validation Loss Decreased(0.01240--->0.01234)    Saving The Model
Validation Loss Decreased(0.01234--->0.01229)    Saving The Model
Validation Loss Decreased(0.01229--->0.01224)    Saving The Model
Validation Loss Decreased(0.01224--->0.01220)    Saving The Model
Validation Loss Decreased(0.01220--->0.01216)    Saving The Model
Validation Loss Decreased(0.01216--->0.01211)    Saving The Model
Validation Loss Decreased(0.01211--->0.01205)    Saving The Model
Validation Loss Decreased(0.01205--->0.01198)    Saving The Model
Validation Loss Decreased(0.01198--->0.01192)    Saving The Model
Validation Loss Decreased(0.01192--->0.01186)    Saving The Model
Validation Loss Decreased(0.01186--->0.01181)    Saving The Model
Validation Loss Decreased(0.01181--->0.01177)    Saving The Model
```

```
Validation Loss Decreased(0.01177--->0.01174)     Saving The Model
Validation Loss Decreased(0.01174--->0.01171)     Saving The Model
Validation Loss Decreased(0.01171--->0.01169)     Saving The Model
Validation Loss Decreased(0.01169--->0.01167)     Saving The Model
Validation Loss Decreased(0.01167--->0.01165)     Saving The Model
Validation Loss Decreased(0.01165--->0.01163)     Saving The Model
Validation Loss Decreased(0.01163--->0.01161)     Saving The Model
Epoch 100                Training Loss: 0.01006                    Val
idation Loss: 0.01160
Validation Loss Decreased(0.01161--->0.01160)     Saving The Model
Validation Loss Decreased(0.01160--->0.01159)     Saving The Model
Validation Loss Decreased(0.01159--->0.01158)     Saving The Model
Validation Loss Decreased(0.01158--->0.01158)     Saving The Model
Validation Loss Decreased(0.01158--->0.01157)     Saving The Model
Validation Loss Decreased(0.01157--->0.01157)     Saving The Model
Validation Loss Decreased(0.01157--->0.01156)     Saving The Model
Validation Loss Decreased(0.01156--->0.01155)     Saving The Model
Validation Loss Decreased(0.01155--->0.01154)     Saving The Model
Validation Loss Decreased(0.01154--->0.01152)     Saving The Model
Validation Loss Decreased(0.01152--->0.01151)     Saving The Model
Validation Loss Decreased(0.01151--->0.01149)     Saving The Model
Validation Loss Decreased(0.01149--->0.01147)     Saving The Model
Validation Loss Decreased(0.01147--->0.01145)     Saving The Model
Validation Loss Decreased(0.01145--->0.01143)     Saving The Model
Validation Loss Decreased(0.01143--->0.01142)     Saving The Model
Validation Loss Decreased(0.01142--->0.01140)     Saving The Model
Validation Loss Decreased(0.01140--->0.01138)     Saving The Model
Validation Loss Decreased(0.01138--->0.01137)     Saving The Model
Validation Loss Decreased(0.01137--->0.01135)     Saving The Model
Validation Loss Decreased(0.01135--->0.01134)     Saving The Model
Validation Loss Decreased(0.01134--->0.01133)     Saving The Model
Validation Loss Decreased(0.01133--->0.01132)     Saving The Model
Validation Loss Decreased(0.01132--->0.01130)     Saving The Model
Validation Loss Decreased(0.01130--->0.01129)     Saving The Model
Validation Loss Decreased(0.01129--->0.01128)     Saving The Model
Validation Loss Decreased(0.01128--->0.01127)     Saving The Model
Validation Loss Decreased(0.01127--->0.01126)     Saving The Model
Validation Loss Decreased(0.01126--->0.01125)     Saving The Model
Validation Loss Decreased(0.01125--->0.01124)     Saving The Model
Validation Loss Decreased(0.01124--->0.01122)     Saving The Model
Validation Loss Decreased(0.01122--->0.01121)     Saving The Model
Validation Loss Decreased(0.01121--->0.01120)     Saving The Model
Validation Loss Decreased(0.01120--->0.01119)     Saving The Model
Validation Loss Decreased(0.01119--->0.01118)     Saving The Model
Validation Loss Decreased(0.01118--->0.01117)     Saving The Model
Validation Loss Decreased(0.01117--->0.01115)     Saving The Model
Validation Loss Decreased(0.01115--->0.01114)     Saving The Model
Validation Loss Decreased(0.01114--->0.01114)     Saving The Model
Validation Loss Decreased(0.01114--->0.01113)     Saving The Model
Validation Loss Decreased(0.01113--->0.01112)     Saving The Model
Validation Loss Decreased(0.01112--->0.01112)     Saving The Model
Validation Loss Decreased(0.01112--->0.01111)     Saving The Model
Validation Loss Decreased(0.01111--->0.01110)     Saving The Model
Validation Loss Decreased(0.01110--->0.01110)     Saving The Model
Validation Loss Decreased(0.01110--->0.01109)     Saving The Model
Validation Loss Decreased(0.01109--->0.01109)     Saving The Model
Validation Loss Decreased(0.01109--->0.01109)     Saving The Model
Validation Loss Decreased(0.01109--->0.01109)     Saving The Model
Validation Loss Decreased(0.01109--->0.01109)     Saving The Model
Validation Loss Decreased(0.01109--->0.01109)     Saving The Model
Validation Loss Decreased(0.01109--->0.01108)     Saving The Model
```

```
Validation Loss Decreased(0.01108--->0.01108)     Saving The Model
Validation Loss Decreased(0.01108--->0.01108)     Saving The Model
Validation Loss Decreased(0.01108--->0.01108)     Saving The Model
Validation Loss Decreased(0.01108--->0.01108)     Saving The Model
Validation Loss Decreased(0.01108--->0.01107)     Saving The Model
Validation Loss Decreased(0.01107--->0.01107)     Saving The Model
Validation Loss Decreased(0.01107--->0.01107)     Saving The Model
Validation Loss Decreased(0.01107--->0.01107)     Saving The Model
Validation Loss Decreased(0.01107--->0.01107)     Saving The Model
Validation Loss Decreased(0.01107--->0.01107)     Saving The Model
Epoch 200              Training Loss: 0.00931                Val
idation Loss: 0.01108
Epoch 300              Training Loss: 0.00916                Val
idation Loss: 0.01120
Validation Loss Decreased(0.01107--->0.01106)     Saving The Model
Validation Loss Decreased(0.01106--->0.01106)     Saving The Model
Validation Loss Decreased(0.01106--->0.01105)     Saving The Model
Validation Loss Decreased(0.01105--->0.01105)     Saving The Model
Validation Loss Decreased(0.01105--->0.01104)     Saving The Model
Validation Loss Decreased(0.01104--->0.01104)     Saving The Model
Validation Loss Decreased(0.01104--->0.01103)     Saving The Model
Validation Loss Decreased(0.01103--->0.01103)     Saving The Model
Validation Loss Decreased(0.01103--->0.01102)     Saving The Model
Validation Loss Decreased(0.01102--->0.01102)     Saving The Model
Validation Loss Decreased(0.01102--->0.01101)     Saving The Model
Validation Loss Decreased(0.01101--->0.01101)     Saving The Model
Validation Loss Decreased(0.01101--->0.01100)     Saving The Model
Validation Loss Decreased(0.01100--->0.01100)     Saving The Model
Validation Loss Decreased(0.01100--->0.01099)     Saving The Model
Validation Loss Decreased(0.01099--->0.01098)     Saving The Model
Validation Loss Decreased(0.01098--->0.01098)     Saving The Model
Validation Loss Decreased(0.01098--->0.01097)     Saving The Model
Validation Loss Decreased(0.01097--->0.01097)     Saving The Model
Validation Loss Decreased(0.01097--->0.01096)     Saving The Model
Validation Loss Decreased(0.01096--->0.01096)     Saving The Model
Validation Loss Decreased(0.01096--->0.01096)     Saving The Model
Validation Loss Decreased(0.01096--->0.01095)     Saving The Model
Validation Loss Decreased(0.01095--->0.01095)     Saving The Model
Validation Loss Decreased(0.01095--->0.01095)     Saving The Model
Validation Loss Decreased(0.01095--->0.01094)     Saving The Model
Validation Loss Decreased(0.01094--->0.01094)     Saving The Model
Validation Loss Decreased(0.01094--->0.01094)     Saving The Model
Validation Loss Decreased(0.01094--->0.01094)     Saving The Model
Validation Loss Decreased(0.01094--->0.01094)     Saving The Model
Validation Loss Decreased(0.01094--->0.01094)     Saving The Model
Validation Loss Decreased(0.01094--->0.01094)     Saving The Model
Epoch 400              Training Loss: 0.00885                Val
idation Loss: 0.01095
Validation Loss Decreased(0.01094--->0.01093)     Saving The Model
Validation Loss Decreased(0.01093--->0.01093)     Saving The Model
Validation Loss Decreased(0.01093--->0.01093)     Saving The Model
Validation Loss Decreased(0.01093--->0.01092)     Saving The Model
Validation Loss Decreased(0.01092--->0.01092)     Saving The Model
Validation Loss Decreased(0.01092--->0.01091)     Saving The Model
Validation Loss Decreased(0.01091--->0.01091)     Saving The Model
Validation Loss Decreased(0.01091--->0.01091)     Saving The Model
Validation Loss Decreased(0.01091--->0.01090)     Saving The Model
Validation Loss Decreased(0.01090--->0.01090)     Saving The Model
Validation Loss Decreased(0.01090--->0.01090)     Saving The Model
Validation Loss Decreased(0.01090--->0.01090)     Saving The Model
Epoch 500              Training Loss: 0.00865                Val
```

```
idation Loss: 0.01090
Validation Loss Decreased(0.01090--->0.01090)    Saving The Model
Validation Loss Decreased(0.01090--->0.01089)    Saving The Model
Validation Loss Decreased(0.01089--->0.01087)    Saving The Model
Validation Loss Decreased(0.01087--->0.01084)    Saving The Model
Epoch 600               Training Loss: 0.00849                   Val
idation Loss: 0.01099
Validation Loss Decreased(0.01084--->0.01078)    Saving The Model
Validation Loss Decreased(0.01078--->0.01076)    Saving The Model
Epoch 700               Training Loss: 0.00833                   Val
idation Loss: 0.01087
Epoch 800               Training Loss: 0.00844                   Val
idation Loss: 0.01094
Validation Loss Decreased(0.01076--->0.01074)    Saving The Model
Validation Loss Decreased(0.01074--->0.01074)    Saving The Model
Epoch 900               Training Loss: 0.00806                   Val
idation Loss: 0.01095
Epoch 1000              Training Loss: 0.00756                   Val
idation Loss: 0.01160
Epoch 1100              Training Loss: 0.00740                   Val
idation Loss: 0.01170
Epoch 1200              Training Loss: 0.00696                   Val
idation Loss: 0.01223
Epoch 1300              Training Loss: 0.00659                   Val
idation Loss: 0.01265
Epoch 1400              Training Loss: 0.00615                   Val
idation Loss: 0.01303
Epoch 1500              Training Loss: 0.00585                   Val
idation Loss: 0.01351
Epoch 1600              Training Loss: 0.00571                   Val
idation Loss: 0.01307
Epoch 1700              Training Loss: 0.00542                   Val
idation Loss: 0.01363
Epoch 1800              Training Loss: 0.00520                   Val
idation Loss: 0.01387
Epoch 1900              Training Loss: 0.00508                   Val
idation Loss: 0.01407
Epoch 2000              Training Loss: 0.00493                   Val
idation Loss: 0.01476
Epoch 2100              Training Loss: 0.00467                   Val
idation Loss: 0.01485
Epoch 2200              Training Loss: 0.00481                   Val
idation Loss: 0.01521
Epoch 2300              Training Loss: 0.00471                   Val
idation Loss: 0.01579
Epoch 2400              Training Loss: 0.00501                   Val
idation Loss: 0.01590
Epoch 2500              Training Loss: 0.00434                   Val
idation Loss: 0.01583
Epoch 2600              Training Loss: 0.00406                   Val
idation Loss: 0.01651
Epoch 2700              Training Loss: 0.00384                   Val
idation Loss: 0.01680
Epoch 2800              Training Loss: 0.00376                   Val
idation Loss: 0.01693
Stopping the training early              Model saved
        Training Loss:  0.003987722564488649
        Validation Loss:  0.010741337202489376
```

Prediction
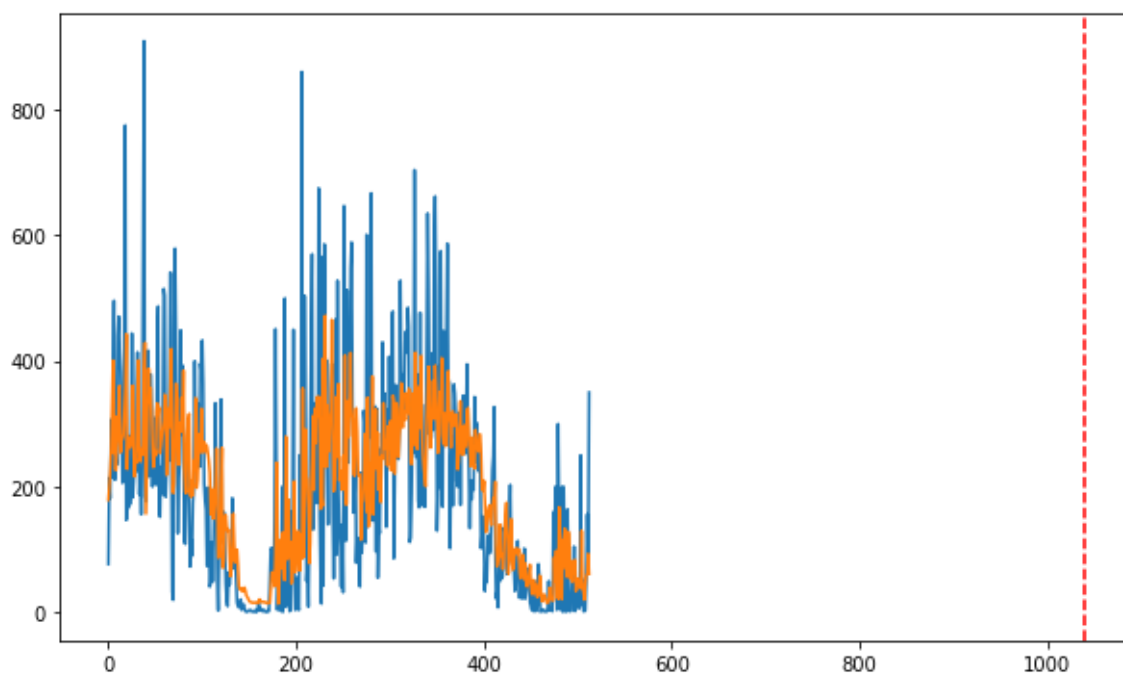
RMSE of validation set: 5.7014921797730365
RMSE of entire data set: 3.0218070845528984

Sales of Store - 10
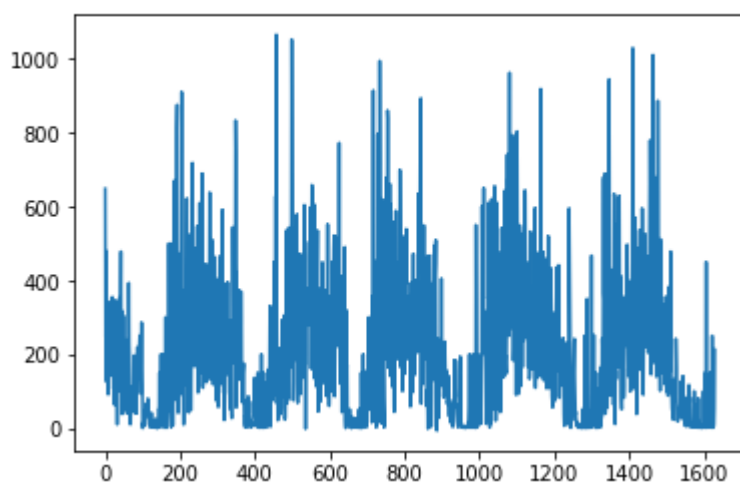
```
Validation Loss Decreased(inf--->0.03008)        Saving The Model
Validation Loss Decreased(0.03008--->0.02890)    Saving The Model
Validation Loss Decreased(0.02890--->0.02809)    Saving The Model
Validation Loss Decreased(0.02809--->0.02777)    Saving The Model
Validation Loss Decreased(0.02777--->0.02706)    Saving The Model
Validation Loss Decreased(0.02706--->0.02606)    Saving The Model
Validation Loss Decreased(0.02606--->0.02540)    Saving The Model
Validation Loss Decreased(0.02540--->0.02469)    Saving The Model
Validation Loss Decreased(0.02469--->0.02325)    Saving The Model
Validation Loss Decreased(0.02325--->0.02194)    Saving The Model
Validation Loss Decreased(0.02194--->0.02087)    Saving The Model
Validation Loss Decreased(0.02087--->0.01957)    Saving The Model
Validation Loss Decreased(0.01957--->0.01950)    Saving The Model
Validation Loss Decreased(0.01950--->0.01926)    Saving The Model
Validation Loss Decreased(0.01926--->0.01912)    Saving The Model
Validation Loss Decreased(0.01912--->0.01891)    Saving The Model
Validation Loss Decreased(0.01891--->0.01880)    Saving The Model
Validation Loss Decreased(0.01880--->0.01873)    Saving The Model
Validation Loss Decreased(0.01873--->0.01859)    Saving The Model
Validation Loss Decreased(0.01859--->0.01858)    Saving The Model
Validation Loss Decreased(0.01858--->0.01852)    Saving The Model
Validation Loss Decreased(0.01852--->0.01851)    Saving The Model
Validation Loss Decreased(0.01851--->0.01843)    Saving The Model
Validation Loss Decreased(0.01843--->0.01835)    Saving The Model
Validation Loss Decreased(0.01835--->0.01833)    Saving The Model
Validation Loss Decreased(0.01833--->0.01824)    Saving The Model
Validation Loss Decreased(0.01824--->0.01818)    Saving The Model
Validation Loss Decreased(0.01818--->0.01810)    Saving The Model
Validation Loss Decreased(0.01810--->0.01803)    Saving The Model
Validation Loss Decreased(0.01803--->0.01799)    Saving The Model
Validation Loss Decreased(0.01799--->0.01795)    Saving The Model
Validation Loss Decreased(0.01795--->0.01792)    Saving The Model
Validation Loss Decreased(0.01792--->0.01789)    Saving The Model
Validation Loss Decreased(0.01789--->0.01783)    Saving The Model
Validation Loss Decreased(0.01783--->0.01781)    Saving The Model
Validation Loss Decreased(0.01781--->0.01778)    Saving The Model
Validation Loss Decreased(0.01778--->0.01776)    Saving The Model
Validation Loss Decreased(0.01776--->0.01774)    Saving The Model
Validation Loss Decreased(0.01774--->0.01769)    Saving The Model
Validation Loss Decreased(0.01769--->0.01763)    Saving The Model
Validation Loss Decreased(0.01763--->0.01756)    Saving The Model
Validation Loss Decreased(0.01756--->0.01751)    Saving The Model
Validation Loss Decreased(0.01751--->0.01745)    Saving The Model
Validation Loss Decreased(0.01745--->0.01740)    Saving The Model
Validation Loss Decreased(0.01740--->0.01735)    Saving The Model
Validation Loss Decreased(0.01735--->0.01730)    Saving The Model
Validation Loss Decreased(0.01730--->0.01726)    Saving The Model
Validation Loss Decreased(0.01726--->0.01722)    Saving The Model
Validation Loss Decreased(0.01722--->0.01718)    Saving The Model
Validation Loss Decreased(0.01718--->0.01714)    Saving The Model
Validation Loss Decreased(0.01714--->0.01709)    Saving The Model
Validation Loss Decreased(0.01709--->0.01704)    Saving The Model
Validation Loss Decreased(0.01704--->0.01699)    Saving The Model
Validation Loss Decreased(0.01699--->0.01695)    Saving The Model
Validation Loss Decreased(0.01695--->0.01692)    Saving The Model
Validation Loss Decreased(0.01692--->0.01689)    Saving The Model
Validation Loss Decreased(0.01689--->0.01686)    Saving The Model
Validation Loss Decreased(0.01686--->0.01685)    Saving The Model
Validation Loss Decreased(0.01685--->0.01684)    Saving The Model
Validation Loss Decreased(0.01684--->0.01683)    Saving The Model
Validation Loss Decreased(0.01683--->0.01682)    Saving The Model
```

```
Validation Loss Decreased(0.01682--->0.01681)    Saving The Model
Validation Loss Decreased(0.01681--->0.01680)    Saving The Model
Validation Loss Decreased(0.01680--->0.01679)    Saving The Model
Validation Loss Decreased(0.01679--->0.01678)    Saving The Model
Validation Loss Decreased(0.01678--->0.01678)    Saving The Model
Epoch 100                Training Loss: 0.01958                    Val
idation Loss: 0.01680
Validation Loss Decreased(0.01678--->0.01678)    Saving The Model
Validation Loss Decreased(0.01678--->0.01677)    Saving The Model
Validation Loss Decreased(0.01677--->0.01677)    Saving The Model
Validation Loss Decreased(0.01677--->0.01676)    Saving The Model
Validation Loss Decreased(0.01676--->0.01676)    Saving The Model
Validation Loss Decreased(0.01676--->0.01675)    Saving The Model
Validation Loss Decreased(0.01675--->0.01674)    Saving The Model
Validation Loss Decreased(0.01674--->0.01673)    Saving The Model
Validation Loss Decreased(0.01673--->0.01672)    Saving The Model
Validation Loss Decreased(0.01672--->0.01672)    Saving The Model
Validation Loss Decreased(0.01672--->0.01671)    Saving The Model
Validation Loss Decreased(0.01671--->0.01671)    Saving The Model
Validation Loss Decreased(0.01671--->0.01670)    Saving The Model
Validation Loss Decreased(0.01670--->0.01670)    Saving The Model
Validation Loss Decreased(0.01670--->0.01670)    Saving The Model
Validation Loss Decreased(0.01670--->0.01669)    Saving The Model
Validation Loss Decreased(0.01669--->0.01669)    Saving The Model
Validation Loss Decreased(0.01669--->0.01669)    Saving The Model
Validation Loss Decreased(0.01669--->0.01669)    Saving The Model
Validation Loss Decreased(0.01669--->0.01668)    Saving The Model
Validation Loss Decreased(0.01668--->0.01668)    Saving The Model
Validation Loss Decreased(0.01668--->0.01668)    Saving The Model
Validation Loss Decreased(0.01668--->0.01668)    Saving The Model
Validation Loss Decreased(0.01668--->0.01668)    Saving The Model
Validation Loss Decreased(0.01668--->0.01668)    Saving The Model
Validation Loss Decreased(0.01668--->0.01668)    Saving The Model
Validation Loss Decreased(0.01668--->0.01668)    Saving The Model
Validation Loss Decreased(0.01668--->0.01667)    Saving The Model
Validation Loss Decreased(0.01667--->0.01667)    Saving The Model
Validation Loss Decreased(0.01667--->0.01667)    Saving The Model
Validation Loss Decreased(0.01667--->0.01667)    Saving The Model
Validation Loss Decreased(0.01667--->0.01667)    Saving The Model
Validation Loss Decreased(0.01667--->0.01666)    Saving The Model
Validation Loss Decreased(0.01666--->0.01666)    Saving The Model
Validation Loss Decreased(0.01666--->0.01666)    Saving The Model
Validation Loss Decreased(0.01666--->0.01665)    Saving The Model
Validation Loss Decreased(0.01665--->0.01665)    Saving The Model
Validation Loss Decreased(0.01665--->0.01665)    Saving The Model
Validation Loss Decreased(0.01665--->0.01664)    Saving The Model
Validation Loss Decreased(0.01664--->0.01664)    Saving The Model
Validation Loss Decreased(0.01664--->0.01664)    Saving The Model
Validation Loss Decreased(0.01664--->0.01663)    Saving The Model
Validation Loss Decreased(0.01663--->0.01663)    Saving The Model
Validation Loss Decreased(0.01663--->0.01663)    Saving The Model
Validation Loss Decreased(0.01663--->0.01662)    Saving The Model
Validation Loss Decreased(0.01662--->0.01662)    Saving The Model
Validation Loss Decreased(0.01662--->0.01662)    Saving The Model
Validation Loss Decreased(0.01662--->0.01662)    Saving The Model
Validation Loss Decreased(0.01662--->0.01661)    Saving The Model
Validation Loss Decreased(0.01661--->0.01661)    Saving The Model
Validation Loss Decreased(0.01661--->0.01661)    Saving The Model
Validation Loss Decreased(0.01661--->0.01661)    Saving The Model
Validation Loss Decreased(0.01661--->0.01660)    Saving The Model
```

```
Validation Loss Decreased(0.01660--->0.01660)     Saving The Model
Validation Loss Decreased(0.01660--->0.01660)     Saving The Model
Validation Loss Decreased(0.01660--->0.01660)     Saving The Model
Validation Loss Decreased(0.01660--->0.01659)     Saving The Model
Validation Loss Decreased(0.01659--->0.01659)     Saving The Model
Validation Loss Decreased(0.01659--->0.01659)     Saving The Model
Validation Loss Decreased(0.01659--->0.01659)     Saving The Model
Validation Loss Decreased(0.01659--->0.01658)     Saving The Model
Validation Loss Decreased(0.01658--->0.01658)     Saving The Model
Validation Loss Decreased(0.01658--->0.01658)     Saving The Model
Validation Loss Decreased(0.01658--->0.01658)     Saving The Model
Validation Loss Decreased(0.01658--->0.01658)     Saving The Model
Validation Loss Decreased(0.01658--->0.01657)     Saving The Model
Validation Loss Decreased(0.01657--->0.01657)     Saving The Model
Validation Loss Decreased(0.01657--->0.01657)     Saving The Model
Validation Loss Decreased(0.01657--->0.01657)     Saving The Model
Validation Loss Decreased(0.01657--->0.01656)     Saving The Model
Validation Loss Decreased(0.01656--->0.01656)     Saving The Model
Validation Loss Decreased(0.01656--->0.01656)     Saving The Model
Validation Loss Decreased(0.01656--->0.01656)     Saving The Model
Validation Loss Decreased(0.01656--->0.01656)     Saving The Model
Validation Loss Decreased(0.01656--->0.01655)     Saving The Model
Validation Loss Decreased(0.01655--->0.01655)     Saving The Model
Validation Loss Decreased(0.01655--->0.01655)     Saving The Model
Validation Loss Decreased(0.01655--->0.01655)     Saving The Model
Validation Loss Decreased(0.01655--->0.01655)     Saving The Model
Validation Loss Decreased(0.01655--->0.01654)     Saving The Model
Validation Loss Decreased(0.01654--->0.01654)     Saving The Model
Validation Loss Decreased(0.01654--->0.01654)     Saving The Model
Validation Loss Decreased(0.01654--->0.01653)     Saving The Model
Validation Loss Decreased(0.01653--->0.01653)     Saving The Model
Validation Loss Decreased(0.01653--->0.01652)     Saving The Model
Validation Loss Decreased(0.01652--->0.01652)     Saving The Model
Validation Loss Decreased(0.01652--->0.01651)     Saving The Model
Validation Loss Decreased(0.01651--->0.01650)     Saving The Model
Validation Loss Decreased(0.01650--->0.01650)     Saving The Model
Validation Loss Decreased(0.01650--->0.01649)     Saving The Model
Epoch 200            Training Loss: 0.01954                    Val
idation Loss: 0.01676
Validation Loss Decreased(0.01649--->0.01648)     Saving The Model
Validation Loss Decreased(0.01648--->0.01644)     Saving The Model
Validation Loss Decreased(0.01644--->0.01643)     Saving The Model
Validation Loss Decreased(0.01643--->0.01641)     Saving The Model
Validation Loss Decreased(0.01641--->0.01637)     Saving The Model
Validation Loss Decreased(0.01637--->0.01636)     Saving The Model
Validation Loss Decreased(0.01636--->0.01632)     Saving The Model
Validation Loss Decreased(0.01632--->0.01631)     Saving The Model
Validation Loss Decreased(0.01631--->0.01630)     Saving The Model
Validation Loss Decreased(0.01630--->0.01626)     Saving The Model
Validation Loss Decreased(0.01626--->0.01626)     Saving The Model
Validation Loss Decreased(0.01626--->0.01622)     Saving The Model
Validation Loss Decreased(0.01622--->0.01621)     Saving The Model
Validation Loss Decreased(0.01621--->0.01614)     Saving The Model
Validation Loss Decreased(0.01614--->0.01612)     Saving The Model
Validation Loss Decreased(0.01612--->0.01612)     Saving The Model
Validation Loss Decreased(0.01612--->0.01610)     Saving The Model
Validation Loss Decreased(0.01610--->0.01609)     Saving The Model
Validation Loss Decreased(0.01609--->0.01609)     Saving The Model
Validation Loss Decreased(0.01609--->0.01608)     Saving The Model
Validation Loss Decreased(0.01608--->0.01607)     Saving The Model
Validation Loss Decreased(0.01607--->0.01606)     Saving The Model
```

```
Validation Loss Decreased(0.01606--->0.01604)    Saving The Model
Validation Loss Decreased(0.01604--->0.01603)    Saving The Model
Validation Loss Decreased(0.01603--->0.01601)    Saving The Model
Validation Loss Decreased(0.01601--->0.01600)    Saving The Model
Validation Loss Decreased(0.01600--->0.01599)    Saving The Model
Validation Loss Decreased(0.01599--->0.01597)    Saving The Model
Validation Loss Decreased(0.01597--->0.01594)    Saving The Model
Validation Loss Decreased(0.01594--->0.01592)    Saving The Model
Validation Loss Decreased(0.01592--->0.01590)    Saving The Model
Epoch 300              Training Loss: 0.01842                    Val
idation Loss: 0.01625
Epoch 400              Training Loss: 0.01874                    Val
idation Loss: 0.01588
Validation Loss Decreased(0.01590--->0.01588)    Saving The Model
Validation Loss Decreased(0.01588--->0.01581)    Saving The Model
Validation Loss Decreased(0.01581--->0.01574)    Saving The Model
Validation Loss Decreased(0.01574--->0.01567)    Saving The Model
Validation Loss Decreased(0.01567--->0.01561)    Saving The Model
Validation Loss Decreased(0.01561--->0.01555)    Saving The Model
Validation Loss Decreased(0.01555--->0.01551)    Saving The Model
Validation Loss Decreased(0.01551--->0.01547)    Saving The Model
Validation Loss Decreased(0.01547--->0.01544)    Saving The Model
Validation Loss Decreased(0.01544--->0.01543)    Saving The Model
Validation Loss Decreased(0.01543--->0.01542)    Saving The Model
Validation Loss Decreased(0.01542--->0.01539)    Saving The Model
Validation Loss Decreased(0.01539--->0.01534)    Saving The Model
Validation Loss Decreased(0.01534--->0.01529)    Saving The Model
Validation Loss Decreased(0.01529--->0.01525)    Saving The Model
Validation Loss Decreased(0.01525--->0.01522)    Saving The Model
Validation Loss Decreased(0.01522--->0.01521)    Saving The Model
Validation Loss Decreased(0.01521--->0.01520)    Saving The Model
Validation Loss Decreased(0.01520--->0.01519)    Saving The Model
Validation Loss Decreased(0.01519--->0.01516)    Saving The Model
Validation Loss Decreased(0.01516--->0.01513)    Saving The Model
Validation Loss Decreased(0.01513--->0.01509)    Saving The Model
Validation Loss Decreased(0.01509--->0.01506)    Saving The Model
Validation Loss Decreased(0.01506--->0.01505)    Saving The Model
Validation Loss Decreased(0.01505--->0.01504)    Saving The Model
Validation Loss Decreased(0.01504--->0.01503)    Saving The Model
Validation Loss Decreased(0.01503--->0.01503)    Saving The Model
Validation Loss Decreased(0.01503--->0.01502)    Saving The Model
Validation Loss Decreased(0.01502--->0.01502)    Saving The Model
Validation Loss Decreased(0.01502--->0.01501)    Saving The Model
Validation Loss Decreased(0.01501--->0.01500)    Saving The Model
Validation Loss Decreased(0.01500--->0.01499)    Saving The Model
Epoch 500              Training Loss: 0.01735                    Val
idation Loss: 0.01518
Epoch 600              Training Loss: 0.01600                    Val
idation Loss: 0.01575
Epoch 700              Training Loss: 0.01305                    Val
idation Loss: 0.01877
Epoch 800              Training Loss: 0.01132                    Val
idation Loss: 0.02056
Epoch 900              Training Loss: 0.00922                    Val
idation Loss: 0.02240
Epoch 1000             Training Loss: 0.00779                    Val
idation Loss: 0.02514
Epoch 1100             Training Loss: 0.00719                    Val
idation Loss: 0.02635
Epoch 1200             Training Loss: 0.00597                    Val
idation Loss: 0.03000
```

```
Epoch 1300                   Training Loss: 0.00481                  Val
idation Loss: 0.03023
Epoch 1400                   Training Loss: 0.00554                  Val
idation Loss: 0.03069
Epoch 1500                   Training Loss: 0.00543                  Val
idation Loss: 0.02997
Epoch 1600                   Training Loss: 0.00406                  Val
idation Loss: 0.03111
Epoch 1700                   Training Loss: 0.00374                  Val
idation Loss: 0.03228
Epoch 1800                   Training Loss: 0.00343                  Val
idation Loss: 0.03245
Epoch 1900                   Training Loss: 0.00311                  Val
idation Loss: 0.03338
Epoch 2000                   Training Loss: 0.00300                  Val
idation Loss: 0.03354
Epoch 2100                   Training Loss: 0.00273                  Val
idation Loss: 0.03413
Epoch 2200                   Training Loss: 0.00329                  Val
idation Loss: 0.03411
Epoch 2300                   Training Loss: 0.00238                  Val
idation Loss: 0.03454
Epoch 2400                   Training Loss: 0.00225                  Val
idation Loss: 0.03491
Stopping the training early          Model saved
        Training Loss:  0.00249851844273507�
        Validation Loss:  0.014991980977356434
```

Prediction
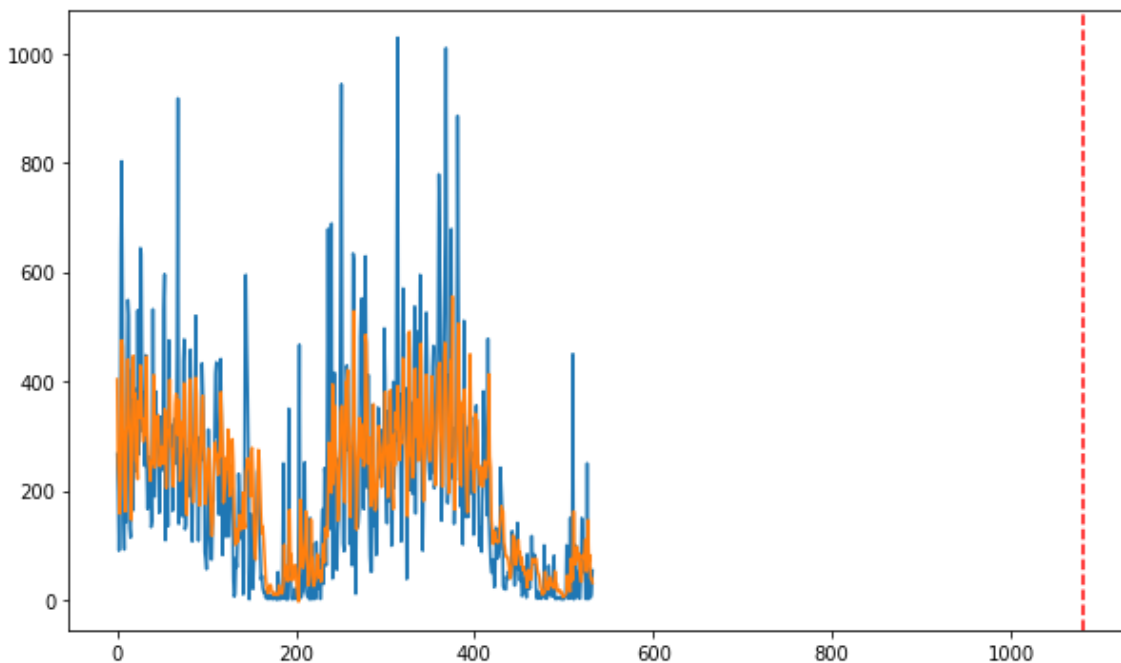

```
RMSE of validation set: 5.685395494865303
RMSE of entire data set: 3.468539649190204
```

Sales of Store - 11

```
Validation Loss Decreased(inf--->0.02649)        Saving The Model
Validation Loss Decreased(0.02649--->0.01606)    Saving The Model
Validation Loss Decreased(0.01606--->0.01566)    Saving The Model
Validation Loss Decreased(0.01566--->0.01463)    Saving The Model
Validation Loss Decreased(0.01463--->0.01453)    Saving The Model
Validation Loss Decreased(0.01453--->0.01421)    Saving The Model
Validation Loss Decreased(0.01421--->0.01400)    Saving The Model
Validation Loss Decreased(0.01400--->0.01390)    Saving The Model
Validation Loss Decreased(0.01390--->0.01387)    Saving The Model
Validation Loss Decreased(0.01387--->0.01385)    Saving The Model
Validation Loss Decreased(0.01385--->0.01380)    Saving The Model
Validation Loss Decreased(0.01380--->0.01374)    Saving The Model
Validation Loss Decreased(0.01374--->0.01367)    Saving The Model
Validation Loss Decreased(0.01367--->0.01363)    Saving The Model
Validation Loss Decreased(0.01363--->0.01350)    Saving The Model
Validation Loss Decreased(0.01350--->0.01332)    Saving The Model
Validation Loss Decreased(0.01332--->0.01315)    Saving The Model
Validation Loss Decreased(0.01315--->0.01302)    Saving The Model
Validation Loss Decreased(0.01302--->0.01291)    Saving The Model
Validation Loss Decreased(0.01291--->0.01282)    Saving The Model
Validation Loss Decreased(0.01282--->0.01274)    Saving The Model
Validation Loss Decreased(0.01274--->0.01268)    Saving The Model
Validation Loss Decreased(0.01268--->0.01263)    Saving The Model
Validation Loss Decreased(0.01263--->0.01259)    Saving The Model
Validation Loss Decreased(0.01259--->0.01256)    Saving The Model
Validation Loss Decreased(0.01256--->0.01255)    Saving The Model
Validation Loss Decreased(0.01255--->0.01254)    Saving The Model
Validation Loss Decreased(0.01254--->0.01253)    Saving The Model
Validation Loss Decreased(0.01253--->0.01250)    Saving The Model
Validation Loss Decreased(0.01250--->0.01246)    Saving The Model
Validation Loss Decreased(0.01246--->0.01240)    Saving The Model
Validation Loss Decreased(0.01240--->0.01231)    Saving The Model
Validation Loss Decreased(0.01231--->0.01220)    Saving The Model
Validation Loss Decreased(0.01220--->0.01208)    Saving The Model
Validation Loss Decreased(0.01208--->0.01197)    Saving The Model
Validation Loss Decreased(0.01197--->0.01186)    Saving The Model
Validation Loss Decreased(0.01186--->0.01177)    Saving The Model
Validation Loss Decreased(0.01177--->0.01168)    Saving The Model
Validation Loss Decreased(0.01168--->0.01161)    Saving The Model
Validation Loss Decreased(0.01161--->0.01154)    Saving The Model
Validation Loss Decreased(0.01154--->0.01149)    Saving The Model
Validation Loss Decreased(0.01149--->0.01144)    Saving The Model
Validation Loss Decreased(0.01144--->0.01139)    Saving The Model
Validation Loss Decreased(0.01139--->0.01135)    Saving The Model
Validation Loss Decreased(0.01135--->0.01130)    Saving The Model
Validation Loss Decreased(0.01130--->0.01125)    Saving The Model
Validation Loss Decreased(0.01125--->0.01118)    Saving The Model
Validation Loss Decreased(0.01118--->0.01110)    Saving The Model
Validation Loss Decreased(0.01110--->0.01101)    Saving The Model
Validation Loss Decreased(0.01101--->0.01093)    Saving The Model
Validation Loss Decreased(0.01093--->0.01086)    Saving The Model
Validation Loss Decreased(0.01086--->0.01079)    Saving The Model
Validation Loss Decreased(0.01079--->0.01073)    Saving The Model
Validation Loss Decreased(0.01073--->0.01069)    Saving The Model
Validation Loss Decreased(0.01069--->0.01065)    Saving The Model
Validation Loss Decreased(0.01065--->0.01061)    Saving The Model
Validation Loss Decreased(0.01061--->0.01058)    Saving The Model
Validation Loss Decreased(0.01058--->0.01055)    Saving The Model
Validation Loss Decreased(0.01055--->0.01051)    Saving The Model
Validation Loss Decreased(0.01051--->0.01047)    Saving The Model
Validation Loss Decreased(0.01047--->0.01043)    Saving The Model
```

```
Validation Loss Decreased(0.01043--->0.01039)    Saving The Model
Validation Loss Decreased(0.01039--->0.01035)    Saving The Model
Validation Loss Decreased(0.01035--->0.01033)    Saving The Model
Validation Loss Decreased(0.01033--->0.01031)    Saving The Model
Validation Loss Decreased(0.01031--->0.01029)    Saving The Model
Validation Loss Decreased(0.01029--->0.01028)    Saving The Model
Validation Loss Decreased(0.01028--->0.01027)    Saving The Model
Validation Loss Decreased(0.01027--->0.01026)    Saving The Model
Validation Loss Decreased(0.01026--->0.01025)    Saving The Model
Validation Loss Decreased(0.01025--->0.01023)    Saving The Model
Validation Loss Decreased(0.01023--->0.01022)    Saving The Model
Validation Loss Decreased(0.01022--->0.01021)    Saving The Model
Validation Loss Decreased(0.01021--->0.01020)    Saving The Model
Validation Loss Decreased(0.01020--->0.01019)    Saving The Model
Validation Loss Decreased(0.01019--->0.01019)    Saving The Model
Epoch 100            Training Loss: 0.01065                Val
idation Loss: 0.01019
Validation Loss Decreased(0.01019--->0.01019)    Saving The Model
Validation Loss Decreased(0.01019--->0.01019)    Saving The Model
Validation Loss Decreased(0.01019--->0.01018)    Saving The Model
Validation Loss Decreased(0.01018--->0.01018)    Saving The Model
Validation Loss Decreased(0.01018--->0.01017)    Saving The Model
Validation Loss Decreased(0.01017--->0.01017)    Saving The Model
Validation Loss Decreased(0.01017--->0.01017)    Saving The Model
Validation Loss Decreased(0.01017--->0.01017)    Saving The Model
Validation Loss Decreased(0.01017--->0.01016)    Saving The Model
Validation Loss Decreased(0.01016--->0.01016)    Saving The Model
Validation Loss Decreased(0.01016--->0.01015)    Saving The Model
Validation Loss Decreased(0.01015--->0.01015)    Saving The Model
Validation Loss Decreased(0.01015--->0.01015)    Saving The Model
Validation Loss Decreased(0.01015--->0.01014)    Saving The Model
Validation Loss Decreased(0.01014--->0.01014)    Saving The Model
Validation Loss Decreased(0.01014--->0.01013)    Saving The Model
Validation Loss Decreased(0.01013--->0.01012)    Saving The Model
Validation Loss Decreased(0.01012--->0.01011)    Saving The Model
Validation Loss Decreased(0.01011--->0.01010)    Saving The Model
Validation Loss Decreased(0.01010--->0.01009)    Saving The Model
Validation Loss Decreased(0.01009--->0.01008)    Saving The Model
Validation Loss Decreased(0.01008--->0.01006)    Saving The Model
Validation Loss Decreased(0.01006--->0.01005)    Saving The Model
Validation Loss Decreased(0.01005--->0.01004)    Saving The Model
Validation Loss Decreased(0.01004--->0.01003)    Saving The Model
Validation Loss Decreased(0.01003--->0.01002)    Saving The Model
Validation Loss Decreased(0.01002--->0.01000)    Saving The Model
Validation Loss Decreased(0.01000--->0.00999)    Saving The Model
Validation Loss Decreased(0.00999--->0.00998)    Saving The Model
Validation Loss Decreased(0.00998--->0.00997)    Saving The Model
Validation Loss Decreased(0.00997--->0.00996)    Saving The Model
Validation Loss Decreased(0.00996--->0.00995)    Saving The Model
Validation Loss Decreased(0.00995--->0.00994)    Saving The Model
Validation Loss Decreased(0.00994--->0.00993)    Saving The Model
Validation Loss Decreased(0.00993--->0.00992)    Saving The Model
Validation Loss Decreased(0.00992--->0.00991)    Saving The Model
Validation Loss Decreased(0.00991--->0.00991)    Saving The Model
Validation Loss Decreased(0.00991--->0.00990)    Saving The Model
Validation Loss Decreased(0.00990--->0.00990)    Saving The Model
Validation Loss Decreased(0.00990--->0.00989)    Saving The Model
Validation Loss Decreased(0.00989--->0.00989)    Saving The Model
Validation Loss Decreased(0.00989--->0.00989)    Saving The Model
Validation Loss Decreased(0.00989--->0.00988)    Saving The Model
Validation Loss Decreased(0.00988--->0.00988)    Saving The Model
```
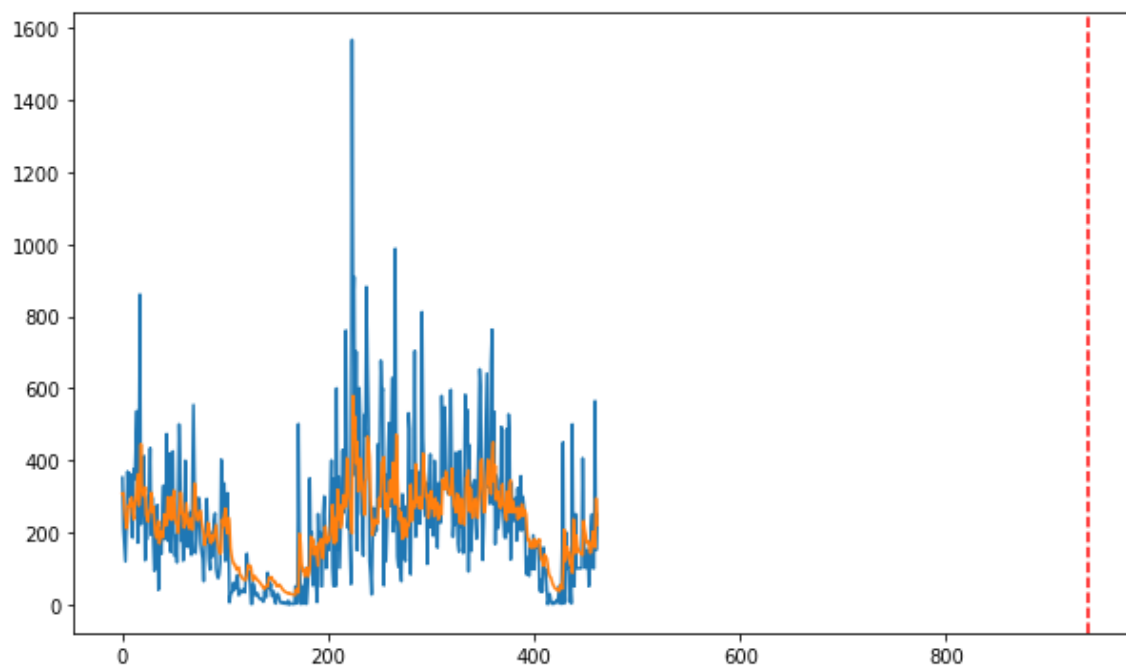
Validation Loss Decreased(0.00988--->0.00988)   Saving The Model
Epoch 200   Training Loss: 0.01019   Val
idation Loss: 0.00999
Epoch 300   Training Loss: 0.01010   Val
idation Loss: 0.01008
Epoch 400   Training Loss: 0.01002   Val
idation Loss: 0.01012
Epoch 500   Training Loss: 0.00989   Val
idation Loss: 0.01010
Epoch 600   Training Loss: 0.00967   Val
idation Loss: 0.01014
Epoch 700   Training Loss: 0.00918   Val
idation Loss: 0.01102
Epoch 800   Training Loss: 0.00758   Val
idation Loss: 0.01199
Epoch 900   Training Loss: 0.00610   Val
idation Loss: 0.01259
Epoch 1000   Training Loss: 0.00544   Val
idation Loss: 0.01411
Epoch 1100   Training Loss: 0.00404   Val
idation Loss: 0.01571
Epoch 1200   Training Loss: 0.00333   Val
idation Loss: 0.01719
Epoch 1300   Training Loss: 0.00298   Val
idation Loss: 0.01816
Epoch 1400   Training Loss: 0.00328   Val
idation Loss: 0.01848
Epoch 1500   Training Loss: 0.00253   Val
idation Loss: 0.02001
Epoch 1600   Training Loss: 0.00205   Val
idation Loss: 0.02066
Epoch 1700   Training Loss: 0.00191   Val
idation Loss: 0.02100
Epoch 1800   Training Loss: 0.00182   Val
idation Loss: 0.02078
Epoch 1900   Training Loss: 0.00161   Val
idation Loss: 0.02104
Epoch 2000   Training Loss: 0.00160   Val
idation Loss: 0.02107
Epoch 2100   Training Loss: 0.00149   Val
idation Loss: 0.02116
Stopping the training early   Model saved
        Training Loss: 0.001397421583533287
        Validation Loss: 0.009883176535367966

Prediction


```
RMSE of validation set: 7.256884908529673
RMSE of entire data set: 4.231677259824578
```

Sales of Store - 12
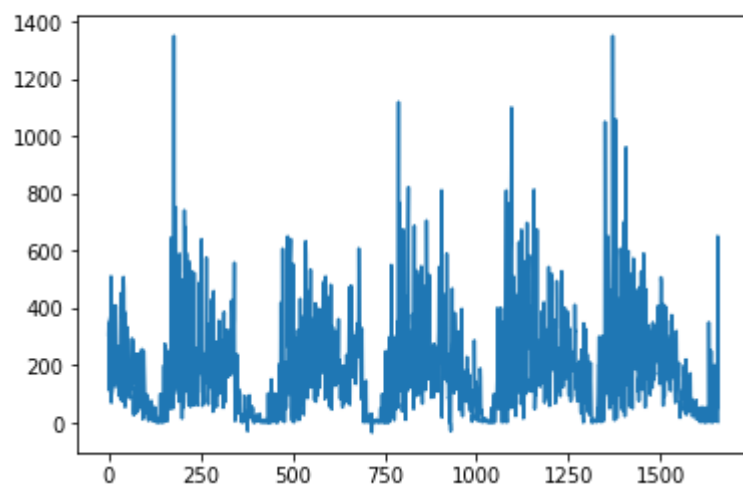
```
Validation Loss Decreased(inf--->0.04873)        Saving The Model
Validation Loss Decreased(0.04873--->0.02927)    Saving The Model
Validation Loss Decreased(0.02927--->0.01745)    Saving The Model
Validation Loss Decreased(0.01745--->0.01578)    Saving The Model
Validation Loss Decreased(0.01578--->0.01494)    Saving The Model
Validation Loss Decreased(0.01494--->0.01472)    Saving The Model
Validation Loss Decreased(0.01472--->0.01446)    Saving The Model
Validation Loss Decreased(0.01446--->0.01431)    Saving The Model
Validation Loss Decreased(0.01431--->0.01424)    Saving The Model
Validation Loss Decreased(0.01424--->0.01420)    Saving The Model
Validation Loss Decreased(0.01420--->0.01418)    Saving The Model
Validation Loss Decreased(0.01418--->0.01414)    Saving The Model
Validation Loss Decreased(0.01414--->0.01409)    Saving The Model
Validation Loss Decreased(0.01409--->0.01405)    Saving The Model
Validation Loss Decreased(0.01405--->0.01403)    Saving The Model
Validation Loss Decreased(0.01403--->0.01387)    Saving The Model
Validation Loss Decreased(0.01387--->0.01371)    Saving The Model
Validation Loss Decreased(0.01371--->0.01357)    Saving The Model
Validation Loss Decreased(0.01357--->0.01346)    Saving The Model
Validation Loss Decreased(0.01346--->0.01337)    Saving The Model
Validation Loss Decreased(0.01337--->0.01330)    Saving The Model
Validation Loss Decreased(0.01330--->0.01324)    Saving The Model
Validation Loss Decreased(0.01324--->0.01320)    Saving The Model
Validation Loss Decreased(0.01320--->0.01317)    Saving The Model
Validation Loss Decreased(0.01317--->0.01315)    Saving The Model
Validation Loss Decreased(0.01315--->0.01314)    Saving The Model
Validation Loss Decreased(0.01314--->0.01313)    Saving The Model
Validation Loss Decreased(0.01313--->0.01309)    Saving The Model
Validation Loss Decreased(0.01309--->0.01302)    Saving The Model
Validation Loss Decreased(0.01302--->0.01293)    Saving The Model
Validation Loss Decreased(0.01293--->0.01284)    Saving The Model
Validation Loss Decreased(0.01284--->0.01275)    Saving The Model
Validation Loss Decreased(0.01275--->0.01267)    Saving The Model
Validation Loss Decreased(0.01267--->0.01261)    Saving The Model
Validation Loss Decreased(0.01261--->0.01257)    Saving The Model
Validation Loss Decreased(0.01257--->0.01255)    Saving The Model
Validation Loss Decreased(0.01255--->0.01254)    Saving The Model
Validation Loss Decreased(0.01254--->0.01252)    Saving The Model
Validation Loss Decreased(0.01252--->0.01248)    Saving The Model
Validation Loss Decreased(0.01248--->0.01243)    Saving The Model
Validation Loss Decreased(0.01243--->0.01238)    Saving The Model
Validation Loss Decreased(0.01238--->0.01234)    Saving The Model
Validation Loss Decreased(0.01234--->0.01231)    Saving The Model
Validation Loss Decreased(0.01231--->0.01228)    Saving The Model
Validation Loss Decreased(0.01228--->0.01226)    Saving The Model
Validation Loss Decreased(0.01226--->0.01224)    Saving The Model
Validation Loss Decreased(0.01224--->0.01221)    Saving The Model
Validation Loss Decreased(0.01221--->0.01218)    Saving The Model
Validation Loss Decreased(0.01218--->0.01215)    Saving The Model
Epoch 100               Training Loss: 0.01029                  Val
idation Loss: 0.01212
Validation Loss Decreased(0.01215--->0.01212)    Saving The Model
Validation Loss Decreased(0.01212--->0.01210)    Saving The Model
Validation Loss Decreased(0.01210--->0.01209)    Saving The Model
Validation Loss Decreased(0.01209--->0.01207)    Saving The Model
Validation Loss Decreased(0.01207--->0.01204)    Saving The Model
Validation Loss Decreased(0.01204--->0.01201)    Saving The Model
Validation Loss Decreased(0.01201--->0.01198)    Saving The Model
Validation Loss Decreased(0.01198--->0.01196)    Saving The Model
Validation Loss Decreased(0.01196--->0.01194)    Saving The Model
Validation Loss Decreased(0.01194--->0.01192)    Saving The Model
```

```
Validation Loss Decreased(0.01192--->0.01189)    Saving The Model
Validation Loss Decreased(0.01189--->0.01186)    Saving The Model
Validation Loss Decreased(0.01186--->0.01184)    Saving The Model
Validation Loss Decreased(0.01184--->0.01181)    Saving The Model
Validation Loss Decreased(0.01181--->0.01178)    Saving The Model
Validation Loss Decreased(0.01178--->0.01176)    Saving The Model
Validation Loss Decreased(0.01176--->0.01173)    Saving The Model
Validation Loss Decreased(0.01173--->0.01170)    Saving The Model
Validation Loss Decreased(0.01170--->0.01168)    Saving The Model
Validation Loss Decreased(0.01168--->0.01166)    Saving The Model
Validation Loss Decreased(0.01166--->0.01164)    Saving The Model
Validation Loss Decreased(0.01164--->0.01163)    Saving The Model
Validation Loss Decreased(0.01163--->0.01162)    Saving The Model
Validation Loss Decreased(0.01162--->0.01160)    Saving The Model
Validation Loss Decreased(0.01160--->0.01159)    Saving The Model
Validation Loss Decreased(0.01159--->0.01157)    Saving The Model
Validation Loss Decreased(0.01157--->0.01156)    Saving The Model
Validation Loss Decreased(0.01156--->0.01156)    Saving The Model
Validation Loss Decreased(0.01156--->0.01155)    Saving The Model
Validation Loss Decreased(0.01155--->0.01154)    Saving The Model
Validation Loss Decreased(0.01154--->0.01154)    Saving The Model
Validation Loss Decreased(0.01154--->0.01153)    Saving The Model
Validation Loss Decreased(0.01153--->0.01153)    Saving The Model
Validation Loss Decreased(0.01153--->0.01153)    Saving The Model
Validation Loss Decreased(0.01153--->0.01153)    Saving The Model
Validation Loss Decreased(0.01153--->0.01152)    Saving The Model
Validation Loss Decreased(0.01152--->0.01152)    Saving The Model
Validation Loss Decreased(0.01152--->0.01151)    Saving The Model
Validation Loss Decreased(0.01151--->0.01150)    Saving The Model
Validation Loss Decreased(0.01150--->0.01149)    Saving The Model
Validation Loss Decreased(0.01149--->0.01149)    Saving The Model
Validation Loss Decreased(0.01149--->0.01148)    Saving The Model
Validation Loss Decreased(0.01148--->0.01148)    Saving The Model
Validation Loss Decreased(0.01148--->0.01147)    Saving The Model
Validation Loss Decreased(0.01147--->0.01147)    Saving The Model
Validation Loss Decreased(0.01147--->0.01146)    Saving The Model
Validation Loss Decreased(0.01146--->0.01145)    Saving The Model
Validation Loss Decreased(0.01145--->0.01144)    Saving The Model
Validation Loss Decreased(0.01144--->0.01144)    Saving The Model
Validation Loss Decreased(0.01144--->0.01143)    Saving The Model
Validation Loss Decreased(0.01143--->0.01142)    Saving The Model
Validation Loss Decreased(0.01142--->0.01142)    Saving The Model
Validation Loss Decreased(0.01142--->0.01141)    Saving The Model
Validation Loss Decreased(0.01141--->0.01141)    Saving The Model
Validation Loss Decreased(0.01141--->0.01140)    Saving The Model
Validation Loss Decreased(0.01140--->0.01140)    Saving The Model
Validation Loss Decreased(0.01140--->0.01139)    Saving The Model
Validation Loss Decreased(0.01139--->0.01139)    Saving The Model
Validation Loss Decreased(0.01139--->0.01138)    Saving The Model
Validation Loss Decreased(0.01138--->0.01138)    Saving The Model
Validation Loss Decreased(0.01138--->0.01137)    Saving The Model
Validation Loss Decreased(0.01137--->0.01136)    Saving The Model
Validation Loss Decreased(0.01136--->0.01136)    Saving The Model
Validation Loss Decreased(0.01136--->0.01135)    Saving The Model
Validation Loss Decreased(0.01135--->0.01135)    Saving The Model
Validation Loss Decreased(0.01135--->0.01134)    Saving The Model
Validation Loss Decreased(0.01134--->0.01134)    Saving The Model
Validation Loss Decreased(0.01134--->0.01133)    Saving The Model
Validation Loss Decreased(0.01133--->0.01132)    Saving The Model
Validation Loss Decreased(0.01132--->0.01132)    Saving The Model
Validation Loss Decreased(0.01132--->0.01131)    Saving The Model
```

```
Validation Loss Decreased(0.01131--->0.01131)    Saving The Model
Validation Loss Decreased(0.01131--->0.01130)    Saving The Model
Validation Loss Decreased(0.01130--->0.01129)    Saving The Model
Validation Loss Decreased(0.01129--->0.01129)    Saving The Model
Validation Loss Decreased(0.01129--->0.01128)    Saving The Model
Validation Loss Decreased(0.01128--->0.01128)    Saving The Model
Validation Loss Decreased(0.01128--->0.01127)    Saving The Model
Validation Loss Decreased(0.01127--->0.01127)    Saving The Model
Validation Loss Decreased(0.01127--->0.01126)    Saving The Model
Validation Loss Decreased(0.01126--->0.01126)    Saving The Model
Validation Loss Decreased(0.01126--->0.01125)    Saving The Model
Validation Loss Decreased(0.01125--->0.01125)    Saving The Model
Validation Loss Decreased(0.01125--->0.01124)    Saving The Model
Validation Loss Decreased(0.01124--->0.01124)    Saving The Model
Validation Loss Decreased(0.01124--->0.01123)    Saving The Model
Validation Loss Decreased(0.01123--->0.01123)    Saving The Model
Validation Loss Decreased(0.01123--->0.01122)    Saving The Model
Validation Loss Decreased(0.01122--->0.01122)    Saving The Model
Validation Loss Decreased(0.01122--->0.01121)    Saving The Model
Validation Loss Decreased(0.01121--->0.01121)    Saving The Model
Validation Loss Decreased(0.01121--->0.01120)    Saving The Model
Validation Loss Decreased(0.01120--->0.01120)    Saving The Model
Validation Loss Decreased(0.01120--->0.01119)    Saving The Model
Validation Loss Decreased(0.01119--->0.01119)    Saving The Model
Validation Loss Decreased(0.01119--->0.01118)    Saving The Model
Validation Loss Decreased(0.01118--->0.01118)    Saving The Model
Validation Loss Decreased(0.01118--->0.01117)    Saving The Model
Validation Loss Decreased(0.01117--->0.01117)    Saving The Model
Validation Loss Decreased(0.01117--->0.01116)    Saving The Model
Epoch 200            Training Loss: 0.00965                    Val
idation Loss: 0.01116
Validation Loss Decreased(0.01116--->0.01116)    Saving The Model
Validation Loss Decreased(0.01116--->0.01116)    Saving The Model
Validation Loss Decreased(0.01116--->0.01115)    Saving The Model
Validation Loss Decreased(0.01115--->0.01115)    Saving The Model
Validation Loss Decreased(0.01115--->0.01114)    Saving The Model
Validation Loss Decreased(0.01114--->0.01114)    Saving The Model
Validation Loss Decreased(0.01114--->0.01114)    Saving The Model
Validation Loss Decreased(0.01114--->0.01113)    Saving The Model
Validation Loss Decreased(0.01113--->0.01113)    Saving The Model
Validation Loss Decreased(0.01113--->0.01112)    Saving The Model
Validation Loss Decreased(0.01112--->0.01112)    Saving The Model
Validation Loss Decreased(0.01112--->0.01112)    Saving The Model
Validation Loss Decreased(0.01112--->0.01111)    Saving The Model
Validation Loss Decreased(0.01111--->0.01111)    Saving The Model
Validation Loss Decreased(0.01111--->0.01111)    Saving The Model
Validation Loss Decreased(0.01111--->0.01110)    Saving The Model
Validation Loss Decreased(0.01110--->0.01110)    Saving The Model
Validation Loss Decreased(0.01110--->0.01110)    Saving The Model
Validation Loss Decreased(0.01110--->0.01109)    Saving The Model
Validation Loss Decreased(0.01109--->0.01109)    Saving The Model
Validation Loss Decreased(0.01109--->0.01109)    Saving The Model
Validation Loss Decreased(0.01109--->0.01108)    Saving The Model
Validation Loss Decreased(0.01108--->0.01108)    Saving The Model
Validation Loss Decreased(0.01108--->0.01108)    Saving The Model
Validation Loss Decreased(0.01108--->0.01107)    Saving The Model
Validation Loss Decreased(0.01107--->0.01107)    Saving The Model
Validation Loss Decreased(0.01107--->0.01107)    Saving The Model
Validation Loss Decreased(0.01107--->0.01106)    Saving The Model
Validation Loss Decreased(0.01106--->0.01106)    Saving The Model
Validation Loss Decreased(0.01106--->0.01106)    Saving The Model
```

```
Validation Loss Decreased(0.01106--->0.01106)    Saving The Model
Validation Loss Decreased(0.01106--->0.01105)    Saving The Model
Validation Loss Decreased(0.01105--->0.01105)    Saving The Model
Validation Loss Decreased(0.01105--->0.01105)    Saving The Model
Validation Loss Decreased(0.01105--->0.01104)    Saving The Model
Validation Loss Decreased(0.01104--->0.01104)    Saving The Model
Validation Loss Decreased(0.01104--->0.01104)    Saving The Model
Validation Loss Decreased(0.01104--->0.01104)    Saving The Model
Validation Loss Decreased(0.01104--->0.01103)    Saving The Model
Validation Loss Decreased(0.01103--->0.01103)    Saving The Model
Validation Loss Decreased(0.01103--->0.01103)    Saving The Model
Validation Loss Decreased(0.01103--->0.01103)    Saving The Model
Validation Loss Decreased(0.01103--->0.01102)    Saving The Model
Validation Loss Decreased(0.01102--->0.01102)    Saving The Model
Validation Loss Decreased(0.01102--->0.01102)    Saving The Model
Validation Loss Decreased(0.01102--->0.01102)    Saving The Model
Validation Loss Decreased(0.01102--->0.01101)    Saving The Model
Validation Loss Decreased(0.01101--->0.01101)    Saving The Model
Validation Loss Decreased(0.01101--->0.01101)    Saving The Model
Validation Loss Decreased(0.01101--->0.01101)    Saving The Model
Validation Loss Decreased(0.01101--->0.01100)    Saving The Model
Validation Loss Decreased(0.01100--->0.01100)    Saving The Model
Validation Loss Decreased(0.01100--->0.01100)    Saving The Model
Validation Loss Decreased(0.01100--->0.01100)    Saving The Model
Validation Loss Decreased(0.01100--->0.01100)    Saving The Model
Validation Loss Decreased(0.01100--->0.01099)    Saving The Model
Validation Loss Decreased(0.01099--->0.01099)    Saving The Model
Validation Loss Decreased(0.01099--->0.01099)    Saving The Model
Validation Loss Decreased(0.01099--->0.01099)    Saving The Model
Validation Loss Decreased(0.01099--->0.01099)    Saving The Model
Validation Loss Decreased(0.01099--->0.01098)    Saving The Model
Validation Loss Decreased(0.01098--->0.01098)    Saving The Model
Validation Loss Decreased(0.01098--->0.01098)    Saving The Model
Validation Loss Decreased(0.01098--->0.01098)    Saving The Model
Validation Loss Decreased(0.01098--->0.01098)    Saving The Model
Validation Loss Decreased(0.01098--->0.01097)    Saving The Model
Validation Loss Decreased(0.01097--->0.01097)    Saving The Model
Validation Loss Decreased(0.01097--->0.01097)    Saving The Model
Validation Loss Decreased(0.01097--->0.01097)    Saving The Model
Validation Loss Decreased(0.01097--->0.01097)    Saving The Model
Validation Loss Decreased(0.01097--->0.01096)    Saving The Model
Validation Loss Decreased(0.01096--->0.01096)    Saving The Model
Validation Loss Decreased(0.01096--->0.01096)    Saving The Model
Validation Loss Decreased(0.01096--->0.01096)    Saving The Model
Validation Loss Decreased(0.01096--->0.01096)    Saving The Model
Validation Loss Decreased(0.01096--->0.01096)    Saving The Model
Validation Loss Decreased(0.01096--->0.01095)    Saving The Model
Validation Loss Decreased(0.01095--->0.01095)    Saving The Model
Validation Loss Decreased(0.01095--->0.01095)    Saving The Model
Validation Loss Decreased(0.01095--->0.01095)    Saving The Model
Validation Loss Decreased(0.01095--->0.01095)    Saving The Model
Validation Loss Decreased(0.01095--->0.01095)    Saving The Model
Validation Loss Decreased(0.01095--->0.01094)    Saving The Model
Validation Loss Decreased(0.01094--->0.01094)    Saving The Model
Validation Loss Decreased(0.01094--->0.01094)    Saving The Model
Validation Loss Decreased(0.01094--->0.01094)    Saving The Model
Validation Loss Decreased(0.01094--->0.01094)    Saving The Model
Validation Loss Decreased(0.01094--->0.01094)    Saving The Model
Validation Loss Decreased(0.01094--->0.01094)    Saving The Model
Validation Loss Decreased(0.01094--->0.01093)    Saving The Model
Validation Loss Decreased(0.01093--->0.01093)    Saving The Model
```

```
Validation Loss Decreased(0.01093--->0.01093)      Saving The Model
Validation Loss Decreased(0.01093--->0.01093)      Saving The Model
Validation Loss Decreased(0.01093--->0.01093)      Saving The Model
Validation Loss Decreased(0.01093--->0.01093)      Saving The Model
Validation Loss Decreased(0.01093--->0.01093)      Saving The Model
Validation Loss Decreased(0.01093--->0.01093)      Saving The Model
Validation Loss Decreased(0.01093--->0.01092)      Saving The Model
Validation Loss Decreased(0.01092--->0.01092)      Saving The Model
Validation Loss Decreased(0.01092--->0.01092)      Saving The Model
Epoch 300              Training Loss: 0.00955                   Val
idation Loss: 0.01092
Validation Loss Decreased(0.01092--->0.01092)      Saving The Model
Validation Loss Decreased(0.01092--->0.01092)      Saving The Model
Validation Loss Decreased(0.01092--->0.01092)      Saving The Model
Validation Loss Decreased(0.01092--->0.01092)      Saving The Model
Validation Loss Decreased(0.01092--->0.01092)      Saving The Model
Validation Loss Decreased(0.01092--->0.01092)      Saving The Model
Validation Loss Decreased(0.01092--->0.01092)      Saving The Model
Validation Loss Decreased(0.01092--->0.01091)      Saving The Model
Validation Loss Decreased(0.01091--->0.01091)      Saving The Model
Validation Loss Decreased(0.01091--->0.01091)      Saving The Model
Validation Loss Decreased(0.01091--->0.01091)      Saving The Model
Validation Loss Decreased(0.01091--->0.01091)      Saving The Model
Validation Loss Decreased(0.01091--->0.01091)      Saving The Model
Validation Loss Decreased(0.01091--->0.01091)      Saving The Model
Validation Loss Decreased(0.01091--->0.01091)      Saving The Model
Validation Loss Decreased(0.01091--->0.01091)      Saving The Model
Validation Loss Decreased(0.01091--->0.01091)      Saving The Model
Validation Loss Decreased(0.01091--->0.01091)      Saving The Model
Validation Loss Decreased(0.01091--->0.01091)      Saving The Model
Validation Loss Decreased(0.01091--->0.01091)      Saving The Model
Validation Loss Decreased(0.01091--->0.01090)      Saving The Model
Validation Loss Decreased(0.01090--->0.01090)      Saving The Model
Validation Loss Decreased(0.01090--->0.01090)      Saving The Model
Validation Loss Decreased(0.01090--->0.01090)      Saving The Model
Validation Loss Decreased(0.01090--->0.01090)      Saving The Model
Validation Loss Decreased(0.01090--->0.01090)      Saving The Model
Validation Loss Decreased(0.01090--->0.01090)      Saving The Model
Validation Loss Decreased(0.01090--->0.01090)      Saving The Model
Validation Loss Decreased(0.01090--->0.01090)      Saving The Model
Validation Loss Decreased(0.01090--->0.01090)      Saving The Model
Validation Loss Decreased(0.01090--->0.01090)      Saving The Model
Validation Loss Decreased(0.01090--->0.01090)      Saving The Model
Validation Loss Decreased(0.01090--->0.01090)      Saving The Model
Validation Loss Decreased(0.01090--->0.01090)      Saving The Model
Validation Loss Decreased(0.01090--->0.01090)      Saving The Model
Validation Loss Decreased(0.01090--->0.01090)      Saving The Model
Validation Loss Decreased(0.01090--->0.01090)      Saving The Model
Validation Loss Decreased(0.01090--->0.01090)      Saving The Model
Validation Loss Decreased(0.01090--->0.01090)      Saving The Model
Validation Loss Decreased(0.01090--->0.01090)      Saving The Model
Validation Loss Decreased(0.01090--->0.01090)      Saving The Model
Validation Loss Decreased(0.01090--->0.01089)      Saving The Model
Validation Loss Decreased(0.01089--->0.01089)      Saving The Model
Validation Loss Decreased(0.01089--->0.01089)      Saving The Model
Validation Loss Decreased(0.01089--->0.01089)      Saving The Model
Validation Loss Decreased(0.01089--->0.01089)      Saving The Model
Validation Loss Decreased(0.01089--->0.01089)      Saving The Model
```
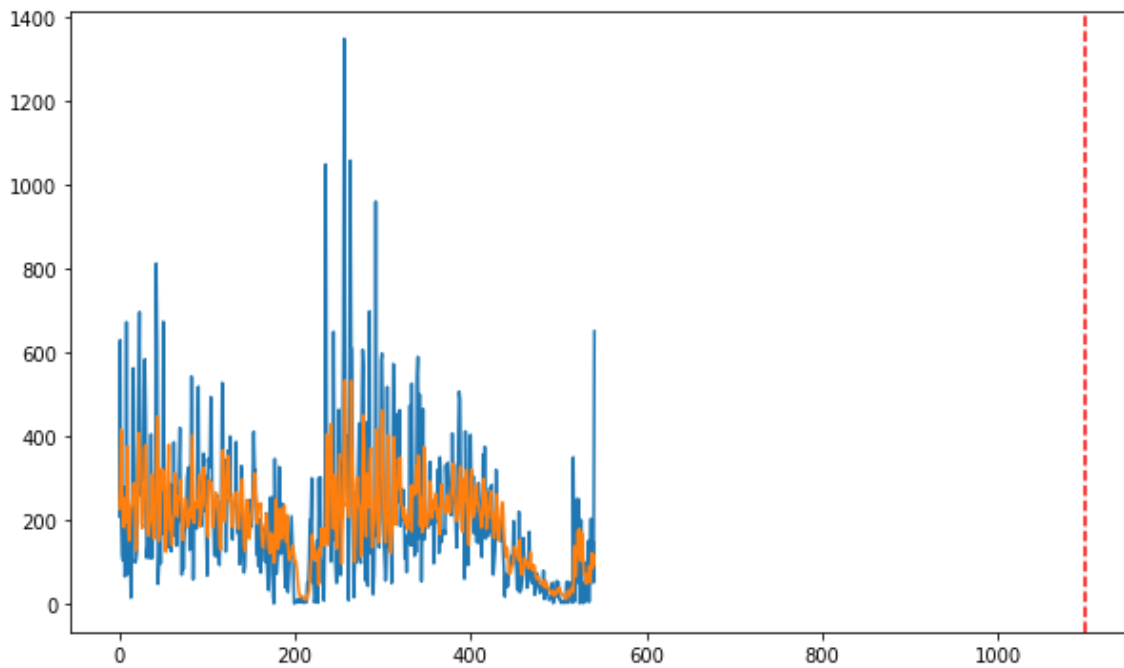
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Epoch 400   Training Loss: 0.00950   Val
    idation Loss: 0.01089
    Validation Loss Decreased(0.01089--->0.01089)   Saving The Model
    Validation Loss Decreased(0.01089--->0.01088)   Saving The Model
    Validation Loss Decreased(0.01088--->0.01088)   Saving The Model
    Validation Loss Decreased(0.01088--->0.01088)   Saving The Model
    Validation Loss Decreased(0.01088--->0.01088)   Saving The Model
    Validation Loss Decreased(0.01088--->0.01088)   Saving The Model
    Validation Loss Decreased(0.01088--->0.01088)   Saving The Model
    Validation Loss Decreased(0.01088--->0.01088)   Saving The Model
    Validation Loss Decreased(0.01088--->0.01087)   Saving The Model
    Validation Loss Decreased(0.01087--->0.01087)   Saving The Model
    Validation Loss Decreased(0.01087--->0.01087)   Saving The Model
    Validation Loss Decreased(0.01087--->0.01087)   Saving The Model
    Validation Loss Decreased(0.01087--->0.01086)   Saving The Model
    Validation Loss Decreased(0.01086--->0.01086)   Saving The Model
    Validation Loss Decreased(0.01086--->0.01086)   Saving The Model
    Validation Loss Decreased(0.01086--->0.01086)   Saving The Model

```
Validation Loss Decreased(0.01086--->0.01085)    Saving The Model
Validation Loss Decreased(0.01085--->0.01085)    Saving The Model
Validation Loss Decreased(0.01085--->0.01085)    Saving The Model
Validation Loss Decreased(0.01085--->0.01085)    Saving The Model
Validation Loss Decreased(0.01085--->0.01085)    Saving The Model
Validation Loss Decreased(0.01085--->0.01084)    Saving The Model
Validation Loss Decreased(0.01084--->0.01084)    Saving The Model
Validation Loss Decreased(0.01084--->0.01084)    Saving The Model
Validation Loss Decreased(0.01084--->0.01084)    Saving The Model
Validation Loss Decreased(0.01084--->0.01083)    Saving The Model
Validation Loss Decreased(0.01083--->0.01083)    Saving The Model
Validation Loss Decreased(0.01083--->0.01082)    Saving The Model
Validation Loss Decreased(0.01082--->0.01082)    Saving The Model
Validation Loss Decreased(0.01082--->0.01081)    Saving The Model
Validation Loss Decreased(0.01081--->0.01081)    Saving The Model
Validation Loss Decreased(0.01081--->0.01080)    Saving The Model
Validation Loss Decreased(0.01080--->0.01079)    Saving The Model
Validation Loss Decreased(0.01079--->0.01078)    Saving The Model
Validation Loss Decreased(0.01078--->0.01077)    Saving The Model
Validation Loss Decreased(0.01077--->0.01076)    Saving The Model
Validation Loss Decreased(0.01076--->0.01075)    Saving The Model
Validation Loss Decreased(0.01075--->0.01072)    Saving The Model
Validation Loss Decreased(0.01072--->0.01066)    Saving The Model
Validation Loss Decreased(0.01066--->0.01063)    Saving The Model
Validation Loss Decreased(0.01063--->0.01057)    Saving The Model
Validation Loss Decreased(0.01057--->0.01055)    Saving The Model
Validation Loss Decreased(0.01055--->0.01048)    Saving The Model
Validation Loss Decreased(0.01048--->0.01047)    Saving The Model
Validation Loss Decreased(0.01047--->0.01044)    Saving The Model
Validation Loss Decreased(0.01044--->0.01043)    Saving The Model
Validation Loss Decreased(0.01043--->0.01043)    Saving The Model
Epoch 500              Training Loss: 0.00892              Val
idation Loss: 0.01053
Epoch 600              Training Loss: 0.00851              Val
idation Loss: 0.01094
Epoch 700              Training Loss: 0.00817              Val
idation Loss: 0.01142
Epoch 800              Training Loss: 0.00759              Val
idation Loss: 0.01196
Epoch 900              Training Loss: 0.00745              Val
idation Loss: 0.01369
Epoch 1000             Training Loss: 0.00593              Val
idation Loss: 0.01360
Epoch 1100             Training Loss: 0.00528              Val
idation Loss: 0.01497
Epoch 1200             Training Loss: 0.00491              Val
idation Loss: 0.01737
Epoch 1300             Training Loss: 0.00445              Val
idation Loss: 0.01812
Epoch 1400             Training Loss: 0.00431              Val
idation Loss: 0.01914
Epoch 1500             Training Loss: 0.00401              Val
idation Loss: 0.02006
Epoch 1600             Training Loss: 0.00394              Val
idation Loss: 0.02172
Epoch 1700             Training Loss: 0.00353              Val
idation Loss: 0.02128
Epoch 1800             Training Loss: 0.00356              Val
idation Loss: 0.02201
Epoch 1900             Training Loss: 0.00325              Val
idation Loss: 0.02248
```

Epoch 2000   Training Loss: 0.00311   Val
idation Loss: 0.02329
Epoch 2100   Training Loss: 0.00314   Val
idation Loss: 0.02329
Epoch 2200   Training Loss: 0.00311   Val
idation Loss: 0.02502
Epoch 2300   Training Loss: 0.00285   Val
idation Loss: 0.02607
Epoch 2400   Training Loss: 0.00275   Val
idation Loss: 0.02576
Stopping the training early   Model saved
        Training Loss: 0.002661010716110468
        Validation Loss: 0.010433966293931007

Prediction

RMSE of validation set: 6.07679855850659
RMSE of entire data set: 3.33724355412969

Sales of Store - 13
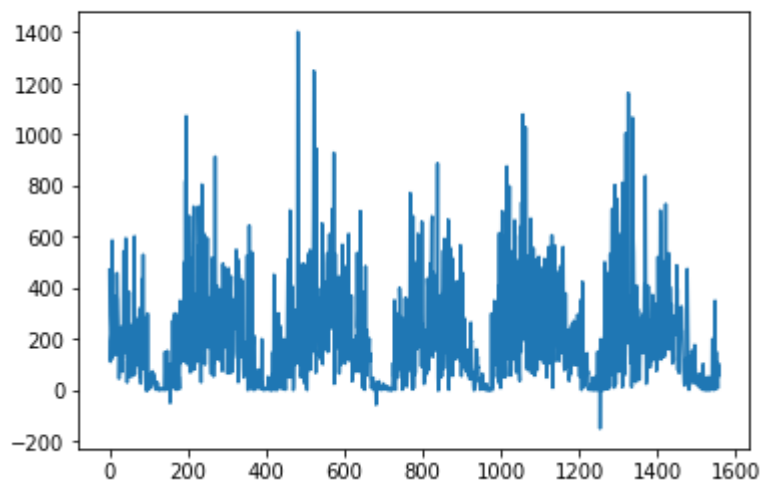
```
Validation Loss Decreased(inf--->0.01648)        Saving The Model
Validation Loss Decreased(0.01648--->0.01484)    Saving The Model
Validation Loss Decreased(0.01484--->0.01448)    Saving The Model
Validation Loss Decreased(0.01448--->0.01430)    Saving The Model
Validation Loss Decreased(0.01430--->0.01403)    Saving The Model
Validation Loss Decreased(0.01403--->0.01376)    Saving The Model
Validation Loss Decreased(0.01376--->0.01371)    Saving The Model
Validation Loss Decreased(0.01371--->0.01353)    Saving The Model
Validation Loss Decreased(0.01353--->0.01337)    Saving The Model
Validation Loss Decreased(0.01337--->0.01332)    Saving The Model
Validation Loss Decreased(0.01332--->0.01310)    Saving The Model
Validation Loss Decreased(0.01310--->0.01282)    Saving The Model
Validation Loss Decreased(0.01282--->0.01264)    Saving The Model
Validation Loss Decreased(0.01264--->0.01259)    Saving The Model
Validation Loss Decreased(0.01259--->0.01250)    Saving The Model
Validation Loss Decreased(0.01250--->0.01227)    Saving The Model
Validation Loss Decreased(0.01227--->0.01208)    Saving The Model
Validation Loss Decreased(0.01208--->0.01203)    Saving The Model
Validation Loss Decreased(0.01203--->0.01170)    Saving The Model
Validation Loss Decreased(0.01170--->0.01164)    Saving The Model
Validation Loss Decreased(0.01164--->0.01164)    Saving The Model
Validation Loss Decreased(0.01164--->0.01162)    Saving The Model
Validation Loss Decreased(0.01162--->0.01160)    Saving The Model
Validation Loss Decreased(0.01160--->0.01160)    Saving The Model
Validation Loss Decreased(0.01160--->0.01154)    Saving The Model
Validation Loss Decreased(0.01154--->0.01148)    Saving The Model
Validation Loss Decreased(0.01148--->0.01147)    Saving The Model
Validation Loss Decreased(0.01147--->0.01145)    Saving The Model
Validation Loss Decreased(0.01145--->0.01141)    Saving The Model
Validation Loss Decreased(0.01141--->0.01138)    Saving The Model
Validation Loss Decreased(0.01138--->0.01138)    Saving The Model
Validation Loss Decreased(0.01138--->0.01134)    Saving The Model
Validation Loss Decreased(0.01134--->0.01134)    Saving The Model
Validation Loss Decreased(0.01134--->0.01131)    Saving The Model
Validation Loss Decreased(0.01131--->0.01129)    Saving The Model
Validation Loss Decreased(0.01129--->0.01127)    Saving The Model
Validation Loss Decreased(0.01127--->0.01126)    Saving The Model
Validation Loss Decreased(0.01126--->0.01126)    Saving The Model
Validation Loss Decreased(0.01126--->0.01124)    Saving The Model
Validation Loss Decreased(0.01124--->0.01123)    Saving The Model
Validation Loss Decreased(0.01123--->0.01123)    Saving The Model
Validation Loss Decreased(0.01123--->0.01123)    Saving The Model
Validation Loss Decreased(0.01123--->0.01121)    Saving The Model
Validation Loss Decreased(0.01121--->0.01120)    Saving The Model
Validation Loss Decreased(0.01120--->0.01119)    Saving The Model
Validation Loss Decreased(0.01119--->0.01119)    Saving The Model
Validation Loss Decreased(0.01119--->0.01119)    Saving The Model
Validation Loss Decreased(0.01119--->0.01118)    Saving The Model
Validation Loss Decreased(0.01118--->0.01118)    Saving The Model
Validation Loss Decreased(0.01118--->0.01118)    Saving The Model
Validation Loss Decreased(0.01118--->0.01116)    Saving The Model
Validation Loss Decreased(0.01116--->0.01115)    Saving The Model
Validation Loss Decreased(0.01115--->0.01114)    Saving The Model
Validation Loss Decreased(0.01114--->0.01114)    Saving The Model
Validation Loss Decreased(0.01114--->0.01113)    Saving The Model
Validation Loss Decreased(0.01113--->0.01112)    Saving The Model
Validation Loss Decreased(0.01112--->0.01112)    Saving The Model
Epoch 100              Training Loss: 0.01056                  Val
idation Loss: 0.01112
Validation Loss Decreased(0.01112--->0.01112)    Saving The Model
Validation Loss Decreased(0.01112--->0.01112)    Saving The Model
```

```
Validation Loss Decreased(0.01112--->0.01111)    Saving The Model
Validation Loss Decreased(0.01111--->0.01110)    Saving The Model
Validation Loss Decreased(0.01110--->0.01109)    Saving The Model
Validation Loss Decreased(0.01109--->0.01108)    Saving The Model
Validation Loss Decreased(0.01108--->0.01107)    Saving The Model
Validation Loss Decreased(0.01107--->0.01107)    Saving The Model
Validation Loss Decreased(0.01107--->0.01106)    Saving The Model
Validation Loss Decreased(0.01106--->0.01105)    Saving The Model
Validation Loss Decreased(0.01105--->0.01105)    Saving The Model
Validation Loss Decreased(0.01105--->0.01105)    Saving The Model
Validation Loss Decreased(0.01105--->0.01104)    Saving The Model
Validation Loss Decreased(0.01104--->0.01103)    Saving The Model
Validation Loss Decreased(0.01103--->0.01102)    Saving The Model
Validation Loss Decreased(0.01102--->0.01102)    Saving The Model
Validation Loss Decreased(0.01102--->0.01101)    Saving The Model
Validation Loss Decreased(0.01101--->0.01100)    Saving The Model
Validation Loss Decreased(0.01100--->0.01099)    Saving The Model
Validation Loss Decreased(0.01099--->0.01099)    Saving The Model
Validation Loss Decreased(0.01099--->0.01098)    Saving The Model
Validation Loss Decreased(0.01098--->0.01098)    Saving The Model
Validation Loss Decreased(0.01098--->0.01097)    Saving The Model
Validation Loss Decreased(0.01097--->0.01097)    Saving The Model
Validation Loss Decreased(0.01097--->0.01096)    Saving The Model
Validation Loss Decreased(0.01096--->0.01095)    Saving The Model
Validation Loss Decreased(0.01095--->0.01095)    Saving The Model
Validation Loss Decreased(0.01095--->0.01095)    Saving The Model
Validation Loss Decreased(0.01095--->0.01094)    Saving The Model
Validation Loss Decreased(0.01094--->0.01094)    Saving The Model
Validation Loss Decreased(0.01094--->0.01094)    Saving The Model
Validation Loss Decreased(0.01094--->0.01094)    Saving The Model
Validation Loss Decreased(0.01094--->0.01094)    Saving The Model
Validation Loss Decreased(0.01094--->0.01093)    Saving The Model
Validation Loss Decreased(0.01093--->0.01093)    Saving The Model
Validation Loss Decreased(0.01093--->0.01093)    Saving The Model
Validation Loss Decreased(0.01093--->0.01092)    Saving The Model
Validation Loss Decreased(0.01092--->0.01089)    Saving The Model
Validation Loss Decreased(0.01089--->0.01086)    Saving The Model
Validation Loss Decreased(0.01086--->0.01082)    Saving The Model
Validation Loss Decreased(0.01082--->0.01076)    Saving The Model
Validation Loss Decreased(0.01076--->0.01070)    Saving The Model
Validation Loss Decreased(0.01070--->0.01064)    Saving The Model
Validation Loss Decreased(0.01064--->0.01058)    Saving The Model
Validation Loss Decreased(0.01058--->0.01053)    Saving The Model
Validation Loss Decreased(0.01053--->0.01049)    Saving The Model
Validation Loss Decreased(0.01049--->0.01046)    Saving The Model
Validation Loss Decreased(0.01046--->0.01042)    Saving The Model
Validation Loss Decreased(0.01042--->0.01039)    Saving The Model
Validation Loss Decreased(0.01039--->0.01037)    Saving The Model
Validation Loss Decreased(0.01037--->0.01034)    Saving The Model
Validation Loss Decreased(0.01034--->0.01032)    Saving The Model
Validation Loss Decreased(0.01032--->0.01031)    Saving The Model
Validation Loss Decreased(0.01031--->0.01030)    Saving The Model
Validation Loss Decreased(0.01030--->0.01029)    Saving The Model
Validation Loss Decreased(0.01029--->0.01028)    Saving The Model
Validation Loss Decreased(0.01028--->0.01025)    Saving The Model
Validation Loss Decreased(0.01025--->0.01022)    Saving The Model
Validation Loss Decreased(0.01022--->0.01019)    Saving The Model
Validation Loss Decreased(0.01019--->0.01018)    Saving The Model
Validation Loss Decreased(0.01018--->0.01018)    Saving The Model
Validation Loss Decreased(0.01018--->0.01017)    Saving The Model
Validation Loss Decreased(0.01017--->0.01014)    Saving The Model
```

```
Validation Loss Decreased(0.01014--->0.01011)    Saving The Model
Validation Loss Decreased(0.01011--->0.01010)    Saving The Model
Validation Loss Decreased(0.01010--->0.01008)    Saving The Model
Validation Loss Decreased(0.01008--->0.01005)    Saving The Model
Epoch 200              Training Loss: 0.00961            Val
idation Loss: 0.01004
Validation Loss Decreased(0.01005--->0.01004)    Saving The Model
Validation Loss Decreased(0.01004--->0.01004)    Saving The Model
Validation Loss Decreased(0.01004--->0.01003)    Saving The Model
Validation Loss Decreased(0.01003--->0.01003)    Saving The Model
Validation Loss Decreased(0.01003--->0.01003)    Saving The Model
Validation Loss Decreased(0.01003--->0.01002)    Saving The Model
Validation Loss Decreased(0.01002--->0.01002)    Saving The Model
Validation Loss Decreased(0.01002--->0.01002)    Saving The Model
Validation Loss Decreased(0.01002--->0.01001)    Saving The Model
Validation Loss Decreased(0.01001--->0.01001)    Saving The Model
Validation Loss Decreased(0.01001--->0.01001)    Saving The Model
Validation Loss Decreased(0.01001--->0.01000)    Saving The Model
Epoch 300              Training Loss: 0.00928            Val
idation Loss: 0.01000
Validation Loss Decreased(0.01000--->0.01000)    Saving The Model
Validation Loss Decreased(0.01000--->0.01000)    Saving The Model
Validation Loss Decreased(0.01000--->0.00999)    Saving The Model
Validation Loss Decreased(0.00999--->0.00999)    Saving The Model
Epoch 400              Training Loss: 0.00884            Val
idation Loss: 0.01050
Epoch 500              Training Loss: 0.00788            Val
idation Loss: 0.01146
Epoch 600              Training Loss: 0.00725            Val
idation Loss: 0.01212
Epoch 700              Training Loss: 0.00642            Val
idation Loss: 0.01290
Epoch 800              Training Loss: 0.00584            Val
idation Loss: 0.01333
Epoch 900              Training Loss: 0.00538            Val
idation Loss: 0.01491
Epoch 1000             Training Loss: 0.00477            Val
idation Loss: 0.01578
Epoch 1100             Training Loss: 0.00429            Val
idation Loss: 0.01684
Epoch 1200             Training Loss: 0.00406            Val
idation Loss: 0.01700
Epoch 1300             Training Loss: 0.00370            Val
idation Loss: 0.01760
Epoch 1400             Training Loss: 0.00368            Val
idation Loss: 0.01774
Epoch 1500             Training Loss: 0.00358            Val
idation Loss: 0.01881
Epoch 1600             Training Loss: 0.00330            Val
idation Loss: 0.01924
Epoch 1700             Training Loss: 0.00315            Val
idation Loss: 0.01931
Epoch 1800             Training Loss: 0.00284            Val
idation Loss: 0.02001
Epoch 1900             Training Loss: 0.00283            Val
idation Loss: 0.02034
Epoch 2000             Training Loss: 0.00255            Val
idation Loss: 0.01967
Epoch 2100             Training Loss: 0.00258            Val
idation Loss: 0.02033
Epoch 2200             Training Loss: 0.00308            Val
```

```
idation Loss: 0.02012
Epoch 2300              Training Loss: 0.00237                      Val
idation Loss: 0.02095
Stopping the training early          Model saved
        Training Loss:  0.0022137227933853865
        Validation Loss:  0.009989150799810886
```
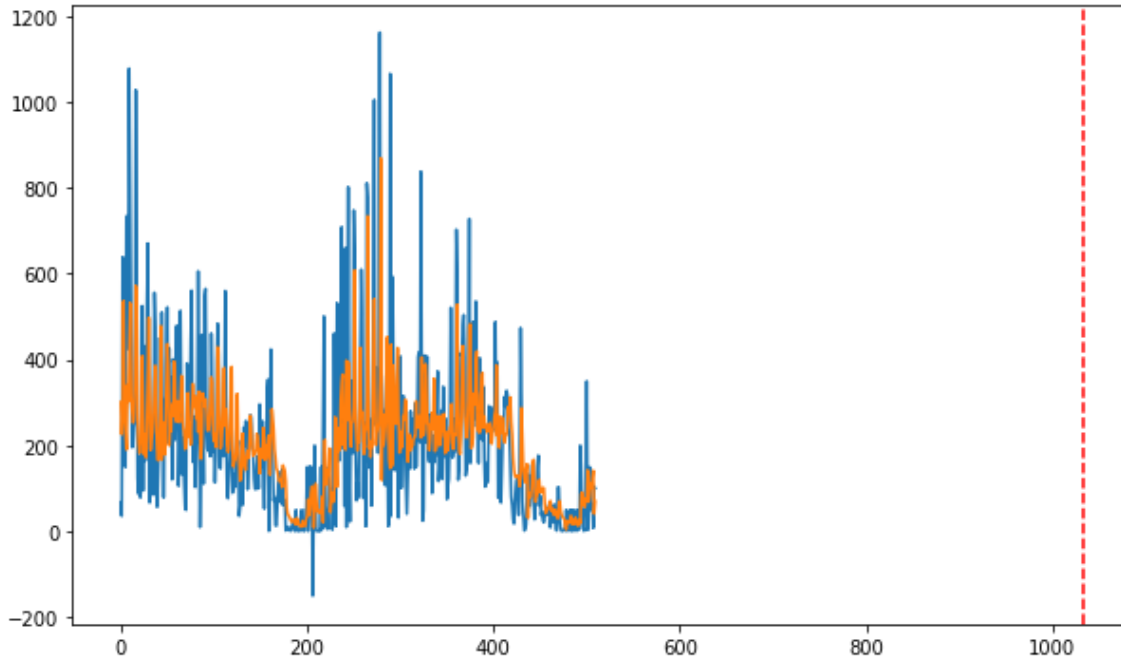
Prediction


```
RMSE of validation set: 6.864216555325907
RMSE of entire data set: 3.8462464634475344
```

Sales of Store - 14
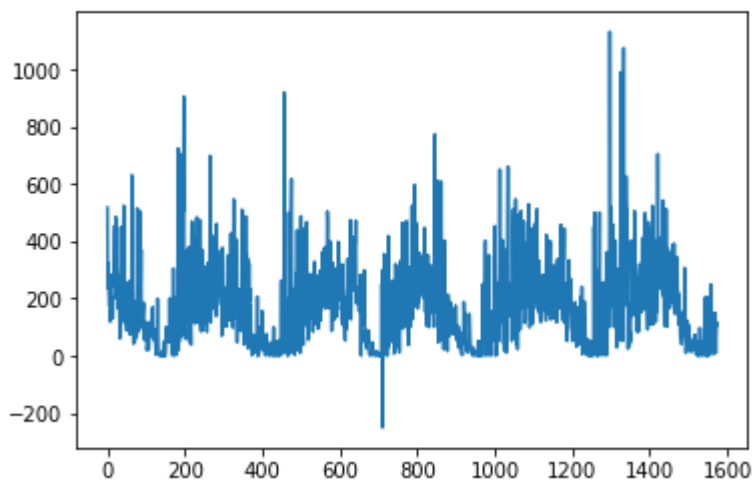
```
Validation Loss Decreased(inf--->0.20323)        Saving The Model
Validation Loss Decreased(0.20323--->0.15093)    Saving The Model
Validation Loss Decreased(0.15093--->0.10142)    Saving The Model
Validation Loss Decreased(0.10142--->0.05647)    Saving The Model
Validation Loss Decreased(0.05647--->0.02178)    Saving The Model
Validation Loss Decreased(0.02178--->0.01145)    Saving The Model
Validation Loss Decreased(0.01145--->0.01125)    Saving The Model
Validation Loss Decreased(0.01125--->0.01065)    Saving The Model
Validation Loss Decreased(0.01065--->0.01058)    Saving The Model
Validation Loss Decreased(0.01058--->0.01040)    Saving The Model
Validation Loss Decreased(0.01040--->0.01037)    Saving The Model
Validation Loss Decreased(0.01037--->0.01036)    Saving The Model
Validation Loss Decreased(0.01036--->0.01036)    Saving The Model
Validation Loss Decreased(0.01036--->0.01025)    Saving The Model
Validation Loss Decreased(0.01025--->0.01020)    Saving The Model
Validation Loss Decreased(0.01020--->0.01018)    Saving The Model
Validation Loss Decreased(0.01018--->0.01016)    Saving The Model
Validation Loss Decreased(0.01016--->0.01015)    Saving The Model
Validation Loss Decreased(0.01015--->0.01014)    Saving The Model
Validation Loss Decreased(0.01014--->0.01014)    Saving The Model
Validation Loss Decreased(0.01014--->0.01011)    Saving The Model
Validation Loss Decreased(0.01011--->0.01005)    Saving The Model
Validation Loss Decreased(0.01005--->0.01001)    Saving The Model
Validation Loss Decreased(0.01001--->0.00998)    Saving The Model
Validation Loss Decreased(0.00998--->0.00996)    Saving The Model
Validation Loss Decreased(0.00996--->0.00995)    Saving The Model
Validation Loss Decreased(0.00995--->0.00995)    Saving The Model
Validation Loss Decreased(0.00995--->0.00995)    Saving The Model
Validation Loss Decreased(0.00995--->0.00991)    Saving The Model
Validation Loss Decreased(0.00991--->0.00987)    Saving The Model
Validation Loss Decreased(0.00987--->0.00983)    Saving The Model
Validation Loss Decreased(0.00983--->0.00980)    Saving The Model
Validation Loss Decreased(0.00980--->0.00977)    Saving The Model
Validation Loss Decreased(0.00977--->0.00975)    Saving The Model
Validation Loss Decreased(0.00975--->0.00973)    Saving The Model
Validation Loss Decreased(0.00973--->0.00972)    Saving The Model
Validation Loss Decreased(0.00972--->0.00972)    Saving The Model
Validation Loss Decreased(0.00972--->0.00971)    Saving The Model
Validation Loss Decreased(0.00971--->0.00971)    Saving The Model
Validation Loss Decreased(0.00971--->0.00971)    Saving The Model
Validation Loss Decreased(0.00971--->0.00970)    Saving The Model
Validation Loss Decreased(0.00970--->0.00970)    Saving The Model
Validation Loss Decreased(0.00970--->0.00968)    Saving The Model
Epoch 100               Training Loss: 0.00876                    Val
idation Loss: 0.00966
Validation Loss Decreased(0.00968--->0.00966)    Saving The Model
Validation Loss Decreased(0.00966--->0.00964)    Saving The Model
Validation Loss Decreased(0.00964--->0.00962)    Saving The Model
Validation Loss Decreased(0.00962--->0.00959)    Saving The Model
Validation Loss Decreased(0.00959--->0.00956)    Saving The Model
Validation Loss Decreased(0.00956--->0.00954)    Saving The Model
Validation Loss Decreased(0.00954--->0.00951)    Saving The Model
Validation Loss Decreased(0.00951--->0.00949)    Saving The Model
Validation Loss Decreased(0.00949--->0.00948)    Saving The Model
Validation Loss Decreased(0.00948--->0.00946)    Saving The Model
Validation Loss Decreased(0.00946--->0.00945)    Saving The Model
Validation Loss Decreased(0.00945--->0.00944)    Saving The Model
Validation Loss Decreased(0.00944--->0.00943)    Saving The Model
Validation Loss Decreased(0.00943--->0.00942)    Saving The Model
Validation Loss Decreased(0.00942--->0.00940)    Saving The Model
Validation Loss Decreased(0.00940--->0.00939)    Saving The Model
```

```
Validation Loss Decreased(0.00939--->0.00937)     Saving The Model
Validation Loss Decreased(0.00937--->0.00935)     Saving The Model
Validation Loss Decreased(0.00935--->0.00933)     Saving The Model
Validation Loss Decreased(0.00933--->0.00930)     Saving The Model
Validation Loss Decreased(0.00930--->0.00928)     Saving The Model
Validation Loss Decreased(0.00928--->0.00926)     Saving The Model
Validation Loss Decreased(0.00926--->0.00924)     Saving The Model
Validation Loss Decreased(0.00924--->0.00922)     Saving The Model
Validation Loss Decreased(0.00922--->0.00921)     Saving The Model
Validation Loss Decreased(0.00921--->0.00919)     Saving The Model
Validation Loss Decreased(0.00919--->0.00918)     Saving The Model
Validation Loss Decreased(0.00918--->0.00916)     Saving The Model
Validation Loss Decreased(0.00916--->0.00915)     Saving The Model
Validation Loss Decreased(0.00915--->0.00913)     Saving The Model
Validation Loss Decreased(0.00913--->0.00911)     Saving The Model
Validation Loss Decreased(0.00911--->0.00909)     Saving The Model
Validation Loss Decreased(0.00909--->0.00907)     Saving The Model
Validation Loss Decreased(0.00907--->0.00905)     Saving The Model
Validation Loss Decreased(0.00905--->0.00903)     Saving The Model
Validation Loss Decreased(0.00903--->0.00901)     Saving The Model
Validation Loss Decreased(0.00901--->0.00899)     Saving The Model
Validation Loss Decreased(0.00899--->0.00897)     Saving The Model
Validation Loss Decreased(0.00897--->0.00896)     Saving The Model
Validation Loss Decreased(0.00896--->0.00894)     Saving The Model
Validation Loss Decreased(0.00894--->0.00892)     Saving The Model
Validation Loss Decreased(0.00892--->0.00890)     Saving The Model
Validation Loss Decreased(0.00890--->0.00889)     Saving The Model
Validation Loss Decreased(0.00889--->0.00887)     Saving The Model
Validation Loss Decreased(0.00887--->0.00885)     Saving The Model
Validation Loss Decreased(0.00885--->0.00883)     Saving The Model
Validation Loss Decreased(0.00883--->0.00881)     Saving The Model
Validation Loss Decreased(0.00881--->0.00879)     Saving The Model
Validation Loss Decreased(0.00879--->0.00877)     Saving The Model
Validation Loss Decreased(0.00877--->0.00875)     Saving The Model
Validation Loss Decreased(0.00875--->0.00874)     Saving The Model
Validation Loss Decreased(0.00874--->0.00872)     Saving The Model
Validation Loss Decreased(0.00872--->0.00870)     Saving The Model
Validation Loss Decreased(0.00870--->0.00868)     Saving The Model
Validation Loss Decreased(0.00868--->0.00867)     Saving The Model
Validation Loss Decreased(0.00867--->0.00865)     Saving The Model
Validation Loss Decreased(0.00865--->0.00863)     Saving The Model
Validation Loss Decreased(0.00863--->0.00861)     Saving The Model
Validation Loss Decreased(0.00861--->0.00859)     Saving The Model
Validation Loss Decreased(0.00859--->0.00858)     Saving The Model
Validation Loss Decreased(0.00858--->0.00856)     Saving The Model
Validation Loss Decreased(0.00856--->0.00855)     Saving The Model
Validation Loss Decreased(0.00855--->0.00853)     Saving The Model
Validation Loss Decreased(0.00853--->0.00851)     Saving The Model
Validation Loss Decreased(0.00851--->0.00850)     Saving The Model
Validation Loss Decreased(0.00850--->0.00848)     Saving The Model
Validation Loss Decreased(0.00848--->0.00847)     Saving The Model
Validation Loss Decreased(0.00847--->0.00845)     Saving The Model
Validation Loss Decreased(0.00845--->0.00844)     Saving The Model
Validation Loss Decreased(0.00844--->0.00843)     Saving The Model
Validation Loss Decreased(0.00843--->0.00842)     Saving The Model
Validation Loss Decreased(0.00842--->0.00841)     Saving The Model
Validation Loss Decreased(0.00841--->0.00840)     Saving The Model
Validation Loss Decreased(0.00840--->0.00839)     Saving The Model
Validation Loss Decreased(0.00839--->0.00838)     Saving The Model
Validation Loss Decreased(0.00838--->0.00837)     Saving The Model
Validation Loss Decreased(0.00837--->0.00836)     Saving The Model
```

```
Validation Loss Decreased(0.00836--->0.00836)    Saving The Model
Validation Loss Decreased(0.00836--->0.00835)    Saving The Model
Validation Loss Decreased(0.00835--->0.00834)    Saving The Model
Validation Loss Decreased(0.00834--->0.00834)    Saving The Model
Validation Loss Decreased(0.00834--->0.00834)    Saving The Model
Validation Loss Decreased(0.00834--->0.00833)    Saving The Model
Validation Loss Decreased(0.00833--->0.00833)    Saving The Model
Validation Loss Decreased(0.00833--->0.00833)    Saving The Model
Validation Loss Decreased(0.00833--->0.00833)    Saving The Model
Validation Loss Decreased(0.00833--->0.00832)    Saving The Model
Validation Loss Decreased(0.00832--->0.00832)    Saving The Model
Validation Loss Decreased(0.00832--->0.00832)    Saving The Model
Validation Loss Decreased(0.00832--->0.00832)    Saving The Model
Validation Loss Decreased(0.00832--->0.00832)    Saving The Model
Validation Loss Decreased(0.00832--->0.00832)    Saving The Model
Validation Loss Decreased(0.00832--->0.00832)    Saving The Model
Validation Loss Decreased(0.00832--->0.00831)    Saving The Model
Validation Loss Decreased(0.00831--->0.00831)    Saving The Model
Validation Loss Decreased(0.00831--->0.00831)    Saving The Model
Validation Loss Decreased(0.00831--->0.00831)    Saving The Model
Validation Loss Decreased(0.00831--->0.00830)    Saving The Model
Validation Loss Decreased(0.00830--->0.00830)    Saving The Model
Validation Loss Decreased(0.00830--->0.00830)    Saving The Model
Epoch 200              Training Loss: 0.00741                    Val
idation Loss: 0.00830
Validation Loss Decreased(0.00830--->0.00830)    Saving The Model
Validation Loss Decreased(0.00830--->0.00829)    Saving The Model
Validation Loss Decreased(0.00829--->0.00829)    Saving The Model
Validation Loss Decreased(0.00829--->0.00829)    Saving The Model
Validation Loss Decreased(0.00829--->0.00829)    Saving The Model
Validation Loss Decreased(0.00829--->0.00828)    Saving The Model
Validation Loss Decreased(0.00828--->0.00828)    Saving The Model
Validation Loss Decreased(0.00828--->0.00828)    Saving The Model
Validation Loss Decreased(0.00828--->0.00828)    Saving The Model
Validation Loss Decreased(0.00828--->0.00828)    Saving The Model
Validation Loss Decreased(0.00828--->0.00827)    Saving The Model
Validation Loss Decreased(0.00827--->0.00827)    Saving The Model
Validation Loss Decreased(0.00827--->0.00827)    Saving The Model
Validation Loss Decreased(0.00827--->0.00827)    Saving The Model
Validation Loss Decreased(0.00827--->0.00827)    Saving The Model
Validation Loss Decreased(0.00827--->0.00827)    Saving The Model
Validation Loss Decreased(0.00827--->0.00826)    Saving The Model
Validation Loss Decreased(0.00826--->0.00826)    Saving The Model
Validation Loss Decreased(0.00826--->0.00826)    Saving The Model
Validation Loss Decreased(0.00826--->0.00826)    Saving The Model
Validation Loss Decreased(0.00826--->0.00826)    Saving The Model
Validation Loss Decreased(0.00826--->0.00826)    Saving The Model
Validation Loss Decreased(0.00826--->0.00825)    Saving The Model
Validation Loss Decreased(0.00825--->0.00825)    Saving The Model
Validation Loss Decreased(0.00825--->0.00825)    Saving The Model
Validation Loss Decreased(0.00825--->0.00825)    Saving The Model
Validation Loss Decreased(0.00825--->0.00825)    Saving The Model
Validation Loss Decreased(0.00825--->0.00825)    Saving The Model
Validation Loss Decreased(0.00825--->0.00825)    Saving The Model
Validation Loss Decreased(0.00825--->0.00824)    Saving The Model
Validation Loss Decreased(0.00824--->0.00824)    Saving The Model
Validation Loss Decreased(0.00824--->0.00824)    Saving The Model
Validation Loss Decreased(0.00824--->0.00824)    Saving The Model
Validation Loss Decreased(0.00824--->0.00824)    Saving The Model
Validation Loss Decreased(0.00824--->0.00824)    Saving The Model
Validation Loss Decreased(0.00824--->0.00823)    Saving The Model
```

```
Validation Loss Decreased(0.00823--->0.00823)    Saving The Model
Validation Loss Decreased(0.00823--->0.00823)    Saving The Model
Validation Loss Decreased(0.00823--->0.00823)    Saving The Model
Validation Loss Decreased(0.00823--->0.00823)    Saving The Model
Validation Loss Decreased(0.00823--->0.00823)    Saving The Model
Validation Loss Decreased(0.00823--->0.00823)    Saving The Model
Validation Loss Decreased(0.00823--->0.00822)    Saving The Model
Validation Loss Decreased(0.00822--->0.00822)    Saving The Model
Validation Loss Decreased(0.00822--->0.00822)    Saving The Model
Validation Loss Decreased(0.00822--->0.00822)    Saving The Model
Validation Loss Decreased(0.00822--->0.00822)    Saving The Model
Validation Loss Decreased(0.00822--->0.00822)    Saving The Model
Validation Loss Decreased(0.00822--->0.00822)    Saving The Model
Validation Loss Decreased(0.00822--->0.00821)    Saving The Model
Validation Loss Decreased(0.00821--->0.00821)    Saving The Model
Validation Loss Decreased(0.00821--->0.00821)    Saving The Model
Validation Loss Decreased(0.00821--->0.00821)    Saving The Model
Validation Loss Decreased(0.00821--->0.00821)    Saving The Model
Validation Loss Decreased(0.00821--->0.00821)    Saving The Model
Validation Loss Decreased(0.00821--->0.00821)    Saving The Model
Validation Loss Decreased(0.00821--->0.00821)    Saving The Model
Validation Loss Decreased(0.00821--->0.00820)    Saving The Model
Validation Loss Decreased(0.00820--->0.00820)    Saving The Model
Validation Loss Decreased(0.00820--->0.00820)    Saving The Model
Validation Loss Decreased(0.00820--->0.00820)    Saving The Model
Validation Loss Decreased(0.00820--->0.00820)    Saving The Model
Validation Loss Decreased(0.00820--->0.00820)    Saving The Model
Validation Loss Decreased(0.00820--->0.00820)    Saving The Model
Validation Loss Decreased(0.00820--->0.00820)    Saving The Model
Validation Loss Decreased(0.00820--->0.00820)    Saving The Model
Validation Loss Decreased(0.00820--->0.00819)    Saving The Model
Validation Loss Decreased(0.00819--->0.00819)    Saving The Model
Validation Loss Decreased(0.00819--->0.00819)    Saving The Model
Validation Loss Decreased(0.00819--->0.00819)    Saving The Model
Validation Loss Decreased(0.00819--->0.00819)    Saving The Model
Validation Loss Decreased(0.00819--->0.00819)    Saving The Model
Validation Loss Decreased(0.00819--->0.00819)    Saving The Model
Validation Loss Decreased(0.00819--->0.00819)    Saving The Model
Validation Loss Decreased(0.00819--->0.00819)    Saving The Model
Validation Loss Decreased(0.00819--->0.00818)    Saving The Model
Validation Loss Decreased(0.00818--->0.00818)    Saving The Model
Validation Loss Decreased(0.00818--->0.00818)    Saving The Model
Validation Loss Decreased(0.00818--->0.00818)    Saving The Model
Validation Loss Decreased(0.00818--->0.00818)    Saving The Model
Validation Loss Decreased(0.00818--->0.00818)    Saving The Model
Validation Loss Decreased(0.00818--->0.00818)    Saving The Model
Validation Loss Decreased(0.00818--->0.00818)    Saving The Model
Validation Loss Decreased(0.00818--->0.00818)    Saving The Model
Validation Loss Decreased(0.00818--->0.00817)    Saving The Model
Validation Loss Decreased(0.00817--->0.00817)    Saving The Model
Validation Loss Decreased(0.00817--->0.00817)    Saving The Model
Validation Loss Decreased(0.00817--->0.00817)    Saving The Model
Validation Loss Decreased(0.00817--->0.00817)    Saving The Model
Validation Loss Decreased(0.00817--->0.00817)    Saving The Model
Validation Loss Decreased(0.00817--->0.00817)    Saving The Model
Validation Loss Decreased(0.00817--->0.00817)    Saving The Model
Validation Loss Decreased(0.00817--->0.00817)    Saving The Model
Validation Loss Decreased(0.00817--->0.00817)    Saving The Model
Validation Loss Decreased(0.00817--->0.00816)    Saving The Model
Validation Loss Decreased(0.00816--->0.00816)    Saving The Model
```
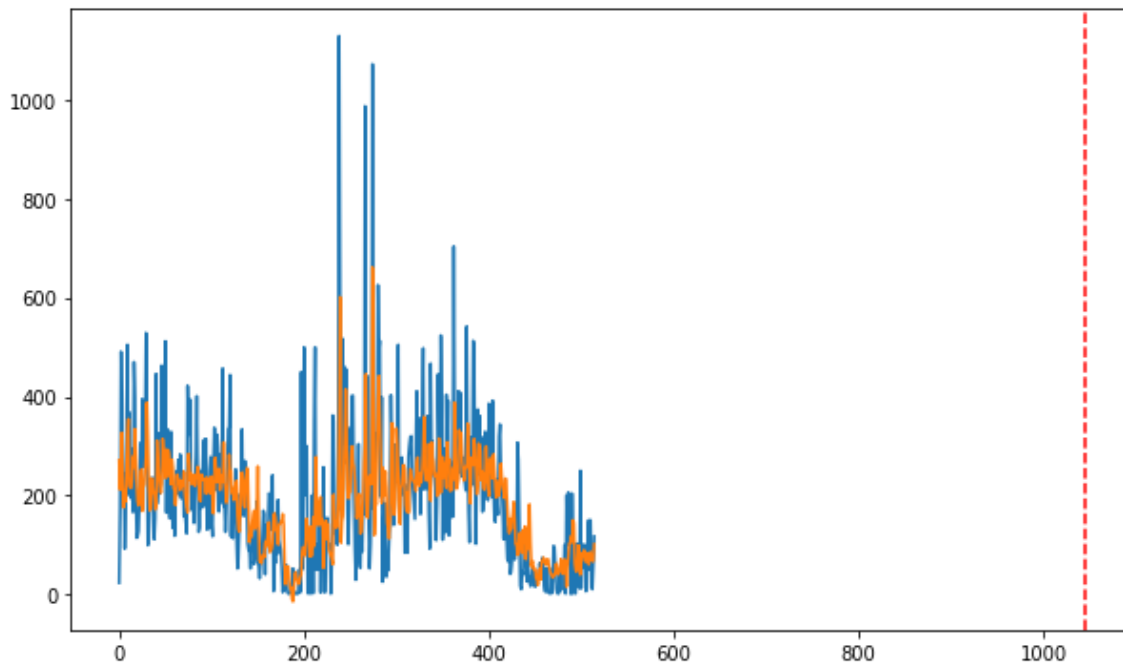
```
Validation Loss Decreased(0.00816--->0.00816)     Saving The Model
Validation Loss Decreased(0.00816--->0.00816)     Saving The Model
Validation Loss Decreased(0.00816--->0.00816)     Saving The Model
Epoch 300              Training Loss: 0.00726                  Val
idation Loss: 0.00816
Validation Loss Decreased(0.00816--->0.00816)     Saving The Model
Validation Loss Decreased(0.00816--->0.00816)     Saving The Model
Validation Loss Decreased(0.00816--->0.00816)     Saving The Model
Validation Loss Decreased(0.00816--->0.00816)     Saving The Model
Validation Loss Decreased(0.00816--->0.00816)     Saving The Model
Validation Loss Decreased(0.00816--->0.00816)     Saving The Model
Validation Loss Decreased(0.00816--->0.00815)     Saving The Model
Validation Loss Decreased(0.00815--->0.00815)     Saving The Model
Validation Loss Decreased(0.00815--->0.00815)     Saving The Model
Validation Loss Decreased(0.00815--->0.00815)     Saving The Model
Validation Loss Decreased(0.00815--->0.00815)     Saving The Model
Validation Loss Decreased(0.00815--->0.00815)     Saving The Model
Validation Loss Decreased(0.00815--->0.00815)     Saving The Model
Validation Loss Decreased(0.00815--->0.00815)     Saving The Model
Validation Loss Decreased(0.00815--->0.00815)     Saving The Model
Validation Loss Decreased(0.00815--->0.00815)     Saving The Model
Validation Loss Decreased(0.00815--->0.00814)     Saving The Model
Validation Loss Decreased(0.00814--->0.00814)     Saving The Model
Validation Loss Decreased(0.00814--->0.00814)     Saving The Model
Validation Loss Decreased(0.00814--->0.00814)     Saving The Model
Validation Loss Decreased(0.00814--->0.00814)     Saving The Model
Validation Loss Decreased(0.00814--->0.00814)     Saving The Model
Validation Loss Decreased(0.00814--->0.00814)     Saving The Model
Validation Loss Decreased(0.00814--->0.00814)     Saving The Model
Validation Loss Decreased(0.00814--->0.00814)     Saving The Model
Validation Loss Decreased(0.00814--->0.00814)     Saving The Model
Validation Loss Decreased(0.00814--->0.00814)     Saving The Model
Validation Loss Decreased(0.00814--->0.00813)     Saving The Model
Validation Loss Decreased(0.00813--->0.00813)     Saving The Model
Validation Loss Decreased(0.00813--->0.00813)     Saving The Model
Validation Loss Decreased(0.00813--->0.00813)     Saving The Model
Validation Loss Decreased(0.00813--->0.00813)     Saving The Model
Validation Loss Decreased(0.00813--->0.00813)     Saving The Model
Validation Loss Decreased(0.00813--->0.00813)     Saving The Model
Validation Loss Decreased(0.00813--->0.00813)     Saving The Model
Validation Loss Decreased(0.00813--->0.00813)     Saving The Model
Validation Loss Decreased(0.00813--->0.00813)     Saving The Model
Validation Loss Decreased(0.00813--->0.00813)     Saving The Model
Validation Loss Decreased(0.00813--->0.00812)     Saving The Model
Validation Loss Decreased(0.00812--->0.00812)     Saving The Model
Validation Loss Decreased(0.00812--->0.00812)     Saving The Model
Validation Loss Decreased(0.00812--->0.00812)     Saving The Model
Validation Loss Decreased(0.00812--->0.00812)     Saving The Model
Validation Loss Decreased(0.00812--->0.00812)     Saving The Model
Validation Loss Decreased(0.00812--->0.00812)     Saving The Model
Validation Loss Decreased(0.00812--->0.00812)     Saving The Model
Validation Loss Decreased(0.00812--->0.00812)     Saving The Model
Validation Loss Decreased(0.00812--->0.00812)     Saving The Model
Validation Loss Decreased(0.00812--->0.00812)     Saving The Model
Validation Loss Decreased(0.00812--->0.00812)     Saving The Model
Validation Loss Decreased(0.00812--->0.00812)     Saving The Model
Validation Loss Decreased(0.00812--->0.00812)     Saving The Model
Validation Loss Decreased(0.00812--->0.00811)     Saving The Model
```

```
Validation Loss Decreased(0.00811--->0.00811)    Saving The Model
Validation Loss Decreased(0.00811--->0.00811)    Saving The Model
Validation Loss Decreased(0.00811--->0.00811)    Saving The Model
Validation Loss Decreased(0.00811--->0.00811)    Saving The Model
Validation Loss Decreased(0.00811--->0.00811)    Saving The Model
Validation Loss Decreased(0.00811--->0.00811)    Saving The Model
Validation Loss Decreased(0.00811--->0.00811)    Saving The Model
Validation Loss Decreased(0.00811--->0.00811)    Saving The Model
Validation Loss Decreased(0.00811--->0.00811)    Saving The Model
Validation Loss Decreased(0.00811--->0.00811)    Saving The Model
Validation Loss Decreased(0.00811--->0.00811)    Saving The Model
Validation Loss Decreased(0.00811--->0.00811)    Saving The Model
Validation Loss Decreased(0.00811--->0.00811)    Saving The Model
Validation Loss Decreased(0.00811--->0.00810)    Saving The Model
Validation Loss Decreased(0.00810--->0.00810)    Saving The Model
Validation Loss Decreased(0.00810--->0.00810)    Saving The Model
Validation Loss Decreased(0.00810--->0.00810)    Saving The Model
Validation Loss Decreased(0.00810--->0.00810)    Saving The Model
Validation Loss Decreased(0.00810--->0.00810)    Saving The Model
Validation Loss Decreased(0.00810--->0.00810)    Saving The Model
Validation Loss Decreased(0.00810--->0.00810)    Saving The Model
Validation Loss Decreased(0.00810--->0.00810)    Saving The Model
Validation Loss Decreased(0.00810--->0.00810)    Saving The Model
Validation Loss Decreased(0.00810--->0.00810)    Saving The Model
Validation Loss Decreased(0.00810--->0.00810)    Saving The Model
Validation Loss Decreased(0.00810--->0.00810)    Saving The Model
Validation Loss Decreased(0.00810--->0.00810)    Saving The Model
Validation Loss Decreased(0.00810--->0.00810)    Saving The Model
Validation Loss Decreased(0.00810--->0.00809)    Saving The Model
Validation Loss Decreased(0.00809--->0.00809)    Saving The Model
Validation Loss Decreased(0.00809--->0.00809)    Saving The Model
Validation Loss Decreased(0.00809--->0.00809)    Saving The Model
Validation Loss Decreased(0.00809--->0.00809)    Saving The Model
Validation Loss Decreased(0.00809--->0.00809)    Saving The Model
Validation Loss Decreased(0.00809--->0.00809)    Saving The Model
Validation Loss Decreased(0.00809--->0.00809)    Saving The Model
Validation Loss Decreased(0.00809--->0.00809)    Saving The Model
Validation Loss Decreased(0.00809--->0.00809)    Saving The Model
Validation Loss Decreased(0.00809--->0.00809)    Saving The Model
Validation Loss Decreased(0.00809--->0.00809)    Saving The Model
Validation Loss Decreased(0.00809--->0.00809)    Saving The Model
Validation Loss Decreased(0.00809--->0.00809)    Saving The Model
Epoch 400              Training Loss: 0.00716                    Val
idation Loss: 0.00809
Validation Loss Decreased(0.00809--->0.00809)    Saving The Model
Validation Loss Decreased(0.00809--->0.00809)    Saving The Model
Validation Loss Decreased(0.00809--->0.00809)    Saving The Model
Validation Loss Decreased(0.00809--->0.00808)    Saving The Model
Validation Loss Decreased(0.00808--->0.00808)    Saving The Model
Validation Loss Decreased(0.00808--->0.00808)    Saving The Model
Validation Loss Decreased(0.00808--->0.00808)    Saving The Model
Validation Loss Decreased(0.00808--->0.00808)    Saving The Model
Validation Loss Decreased(0.00808--->0.00808)    Saving The Model
Validation Loss Decreased(0.00808--->0.00808)    Saving The Model
Validation Loss Decreased(0.00808--->0.00808)    Saving The Model
Validation Loss Decreased(0.00808--->0.00808)    Saving The Model
Validation Loss Decreased(0.00808--->0.00808)    Saving The Model
Validation Loss Decreased(0.00808--->0.00808)    Saving The Model
Validation Loss Decreased(0.00808--->0.00808)    Saving The Model
```

Validation Loss Decreased(0.00808--->0.00808)   Saving The Model
Validation Loss Decreased(0.00808--->0.00808)   Saving The Model
Validation Loss Decreased(0.00808--->0.00808)   Saving The Model
Validation Loss Decreased(0.00808--->0.00808)   Saving The Model
Validation Loss Decreased(0.00808--->0.00808)   Saving The Model
Validation Loss Decreased(0.00808--->0.00808)   Saving The Model
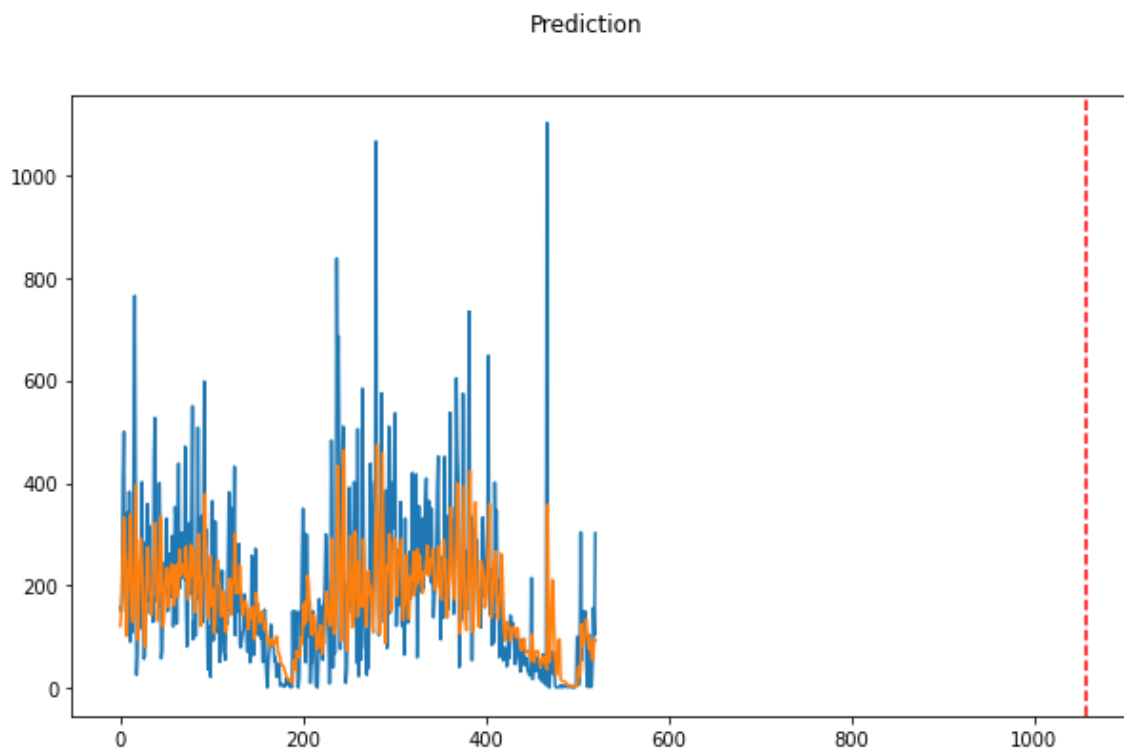Validation Loss Decreased(0.00808--->0.00808)   Saving The Model
Validation Loss Decreased(0.00808--->0.00808)   Saving The Model
Validation Loss Decreased(0.00808--->0.00808)   Saving The Model
Validation Loss Decreased(0.00808--->0.00808)   Saving The Model
Validation Loss Decreased(0.00808--->0.00808)   Saving The Model
Validation Loss Decreased(0.00808--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Epoch 500   Training Loss: 0.00716   Val
idation Loss: 0.00808
Validation Loss Decreased(0.00807--->0.00807)   Saving The Model
Epoch 600   Training Loss: 0.00707   Val
idation Loss: 0.00809
Epoch 700   Training Loss: 0.00702   Val
idation Loss: 0.00812
Validation Loss Decreased(0.00807--->0.00806)   Saving The Model

```
Validation Loss Decreased(0.00806--->0.00806)      Saving The Model
Validation Loss Decreased(0.00806--->0.00806)      Saving The Model
Validation Loss Decreased(0.00806--->0.00806)      Saving The Model
Validation Loss Decreased(0.00806--->0.00805)      Saving The Model
Validation Loss Decreased(0.00805--->0.00805)      Saving The Model
Validation Loss Decreased(0.00805--->0.00805)      Saving The Model
Validation Loss Decreased(0.00805--->0.00804)      Saving The Model
Validation Loss Decreased(0.00804--->0.00804)      Saving The Model
Epoch 800              Training Loss: 0.00709              Val
idation Loss: 0.00813
Validation Loss Decreased(0.00804--->0.00800)      Saving The Model
Validation Loss Decreased(0.00800--->0.00799)      Saving The Model
Validation Loss Decreased(0.00799--->0.00799)      Saving The Model
Validation Loss Decreased(0.00799--->0.00798)      Saving The Model
Validation Loss Decreased(0.00798--->0.00796)      Saving The Model
Validation Loss Decreased(0.00796--->0.00796)      Saving The Model
Validation Loss Decreased(0.00796--->0.00796)      Saving The Model
Validation Loss Decreased(0.00796--->0.00795)      Saving The Model
Validation Loss Decreased(0.00795--->0.00794)      Saving The Model
Validation Loss Decreased(0.00794--->0.00793)      Saving The Model
Validation Loss Decreased(0.00793--->0.00792)      Saving The Model
Validation Loss Decreased(0.00792--->0.00791)      Saving The Model
Validation Loss Decreased(0.00791--->0.00790)      Saving The Model
Validation Loss Decreased(0.00790--->0.00790)      Saving The Model
Validation Loss Decreased(0.00790--->0.00788)      Saving The Model
Validation Loss Decreased(0.00788--->0.00787)      Saving The Model
Validation Loss Decreased(0.00787--->0.00786)      Saving The Model
Validation Loss Decreased(0.00786--->0.00786)      Saving The Model
Validation Loss Decreased(0.00786--->0.00784)      Saving The Model
Validation Loss Decreased(0.00784--->0.00784)      Saving The Model
Validation Loss Decreased(0.00784--->0.00782)      Saving The Model
Validation Loss Decreased(0.00782--->0.00782)      Saving The Model
Validation Loss Decreased(0.00782--->0.00780)      Saving The Model
Validation Loss Decreased(0.00780--->0.00780)      Saving The Model
Validation Loss Decreased(0.00780--->0.00779)      Saving The Model
Validation Loss Decreased(0.00779--->0.00779)      Saving The Model
Validation Loss Decreased(0.00779--->0.00778)      Saving The Model
Validation Loss Decreased(0.00778--->0.00777)      Saving The Model
Validation Loss Decreased(0.00777--->0.00776)      Saving The Model
Validation Loss Decreased(0.00776--->0.00775)      Saving The Model
Validation Loss Decreased(0.00775--->0.00775)      Saving The Model
Validation Loss Decreased(0.00775--->0.00775)      Saving The Model
Validation Loss Decreased(0.00775--->0.00774)      Saving The Model
Validation Loss Decreased(0.00774--->0.00773)      Saving The Model
Validation Loss Decreased(0.00773--->0.00773)      Saving The Model
Validation Loss Decreased(0.00773--->0.00772)      Saving The Model
Validation Loss Decreased(0.00772--->0.00772)      Saving The Model
Validation Loss Decreased(0.00772--->0.00772)      Saving The Model
Validation Loss Decreased(0.00772--->0.00771)      Saving The Model
Validation Loss Decreased(0.00771--->0.00770)      Saving The Model
Validation Loss Decreased(0.00770--->0.00770)      Saving The Model
Validation Loss Decreased(0.00770--->0.00769)      Saving The Model
Validation Loss Decreased(0.00769--->0.00769)      Saving The Model
Validation Loss Decreased(0.00769--->0.00769)      Saving The Model
Validation Loss Decreased(0.00769--->0.00768)      Saving The Model
Validation Loss Decreased(0.00768--->0.00768)      Saving The Model
Validation Loss Decreased(0.00768--->0.00768)      Saving The Model
Validation Loss Decreased(0.00768--->0.00767)      Saving The Model
Validation Loss Decreased(0.00767--->0.00767)      Saving The Model
Validation Loss Decreased(0.00767--->0.00767)      Saving The Model
Validation Loss Decreased(0.00767--->0.00766)      Saving The Model
```

```
Validation Loss Decreased(0.00766--->0.00766)     Saving The Model
Validation Loss Decreased(0.00766--->0.00766)     Saving The Model
Validation Loss Decreased(0.00766--->0.00765)     Saving The Model
Validation Loss Decreased(0.00765--->0.00765)     Saving The Model
Validation Loss Decreased(0.00765--->0.00765)     Saving The Model
Validation Loss Decreased(0.00765--->0.00765)     Saving The Model
Validation Loss Decreased(0.00765--->0.00764)     Saving The Model
Validation Loss Decreased(0.00764--->0.00764)     Saving The Model
Validation Loss Decreased(0.00764--->0.00764)     Saving The Model
Epoch 900              Training Loss: 0.00659                Val
idation Loss: 0.00763
Validation Loss Decreased(0.00764--->0.00763)     Saving The Model
Validation Loss Decreased(0.00763--->0.00763)     Saving The Model
Validation Loss Decreased(0.00763--->0.00763)     Saving The Model
Validation Loss Decreased(0.00763--->0.00763)     Saving The Model
Validation Loss Decreased(0.00763--->0.00763)     Saving The Model
Validation Loss Decreased(0.00763--->0.00762)     Saving The Model
Validation Loss Decreased(0.00762--->0.00762)     Saving The Model
Validation Loss Decreased(0.00762--->0.00762)     Saving The Model
Validation Loss Decreased(0.00762--->0.00762)     Saving The Model
Validation Loss Decreased(0.00762--->0.00761)     Saving The Model
Validation Loss Decreased(0.00761--->0.00761)     Saving The Model
Validation Loss Decreased(0.00761--->0.00761)     Saving The Model
Validation Loss Decreased(0.00761--->0.00761)     Saving The Model
Validation Loss Decreased(0.00761--->0.00761)     Saving The Model
Validation Loss Decreased(0.00761--->0.00760)     Saving The Model
Validation Loss Decreased(0.00760--->0.00760)     Saving The Model
Validation Loss Decreased(0.00760--->0.00760)     Saving The Model
Validation Loss Decreased(0.00760--->0.00760)     Saving The Model
Validation Loss Decreased(0.00760--->0.00759)     Saving The Model
Validation Loss Decreased(0.00759--->0.00759)     Saving The Model
Validation Loss Decreased(0.00759--->0.00758)     Saving The Model
Validation Loss Decreased(0.00758--->0.00757)     Saving The Model
Validation Loss Decreased(0.00757--->0.00756)     Saving The Model
Validation Loss Decreased(0.00756--->0.00756)     Saving The Model
Validation Loss Decreased(0.00756--->0.00755)     Saving The Model
Validation Loss Decreased(0.00755--->0.00755)     Saving The Model
Validation Loss Decreased(0.00755--->0.00755)     Saving The Model
Validation Loss Decreased(0.00755--->0.00755)     Saving The Model
Validation Loss Decreased(0.00755--->0.00755)     Saving The Model
Validation Loss Decreased(0.00755--->0.00755)     Saving The Model
Validation Loss Decreased(0.00755--->0.00754)     Saving The Model
Validation Loss Decreased(0.00754--->0.00754)     Saving The Model
Validation Loss Decreased(0.00754--->0.00754)     Saving The Model
Validation Loss Decreased(0.00754--->0.00754)     Saving The Model
Epoch 1000             Training Loss: 0.00653                Val
idation Loss: 0.00754
Validation Loss Decreased(0.00754--->0.00753)     Saving The Model
Validation Loss Decreased(0.00753--->0.00753)     Saving The Model
Validation Loss Decreased(0.00753--->0.00753)     Saving The Model
Validation Loss Decreased(0.00753--->0.00753)     Saving The Model
Validation Loss Decreased(0.00753--->0.00752)     Saving The Model
Validation Loss Decreased(0.00752--->0.00752)     Saving The Model
Validation Loss Decreased(0.00752--->0.00751)     Saving The Model
Validation Loss Decreased(0.00751--->0.00750)     Saving The Model
Validation Loss Decreased(0.00750--->0.00750)     Saving The Model
Epoch 1100             Training Loss: 0.00650                Val
idation Loss: 0.00753
Validation Loss Decreased(0.00750--->0.00750)     Saving The Model
Validation Loss Decreased(0.00750--->0.00749)     Saving The Model
Validation Loss Decreased(0.00749--->0.00749)     Saving The Model
```
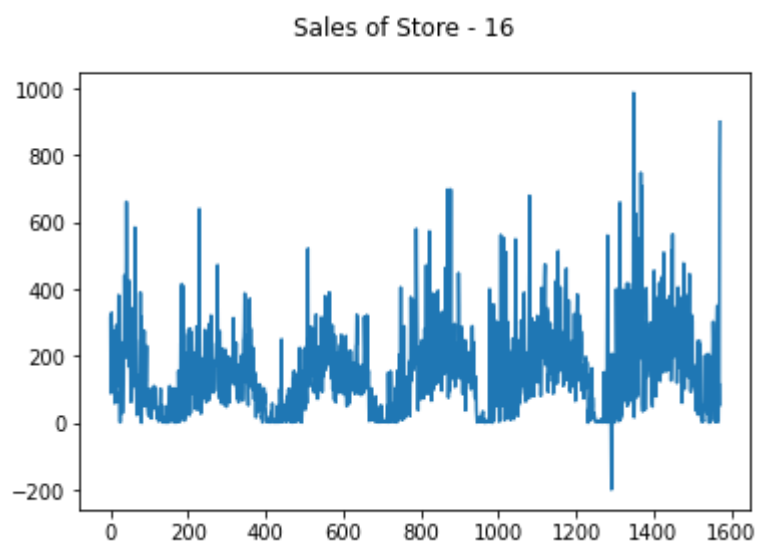
```
Validation Loss Decreased(0.00749--->0.00749)   Saving The Model
Validation Loss Decreased(0.00749--->0.00749)   Saving The Model
Validation Loss Decreased(0.00749--->0.00749)   Saving The Model
Epoch 1200            Training Loss: 0.00644              Val
idation Loss: 0.00749
Validation Loss Decreased(0.00749--->0.00748)   Saving The Model
Validation Loss Decreased(0.00748--->0.00747)   Saving The Model
Validation Loss Decreased(0.00747--->0.00747)   Saving The Model
Validation Loss Decreased(0.00747--->0.00746)   Saving The Model
Validation Loss Decreased(0.00746--->0.00745)   Saving The Model
Validation Loss Decreased(0.00745--->0.00745)   Saving The Model
Validation Loss Decreased(0.00745--->0.00744)   Saving The Model
Validation Loss Decreased(0.00744--->0.00743)   Saving The Model
Validation Loss Decreased(0.00743--->0.00742)   Saving The Model
Epoch 1300            Training Loss: 0.00644              Val
idation Loss: 0.00751
Epoch 1400            Training Loss: 0.00632              Val
idation Loss: 0.00766
Epoch 1500            Training Loss: 0.00684              Val
idation Loss: 0.00800
Epoch 1600            Training Loss: 0.00659              Val
idation Loss: 0.00770
Epoch 1700            Training Loss: 0.00618              Val
idation Loss: 0.00809
Epoch 1800            Training Loss: 0.00600              Val
idation Loss: 0.00804
Epoch 1900            Training Loss: 0.00587              Val
idation Loss: 0.00835
Epoch 2000            Training Loss: 0.00600              Val
idation Loss: 0.00796
Validation Loss Decreased(0.00742--->0.00742)   Saving The Model
Validation Loss Decreased(0.00742--->0.00737)   Saving The Model
Validation Loss Decreased(0.00737--->0.00735)   Saving The Model
Validation Loss Decreased(0.00735--->0.00734)   Saving The Model
Validation Loss Decreased(0.00734--->0.00727)   Saving The Model
Validation Loss Decreased(0.00727--->0.00723)   Saving The Model
Epoch 2100            Training Loss: 0.00565              Val
idation Loss: 0.00834
Validation Loss Decreased(0.00723--->0.00715)   Saving The Model
Validation Loss Decreased(0.00715--->0.00714)   Saving The Model
Validation Loss Decreased(0.00714--->0.00711)   Saving The Model
Epoch 2200            Training Loss: 0.00583              Val
idation Loss: 0.00772
Epoch 2300            Training Loss: 0.00648              Val
idation Loss: 0.00758
Epoch 2400            Training Loss: 0.00584              Val
idation Loss: 0.00723
Validation Loss Decreased(0.00711--->0.00710)   Saving The Model
Validation Loss Decreased(0.00710--->0.00708)   Saving The Model
Validation Loss Decreased(0.00708--->0.00707)   Saving The Model
Validation Loss Decreased(0.00707--->0.00706)   Saving The Model
Epoch 2500            Training Loss: 0.00567              Val
idation Loss: 0.00727
Epoch 2600            Training Loss: 0.00554              Val
idation Loss: 0.00751
Epoch 2700            Training Loss: 0.00550              Val
idation Loss: 0.00751
Epoch 2800            Training Loss: 0.00540              Val
idation Loss: 0.00759
Epoch 2900            Training Loss: 0.00539              Val
idation Loss: 0.00770
```

```
Epoch 3000                    Training Loss: 0.00523                    Val
idation Loss: 0.00794
Epoch 3100                    Training Loss: 0.00514                    Val
idation Loss: 0.00845
Epoch 3200                    Training Loss: 0.00511                    Val
idation Loss: 0.00803
Epoch 3300                    Training Loss: 0.00476                    Val
idation Loss: 0.00833
Epoch 3400                    Training Loss: 0.00514                    Val
idation Loss: 0.00857
Epoch 3500                    Training Loss: 0.00464                    Val
idation Loss: 0.00881
Epoch 3600                    Training Loss: 0.00435                    Val
idation Loss: 0.00857
Epoch 3700                    Training Loss: 0.00450                    Val
idation Loss: 0.00838
Epoch 3800                    Training Loss: 0.00485                    Val
idation Loss: 0.00863
Epoch 3900                    Training Loss: 0.00416                    Val
idation Loss: 0.00870
Epoch 4000                    Training Loss: 0.00409                    Val
idation Loss: 0.00837
```

Prediction


```
RMSE of validation set: 5.109135046723694
RMSE of entire data set: 2.754746493666043
```

Sales of Store - 15
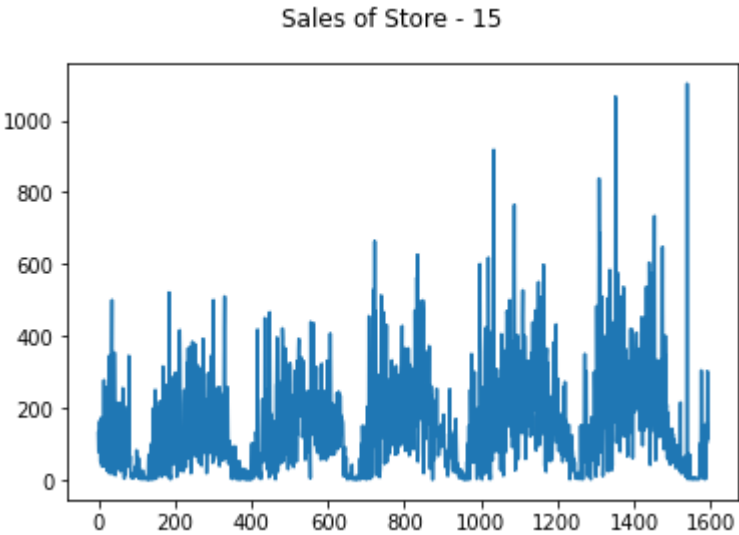
```
Validation Loss Decreased(inf--->0.02169)        Saving The Model
Validation Loss Decreased(0.02169--->0.01979)    Saving The Model
Validation Loss Decreased(0.01979--->0.01964)    Saving The Model
Validation Loss Decreased(0.01964--->0.01939)    Saving The Model
Validation Loss Decreased(0.01939--->0.01879)    Saving The Model
Validation Loss Decreased(0.01879--->0.01849)    Saving The Model
Validation Loss Decreased(0.01849--->0.01842)    Saving The Model
Validation Loss Decreased(0.01842--->0.01832)    Saving The Model
Validation Loss Decreased(0.01832--->0.01750)    Saving The Model
Validation Loss Decreased(0.01750--->0.01689)    Saving The Model
Validation Loss Decreased(0.01689--->0.01656)    Saving The Model
Validation Loss Decreased(0.01656--->0.01648)    Saving The Model
Validation Loss Decreased(0.01648--->0.01579)    Saving The Model
Validation Loss Decreased(0.01579--->0.01524)    Saving The Model
Validation Loss Decreased(0.01524--->0.01517)    Saving The Model
Validation Loss Decreased(0.01517--->0.01515)    Saving The Model
Validation Loss Decreased(0.01515--->0.01507)    Saving The Model
Validation Loss Decreased(0.01507--->0.01502)    Saving The Model
Validation Loss Decreased(0.01502--->0.01494)    Saving The Model
Validation Loss Decreased(0.01494--->0.01484)    Saving The Model
Validation Loss Decreased(0.01484--->0.01483)    Saving The Model
Validation Loss Decreased(0.01483--->0.01475)    Saving The Model
Validation Loss Decreased(0.01475--->0.01465)    Saving The Model
Validation Loss Decreased(0.01465--->0.01465)    Saving The Model
Validation Loss Decreased(0.01465--->0.01463)    Saving The Model
Validation Loss Decreased(0.01463--->0.01459)    Saving The Model
Validation Loss Decreased(0.01459--->0.01459)    Saving The Model
Validation Loss Decreased(0.01459--->0.01457)    Saving The Model
Epoch 100              Training Loss: 0.00870              Val
idation Loss: 0.01463
Validation Loss Decreased(0.01457--->0.01457)    Saving The Model
Validation Loss Decreased(0.01457--->0.01457)    Saving The Model
Validation Loss Decreased(0.01457--->0.01456)    Saving The Model
Validation Loss Decreased(0.01456--->0.01454)    Saving The Model
Validation Loss Decreased(0.01454--->0.01453)    Saving The Model
Validation Loss Decreased(0.01453--->0.01452)    Saving The Model
Validation Loss Decreased(0.01452--->0.01451)    Saving The Model
Validation Loss Decreased(0.01451--->0.01451)    Saving The Model
Validation Loss Decreased(0.01451--->0.01449)    Saving The Model
Validation Loss Decreased(0.01449--->0.01448)    Saving The Model
Validation Loss Decreased(0.01448--->0.01447)    Saving The Model
Validation Loss Decreased(0.01447--->0.01445)    Saving The Model
Validation Loss Decreased(0.01445--->0.01444)    Saving The Model
Validation Loss Decreased(0.01444--->0.01444)    Saving The Model
Validation Loss Decreased(0.01444--->0.01443)    Saving The Model
Validation Loss Decreased(0.01443--->0.01442)    Saving The Model
Validation Loss Decreased(0.01442--->0.01441)    Saving The Model
Validation Loss Decreased(0.01441--->0.01439)    Saving The Model
Validation Loss Decreased(0.01439--->0.01438)    Saving The Model
Validation Loss Decreased(0.01438--->0.01437)    Saving The Model
Validation Loss Decreased(0.01437--->0.01436)    Saving The Model
Validation Loss Decreased(0.01436--->0.01434)    Saving The Model
Validation Loss Decreased(0.01434--->0.01431)    Saving The Model
Validation Loss Decreased(0.01431--->0.01427)    Saving The Model
Validation Loss Decreased(0.01427--->0.01420)    Saving The Model
Validation Loss Decreased(0.01420--->0.01413)    Saving The Model
Validation Loss Decreased(0.01413--->0.01406)    Saving The Model
Validation Loss Decreased(0.01406--->0.01400)    Saving The Model
Validation Loss Decreased(0.01400--->0.01396)    Saving The Model
Validation Loss Decreased(0.01396--->0.01391)    Saving The Model
Validation Loss Decreased(0.01391--->0.01388)    Saving The Model
```

    Validation Loss Decreased(0.01388--->0.01387)   Saving The Model
    Epoch 200   Training Loss: 0.00790   Val
    idation Loss: 0.01428
    Epoch 300   Training Loss: 0.00747   Val
    idation Loss: 0.01478
    Epoch 400   Training Loss: 0.00683   Val
    idation Loss: 0.01778
    Epoch 500   Training Loss: 0.00620   Val
    idation Loss: 0.01680
    Epoch 600   Training Loss: 0.00555   Val
    idation Loss: 0.01657
    Epoch 700   Training Loss: 0.00494   Val
    idation Loss: 0.01723
    Epoch 800   Training Loss: 0.00442   Val
    idation Loss: 0.01860
    Epoch 900   Training Loss: 0.00384   Val
    idation Loss: 0.02029
    Epoch 1000   Training Loss: 0.00357   Val
    idation Loss: 0.02170
    Epoch 1100   Training Loss: 0.00311   Val
    idation Loss: 0.02315
    Epoch 1200   Training Loss: 0.00280   Val
    idation Loss: 0.02403
    Epoch 1300   Training Loss: 0.00267   Val
    idation Loss: 0.02562
    Epoch 1400   Training Loss: 0.00239   Val
    idation Loss: 0.02737
    Epoch 1500   Training Loss: 0.00225   Val
    idation Loss: 0.02834
    Epoch 1600   Training Loss: 0.00211   Val
    idation Loss: 0.02881
    Epoch 1700   Training Loss: 0.00206   Val
    idation Loss: 0.02915
    Epoch 1800   Training Loss: 0.00191   Val
    idation Loss: 0.02875
    Epoch 1900   Training Loss: 0.00185   Val
    idation Loss: 0.02834
    Epoch 2000   Training Loss: 0.00174   Val
    idation Loss: 0.02833
    Epoch 2100   Training Loss: 0.00167   Val
    idation Loss: 0.02751
    Stopping the training early   Model saved
            Training Loss: 0.0016115931794047356
            Validation Loss: 0.013874887488782406

Prediction


```
RMSE of validation set: 5.686924920305356
RMSE of entire data set: 2.7768992174119127
```

Sales of Store - 16

```
Validation Loss Decreased(inf--->0.04673)        Saving The Model
Validation Loss Decreased(0.04673--->0.02437)    Saving The Model
Validation Loss Decreased(0.02437--->0.01291)    Saving The Model
Validation Loss Decreased(0.01291--->0.01261)    Saving The Model
Validation Loss Decreased(0.01261--->0.01236)    Saving The Model
Validation Loss Decreased(0.01236--->0.01235)    Saving The Model
Validation Loss Decreased(0.01235--->0.01225)    Saving The Model
Validation Loss Decreased(0.01225--->0.01217)    Saving The Model
Validation Loss Decreased(0.01217--->0.01210)    Saving The Model
Validation Loss Decreased(0.01210--->0.01206)    Saving The Model
Validation Loss Decreased(0.01206--->0.01204)    Saving The Model
Validation Loss Decreased(0.01204--->0.01203)    Saving The Model
Validation Loss Decreased(0.01203--->0.01203)    Saving The Model
Validation Loss Decreased(0.01203--->0.01200)    Saving The Model
Validation Loss Decreased(0.01200--->0.01196)    Saving The Model
Validation Loss Decreased(0.01196--->0.01190)    Saving The Model
Validation Loss Decreased(0.01190--->0.01182)    Saving The Model
Validation Loss Decreased(0.01182--->0.01175)    Saving The Model
Validation Loss Decreased(0.01175--->0.01168)    Saving The Model
Validation Loss Decreased(0.01168--->0.01163)    Saving The Model
Validation Loss Decreased(0.01163--->0.01159)    Saving The Model
Validation Loss Decreased(0.01159--->0.01156)    Saving The Model
Validation Loss Decreased(0.01156--->0.01155)    Saving The Model
Validation Loss Decreased(0.01155--->0.01153)    Saving The Model
Validation Loss Decreased(0.01153--->0.01151)    Saving The Model
Validation Loss Decreased(0.01151--->0.01148)    Saving The Model
Validation Loss Decreased(0.01148--->0.01143)    Saving The Model
Validation Loss Decreased(0.01143--->0.01137)    Saving The Model
Validation Loss Decreased(0.01137--->0.01132)    Saving The Model
Epoch 100              Training Loss: 0.00602                  Val
idation Loss: 0.01127
Validation Loss Decreased(0.01132--->0.01127)    Saving The Model
Validation Loss Decreased(0.01127--->0.01124)    Saving The Model
Validation Loss Decreased(0.01124--->0.01122)    Saving The Model
Validation Loss Decreased(0.01122--->0.01121)    Saving The Model
Validation Loss Decreased(0.01121--->0.01119)    Saving The Model
Validation Loss Decreased(0.01119--->0.01117)    Saving The Model
Validation Loss Decreased(0.01117--->0.01115)    Saving The Model
Validation Loss Decreased(0.01115--->0.01112)    Saving The Model
Validation Loss Decreased(0.01112--->0.01109)    Saving The Model
Validation Loss Decreased(0.01109--->0.01108)    Saving The Model
Validation Loss Decreased(0.01108--->0.01108)    Saving The Model
Validation Loss Decreased(0.01108--->0.01108)    Saving The Model
Validation Loss Decreased(0.01108--->0.01107)    Saving The Model
Validation Loss Decreased(0.01107--->0.01107)    Saving The Model
Validation Loss Decreased(0.01107--->0.01106)    Saving The Model
Validation Loss Decreased(0.01106--->0.01105)    Saving The Model
Validation Loss Decreased(0.01105--->0.01104)    Saving The Model
Validation Loss Decreased(0.01104--->0.01104)    Saving The Model
Validation Loss Decreased(0.01104--->0.01103)    Saving The Model
Validation Loss Decreased(0.01103--->0.01102)    Saving The Model
Validation Loss Decreased(0.01102--->0.01101)    Saving The Model
Validation Loss Decreased(0.01101--->0.01100)    Saving The Model
Validation Loss Decreased(0.01100--->0.01099)    Saving The Model
Validation Loss Decreased(0.01099--->0.01099)    Saving The Model
Validation Loss Decreased(0.01099--->0.01098)    Saving The Model
Validation Loss Decreased(0.01098--->0.01098)    Saving The Model
Validation Loss Decreased(0.01098--->0.01097)    Saving The Model
Validation Loss Decreased(0.01097--->0.01096)    Saving The Model
Validation Loss Decreased(0.01096--->0.01096)    Saving The Model
Validation Loss Decreased(0.01096--->0.01096)    Saving The Model
```
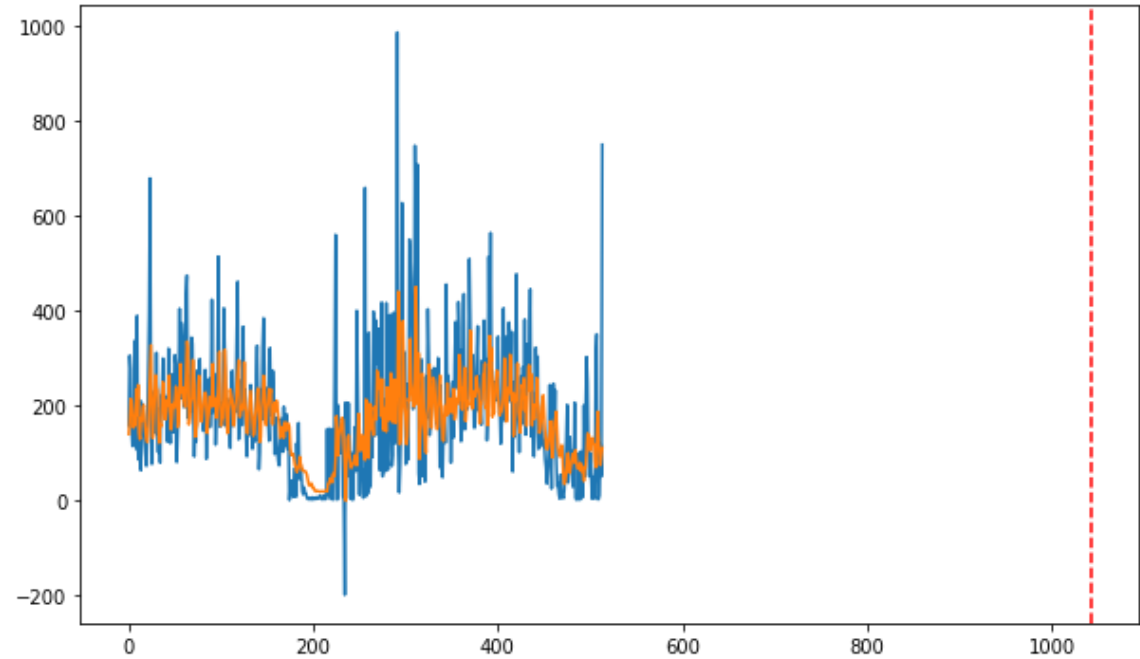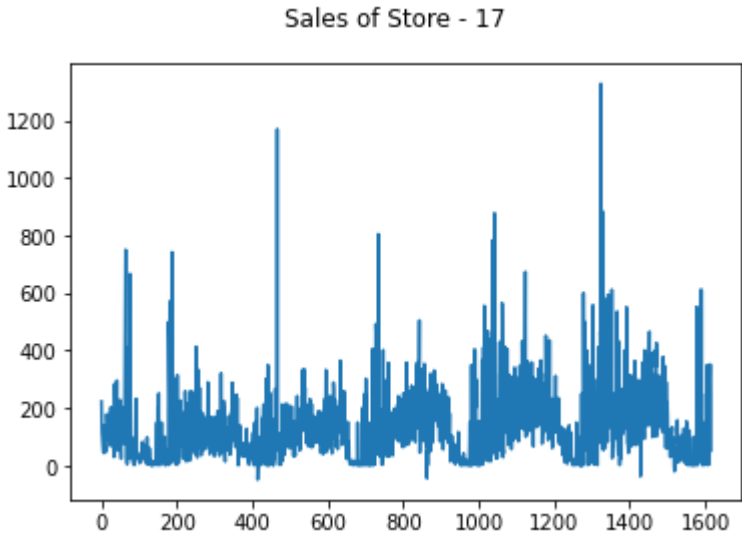
```
Validation Loss Decreased(0.01096--->0.01095)     Saving The Model
Validation Loss Decreased(0.01095--->0.01095)     Saving The Model
Validation Loss Decreased(0.01095--->0.01094)     Saving The Model
Validation Loss Decreased(0.01094--->0.01093)     Saving The Model
Validation Loss Decreased(0.01093--->0.01093)     Saving The Model
Validation Loss Decreased(0.01093--->0.01092)     Saving The Model
Validation Loss Decreased(0.01092--->0.01092)     Saving The Model
Validation Loss Decreased(0.01092--->0.01091)     Saving The Model
Validation Loss Decreased(0.01091--->0.01090)     Saving The Model
Validation Loss Decreased(0.01090--->0.01089)     Saving The Model
Validation Loss Decreased(0.01089--->0.01088)     Saving The Model
Validation Loss Decreased(0.01088--->0.01087)     Saving The Model
Validation Loss Decreased(0.01087--->0.01087)     Saving The Model
Validation Loss Decreased(0.01087--->0.01086)     Saving The Model
Validation Loss Decreased(0.01086--->0.01085)     Saving The Model
Validation Loss Decreased(0.01085--->0.01084)     Saving The Model
Validation Loss Decreased(0.01084--->0.01083)     Saving The Model
Validation Loss Decreased(0.01083--->0.01083)     Saving The Model
Validation Loss Decreased(0.01083--->0.01082)     Saving The Model
Validation Loss Decreased(0.01082--->0.01082)     Saving The Model
Validation Loss Decreased(0.01082--->0.01081)     Saving The Model
Validation Loss Decreased(0.01081--->0.01080)     Saving The Model
Validation Loss Decreased(0.01080--->0.01080)     Saving The Model
Validation Loss Decreased(0.01080--->0.01079)     Saving The Model
Validation Loss Decreased(0.01079--->0.01079)     Saving The Model
Validation Loss Decreased(0.01079--->0.01078)     Saving The Model
Validation Loss Decreased(0.01078--->0.01078)     Saving The Model
Validation Loss Decreased(0.01078--->0.01078)     Saving The Model
Validation Loss Decreased(0.01078--->0.01077)     Saving The Model
Validation Loss Decreased(0.01077--->0.01077)     Saving The Model
Validation Loss Decreased(0.01077--->0.01077)     Saving The Model
Validation Loss Decreased(0.01077--->0.01076)     Saving The Model
Validation Loss Decreased(0.01076--->0.01076)     Saving The Model
Validation Loss Decreased(0.01076--->0.01075)     Saving The Model
Validation Loss Decreased(0.01075--->0.01075)     Saving The Model
Validation Loss Decreased(0.01075--->0.01074)     Saving The Model
Validation Loss Decreased(0.01074--->0.01074)     Saving The Model
Validation Loss Decreased(0.01074--->0.01073)     Saving The Model
Validation Loss Decreased(0.01073--->0.01073)     Saving The Model
Validation Loss Decreased(0.01073--->0.01072)     Saving The Model
Validation Loss Decreased(0.01072--->0.01072)     Saving The Model
Validation Loss Decreased(0.01072--->0.01071)     Saving The Model
Validation Loss Decreased(0.01071--->0.01071)     Saving The Model
Validation Loss Decreased(0.01071--->0.01071)     Saving The Model
Validation Loss Decreased(0.01071--->0.01071)     Saving The Model
Validation Loss Decreased(0.01071--->0.01071)     Saving The Model
Validation Loss Decreased(0.01071--->0.01071)     Saving The Model
Validation Loss Decreased(0.01071--->0.01071)     Saving The Model
Validation Loss Decreased(0.01071--->0.01070)     Saving The Model
Validation Loss Decreased(0.01070--->0.01070)     Saving The Model
Validation Loss Decreased(0.01070--->0.01070)     Saving The Model
Validation Loss Decreased(0.01070--->0.01070)     Saving The Model
Validation Loss Decreased(0.01070--->0.01070)     Saving The Model
Epoch 200              Training Loss: 0.00562                    Val
idation Loss: 0.01071
Validation Loss Decreased(0.01070--->0.01070)     Saving The Model
Validation Loss Decreased(0.01070--->0.01070)     Saving The Model
Validation Loss Decreased(0.01070--->0.01070)     Saving The Model
Validation Loss Decreased(0.01070--->0.01070)     Saving The Model
Validation Loss Decreased(0.01070--->0.01070)     Saving The Model
Validation Loss Decreased(0.01070--->0.01070)     Saving The Model
```

```
Validation Loss Decreased(0.01070--->0.01070)    Saving The Model
Validation Loss Decreased(0.01070--->0.01070)    Saving The Model
Validation Loss Decreased(0.01070--->0.01070)    Saving The Model
Validation Loss Decreased(0.01070--->0.01069)    Saving The Model
Validation Loss Decreased(0.01069--->0.01069)    Saving The Model
Validation Loss Decreased(0.01069--->0.01069)    Saving The Model
Validation Loss Decreased(0.01069--->0.01069)    Saving The Model
Validation Loss Decreased(0.01069--->0.01069)    Saving The Model
Validation Loss Decreased(0.01069--->0.01069)    Saving The Model
Validation Loss Decreased(0.01069--->0.01069)    Saving The Model
Validation Loss Decreased(0.01069--->0.01069)    Saving The Model
Validation Loss Decreased(0.01069--->0.01069)    Saving The Model
Validation Loss Decreased(0.01069--->0.01069)    Saving The Model
Validation Loss Decreased(0.01069--->0.01069)    Saving The Model
Validation Loss Decreased(0.01069--->0.01069)    Saving The Model
Validation Loss Decreased(0.01069--->0.01069)    Saving The Model
Validation Loss Decreased(0.01069--->0.01069)    Saving The Model
Validation Loss Decreased(0.01069--->0.01069)    Saving The Model
Validation Loss Decreased(0.01069--->0.01069)    Saving The Model
Validation Loss Decreased(0.01069--->0.01069)    Saving The Model
Validation Loss Decreased(0.01069--->0.01069)    Saving The Model
Validation Loss Decreased(0.01069--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01067)    Saving The Model
Validation Loss Decreased(0.01067--->0.01067)    Saving The Model
Validation Loss Decreased(0.01067--->0.01067)    Saving The Model
Validation Loss Decreased(0.01067--->0.01067)    Saving The Model
Validation Loss Decreased(0.01067--->0.01067)    Saving The Model
```

```
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Epoch 300                 Training Loss: 0.00558                    Val
idation Loss: 0.01067
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01067)     Saving The Model
Validation Loss Decreased(0.01067--->0.01066)     Saving The Model
Validation Loss Decreased(0.01066--->0.01066)     Saving The Model
Validation Loss Decreased(0.01066--->0.01066)     Saving The Model
Validation Loss Decreased(0.01066--->0.01066)     Saving The Model
Validation Loss Decreased(0.01066--->0.01066)     Saving The Model
Validation Loss Decreased(0.01066--->0.01066)     Saving The Model
Validation Loss Decreased(0.01066--->0.01066)     Saving The Model
Validation Loss Decreased(0.01066--->0.01066)     Saving The Model
Validation Loss Decreased(0.01066--->0.01066)     Saving The Model
Validation Loss Decreased(0.01066--->0.01066)     Saving The Model
Validation Loss Decreased(0.01066--->0.01066)     Saving The Model
Validation Loss Decreased(0.01066--->0.01066)     Saving The Model
Validation Loss Decreased(0.01066--->0.01066)     Saving The Model
Validation Loss Decreased(0.01066--->0.01066)     Saving The Model
Validation Loss Decreased(0.01066--->0.01066)     Saving The Model
Validation Loss Decreased(0.01066--->0.01066)     Saving The Model
Validation Loss Decreased(0.01066--->0.01066)     Saving The Model
```

```
Validation Loss Decreased(0.01066--->0.01066)    Saving The Model
Validation Loss Decreased(0.01066--->0.01066)    Saving The Model
Validation Loss Decreased(0.01066--->0.01066)    Saving The Model
Validation Loss Decreased(0.01066--->0.01066)    Saving The Model
Validation Loss Decreased(0.01066--->0.01066)    Saving The Model
Validation Loss Decreased(0.01066--->0.01066)    Saving The Model
Validation Loss Decreased(0.01066--->0.01066)    Saving The Model
Validation Loss Decreased(0.01066--->0.01066)    Saving The Model
Validation Loss Decreased(0.01066--->0.01066)    Saving The Model
Validation Loss Decreased(0.01066--->0.01066)    Saving The Model
Validation Loss Decreased(0.01066--->0.01065)    Saving The Model
Validation Loss Decreased(0.01065--->0.01064)    Saving The Model
Validation Loss Decreased(0.01064--->0.01063)    Saving The Model
Epoch 400              Training Loss: 0.00555                  Val
idation Loss: 0.01065
Epoch 500              Training Loss: 0.00553                  Val
idation Loss: 0.01066
Validation Loss Decreased(0.01063--->0.01063)    Saving The Model
Validation Loss Decreased(0.01063--->0.01062)    Saving The Model
Epoch 600              Training Loss: 0.00552                  Val
idation Loss: 0.01066
Epoch 700              Training Loss: 0.00552                  Val
idation Loss: 0.01066
Epoch 800              Training Loss: 0.00551                  Val
idation Loss: 0.01065
Epoch 900              Training Loss: 0.00550                  Val
idation Loss: 0.01068
Epoch 1000             Training Loss: 0.00550                  Val
idation Loss: 0.01076
Epoch 1100             Training Loss: 0.00546                  Val
idation Loss: 0.01075
Validation Loss Decreased(0.01062--->0.01061)    Saving The Model
Validation Loss Decreased(0.01061--->0.01058)    Saving The Model
Validation Loss Decreased(0.01058--->0.01053)    Saving The Model
Validation Loss Decreased(0.01053--->0.01052)    Saving The Model
Validation Loss Decreased(0.01052--->0.01046)    Saving The Model
Validation Loss Decreased(0.01046--->0.01045)    Saving The Model
Validation Loss Decreased(0.01045--->0.01044)    Saving The Model
Validation Loss Decreased(0.01044--->0.01044)    Saving The Model
Validation Loss Decreased(0.01044--->0.01039)    Saving The Model
Validation Loss Decreased(0.01039--->0.01039)    Saving The Model
Validation Loss Decreased(0.01039--->0.01037)    Saving The Model
Validation Loss Decreased(0.01037--->0.01032)    Saving The Model
Validation Loss Decreased(0.01032--->0.01030)    Saving The Model
Epoch 1200             Training Loss: 0.00524                  Val
idation Loss: 0.01032
Epoch 1300             Training Loss: 0.00508                  Val
idation Loss: 0.01050
Epoch 1400             Training Loss: 0.00492                  Val
idation Loss: 0.01057
Epoch 1500             Training Loss: 0.00464                  Val
idation Loss: 0.01105
Epoch 1600             Training Loss: 0.00427                  Val
idation Loss: 0.01151
Epoch 1700             Training Loss: 0.00390                  Val
idation Loss: 0.01255
Epoch 1800             Training Loss: 0.00359                  Val
idation Loss: 0.01377
Epoch 1900             Training Loss: 0.00370                  Val
idation Loss: 0.01459
Epoch 2000             Training Loss: 0.00297                  Val
```

```
idation Loss: 0.01511
Epoch 2100                    Training Loss: 0.00268                    Val
idation Loss: 0.01558
Epoch 2200                    Training Loss: 0.00247                    Val
idation Loss: 0.01659
Epoch 2300                    Training Loss: 0.00284                    Val
idation Loss: 0.01696
Epoch 2400                    Training Loss: 0.00218                    Val
idation Loss: 0.01766
Epoch 2500                    Training Loss: 0.00183                    Val
idation Loss: 0.01867
Epoch 2600                    Training Loss: 0.00163                    Val
idation Loss: 0.01939
Epoch 2700                    Training Loss: 0.00154                    Val
idation Loss: 0.01949
Epoch 2800                    Training Loss: 0.00149                    Val
idation Loss: 0.01967
Epoch 2900                    Training Loss: 0.00139                    Val
idation Loss: 0.02088
Epoch 3000                    Training Loss: 0.00126                    Val
idation Loss: 0.02104
Epoch 3100                    Training Loss: 0.00120                    Val
idation Loss: 0.02186
Stopping the training early              Model saved
        Training Loss:   0.0011873487383127213
        Validation Loss:   0.010304093360900879
```

Prediction


```
  RMSE of validation set: 5.314642490497975
  RMSE of entire data set: 2.5068111253667484
```

Sales of Store - 17

```
Validation Loss Decreased(inf--->0.11173)        Saving The Model
Validation Loss Decreased(0.11173--->0.07879)    Saving The Model
Validation Loss Decreased(0.07879--->0.04733)    Saving The Model
Validation Loss Decreased(0.04733--->0.02100)    Saving The Model
Validation Loss Decreased(0.02100--->0.01001)    Saving The Model
Validation Loss Decreased(0.01001--->0.01000)    Saving The Model
Epoch 100                 Training Loss: 0.00640                    Val
idation Loss: 0.01006
Validation Loss Decreased(0.01000--->0.00998)    Saving The Model
Validation Loss Decreased(0.00998--->0.00996)    Saving The Model
Validation Loss Decreased(0.00996--->0.00994)    Saving The Model
Validation Loss Decreased(0.00994--->0.00993)    Saving The Model
Validation Loss Decreased(0.00993--->0.00991)    Saving The Model
Validation Loss Decreased(0.00991--->0.00990)    Saving The Model
Validation Loss Decreased(0.00990--->0.00989)    Saving The Model
Validation Loss Decreased(0.00989--->0.00988)    Saving The Model
Validation Loss Decreased(0.00988--->0.00988)    Saving The Model
Validation Loss Decreased(0.00988--->0.00987)    Saving The Model
Validation Loss Decreased(0.00987--->0.00987)    Saving The Model
Validation Loss Decreased(0.00987--->0.00986)    Saving The Model
Validation Loss Decreased(0.00986--->0.00985)    Saving The Model
Validation Loss Decreased(0.00985--->0.00985)    Saving The Model
Validation Loss Decreased(0.00985--->0.00984)    Saving The Model
Validation Loss Decreased(0.00984--->0.00983)    Saving The Model
Validation Loss Decreased(0.00983--->0.00981)    Saving The Model
Validation Loss Decreased(0.00981--->0.00980)    Saving The Model
Validation Loss Decreased(0.00980--->0.00979)    Saving The Model
Validation Loss Decreased(0.00979--->0.00978)    Saving The Model
Validation Loss Decreased(0.00978--->0.00976)    Saving The Model
Validation Loss Decreased(0.00976--->0.00975)    Saving The Model
Validation Loss Decreased(0.00975--->0.00974)    Saving The Model
Validation Loss Decreased(0.00974--->0.00973)    Saving The Model
Validation Loss Decreased(0.00973--->0.00972)    Saving The Model
Validation Loss Decreased(0.00972--->0.00971)    Saving The Model
Validation Loss Decreased(0.00971--->0.00970)    Saving The Model
Validation Loss Decreased(0.00970--->0.00970)    Saving The Model
Validation Loss Decreased(0.00970--->0.00969)    Saving The Model
Validation Loss Decreased(0.00969--->0.00968)    Saving The Model
Validation Loss Decreased(0.00968--->0.00967)    Saving The Model
Validation Loss Decreased(0.00967--->0.00967)    Saving The Model
Validation Loss Decreased(0.00967--->0.00966)    Saving The Model
Validation Loss Decreased(0.00966--->0.00965)    Saving The Model
Validation Loss Decreased(0.00965--->0.00964)    Saving The Model
Validation Loss Decreased(0.00964--->0.00963)    Saving The Model
Validation Loss Decreased(0.00963--->0.00962)    Saving The Model
Validation Loss Decreased(0.00962--->0.00961)    Saving The Model
Validation Loss Decreased(0.00961--->0.00960)    Saving The Model
Validation Loss Decreased(0.00960--->0.00959)    Saving The Model
Validation Loss Decreased(0.00959--->0.00958)    Saving The Model
Validation Loss Decreased(0.00958--->0.00957)    Saving The Model
Validation Loss Decreased(0.00957--->0.00956)    Saving The Model
Validation Loss Decreased(0.00956--->0.00956)    Saving The Model
Validation Loss Decreased(0.00956--->0.00955)    Saving The Model
Validation Loss Decreased(0.00955--->0.00954)    Saving The Model
Validation Loss Decreased(0.00954--->0.00953)    Saving The Model
Validation Loss Decreased(0.00953--->0.00953)    Saving The Model
Validation Loss Decreased(0.00953--->0.00952)    Saving The Model
Validation Loss Decreased(0.00952--->0.00951)    Saving The Model
Validation Loss Decreased(0.00951--->0.00950)    Saving The Model
Validation Loss Decreased(0.00950--->0.00949)    Saving The Model
Validation Loss Decreased(0.00949--->0.00948)    Saving The Model
```
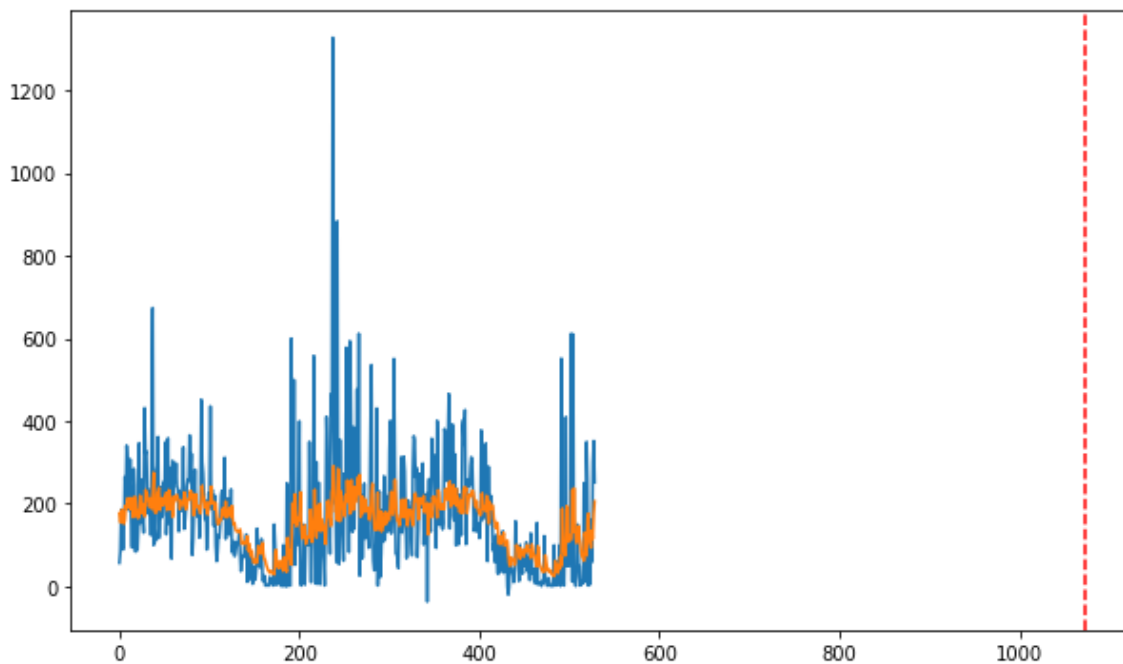
```
Validation Loss Decreased(0.00948--->0.00948)    Saving The Model
Validation Loss Decreased(0.00948--->0.00947)    Saving The Model
Validation Loss Decreased(0.00947--->0.00946)    Saving The Model
Validation Loss Decreased(0.00946--->0.00945)    Saving The Model
Validation Loss Decreased(0.00945--->0.00945)    Saving The Model
Validation Loss Decreased(0.00945--->0.00944)    Saving The Model
Validation Loss Decreased(0.00944--->0.00943)    Saving The Model
Validation Loss Decreased(0.00943--->0.00943)    Saving The Model
Validation Loss Decreased(0.00943--->0.00942)    Saving The Model
Validation Loss Decreased(0.00942--->0.00941)    Saving The Model
Validation Loss Decreased(0.00941--->0.00941)    Saving The Model
Validation Loss Decreased(0.00941--->0.00940)    Saving The Model
Validation Loss Decreased(0.00940--->0.00939)    Saving The Model
Validation Loss Decreased(0.00939--->0.00939)    Saving The Model
Validation Loss Decreased(0.00939--->0.00938)    Saving The Model
Validation Loss Decreased(0.00938--->0.00937)    Saving The Model
Validation Loss Decreased(0.00937--->0.00937)    Saving The Model
Validation Loss Decreased(0.00937--->0.00936)    Saving The Model
Validation Loss Decreased(0.00936--->0.00935)    Saving The Model
Validation Loss Decreased(0.00935--->0.00935)    Saving The Model
Validation Loss Decreased(0.00935--->0.00934)    Saving The Model
Validation Loss Decreased(0.00934--->0.00933)    Saving The Model
Validation Loss Decreased(0.00933--->0.00933)    Saving The Model
Validation Loss Decreased(0.00933--->0.00932)    Saving The Model
Validation Loss Decreased(0.00932--->0.00932)    Saving The Model
Validation Loss Decreased(0.00932--->0.00931)    Saving The Model
Validation Loss Decreased(0.00931--->0.00931)    Saving The Model
Validation Loss Decreased(0.00931--->0.00930)    Saving The Model
Validation Loss Decreased(0.00930--->0.00929)    Saving The Model
Validation Loss Decreased(0.00929--->0.00929)    Saving The Model
Validation Loss Decreased(0.00929--->0.00928)    Saving The Model
Validation Loss Decreased(0.00928--->0.00928)    Saving The Model
Validation Loss Decreased(0.00928--->0.00927)    Saving The Model
Validation Loss Decreased(0.00927--->0.00927)    Saving The Model
Validation Loss Decreased(0.00927--->0.00926)    Saving The Model
Validation Loss Decreased(0.00926--->0.00926)    Saving The Model
Validation Loss Decreased(0.00926--->0.00925)    Saving The Model
Epoch 200              Training Loss: 0.00609                    Val
idation Loss: 0.00925
Validation Loss Decreased(0.00925--->0.00925)    Saving The Model
Validation Loss Decreased(0.00925--->0.00924)    Saving The Model
Validation Loss Decreased(0.00924--->0.00924)    Saving The Model
Validation Loss Decreased(0.00924--->0.00923)    Saving The Model
Validation Loss Decreased(0.00923--->0.00923)    Saving The Model
Validation Loss Decreased(0.00923--->0.00922)    Saving The Model
Validation Loss Decreased(0.00922--->0.00922)    Saving The Model
Validation Loss Decreased(0.00922--->0.00921)    Saving The Model
Validation Loss Decreased(0.00921--->0.00921)    Saving The Model
Validation Loss Decreased(0.00921--->0.00921)    Saving The Model
Validation Loss Decreased(0.00921--->0.00920)    Saving The Model
Validation Loss Decreased(0.00920--->0.00920)    Saving The Model
Validation Loss Decreased(0.00920--->0.00919)    Saving The Model
Validation Loss Decreased(0.00919--->0.00919)    Saving The Model
Validation Loss Decreased(0.00919--->0.00918)    Saving The Model
Validation Loss Decreased(0.00918--->0.00918)    Saving The Model
Validation Loss Decreased(0.00918--->0.00918)    Saving The Model
Validation Loss Decreased(0.00918--->0.00917)    Saving The Model
Validation Loss Decreased(0.00917--->0.00917)    Saving The Model
Validation Loss Decreased(0.00917--->0.00916)    Saving The Model
Validation Loss Decreased(0.00916--->0.00916)    Saving The Model
Validation Loss Decreased(0.00916--->0.00916)    Saving The Model
```

```
Validation Loss Decreased(0.00916--->0.00915)     Saving The Model
Validation Loss Decreased(0.00915--->0.00915)     Saving The Model
Validation Loss Decreased(0.00915--->0.00915)     Saving The Model
Validation Loss Decreased(0.00915--->0.00914)     Saving The Model
Validation Loss Decreased(0.00914--->0.00914)     Saving The Model
Validation Loss Decreased(0.00914--->0.00914)     Saving The Model
Validation Loss Decreased(0.00914--->0.00913)     Saving The Model
Validation Loss Decreased(0.00913--->0.00913)     Saving The Model
Validation Loss Decreased(0.00913--->0.00912)     Saving The Model
Validation Loss Decreased(0.00912--->0.00912)     Saving The Model
Validation Loss Decreased(0.00912--->0.00912)     Saving The Model
Validation Loss Decreased(0.00912--->0.00911)     Saving The Model
Validation Loss Decreased(0.00911--->0.00911)     Saving The Model
Validation Loss Decreased(0.00911--->0.00911)     Saving The Model
Validation Loss Decreased(0.00911--->0.00911)     Saving The Model
Validation Loss Decreased(0.00911--->0.00910)     Saving The Model
Validation Loss Decreased(0.00910--->0.00910)     Saving The Model
Validation Loss Decreased(0.00910--->0.00910)     Saving The Model
Validation Loss Decreased(0.00910--->0.00909)     Saving The Model
Validation Loss Decreased(0.00909--->0.00909)     Saving The Model
Validation Loss Decreased(0.00909--->0.00909)     Saving The Model
Validation Loss Decreased(0.00909--->0.00908)     Saving The Model
Validation Loss Decreased(0.00908--->0.00908)     Saving The Model
Validation Loss Decreased(0.00908--->0.00908)     Saving The Model
Validation Loss Decreased(0.00908--->0.00907)     Saving The Model
Validation Loss Decreased(0.00907--->0.00907)     Saving The Model
Validation Loss Decreased(0.00907--->0.00907)     Saving The Model
Validation Loss Decreased(0.00907--->0.00907)     Saving The Model
Validation Loss Decreased(0.00907--->0.00906)     Saving The Model
Validation Loss Decreased(0.00906--->0.00906)     Saving The Model
Validation Loss Decreased(0.00906--->0.00906)     Saving The Model
Validation Loss Decreased(0.00906--->0.00905)     Saving The Model
Validation Loss Decreased(0.00905--->0.00905)     Saving The Model
Validation Loss Decreased(0.00905--->0.00905)     Saving The Model
Validation Loss Decreased(0.00905--->0.00905)     Saving The Model
Validation Loss Decreased(0.00905--->0.00904)     Saving The Model
Validation Loss Decreased(0.00904--->0.00904)     Saving The Model
Validation Loss Decreased(0.00904--->0.00904)     Saving The Model
Validation Loss Decreased(0.00904--->0.00903)     Saving The Model
Validation Loss Decreased(0.00903--->0.00903)     Saving The Model
Validation Loss Decreased(0.00903--->0.00903)     Saving The Model
Validation Loss Decreased(0.00903--->0.00903)     Saving The Model
Validation Loss Decreased(0.00903--->0.00902)     Saving The Model
Validation Loss Decreased(0.00902--->0.00902)     Saving The Model
Validation Loss Decreased(0.00902--->0.00902)     Saving The Model
Validation Loss Decreased(0.00902--->0.00902)     Saving The Model
Validation Loss Decreased(0.00902--->0.00901)     Saving The Model
Validation Loss Decreased(0.00901--->0.00901)     Saving The Model
Validation Loss Decreased(0.00901--->0.00901)     Saving The Model
Validation Loss Decreased(0.00901--->0.00900)     Saving The Model
Validation Loss Decreased(0.00900--->0.00900)     Saving The Model
Validation Loss Decreased(0.00900--->0.00900)     Saving The Model
Validation Loss Decreased(0.00900--->0.00900)     Saving The Model
Validation Loss Decreased(0.00900--->0.00899)     Saving The Model
Validation Loss Decreased(0.00899--->0.00899)     Saving The Model
Validation Loss Decreased(0.00899--->0.00899)     Saving The Model
Validation Loss Decreased(0.00899--->0.00898)     Saving The Model
Validation Loss Decreased(0.00898--->0.00898)     Saving The Model
Validation Loss Decreased(0.00898--->0.00898)     Saving The Model
Validation Loss Decreased(0.00898--->0.00898)     Saving The Model
Validation Loss Decreased(0.00898--->0.00897)     Saving The Model
```

```
Validation Loss Decreased(0.00897--->0.00897)     Saving The Model
Validation Loss Decreased(0.00897--->0.00897)     Saving The Model
Validation Loss Decreased(0.00897--->0.00896)     Saving The Model
Validation Loss Decreased(0.00896--->0.00896)     Saving The Model
Validation Loss Decreased(0.00896--->0.00896)     Saving The Model
Validation Loss Decreased(0.00896--->0.00895)     Saving The Model
Validation Loss Decreased(0.00895--->0.00895)     Saving The Model
Validation Loss Decreased(0.00895--->0.00895)     Saving The Model
Validation Loss Decreased(0.00895--->0.00894)     Saving The Model
Validation Loss Decreased(0.00894--->0.00894)     Saving The Model
Validation Loss Decreased(0.00894--->0.00894)     Saving The Model
Validation Loss Decreased(0.00894--->0.00893)     Saving The Model
Validation Loss Decreased(0.00893--->0.00893)     Saving The Model
Validation Loss Decreased(0.00893--->0.00893)     Saving The Model
Validation Loss Decreased(0.00893--->0.00892)     Saving The Model
Validation Loss Decreased(0.00892--->0.00892)     Saving The Model
Validation Loss Decreased(0.00892--->0.00891)     Saving The Model
Epoch 300              Training Loss: 0.00601                    Val
idation Loss: 0.00891
Validation Loss Decreased(0.00891--->0.00891)     Saving The Model
Validation Loss Decreased(0.00891--->0.00891)     Saving The Model
Validation Loss Decreased(0.00891--->0.00890)     Saving The Model
Validation Loss Decreased(0.00890--->0.00890)     Saving The Model
Validation Loss Decreased(0.00890--->0.00889)     Saving The Model
Validation Loss Decreased(0.00889--->0.00889)     Saving The Model
Validation Loss Decreased(0.00889--->0.00888)     Saving The Model
Validation Loss Decreased(0.00888--->0.00888)     Saving The Model
Validation Loss Decreased(0.00888--->0.00887)     Saving The Model
Validation Loss Decreased(0.00887--->0.00887)     Saving The Model
Validation Loss Decreased(0.00887--->0.00886)     Saving The Model
Validation Loss Decreased(0.00886--->0.00886)     Saving The Model
Validation Loss Decreased(0.00886--->0.00885)     Saving The Model
Validation Loss Decreased(0.00885--->0.00885)     Saving The Model
Validation Loss Decreased(0.00885--->0.00884)     Saving The Model
Validation Loss Decreased(0.00884--->0.00884)     Saving The Model
Validation Loss Decreased(0.00884--->0.00883)     Saving The Model
Validation Loss Decreased(0.00883--->0.00882)     Saving The Model
Validation Loss Decreased(0.00882--->0.00882)     Saving The Model
Validation Loss Decreased(0.00882--->0.00881)     Saving The Model
Validation Loss Decreased(0.00881--->0.00880)     Saving The Model
Validation Loss Decreased(0.00880--->0.00880)     Saving The Model
Validation Loss Decreased(0.00880--->0.00879)     Saving The Model
Validation Loss Decreased(0.00879--->0.00878)     Saving The Model
Validation Loss Decreased(0.00878--->0.00878)     Saving The Model
Validation Loss Decreased(0.00878--->0.00877)     Saving The Model
Validation Loss Decreased(0.00877--->0.00876)     Saving The Model
Validation Loss Decreased(0.00876--->0.00875)     Saving The Model
Validation Loss Decreased(0.00875--->0.00875)     Saving The Model
Validation Loss Decreased(0.00875--->0.00874)     Saving The Model
Validation Loss Decreased(0.00874--->0.00873)     Saving The Model
Validation Loss Decreased(0.00873--->0.00872)     Saving The Model
Validation Loss Decreased(0.00872--->0.00872)     Saving The Model
Validation Loss Decreased(0.00872--->0.00871)     Saving The Model
Validation Loss Decreased(0.00871--->0.00870)     Saving The Model
Validation Loss Decreased(0.00870--->0.00870)     Saving The Model
Validation Loss Decreased(0.00870--->0.00869)     Saving The Model
Validation Loss Decreased(0.00869--->0.00868)     Saving The Model
Validation Loss Decreased(0.00868--->0.00868)     Saving The Model
Validation Loss Decreased(0.00868--->0.00867)     Saving The Model
Validation Loss Decreased(0.00867--->0.00867)     Saving The Model
Validation Loss Decreased(0.00867--->0.00867)     Saving The Model
```

```
Validation Loss Decreased(0.00867--->0.00866)    Saving The Model
Validation Loss Decreased(0.00866--->0.00866)    Saving The Model
Validation Loss Decreased(0.00866--->0.00866)    Saving The Model
Validation Loss Decreased(0.00866--->0.00866)    Saving The Model
Validation Loss Decreased(0.00866--->0.00865)    Saving The Model
Validation Loss Decreased(0.00865--->0.00865)    Saving The Model
Validation Loss Decreased(0.00865--->0.00865)    Saving The Model
Validation Loss Decreased(0.00865--->0.00865)    Saving The Model
Validation Loss Decreased(0.00865--->0.00865)    Saving The Model
Validation Loss Decreased(0.00865--->0.00865)    Saving The Model
Validation Loss Decreased(0.00865--->0.00865)    Saving The Model
Validation Loss Decreased(0.00865--->0.00865)    Saving The Model
Validation Loss Decreased(0.00865--->0.00865)    Saving The Model
Validation Loss Decreased(0.00865--->0.00865)    Saving The Model
Epoch 400              Training Loss: 0.00588                 Val
idation Loss: 0.00871
Epoch 500              Training Loss: 0.00586                 Val
idation Loss: 0.00869
Validation Loss Decreased(0.00865--->0.00865)    Saving The Model
Validation Loss Decreased(0.00865--->0.00860)    Saving The Model
Validation Loss Decreased(0.00860--->0.00857)    Saving The Model
Epoch 600              Training Loss: 0.00587                 Val
idation Loss: 0.00896
Epoch 700              Training Loss: 0.00582                 Val
idation Loss: 0.00868
Epoch 800              Training Loss: 0.00580                 Val
idation Loss: 0.00868
Validation Loss Decreased(0.00857--->0.00856)    Saving The Model
Validation Loss Decreased(0.00856--->0.00856)    Saving The Model
Epoch 900              Training Loss: 0.00579                 Val
idation Loss: 0.00869
Epoch 1000             Training Loss: 0.00577                 Val
idation Loss: 0.00868
Validation Loss Decreased(0.00856--->0.00855)    Saving The Model
Epoch 1100             Training Loss: 0.00575                 Val
idation Loss: 0.00869
Validation Loss Decreased(0.00855--->0.00854)    Saving The Model
Validation Loss Decreased(0.00854--->0.00852)    Saving The Model
Validation Loss Decreased(0.00852--->0.00852)    Saving The Model
Epoch 1200             Training Loss: 0.00572                 Val
idation Loss: 0.00870
Epoch 1300             Training Loss: 0.00565                 Val
idation Loss: 0.00865
Epoch 1400             Training Loss: 0.00549                 Val
idation Loss: 0.00878
Epoch 1500             Training Loss: 0.00540                 Val
idation Loss: 0.00886
Epoch 1600             Training Loss: 0.00536                 Val
idation Loss: 0.00888
Epoch 1700             Training Loss: 0.00539                 Val
idation Loss: 0.00914
Epoch 1800             Training Loss: 0.00523                 Val
idation Loss: 0.00901
Epoch 1900             Training Loss: 0.00495                 Val
idation Loss: 0.00944
Epoch 2000             Training Loss: 0.00471                 Val
idation Loss: 0.01038
Epoch 2100             Training Loss: 0.00450                 Val
idation Loss: 0.01046
Epoch 2200             Training Loss: 0.00429                 Val
idation Loss: 0.01083
```

Epoch 2300   Training Loss: 0.00409   Val
idation Loss: 0.00998
Epoch 2400   Training Loss: 0.00382   Val
idation Loss: 0.01048
Epoch 2500   Training Loss: 0.00362   Val
idation Loss: 0.01028
Epoch 2600   Training Loss: 0.00360   Val
idation Loss: 0.01104
Epoch 2700   Training Loss: 0.00333   Val
idation Loss: 0.01110
Epoch 2800   Training Loss: 0.00318   Val
idation Loss: 0.01237
Epoch 2900   Training Loss: 0.00282   Val
idation Loss: 0.01349
Epoch 3000   Training Loss: 0.00269   Val
idation Loss: 0.01410
Epoch 3100   Training Loss: 0.00259   Val
idation Loss: 0.01485
Stopping the training early   Model saved
          Training Loss: 0.0024656145833432674
          Validation Loss: 0.008516310714185238

Prediction

RMSE of validation set: 5.524994515449976
RMSE of entire data set: 2.813208290120417

Sales of Store - 18

```
Validation Loss Decreased(inf--->0.22268)        Saving The Model
Validation Loss Decreased(0.22268--->0.15373)    Saving The Model
Validation Loss Decreased(0.15373--->0.09947)    Saving The Model
Validation Loss Decreased(0.09947--->0.05749)    Saving The Model
Validation Loss Decreased(0.05749--->0.02783)    Saving The Model
Validation Loss Decreased(0.02783--->0.01277)    Saving The Model
Validation Loss Decreased(0.01277--->0.01175)    Saving The Model
Validation Loss Decreased(0.01175--->0.01169)    Saving The Model
Validation Loss Decreased(0.01169--->0.01163)    Saving The Model
Validation Loss Decreased(0.01163--->0.01156)    Saving The Model
Validation Loss Decreased(0.01156--->0.01154)    Saving The Model
Validation Loss Decreased(0.01154--->0.01152)    Saving The Model
Validation Loss Decreased(0.01152--->0.01146)    Saving The Model
Validation Loss Decreased(0.01146--->0.01142)    Saving The Model
Validation Loss Decreased(0.01142--->0.01139)    Saving The Model
Validation Loss Decreased(0.01139--->0.01138)    Saving The Model
Validation Loss Decreased(0.01138--->0.01137)    Saving The Model
Validation Loss Decreased(0.01137--->0.01134)    Saving The Model
Validation Loss Decreased(0.01134--->0.01130)    Saving The Model
Validation Loss Decreased(0.01130--->0.01127)    Saving The Model
Validation Loss Decreased(0.01127--->0.01124)    Saving The Model
Validation Loss Decreased(0.01124--->0.01121)    Saving The Model
Validation Loss Decreased(0.01121--->0.01119)    Saving The Model
Validation Loss Decreased(0.01119--->0.01118)    Saving The Model
Validation Loss Decreased(0.01118--->0.01117)    Saving The Model
Validation Loss Decreased(0.01117--->0.01116)    Saving The Model
Validation Loss Decreased(0.01116--->0.01114)    Saving The Model
Validation Loss Decreased(0.01114--->0.01113)    Saving The Model
Validation Loss Decreased(0.01113--->0.01111)    Saving The Model
Validation Loss Decreased(0.01111--->0.01110)    Saving The Model
Validation Loss Decreased(0.01110--->0.01108)    Saving The Model
Validation Loss Decreased(0.01108--->0.01106)    Saving The Model
Validation Loss Decreased(0.01106--->0.01105)    Saving The Model
Validation Loss Decreased(0.01105--->0.01103)    Saving The Model
Validation Loss Decreased(0.01103--->0.01102)    Saving The Model
Validation Loss Decreased(0.01102--->0.01101)    Saving The Model
Validation Loss Decreased(0.01101--->0.01100)    Saving The Model
Validation Loss Decreased(0.01100--->0.01099)    Saving The Model
Validation Loss Decreased(0.01099--->0.01097)    Saving The Model
Validation Loss Decreased(0.01097--->0.01096)    Saving The Model
Validation Loss Decreased(0.01096--->0.01094)    Saving The Model
Validation Loss Decreased(0.01094--->0.01092)    Saving The Model
Validation Loss Decreased(0.01092--->0.01091)    Saving The Model
Validation Loss Decreased(0.01091--->0.01089)    Saving The Model
Validation Loss Decreased(0.01089--->0.01087)    Saving The Model
Validation Loss Decreased(0.01087--->0.01085)    Saving The Model
Validation Loss Decreased(0.01085--->0.01083)    Saving The Model
Validation Loss Decreased(0.01083--->0.01082)    Saving The Model
Validation Loss Decreased(0.01082--->0.01080)    Saving The Model
Validation Loss Decreased(0.01080--->0.01079)    Saving The Model
Validation Loss Decreased(0.01079--->0.01077)    Saving The Model
Epoch 100              Training Loss: 0.01304                  Val
idation Loss: 0.01075
Validation Loss Decreased(0.01077--->0.01075)    Saving The Model
Validation Loss Decreased(0.01075--->0.01074)    Saving The Model
Validation Loss Decreased(0.01074--->0.01072)    Saving The Model
Validation Loss Decreased(0.01072--->0.01071)    Saving The Model
Validation Loss Decreased(0.01071--->0.01069)    Saving The Model
Validation Loss Decreased(0.01069--->0.01068)    Saving The Model
Validation Loss Decreased(0.01068--->0.01066)    Saving The Model
Validation Loss Decreased(0.01066--->0.01065)    Saving The Model
```

```
Validation Loss Decreased(0.01065--->0.01063)    Saving The Model
Validation Loss Decreased(0.01063--->0.01062)    Saving The Model
Validation Loss Decreased(0.01062--->0.01060)    Saving The Model
Validation Loss Decreased(0.01060--->0.01058)    Saving The Model
Validation Loss Decreased(0.01058--->0.01057)    Saving The Model
Validation Loss Decreased(0.01057--->0.01055)    Saving The Model
Validation Loss Decreased(0.01055--->0.01053)    Saving The Model
Validation Loss Decreased(0.01053--->0.01052)    Saving The Model
Validation Loss Decreased(0.01052--->0.01050)    Saving The Model
Validation Loss Decreased(0.01050--->0.01048)    Saving The Model
Validation Loss Decreased(0.01048--->0.01046)    Saving The Model
Validation Loss Decreased(0.01046--->0.01045)    Saving The Model
Validation Loss Decreased(0.01045--->0.01043)    Saving The Model
Validation Loss Decreased(0.01043--->0.01042)    Saving The Model
Validation Loss Decreased(0.01042--->0.01040)    Saving The Model
Validation Loss Decreased(0.01040--->0.01038)    Saving The Model
Validation Loss Decreased(0.01038--->0.01037)    Saving The Model
Validation Loss Decreased(0.01037--->0.01035)    Saving The Model
Validation Loss Decreased(0.01035--->0.01033)    Saving The Model
Validation Loss Decreased(0.01033--->0.01032)    Saving The Model
Validation Loss Decreased(0.01032--->0.01030)    Saving The Model
Validation Loss Decreased(0.01030--->0.01028)    Saving The Model
Validation Loss Decreased(0.01028--->0.01027)    Saving The Model
Validation Loss Decreased(0.01027--->0.01025)    Saving The Model
Validation Loss Decreased(0.01025--->0.01023)    Saving The Model
Validation Loss Decreased(0.01023--->0.01022)    Saving The Model
Validation Loss Decreased(0.01022--->0.01020)    Saving The Model
Validation Loss Decreased(0.01020--->0.01018)    Saving The Model
Validation Loss Decreased(0.01018--->0.01017)    Saving The Model
Validation Loss Decreased(0.01017--->0.01015)    Saving The Model
Validation Loss Decreased(0.01015--->0.01013)    Saving The Model
Validation Loss Decreased(0.01013--->0.01012)    Saving The Model
Validation Loss Decreased(0.01012--->0.01010)    Saving The Model
Validation Loss Decreased(0.01010--->0.01008)    Saving The Model
Validation Loss Decreased(0.01008--->0.01007)    Saving The Model
Validation Loss Decreased(0.01007--->0.01005)    Saving The Model
Validation Loss Decreased(0.01005--->0.01003)    Saving The Model
Validation Loss Decreased(0.01003--->0.01002)    Saving The Model
Validation Loss Decreased(0.01002--->0.01000)    Saving The Model
Validation Loss Decreased(0.01000--->0.00998)    Saving The Model
Validation Loss Decreased(0.00998--->0.00997)    Saving The Model
Validation Loss Decreased(0.00997--->0.00995)    Saving The Model
Validation Loss Decreased(0.00995--->0.00993)    Saving The Model
Validation Loss Decreased(0.00993--->0.00992)    Saving The Model
Validation Loss Decreased(0.00992--->0.00990)    Saving The Model
Validation Loss Decreased(0.00990--->0.00988)    Saving The Model
Validation Loss Decreased(0.00988--->0.00987)    Saving The Model
Validation Loss Decreased(0.00987--->0.00985)    Saving The Model
Validation Loss Decreased(0.00985--->0.00983)    Saving The Model
Validation Loss Decreased(0.00983--->0.00982)    Saving The Model
Validation Loss Decreased(0.00982--->0.00980)    Saving The Model
Validation Loss Decreased(0.00980--->0.00979)    Saving The Model
Validation Loss Decreased(0.00979--->0.00977)    Saving The Model
Validation Loss Decreased(0.00977--->0.00975)    Saving The Model
Validation Loss Decreased(0.00975--->0.00974)    Saving The Model
Validation Loss Decreased(0.00974--->0.00972)    Saving The Model
Validation Loss Decreased(0.00972--->0.00971)    Saving The Model
Validation Loss Decreased(0.00971--->0.00969)    Saving The Model
Validation Loss Decreased(0.00969--->0.00968)    Saving The Model
Validation Loss Decreased(0.00968--->0.00966)    Saving The Model
Validation Loss Decreased(0.00966--->0.00964)    Saving The Model
```

```
Validation Loss Decreased(0.00964--->0.00963)    Saving The Model
Validation Loss Decreased(0.00963--->0.00961)    Saving The Model
Validation Loss Decreased(0.00961--->0.00960)    Saving The Model
Validation Loss Decreased(0.00960--->0.00958)    Saving The Model
Validation Loss Decreased(0.00958--->0.00957)    Saving The Model
Validation Loss Decreased(0.00957--->0.00955)    Saving The Model
Validation Loss Decreased(0.00955--->0.00954)    Saving The Model
Validation Loss Decreased(0.00954--->0.00952)    Saving The Model
Validation Loss Decreased(0.00952--->0.00951)    Saving The Model
Validation Loss Decreased(0.00951--->0.00950)    Saving The Model
Validation Loss Decreased(0.00950--->0.00948)    Saving The Model
Validation Loss Decreased(0.00948--->0.00947)    Saving The Model
Validation Loss Decreased(0.00947--->0.00945)    Saving The Model
Validation Loss Decreased(0.00945--->0.00944)    Saving The Model
Validation Loss Decreased(0.00944--->0.00943)    Saving The Model
Validation Loss Decreased(0.00943--->0.00941)    Saving The Model
Validation Loss Decreased(0.00941--->0.00940)    Saving The Model
Validation Loss Decreased(0.00940--->0.00939)    Saving The Model
Validation Loss Decreased(0.00939--->0.00938)    Saving The Model
Validation Loss Decreased(0.00938--->0.00936)    Saving The Model
Validation Loss Decreased(0.00936--->0.00935)    Saving The Model
Validation Loss Decreased(0.00935--->0.00934)    Saving The Model
Validation Loss Decreased(0.00934--->0.00933)    Saving The Model
Validation Loss Decreased(0.00933--->0.00932)    Saving The Model
Validation Loss Decreased(0.00932--->0.00931)    Saving The Model
Validation Loss Decreased(0.00931--->0.00930)    Saving The Model
Validation Loss Decreased(0.00930--->0.00929)    Saving The Model
Validation Loss Decreased(0.00929--->0.00928)    Saving The Model
Validation Loss Decreased(0.00928--->0.00927)    Saving The Model
Validation Loss Decreased(0.00927--->0.00926)    Saving The Model
Validation Loss Decreased(0.00926--->0.00925)    Saving The Model
Epoch 200             Training Loss: 0.01136              Val
idation Loss: 0.00924
Validation Loss Decreased(0.00925--->0.00924)    Saving The Model
Validation Loss Decreased(0.00924--->0.00923)    Saving The Model
Validation Loss Decreased(0.00923--->0.00922)    Saving The Model
Validation Loss Decreased(0.00922--->0.00921)    Saving The Model
Validation Loss Decreased(0.00921--->0.00920)    Saving The Model
Validation Loss Decreased(0.00920--->0.00920)    Saving The Model
Validation Loss Decreased(0.00920--->0.00919)    Saving The Model
Validation Loss Decreased(0.00919--->0.00918)    Saving The Model
Validation Loss Decreased(0.00918--->0.00917)    Saving The Model
Validation Loss Decreased(0.00917--->0.00917)    Saving The Model
Validation Loss Decreased(0.00917--->0.00916)    Saving The Model
Validation Loss Decreased(0.00916--->0.00915)    Saving The Model
Validation Loss Decreased(0.00915--->0.00915)    Saving The Model
Validation Loss Decreased(0.00915--->0.00914)    Saving The Model
Validation Loss Decreased(0.00914--->0.00914)    Saving The Model
Validation Loss Decreased(0.00914--->0.00913)    Saving The Model
Validation Loss Decreased(0.00913--->0.00913)    Saving The Model
Validation Loss Decreased(0.00913--->0.00912)    Saving The Model
Validation Loss Decreased(0.00912--->0.00912)    Saving The Model
Validation Loss Decreased(0.00912--->0.00911)    Saving The Model
Validation Loss Decreased(0.00911--->0.00911)    Saving The Model
Validation Loss Decreased(0.00911--->0.00910)    Saving The Model
Validation Loss Decreased(0.00910--->0.00910)    Saving The Model
Validation Loss Decreased(0.00910--->0.00909)    Saving The Model
Validation Loss Decreased(0.00909--->0.00909)    Saving The Model
Validation Loss Decreased(0.00909--->0.00908)    Saving The Model
Validation Loss Decreased(0.00908--->0.00908)    Saving The Model
Validation Loss Decreased(0.00908--->0.00908)    Saving The Model
```

```
Validation Loss Decreased(0.00908--->0.00907)     Saving The Model
Validation Loss Decreased(0.00907--->0.00907)     Saving The Model
Validation Loss Decreased(0.00907--->0.00906)     Saving The Model
Validation Loss Decreased(0.00906--->0.00906)     Saving The Model
Validation Loss Decreased(0.00906--->0.00905)     Saving The Model
Validation Loss Decreased(0.00905--->0.00905)     Saving The Model
Validation Loss Decreased(0.00905--->0.00905)     Saving The Model
Validation Loss Decreased(0.00905--->0.00904)     Saving The Model
Validation Loss Decreased(0.00904--->0.00904)     Saving The Model
Validation Loss Decreased(0.00904--->0.00904)     Saving The Model
Validation Loss Decreased(0.00904--->0.00903)     Saving The Model
Validation Loss Decreased(0.00903--->0.00903)     Saving The Model
Validation Loss Decreased(0.00903--->0.00902)     Saving The Model
Validation Loss Decreased(0.00902--->0.00902)     Saving The Model
Validation Loss Decreased(0.00902--->0.00902)     Saving The Model
Validation Loss Decreased(0.00902--->0.00901)     Saving The Model
Validation Loss Decreased(0.00901--->0.00901)     Saving The Model
Validation Loss Decreased(0.00901--->0.00901)     Saving The Model
Validation Loss Decreased(0.00901--->0.00900)     Saving The Model
Validation Loss Decreased(0.00900--->0.00900)     Saving The Model
Validation Loss Decreased(0.00900--->0.00899)     Saving The Model
Validation Loss Decreased(0.00899--->0.00899)     Saving The Model
Validation Loss Decreased(0.00899--->0.00899)     Saving The Model
Validation Loss Decreased(0.00899--->0.00898)     Saving The Model
Validation Loss Decreased(0.00898--->0.00898)     Saving The Model
Validation Loss Decreased(0.00898--->0.00898)     Saving The Model
Validation Loss Decreased(0.00898--->0.00897)     Saving The Model
Validation Loss Decreased(0.00897--->0.00897)     Saving The Model
Validation Loss Decreased(0.00897--->0.00896)     Saving The Model
Validation Loss Decreased(0.00896--->0.00896)     Saving The Model
Validation Loss Decreased(0.00896--->0.00896)     Saving The Model
Validation Loss Decreased(0.00896--->0.00895)     Saving The Model
Validation Loss Decreased(0.00895--->0.00895)     Saving The Model
Validation Loss Decreased(0.00895--->0.00895)     Saving The Model
Validation Loss Decreased(0.00895--->0.00894)     Saving The Model
Validation Loss Decreased(0.00894--->0.00894)     Saving The Model
Validation Loss Decreased(0.00894--->0.00894)     Saving The Model
Validation Loss Decreased(0.00894--->0.00893)     Saving The Model
Validation Loss Decreased(0.00893--->0.00893)     Saving The Model
Validation Loss Decreased(0.00893--->0.00892)     Saving The Model
Validation Loss Decreased(0.00892--->0.00892)     Saving The Model
Validation Loss Decreased(0.00892--->0.00892)     Saving The Model
Validation Loss Decreased(0.00892--->0.00891)     Saving The Model
Validation Loss Decreased(0.00891--->0.00891)     Saving The Model
Validation Loss Decreased(0.00891--->0.00891)     Saving The Model
Validation Loss Decreased(0.00891--->0.00890)     Saving The Model
Validation Loss Decreased(0.00890--->0.00890)     Saving The Model
Validation Loss Decreased(0.00890--->0.00890)     Saving The Model
Validation Loss Decreased(0.00890--->0.00889)     Saving The Model
Validation Loss Decreased(0.00889--->0.00889)     Saving The Model
Validation Loss Decreased(0.00889--->0.00889)     Saving The Model
Validation Loss Decreased(0.00889--->0.00888)     Saving The Model
Validation Loss Decreased(0.00888--->0.00888)     Saving The Model
Validation Loss Decreased(0.00888--->0.00888)     Saving The Model
Validation Loss Decreased(0.00888--->0.00887)     Saving The Model
Validation Loss Decreased(0.00887--->0.00887)     Saving The Model
Validation Loss Decreased(0.00887--->0.00887)     Saving The Model
Validation Loss Decreased(0.00887--->0.00886)     Saving The Model
Validation Loss Decreased(0.00886--->0.00886)     Saving The Model
Validation Loss Decreased(0.00886--->0.00886)     Saving The Model
Validation Loss Decreased(0.00886--->0.00886)     Saving The Model
```

```
Validation Loss Decreased(0.00886--->0.00885)     Saving The Model
Validation Loss Decreased(0.00885--->0.00885)     Saving The Model
Validation Loss Decreased(0.00885--->0.00885)     Saving The Model
Validation Loss Decreased(0.00885--->0.00884)     Saving The Model
Validation Loss Decreased(0.00884--->0.00884)     Saving The Model
Validation Loss Decreased(0.00884--->0.00884)     Saving The Model
Validation Loss Decreased(0.00884--->0.00884)     Saving The Model
Validation Loss Decreased(0.00884--->0.00883)     Saving The Model
Validation Loss Decreased(0.00883--->0.00883)     Saving The Model
Validation Loss Decreased(0.00883--->0.00883)     Saving The Model
Validation Loss Decreased(0.00883--->0.00883)     Saving The Model
Epoch 300              Training Loss: 0.01084                      Val
idation Loss: 0.00882
Validation Loss Decreased(0.00883--->0.00882)     Saving The Model
Validation Loss Decreased(0.00882--->0.00882)     Saving The Model
Validation Loss Decreased(0.00882--->0.00882)     Saving The Model
Validation Loss Decreased(0.00882--->0.00882)     Saving The Model
Validation Loss Decreased(0.00882--->0.00881)     Saving The Model
Validation Loss Decreased(0.00881--->0.00881)     Saving The Model
Validation Loss Decreased(0.00881--->0.00881)     Saving The Model
Validation Loss Decreased(0.00881--->0.00881)     Saving The Model
Validation Loss Decreased(0.00881--->0.00881)     Saving The Model
Validation Loss Decreased(0.00881--->0.00880)     Saving The Model
Validation Loss Decreased(0.00880--->0.00880)     Saving The Model
Validation Loss Decreased(0.00880--->0.00880)     Saving The Model
Validation Loss Decreased(0.00880--->0.00880)     Saving The Model
Validation Loss Decreased(0.00880--->0.00880)     Saving The Model
Validation Loss Decreased(0.00880--->0.00880)     Saving The Model
Validation Loss Decreased(0.00880--->0.00879)     Saving The Model
Validation Loss Decreased(0.00879--->0.00879)     Saving The Model
Validation Loss Decreased(0.00879--->0.00879)     Saving The Model
Validation Loss Decreased(0.00879--->0.00879)     Saving The Model
Validation Loss Decreased(0.00879--->0.00879)     Saving The Model
Validation Loss Decreased(0.00879--->0.00879)     Saving The Model
Validation Loss Decreased(0.00879--->0.00879)     Saving The Model
Validation Loss Decreased(0.00879--->0.00879)     Saving The Model
Validation Loss Decreased(0.00879--->0.00878)     Saving The Model
Validation Loss Decreased(0.00878--->0.00878)     Saving The Model
Validation Loss Decreased(0.00878--->0.00878)     Saving The Model
Validation Loss Decreased(0.00878--->0.00878)     Saving The Model
Validation Loss Decreased(0.00878--->0.00878)     Saving The Model
Validation Loss Decreased(0.00878--->0.00878)     Saving The Model
Validation Loss Decreased(0.00878--->0.00878)     Saving The Model
Validation Loss Decreased(0.00878--->0.00878)     Saving The Model
Validation Loss Decreased(0.00878--->0.00878)     Saving The Model
Validation Loss Decreased(0.00878--->0.00878)     Saving The Model
Validation Loss Decreased(0.00878--->0.00877)     Saving The Model
Validation Loss Decreased(0.00877--->0.00877)     Saving The Model
Validation Loss Decreased(0.00877--->0.00877)     Saving The Model
Validation Loss Decreased(0.00877--->0.00877)     Saving The Model
Validation Loss Decreased(0.00877--->0.00877)     Saving The Model
Validation Loss Decreased(0.00877--->0.00877)     Saving The Model
Validation Loss Decreased(0.00877--->0.00877)     Saving The Model
Validation Loss Decreased(0.00877--->0.00877)     Saving The Model
Validation Loss Decreased(0.00877--->0.00877)     Saving The Model
Validation Loss Decreased(0.00877--->0.00877)     Saving The Model
Validation Loss Decreased(0.00877--->0.00877)     Saving The Model
Validation Loss Decreased(0.00877--->0.00877)     Saving The Model
Validation Loss Decreased(0.00877--->0.00877)     Saving The Model
Validation Loss Decreased(0.00877--->0.00877)     Saving The Model
```
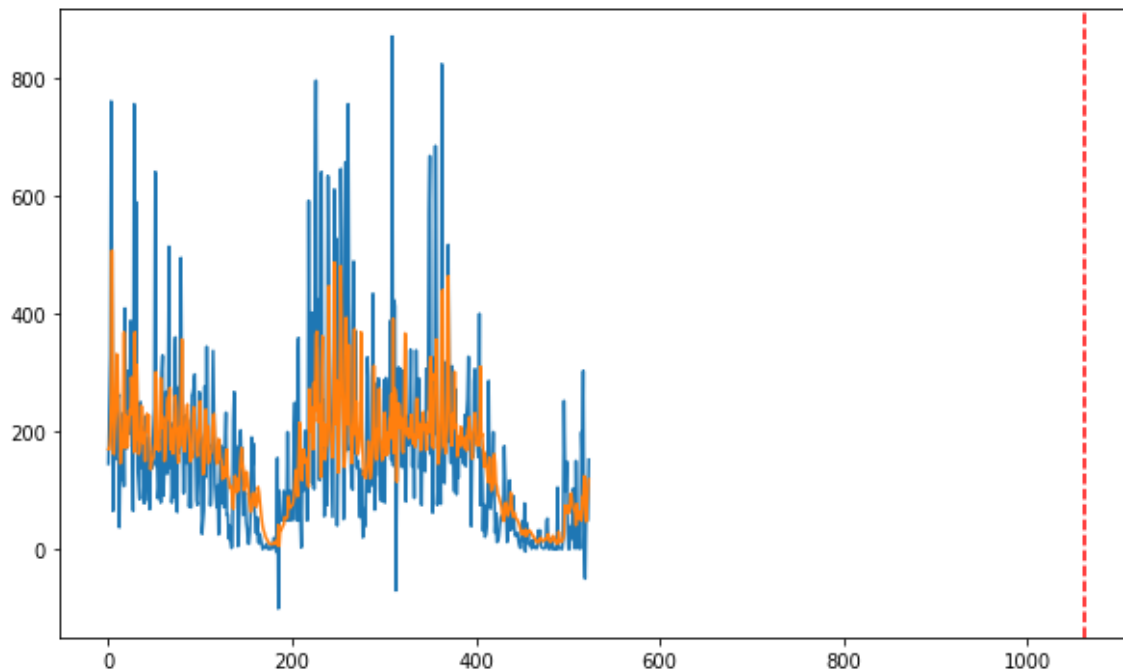
```
Validation Loss Decreased(0.00877--->0.00877)     Saving The Model
Validation Loss Decreased(0.00877--->0.00877)     Saving The Model
Validation Loss Decreased(0.00877--->0.00877)     Saving The Model
Validation Loss Decreased(0.00877--->0.00877)     Saving The Model
Validation Loss Decreased(0.00877--->0.00877)     Saving The Model
Validation Loss Decreased(0.00877--->0.00877)     Saving The Model
Validation Loss Decreased(0.00877--->0.00877)     Saving The Model
Validation Loss Decreased(0.00877--->0.00877)     Saving The Model
Validation Loss Decreased(0.00877--->0.00877)     Saving The Model
Validation Loss Decreased(0.00877--->0.00877)     Saving The Model
Validation Loss Decreased(0.00877--->0.00877)     Saving The Model
Validation Loss Decreased(0.00877--->0.00877)     Saving The Model
Validation Loss Decreased(0.00877--->0.00877)     Saving The Model
Epoch 400              Training Loss: 0.01064                Val
idation Loss: 0.00877
Epoch 500              Training Loss: 0.01052                Val
idation Loss: 0.00880
Epoch 600              Training Loss: 0.01042                Val
idation Loss: 0.00886
Epoch 700              Training Loss: 0.01036                Val
idation Loss: 0.00891
Epoch 800              Training Loss: 0.01029                Val
idation Loss: 0.00889
Validation Loss Decreased(0.00877--->0.00876)     Saving The Model
Validation Loss Decreased(0.00876--->0.00876)     Saving The Model
Validation Loss Decreased(0.00876--->0.00875)     Saving The Model
Validation Loss Decreased(0.00875--->0.00874)     Saving The Model
Validation Loss Decreased(0.00874--->0.00873)     Saving The Model
Validation Loss Decreased(0.00873--->0.00872)     Saving The Model
Validation Loss Decreased(0.00872--->0.00871)     Saving The Model
Validation Loss Decreased(0.00871--->0.00870)     Saving The Model
Validation Loss Decreased(0.00870--->0.00869)     Saving The Model
Validation Loss Decreased(0.00869--->0.00868)     Saving The Model
Validation Loss Decreased(0.00868--->0.00866)     Saving The Model
Validation Loss Decreased(0.00866--->0.00865)     Saving The Model
Validation Loss Decreased(0.00865--->0.00863)     Saving The Model
Validation Loss Decreased(0.00863--->0.00862)     Saving The Model
Validation Loss Decreased(0.00862--->0.00860)     Saving The Model
Validation Loss Decreased(0.00860--->0.00859)     Saving The Model
Validation Loss Decreased(0.00859--->0.00857)     Saving The Model
Validation Loss Decreased(0.00857--->0.00856)     Saving The Model
Validation Loss Decreased(0.00856--->0.00854)     Saving The Model
Validation Loss Decreased(0.00854--->0.00853)     Saving The Model
Validation Loss Decreased(0.00853--->0.00851)     Saving The Model
Validation Loss Decreased(0.00851--->0.00850)     Saving The Model
Validation Loss Decreased(0.00850--->0.00848)     Saving The Model
Validation Loss Decreased(0.00848--->0.00846)     Saving The Model
Validation Loss Decreased(0.00846--->0.00844)     Saving The Model
Validation Loss Decreased(0.00844--->0.00841)     Saving The Model
Validation Loss Decreased(0.00841--->0.00839)     Saving The Model
Validation Loss Decreased(0.00839--->0.00837)     Saving The Model
Validation Loss Decreased(0.00837--->0.00835)     Saving The Model
Validation Loss Decreased(0.00835--->0.00833)     Saving The Model
Validation Loss Decreased(0.00833--->0.00831)     Saving The Model
Validation Loss Decreased(0.00831--->0.00830)     Saving The Model
Validation Loss Decreased(0.00830--->0.00828)     Saving The Model
Validation Loss Decreased(0.00828--->0.00827)     Saving The Model
Validation Loss Decreased(0.00827--->0.00826)     Saving The Model
Validation Loss Decreased(0.00826--->0.00826)     Saving The Model
Validation Loss Decreased(0.00826--->0.00825)     Saving The Model
Validation Loss Decreased(0.00825--->0.00824)     Saving The Model
```

Validation Loss Decreased(0.00824--->0.00823)   Saving The Model
Validation Loss Decreased(0.00823--->0.00823)   Saving The Model
Epoch 900   Training Loss: 0.00917   Val
idation Loss: 0.00827
Validation Loss Decreased(0.00823--->0.00822)   Saving The Model
Validation Loss Decreased(0.00822--->0.00821)   Saving The Model
Validation Loss Decreased(0.00821--->0.00821)   Saving The Model
Validation Loss Decreased(0.00821--->0.00821)   Saving The Model
Validation Loss Decreased(0.00821--->0.00821)   Saving The Model
Validation Loss Decreased(0.00821--->0.00820)   Saving The Model
Validation Loss Decreased(0.00820--->0.00820)   Saving The Model
Validation Loss Decreased(0.00820--->0.00819)   Saving The Model
Validation Loss Decreased(0.00819--->0.00818)   Saving The Model
Validation Loss Decreased(0.00818--->0.00818)   Saving The Model
Validation Loss Decreased(0.00818--->0.00818)   Saving The Model
Validation Loss Decreased(0.00818--->0.00818)   Saving The Model
Validation Loss Decreased(0.00818--->0.00818)   Saving The Model
Validation Loss Decreased(0.00818--->0.00817)   Saving The Model
Validation Loss Decreased(0.00817--->0.00817)   Saving The Model
Validation Loss Decreased(0.00817--->0.00817)   Saving The Model
Epoch 1000   Training Loss: 0.00874   Val
idation Loss: 0.00819
Epoch 1100   Training Loss: 0.00856   Val
idation Loss: 0.00828
Epoch 1200   Training Loss: 0.00843   Val
idation Loss: 0.00849
Epoch 1300   Training Loss: 0.00830   Val
idation Loss: 0.00854
Epoch 1400   Training Loss: 0.00817   Val
idation Loss: 0.00860
Epoch 1500   Training Loss: 0.00799   Val
idation Loss: 0.00882
Epoch 1600   Training Loss: 0.00786   Val
idation Loss: 0.00885
Epoch 1700   Training Loss: 0.00763   Val
idation Loss: 0.00874
Epoch 1800   Training Loss: 0.00743   Val
idation Loss: 0.00894
Epoch 1900   Training Loss: 0.00721   Val
idation Loss: 0.00920
Epoch 2000   Training Loss: 0.00716   Val
idation Loss: 0.00943
Epoch 2100   Training Loss: 0.00743   Val
idation Loss: 0.01063
Epoch 2200   Training Loss: 0.00715   Val
idation Loss: 0.00910
Epoch 2300   Training Loss: 0.00666   Val
idation Loss: 0.00971
Epoch 2400   Training Loss: 0.00590   Val
idation Loss: 0.01095
Epoch 2500   Training Loss: 0.00565   Val
idation Loss: 0.01166
Epoch 2600   Training Loss: 0.00540   Val
idation Loss: 0.01101
Epoch 2700   Training Loss: 0.00518   Val
idation Loss: 0.01223
Epoch 2800   Training Loss: 0.00469   Val
idation Loss: 0.01248
Epoch 2900   Training Loss: 0.00448   Val
idation Loss: 0.01283
Stopping the training early   Model saved

```
Training Loss:  0.0043860566802322865
Validation Loss:  0.008169769309461117
```

Prediction


```
RMSE of validation set: 5.306870798978589
RMSE of entire data set: 3.1379514753463105
```

Sales of Store - 19
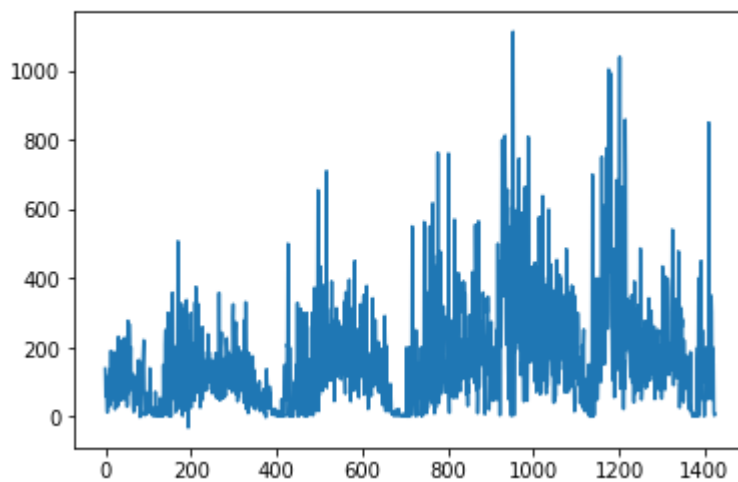
```
Validation Loss Decreased(inf--->0.22286)        Saving The Model
Validation Loss Decreased(0.22286--->0.17678)    Saving The Model
Validation Loss Decreased(0.17678--->0.13431)    Saving The Model
Validation Loss Decreased(0.13431--->0.09519)    Saving The Model
Validation Loss Decreased(0.09519--->0.06074)    Saving The Model
Validation Loss Decreased(0.06074--->0.03422)    Saving The Model
Validation Loss Decreased(0.03422--->0.02159)    Saving The Model
Epoch 100                 Training Loss: 0.01127                   Val
idation Loss: 0.02210
Validation Loss Decreased(0.02159--->0.02158)    Saving The Model
Validation Loss Decreased(0.02158--->0.02156)    Saving The Model
Validation Loss Decreased(0.02156--->0.02153)    Saving The Model
Validation Loss Decreased(0.02153--->0.02150)    Saving The Model
Validation Loss Decreased(0.02150--->0.02146)    Saving The Model
Validation Loss Decreased(0.02146--->0.02142)    Saving The Model
Validation Loss Decreased(0.02142--->0.02137)    Saving The Model
Validation Loss Decreased(0.02137--->0.02132)    Saving The Model
Validation Loss Decreased(0.02132--->0.02126)    Saving The Model
Validation Loss Decreased(0.02126--->0.02120)    Saving The Model
Validation Loss Decreased(0.02120--->0.02114)    Saving The Model
Validation Loss Decreased(0.02114--->0.02107)    Saving The Model
Validation Loss Decreased(0.02107--->0.02101)    Saving The Model
Validation Loss Decreased(0.02101--->0.02096)    Saving The Model
Validation Loss Decreased(0.02096--->0.02090)    Saving The Model
Validation Loss Decreased(0.02090--->0.02085)    Saving The Model
Validation Loss Decreased(0.02085--->0.02081)    Saving The Model
Validation Loss Decreased(0.02081--->0.02076)    Saving The Model
Validation Loss Decreased(0.02076--->0.02072)    Saving The Model
Validation Loss Decreased(0.02072--->0.02068)    Saving The Model
Validation Loss Decreased(0.02068--->0.02064)    Saving The Model
Validation Loss Decreased(0.02064--->0.02060)    Saving The Model
Validation Loss Decreased(0.02060--->0.02056)    Saving The Model
Validation Loss Decreased(0.02056--->0.02051)    Saving The Model
Validation Loss Decreased(0.02051--->0.02046)    Saving The Model
Validation Loss Decreased(0.02046--->0.02041)    Saving The Model
Validation Loss Decreased(0.02041--->0.02035)    Saving The Model
Validation Loss Decreased(0.02035--->0.02030)    Saving The Model
Validation Loss Decreased(0.02030--->0.02024)    Saving The Model
Validation Loss Decreased(0.02024--->0.02019)    Saving The Model
Validation Loss Decreased(0.02019--->0.02014)    Saving The Model
Validation Loss Decreased(0.02014--->0.02009)    Saving The Model
Validation Loss Decreased(0.02009--->0.02005)    Saving The Model
Validation Loss Decreased(0.02005--->0.02000)    Saving The Model
Validation Loss Decreased(0.02000--->0.01996)    Saving The Model
Validation Loss Decreased(0.01996--->0.01991)    Saving The Model
Validation Loss Decreased(0.01991--->0.01987)    Saving The Model
Validation Loss Decreased(0.01987--->0.01983)    Saving The Model
Validation Loss Decreased(0.01983--->0.01978)    Saving The Model
Validation Loss Decreased(0.01978--->0.01974)    Saving The Model
Validation Loss Decreased(0.01974--->0.01969)    Saving The Model
Validation Loss Decreased(0.01969--->0.01964)    Saving The Model
Validation Loss Decreased(0.01964--->0.01960)    Saving The Model
Validation Loss Decreased(0.01960--->0.01956)    Saving The Model
Validation Loss Decreased(0.01956--->0.01952)    Saving The Model
Validation Loss Decreased(0.01952--->0.01949)    Saving The Model
Validation Loss Decreased(0.01949--->0.01946)    Saving The Model
Validation Loss Decreased(0.01946--->0.01943)    Saving The Model
Validation Loss Decreased(0.01943--->0.01941)    Saving The Model
Validation Loss Decreased(0.01941--->0.01938)    Saving The Model
Validation Loss Decreased(0.01938--->0.01936)    Saving The Model
Validation Loss Decreased(0.01936--->0.01934)    Saving The Model
```

```
Validation Loss Decreased(0.01934--->0.01931)    Saving The Model
Validation Loss Decreased(0.01931--->0.01929)    Saving The Model
Validation Loss Decreased(0.01929--->0.01927)    Saving The Model
Validation Loss Decreased(0.01927--->0.01925)    Saving The Model
Validation Loss Decreased(0.01925--->0.01923)    Saving The Model
Validation Loss Decreased(0.01923--->0.01922)    Saving The Model
Validation Loss Decreased(0.01922--->0.01920)    Saving The Model
Validation Loss Decreased(0.01920--->0.01918)    Saving The Model
Validation Loss Decreased(0.01918--->0.01916)    Saving The Model
Validation Loss Decreased(0.01916--->0.01914)    Saving The Model
Validation Loss Decreased(0.01914--->0.01912)    Saving The Model
Validation Loss Decreased(0.01912--->0.01910)    Saving The Model
Validation Loss Decreased(0.01910--->0.01908)    Saving The Model
Validation Loss Decreased(0.01908--->0.01906)    Saving The Model
Validation Loss Decreased(0.01906--->0.01904)    Saving The Model
Validation Loss Decreased(0.01904--->0.01902)    Saving The Model
Validation Loss Decreased(0.01902--->0.01900)    Saving The Model
Validation Loss Decreased(0.01900--->0.01898)    Saving The Model
Validation Loss Decreased(0.01898--->0.01896)    Saving The Model
Validation Loss Decreased(0.01896--->0.01894)    Saving The Model
Validation Loss Decreased(0.01894--->0.01893)    Saving The Model
Validation Loss Decreased(0.01893--->0.01891)    Saving The Model
Validation Loss Decreased(0.01891--->0.01889)    Saving The Model
Validation Loss Decreased(0.01889--->0.01888)    Saving The Model
Validation Loss Decreased(0.01888--->0.01886)    Saving The Model
Validation Loss Decreased(0.01886--->0.01885)    Saving The Model
Validation Loss Decreased(0.01885--->0.01883)    Saving The Model
Validation Loss Decreased(0.01883--->0.01882)    Saving The Model
Validation Loss Decreased(0.01882--->0.01881)    Saving The Model
Validation Loss Decreased(0.01881--->0.01880)    Saving The Model
Validation Loss Decreased(0.01880--->0.01878)    Saving The Model
Validation Loss Decreased(0.01878--->0.01877)    Saving The Model
Validation Loss Decreased(0.01877--->0.01877)    Saving The Model
Validation Loss Decreased(0.01877--->0.01876)    Saving The Model
Validation Loss Decreased(0.01876--->0.01875)    Saving The Model
Validation Loss Decreased(0.01875--->0.01874)    Saving The Model
Validation Loss Decreased(0.01874--->0.01874)    Saving The Model
Validation Loss Decreased(0.01874--->0.01873)    Saving The Model
Validation Loss Decreased(0.01873--->0.01873)    Saving The Model
Epoch 200              Training Loss: 0.01013                    Val
idation Loss: 0.01873
Validation Loss Decreased(0.01873--->0.01873)    Saving The Model
Validation Loss Decreased(0.01873--->0.01872)    Saving The Model
Validation Loss Decreased(0.01872--->0.01872)    Saving The Model
Validation Loss Decreased(0.01872--->0.01872)    Saving The Model
Validation Loss Decreased(0.01872--->0.01872)    Saving The Model
Validation Loss Decreased(0.01872--->0.01872)    Saving The Model
Validation Loss Decreased(0.01872--->0.01872)    Saving The Model
Validation Loss Decreased(0.01872--->0.01871)    Saving The Model
Validation Loss Decreased(0.01871--->0.01871)    Saving The Model
Validation Loss Decreased(0.01871--->0.01871)    Saving The Model
Validation Loss Decreased(0.01871--->0.01871)    Saving The Model
Validation Loss Decreased(0.01871--->0.01871)    Saving The Model
Validation Loss Decreased(0.01871--->0.01870)    Saving The Model
Validation Loss Decreased(0.01870--->0.01870)    Saving The Model
Validation Loss Decreased(0.01870--->0.01870)    Saving The Model
Validation Loss Decreased(0.01870--->0.01870)    Saving The Model
Validation Loss Decreased(0.01870--->0.01870)    Saving The Model
Validation Loss Decreased(0.01870--->0.01870)    Saving The Model
Validation Loss Decreased(0.01870--->0.01870)    Saving The Model
Validation Loss Decreased(0.01870--->0.01870)    Saving The Model
```

```
Validation Loss Decreased(0.01870--->0.01869)        Saving The Model
Validation Loss Decreased(0.01869--->0.01869)        Saving The Model
Validation Loss Decreased(0.01869--->0.01869)        Saving The Model
Validation Loss Decreased(0.01869--->0.01869)        Saving The Model
Validation Loss Decreased(0.01869--->0.01869)        Saving The Model
Validation Loss Decreased(0.01869--->0.01869)        Saving The Model
Validation Loss Decreased(0.01869--->0.01869)        Saving The Model
Validation Loss Decreased(0.01869--->0.01869)        Saving The Model
Validation Loss Decreased(0.01869--->0.01869)        Saving The Model
Validation Loss Decreased(0.01869--->0.01869)        Saving The Model
Validation Loss Decreased(0.01869--->0.01869)        Saving The Model
Validation Loss Decreased(0.01869--->0.01869)        Saving The Model
Validation Loss Decreased(0.01869--->0.01869)        Saving The Model
Validation Loss Decreased(0.01869--->0.01869)        Saving The Model
Validation Loss Decreased(0.01869--->0.01869)        Saving The Model
Validation Loss Decreased(0.01869--->0.01869)        Saving The Model
Validation Loss Decreased(0.01869--->0.01868)        Saving The Model
Validation Loss Decreased(0.01868--->0.01868)        Saving The Model
Validation Loss Decreased(0.01868--->0.01868)        Saving The Model
Validation Loss Decreased(0.01868--->0.01868)        Saving The Model
Validation Loss Decreased(0.01868--->0.01868)        Saving The Model
Epoch 300              Training Loss: 0.01002                    Val
idation Loss: 0.01868
Validation Loss Decreased(0.01868--->0.01868)        Saving The Model
Validation Loss Decreased(0.01868--->0.01868)        Saving The Model
Validation Loss Decreased(0.01868--->0.01868)        Saving The Model
Validation Loss Decreased(0.01868--->0.01868)        Saving The Model
Validation Loss Decreased(0.01868--->0.01868)        Saving The Model
Validation Loss Decreased(0.01868--->0.01868)        Saving The Model
Validation Loss Decreased(0.01868--->0.01868)        Saving The Model
Validation Loss Decreased(0.01868--->0.01868)        Saving The Model
Validation Loss Decreased(0.01868--->0.01868)        Saving The Model
Validation Loss Decreased(0.01868--->0.01868)        Saving The Model
Validation Loss Decreased(0.01868--->0.01868)        Saving The Model
Validation Loss Decreased(0.01868--->0.01868)        Saving The Model
Validation Loss Decreased(0.01868--->0.01868)        Saving The Model
Validation Loss Decreased(0.01868--->0.01868)        Saving The Model
Validation Loss Decreased(0.01868--->0.01867)        Saving The Model
Validation Loss Decreased(0.01867--->0.01867)        Saving The Model
Validation Loss Decreased(0.01867--->0.01867)        Saving The Model
Validation Loss Decreased(0.01867--->0.01867)        Saving The Model
Validation Loss Decreased(0.01867--->0.01867)        Saving The Model
Validation Loss Decreased(0.01867--->0.01867)        Saving The Model
Validation Loss Decreased(0.01867--->0.01867)        Saving The Model
Validation Loss Decreased(0.01867--->0.01867)        Saving The Model
Validation Loss Decreased(0.01867--->0.01867)        Saving The Model
Validation Loss Decreased(0.01867--->0.01867)        Saving The Model
Validation Loss Decreased(0.01867--->0.01867)        Saving The Model
Validation Loss Decreased(0.01867--->0.01867)        Saving The Model
Validation Loss Decreased(0.01867--->0.01867)        Saving The Model
Validation Loss Decreased(0.01867--->0.01867)        Saving The Model
Validation Loss Decreased(0.01867--->0.01867)        Saving The Model
Validation Loss Decreased(0.01867--->0.01867)        Saving The Model
Validation Loss Decreased(0.01867--->0.01867)        Saving The Model
Validation Loss Decreased(0.01867--->0.01867)        Saving The Model
Validation Loss Decreased(0.01867--->0.01866)        Saving The Model
Validation Loss Decreased(0.01866--->0.01866)        Saving The Model
Validation Loss Decreased(0.01866--->0.01866)        Saving The Model
```

```
Validation Loss Decreased(0.01866--->0.01866)    Saving The Model
Validation Loss Decreased(0.01866--->0.01866)    Saving The Model
Validation Loss Decreased(0.01866--->0.01866)    Saving The Model
Validation Loss Decreased(0.01866--->0.01866)    Saving The Model
Validation Loss Decreased(0.01866--->0.01866)    Saving The Model
Validation Loss Decreased(0.01866--->0.01866)    Saving The Model
Validation Loss Decreased(0.01866--->0.01866)    Saving The Model
Validation Loss Decreased(0.01866--->0.01866)    Saving The Model
Validation Loss Decreased(0.01866--->0.01866)    Saving The Model
Validation Loss Decreased(0.01866--->0.01866)    Saving The Model
Validation Loss Decreased(0.01866--->0.01866)    Saving The Model
Validation Loss Decreased(0.01866--->0.01866)    Saving The Model
Validation Loss Decreased(0.01866--->0.01866)    Saving The Model
Validation Loss Decreased(0.01866--->0.01866)    Saving The Model
Validation Loss Decreased(0.01866--->0.01866)    Saving The Model
Validation Loss Decreased(0.01866--->0.01866)    Saving The Model
Validation Loss Decreased(0.01866--->0.01866)    Saving The Model
Validation Loss Decreased(0.01866--->0.01866)    Saving The Model
Validation Loss Decreased(0.01866--->0.01866)    Saving The Model
Validation Loss Decreased(0.01866--->0.01866)    Saving The Model
Validation Loss Decreased(0.01866--->0.01866)    Saving The Model
Validation Loss Decreased(0.01866--->0.01866)    Saving The Model
Validation Loss Decreased(0.01866--->0.01866)    Saving The Model
Validation Loss Decreased(0.01866--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01865)    Saving The Model
Validation Loss Decreased(0.01865--->0.01864)    Saving The Model
Validation Loss Decreased(0.01864--->0.01864)    Saving The Model
```

```
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Epoch 400                    Training Loss: 0.01000                    Val
   idation Loss: 0.01864
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01864)     Saving The Model
   Validation Loss Decreased(0.01864--->0.01863)     Saving The Model
   Validation Loss Decreased(0.01863--->0.01863)     Saving The Model
   Validation Loss Decreased(0.01863--->0.01863)     Saving The Model
   Validation Loss Decreased(0.01863--->0.01863)     Saving The Model
   Validation Loss Decreased(0.01863--->0.01863)     Saving The Model
   Validation Loss Decreased(0.01863--->0.01863)     Saving The Model
   Validation Loss Decreased(0.01863--->0.01863)     Saving The Model
   Validation Loss Decreased(0.01863--->0.01863)     Saving The Model
   Validation Loss Decreased(0.01863--->0.01863)     Saving The Model
   Validation Loss Decreased(0.01863--->0.01863)     Saving The Model
   Validation Loss Decreased(0.01863--->0.01863)     Saving The Model
   Validation Loss Decreased(0.01863--->0.01863)     Saving The Model
   Validation Loss Decreased(0.01863--->0.01863)     Saving The Model
   Validation Loss Decreased(0.01863--->0.01863)     Saving The Model
   Validation Loss Decreased(0.01863--->0.01863)     Saving The Model
   Validation Loss Decreased(0.01863--->0.01863)     Saving The Model
   Validation Loss Decreased(0.01863--->0.01863)     Saving The Model
   Validation Loss Decreased(0.01863--->0.01863)     Saving The Model
   Validation Loss Decreased(0.01863--->0.01863)     Saving The Model
   Validation Loss Decreased(0.01863--->0.01863)     Saving The Model
   Validation Loss Decreased(0.01863--->0.01863)     Saving The Model
   Validation Loss Decreased(0.01863--->0.01863)     Saving The Model
   Validation Loss Decreased(0.01863--->0.01863)     Saving The Model
   idation Loss Decreased(0.01863--->0.01863)     Saving The Model
   Validation Loss Decreased(0.01863--->0.01863)     Saving The Model
   Validation Loss Decreased(0.01863--->0.01863)     Saving The Model
   Validation Loss Decreased(0.01863--->0.01863)     Saving The Model
   Validation Loss Decreased(0.01863--->0.01863)     Saving The Model
```

```
Validation Loss Decreased(0.01863--->0.01863)    Saving The Model
Validation Loss Decreased(0.01863--->0.01863)    Saving The Model
Validation Loss Decreased(0.01863--->0.01863)    Saving The Model
Validation Loss Decreased(0.01863--->0.01863)    Saving The Model
Validation Loss Decreased(0.01863--->0.01863)    Saving The Model
Validation Loss Decreased(0.01863--->0.01863)    Saving The Model
Validation Loss Decreased(0.01863--->0.01863)    Saving The Model
Validation Loss Decreased(0.01863--->0.01863)    Saving The Model
Validation Loss Decreased(0.01863--->0.01863)    Saving The Model
Validation Loss Decreased(0.01863--->0.01863)    Saving The Model
Validation Loss Decreased(0.01863--->0.01862)    Saving The Model
Validation Loss Decreased(0.01862--->0.01862)    Saving The Model
Validation Loss Decreased(0.01862--->0.01862)    Saving The Model
Validation Loss Decreased(0.01862--->0.01862)    Saving The Model
Validation Loss Decreased(0.01862--->0.01862)    Saving The Model
Validation Loss Decreased(0.01862--->0.01862)    Saving The Model
Validation Loss Decreased(0.01862--->0.01862)    Saving The Model
Validation Loss Decreased(0.01862--->0.01862)    Saving The Model
Validation Loss Decreased(0.01862--->0.01862)    Saving The Model
Validation Loss Decreased(0.01862--->0.01862)    Saving The Model
Validation Loss Decreased(0.01862--->0.01862)    Saving The Model
Validation Loss Decreased(0.01862--->0.01862)    Saving The Model
Validation Loss Decreased(0.01862--->0.01862)    Saving The Model
Validation Loss Decreased(0.01862--->0.01862)    Saving The Model
Validation Loss Decreased(0.01862--->0.01862)    Saving The Model
Validation Loss Decreased(0.01862--->0.01862)    Saving The Model
Validation Loss Decreased(0.01862--->0.01861)    Saving The Model
Validation Loss Decreased(0.01861--->0.01861)    Saving The Model
Validation Loss Decreased(0.01861--->0.01859)    Saving The Model
Validation Loss Decreased(0.01859--->0.01858)    Saving The Model
Validation Loss Decreased(0.01858--->0.01858)    Saving The Model
Epoch 500              Training Loss: 0.01001                    Val
idation Loss: 0.01860
Epoch 600              Training Loss: 0.00998                    Val
idation Loss: 0.01859
Validation Loss Decreased(0.01858--->0.01857)    Saving The Model
Validation Loss Decreased(0.01857--->0.01857)    Saving The Model
Validation Loss Decreased(0.01857--->0.01856)    Saving The Model
Validation Loss Decreased(0.01856--->0.01855)    Saving The Model
Validation Loss Decreased(0.01855--->0.01854)    Saving The Model
Epoch 700              Training Loss: 0.00997                    Val
idation Loss: 0.01857
Validation Loss Decreased(0.01854--->0.01854)    Saving The Model
Validation Loss Decreased(0.01854--->0.01853)    Saving The Model
Validation Loss Decreased(0.01853--->0.01853)    Saving The Model
Validation Loss Decreased(0.01853--->0.01852)    Saving The Model
Epoch 800              Training Loss: 0.00997                    Val
idation Loss: 0.01857
Epoch 900              Training Loss: 0.00996                    Val
idation Loss: 0.01853
Validation Loss Decreased(0.01852--->0.01852)    Saving The Model
Validation Loss Decreased(0.01852--->0.01851)    Saving The Model
Validation Loss Decreased(0.01851--->0.01850)    Saving The Model
Validation Loss Decreased(0.01850--->0.01850)    Saving The Model
Epoch 1000             Training Loss: 0.00995                    Val
idation Loss: 0.01852
Validation Loss Decreased(0.01850--->0.01850)    Saving The Model
Validation Loss Decreased(0.01850--->0.01849)    Saving The Model
Validation Loss Decreased(0.01849--->0.01848)    Saving The Model
Validation Loss Decreased(0.01848--->0.01848)    Saving The Model
```

```
Validation Loss Decreased(0.01848--->0.01847)    Saving The Model
Epoch 1100              Training Loss: 0.00994                    Val
idation Loss: 0.01849
Validation Loss Decreased(0.01847--->0.01846)    Saving The Model
Epoch 1200              Training Loss: 0.00995                    Val
idation Loss: 0.01846
Validation Loss Decreased(0.01846--->0.01844)    Saving The Model
Epoch 1300              Training Loss: 0.00986                    Val
idation Loss: 0.01847
Validation Loss Decreased(0.01844--->0.01844)    Saving The Model
Validation Loss Decreased(0.01844--->0.01843)    Saving The Model
Validation Loss Decreased(0.01843--->0.01843)    Saving The Model
Validation Loss Decreased(0.01843--->0.01841)    Saving The Model
Validation Loss Decreased(0.01841--->0.01840)    Saving The Model
Validation Loss Decreased(0.01840--->0.01839)    Saving The Model
Validation Loss Decreased(0.01839--->0.01839)    Saving The Model
Validation Loss Decreased(0.01839--->0.01839)    Saving The Model
Validation Loss Decreased(0.01839--->0.01839)    Saving The Model
Validation Loss Decreased(0.01839--->0.01838)    Saving The Model
Validation Loss Decreased(0.01838--->0.01837)    Saving The Model
Validation Loss Decreased(0.01837--->0.01836)    Saving The Model
Validation Loss Decreased(0.01836--->0.01836)    Saving The Model
Validation Loss Decreased(0.01836--->0.01835)    Saving The Model
Validation Loss Decreased(0.01835--->0.01835)    Saving The Model
Validation Loss Decreased(0.01835--->0.01835)    Saving The Model
Validation Loss Decreased(0.01835--->0.01835)    Saving The Model
Validation Loss Decreased(0.01835--->0.01834)    Saving The Model
Validation Loss Decreased(0.01834--->0.01833)    Saving The Model
Validation Loss Decreased(0.01833--->0.01833)    Saving The Model
Validation Loss Decreased(0.01833--->0.01832)    Saving The Model
Validation Loss Decreased(0.01832--->0.01832)    Saving The Model
Validation Loss Decreased(0.01832--->0.01831)    Saving The Model
Validation Loss Decreased(0.01831--->0.01830)    Saving The Model
Validation Loss Decreased(0.01830--->0.01829)    Saving The Model
Validation Loss Decreased(0.01829--->0.01828)    Saving The Model
Validation Loss Decreased(0.01828--->0.01827)    Saving The Model
Validation Loss Decreased(0.01827--->0.01826)    Saving The Model
Validation Loss Decreased(0.01826--->0.01825)    Saving The Model
Validation Loss Decreased(0.01825--->0.01824)    Saving The Model
Validation Loss Decreased(0.01824--->0.01822)    Saving The Model
Validation Loss Decreased(0.01822--->0.01821)    Saving The Model
Validation Loss Decreased(0.01821--->0.01819)    Saving The Model
Validation Loss Decreased(0.01819--->0.01818)    Saving The Model
Validation Loss Decreased(0.01818--->0.01816)    Saving The Model
Validation Loss Decreased(0.01816--->0.01815)    Saving The Model
Validation Loss Decreased(0.01815--->0.01813)    Saving The Model
Validation Loss Decreased(0.01813--->0.01812)    Saving The Model
Validation Loss Decreased(0.01812--->0.01810)    Saving The Model
Validation Loss Decreased(0.01810--->0.01808)    Saving The Model
Validation Loss Decreased(0.01808--->0.01807)    Saving The Model
Validation Loss Decreased(0.01807--->0.01806)    Saving The Model
Epoch 1400              Training Loss: 0.00959                    Val
idation Loss: 0.01804
Validation Loss Decreased(0.01806--->0.01804)    Saving The Model
Validation Loss Decreased(0.01804--->0.01803)    Saving The Model
Validation Loss Decreased(0.01803--->0.01802)    Saving The Model
Validation Loss Decreased(0.01802--->0.01801)    Saving The Model
Validation Loss Decreased(0.01801--->0.01799)    Saving The Model
Validation Loss Decreased(0.01799--->0.01799)    Saving The Model
Validation Loss Decreased(0.01799--->0.01797)    Saving The Model
Validation Loss Decreased(0.01797--->0.01795)    Saving The Model
```
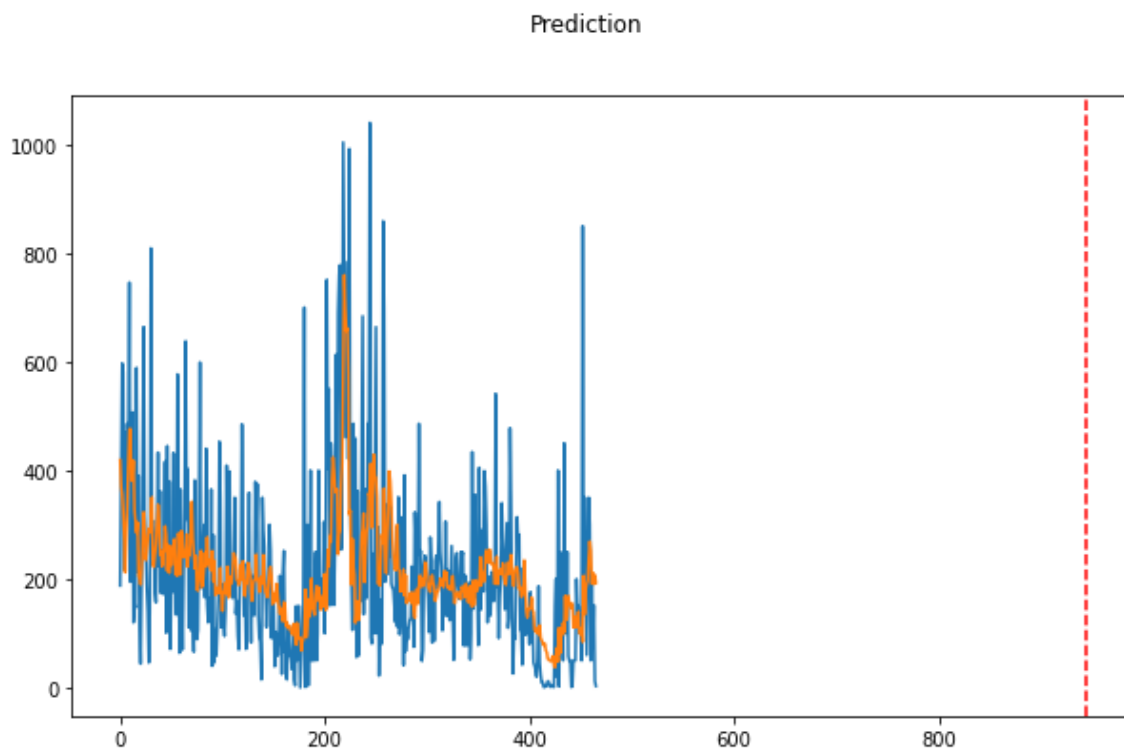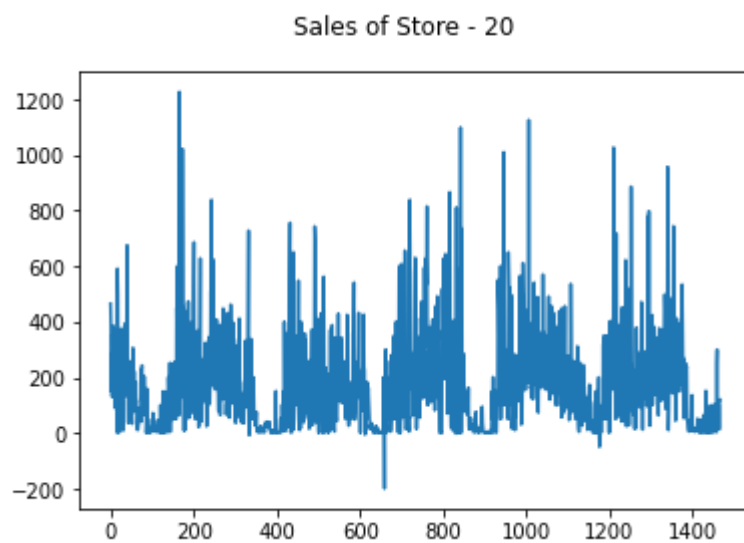
```
   Validation Loss Decreased(0.01795--->0.01795)    Saving The Model
   Validation Loss Decreased(0.01795--->0.01790)    Saving The Model
   Epoch 1500              Training Loss: 0.00911                    Val
   idation Loss: 0.01818
   Epoch 1600              Training Loss: 0.00879                    Val
   idation Loss: 0.02159
   Epoch 1700              Training Loss: 0.00867                    Val
   idation Loss: 0.02043
   Epoch 1800              Training Loss: 0.00775                    Val
   idation Loss: 0.02384
   Epoch 1900              Training Loss: 0.00745                    Val
   idation Loss: 0.02880
   Epoch 2000              Training Loss: 0.00735                    Val
   idation Loss: 0.02894
   Epoch 2100              Training Loss: 0.00741                    Val
   idation Loss: 0.02784
   Epoch 2200              Training Loss: 0.00689                    Val
   idation Loss: 0.02926
   Epoch 2300              Training Loss: 0.00623                    Val
   idation Loss: 0.03348
   Epoch 2400              Training Loss: 0.00590                    Val
   idation Loss: 0.03797
   Epoch 2500              Training Loss: 0.00564                    Val
   idation Loss: 0.03712
   Epoch 2600              Training Loss: 0.00540                    Val
   idation Loss: 0.04187
   Epoch 2700              Training Loss: 0.00523                    Val
   idation Loss: 0.04138
   Epoch 2800              Training Loss: 0.00520                    Val
   idation Loss: 0.04136
   Epoch 2900              Training Loss: 0.00476                    Val
   idation Loss: 0.04372
   Epoch 3000              Training Loss: 0.00450                    Val
   idation Loss: 0.04504
   Epoch 3100              Training Loss: 0.00439                    Val
   idation Loss: 0.04527
   Epoch 3200              Training Loss: 0.00429                    Val
   idation Loss: 0.04758
   Epoch 3300              Training Loss: 0.00380                    Val
   idation Loss: 0.04862
   Epoch 3400              Training Loss: 0.00363                    Val
   idation Loss: 0.04767
   Stopping the training early            Model saved
          Training Loss:  0.0035933770705014467
          Validation Loss:  0.017899196594953537
```

Prediction

RMSE of validation set: 7.096255866755
RMSE of entire data set: 3.3802132119788206

Sales of Store - 20

```
Validation Loss Decreased(inf--->0.02047)        Saving The Model
Validation Loss Decreased(0.02047--->0.01346)    Saving The Model
Validation Loss Decreased(0.01346--->0.01341)    Saving The Model
Validation Loss Decreased(0.01341--->0.01338)    Saving The Model
Validation Loss Decreased(0.01338--->0.01302)    Saving The Model
Validation Loss Decreased(0.01302--->0.01295)    Saving The Model
Validation Loss Decreased(0.01295--->0.01283)    Saving The Model
Validation Loss Decreased(0.01283--->0.01276)    Saving The Model
Validation Loss Decreased(0.01276--->0.01269)    Saving The Model
Validation Loss Decreased(0.01269--->0.01247)    Saving The Model
Validation Loss Decreased(0.01247--->0.01233)    Saving The Model
Validation Loss Decreased(0.01233--->0.01225)    Saving The Model
Validation Loss Decreased(0.01225--->0.01220)    Saving The Model
Validation Loss Decreased(0.01220--->0.01215)    Saving The Model
Validation Loss Decreased(0.01215--->0.01212)    Saving The Model
Validation Loss Decreased(0.01212--->0.01211)    Saving The Model
Validation Loss Decreased(0.01211--->0.01192)    Saving The Model
Validation Loss Decreased(0.01192--->0.01173)    Saving The Model
Validation Loss Decreased(0.01173--->0.01156)    Saving The Model
Validation Loss Decreased(0.01156--->0.01143)    Saving The Model
Validation Loss Decreased(0.01143--->0.01133)    Saving The Model
Validation Loss Decreased(0.01133--->0.01125)    Saving The Model
Validation Loss Decreased(0.01125--->0.01120)    Saving The Model
Validation Loss Decreased(0.01120--->0.01118)    Saving The Model
Validation Loss Decreased(0.01118--->0.01116)    Saving The Model
Validation Loss Decreased(0.01116--->0.01106)    Saving The Model
Validation Loss Decreased(0.01106--->0.01087)    Saving The Model
Validation Loss Decreased(0.01087--->0.01063)    Saving The Model
Validation Loss Decreased(0.01063--->0.01047)    Saving The Model
Validation Loss Decreased(0.01047--->0.01036)    Saving The Model
Validation Loss Decreased(0.01036--->0.01032)    Saving The Model
Validation Loss Decreased(0.01032--->0.01020)    Saving The Model
Validation Loss Decreased(0.01020--->0.01017)    Saving The Model
Validation Loss Decreased(0.01017--->0.01016)    Saving The Model
Validation Loss Decreased(0.01016--->0.01013)    Saving The Model
Validation Loss Decreased(0.01013--->0.01009)    Saving The Model
Validation Loss Decreased(0.01009--->0.01008)    Saving The Model
Validation Loss Decreased(0.01008--->0.01008)    Saving The Model
Validation Loss Decreased(0.01008--->0.01007)    Saving The Model
Validation Loss Decreased(0.01007--->0.01006)    Saving The Model
Validation Loss Decreased(0.01006--->0.01001)    Saving The Model
Validation Loss Decreased(0.01001--->0.00996)    Saving The Model
Validation Loss Decreased(0.00996--->0.00993)    Saving The Model
Validation Loss Decreased(0.00993--->0.00992)    Saving The Model
Validation Loss Decreased(0.00992--->0.00989)    Saving The Model
Validation Loss Decreased(0.00989--->0.00986)    Saving The Model
Validation Loss Decreased(0.00986--->0.00984)    Saving The Model
Validation Loss Decreased(0.00984--->0.00983)    Saving The Model
Validation Loss Decreased(0.00983--->0.00981)    Saving The Model
Validation Loss Decreased(0.00981--->0.00980)    Saving The Model
Validation Loss Decreased(0.00980--->0.00979)    Saving The Model
Validation Loss Decreased(0.00979--->0.00979)    Saving The Model
Epoch 100              Training Loss: 0.01137              Val
idation Loss: 0.00980
Validation Loss Decreased(0.00979--->0.00978)    Saving The Model
Validation Loss Decreased(0.00978--->0.00977)    Saving The Model
Validation Loss Decreased(0.00977--->0.00975)    Saving The Model
Validation Loss Decreased(0.00975--->0.00973)    Saving The Model
Validation Loss Decreased(0.00973--->0.00971)    Saving The Model
Validation Loss Decreased(0.00971--->0.00970)    Saving The Model
Validation Loss Decreased(0.00970--->0.00970)    Saving The Model
```

```
Validation Loss Decreased(0.00970--->0.00970)     Saving The Model
Validation Loss Decreased(0.00970--->0.00969)     Saving The Model
Validation Loss Decreased(0.00969--->0.00968)     Saving The Model
Validation Loss Decreased(0.00968--->0.00968)     Saving The Model
Validation Loss Decreased(0.00968--->0.00967)     Saving The Model
Validation Loss Decreased(0.00967--->0.00967)     Saving The Model
Validation Loss Decreased(0.00967--->0.00966)     Saving The Model
Validation Loss Decreased(0.00966--->0.00966)     Saving The Model
Validation Loss Decreased(0.00966--->0.00966)     Saving The Model
Validation Loss Decreased(0.00966--->0.00966)     Saving The Model
Validation Loss Decreased(0.00966--->0.00966)     Saving The Model
Validation Loss Decreased(0.00966--->0.00965)     Saving The Model
Validation Loss Decreased(0.00965--->0.00965)     Saving The Model
Validation Loss Decreased(0.00965--->0.00965)     Saving The Model
Validation Loss Decreased(0.00965--->0.00965)     Saving The Model
Validation Loss Decreased(0.00965--->0.00964)     Saving The Model
Validation Loss Decreased(0.00964--->0.00964)     Saving The Model
Validation Loss Decreased(0.00964--->0.00964)     Saving The Model
Validation Loss Decreased(0.00964--->0.00964)     Saving The Model
Validation Loss Decreased(0.00964--->0.00964)     Saving The Model
Validation Loss Decreased(0.00964--->0.00964)     Saving The Model
Validation Loss Decreased(0.00964--->0.00964)     Saving The Model
Validation Loss Decreased(0.00964--->0.00963)     Saving The Model
Validation Loss Decreased(0.00963--->0.00963)     Saving The Model
Validation Loss Decreased(0.00963--->0.00963)     Saving The Model
Validation Loss Decreased(0.00963--->0.00963)     Saving The Model
Validation Loss Decreased(0.00963--->0.00963)     Saving The Model
Validation Loss Decreased(0.00963--->0.00963)     Saving The Model
Validation Loss Decreased(0.00963--->0.00963)     Saving The Model
Validation Loss Decreased(0.00963--->0.00963)     Saving The Model
Validation Loss Decreased(0.00963--->0.00963)     Saving The Model
Validation Loss Decreased(0.00963--->0.00963)     Saving The Model
Validation Loss Decreased(0.00963--->0.00963)     Saving The Model
Validation Loss Decreased(0.00963--->0.00963)     Saving The Model
Validation Loss Decreased(0.00963--->0.00963)     Saving The Model
Validation Loss Decreased(0.00963--->0.00963)     Saving The Model
Validation Loss Decreased(0.00963--->0.00962)     Saving The Model
Validation Loss Decreased(0.00962--->0.00962)     Saving The Model
Validation Loss Decreased(0.00962--->0.00962)     Saving The Model
Validation Loss Decreased(0.00962--->0.00962)     Saving The Model
Validation Loss Decreased(0.00962--->0.00962)     Saving The Model
Validation Loss Decreased(0.00962--->0.00962)     Saving The Model
Validation Loss Decreased(0.00962--->0.00962)     Saving The Model
Validation Loss Decreased(0.00962--->0.00962)     Saving The Model
Validation Loss Decreased(0.00962--->0.00962)     Saving The Model
Validation Loss Decreased(0.00962--->0.00962)     Saving The Model
Validation Loss Decreased(0.00962--->0.00962)     Saving The Model
Epoch 200              Training Loss: 0.01124                    Val
idation Loss: 0.00962
Validation Loss Decreased(0.00962--->0.00962)     Saving The Model
Validation Loss Decreased(0.00962--->0.00962)     Saving The Model
Validation Loss Decreased(0.00962--->0.00962)     Saving The Model
Validation Loss Decreased(0.00962--->0.00962)     Saving The Model
Validation Loss Decreased(0.00962--->0.00962)     Saving The Model
Validation Loss Decreased(0.00962--->0.00962)     Saving The Model
Validation Loss Decreased(0.00962--->0.00962)     Saving The Model
Validation Loss Decreased(0.00962--->0.00962)     Saving The Model
Validation Loss Decreased(0.00962--->0.00962)     Saving The Model
```

```
Validation Loss Decreased(0.00962--->0.00962)    Saving The Model
Validation Loss Decreased(0.00962--->0.00961)    Saving The Model
Validation Loss Decreased(0.00961--->0.00961)    Saving The Model
Validation Loss Decreased(0.00961--->0.00961)    Saving The Model
Validation Loss Decreased(0.00961--->0.00961)    Saving The Model
Validation Loss Decreased(0.00961--->0.00961)    Saving The Model
Validation Loss Decreased(0.00961--->0.00961)    Saving The Model
Validation Loss Decreased(0.00961--->0.00961)    Saving The Model
Validation Loss Decreased(0.00961--->0.00961)    Saving The Model
Validation Loss Decreased(0.00961--->0.00961)    Saving The Model
Validation Loss Decreased(0.00961--->0.00961)    Saving The Model
Validation Loss Decreased(0.00961--->0.00961)    Saving The Model
Validation Loss Decreased(0.00961--->0.00961)    Saving The Model
Validation Loss Decreased(0.00961--->0.00961)    Saving The Model
Validation Loss Decreased(0.00961--->0.00961)    Saving The Model
Validation Loss Decreased(0.00961--->0.00961)    Saving The Model
Validation Loss Decreased(0.00961--->0.00961)    Saving The Model
Validation Loss Decreased(0.00961--->0.00961)    Saving The Model
Validation Loss Decreased(0.00961--->0.00961)    Saving The Model
Validation Loss Decreased(0.00961--->0.00961)    Saving The Model
Validation Loss Decreased(0.00961--->0.00960)    Saving The Model
Validation Loss Decreased(0.00960--->0.00960)    Saving The Model
Validation Loss Decreased(0.00960--->0.00960)    Saving The Model
Validation Loss Decreased(0.00960--->0.00960)    Saving The Model
Validation Loss Decreased(0.00960--->0.00960)    Saving The Model
Validation Loss Decreased(0.00960--->0.00960)    Saving The Model
Validation Loss Decreased(0.00960--->0.00960)    Saving The Model
Validation Loss Decreased(0.00960--->0.00960)    Saving The Model
Validation Loss Decreased(0.00960--->0.00960)    Saving The Model
Validation Loss Decreased(0.00960--->0.00960)    Saving The Model
Validation Loss Decreased(0.00960--->0.00960)    Saving The Model
Validation Loss Decreased(0.00960--->0.00960)    Saving The Model
Validation Loss Decreased(0.00960--->0.00960)    Saving The Model
Validation Loss Decreased(0.00960--->0.00960)    Saving The Model
Validation Loss Decreased(0.00960--->0.00960)    Saving The Model
Validation Loss Decreased(0.00960--->0.00960)    Saving The Model
Validation Loss Decreased(0.00960--->0.00959)    Saving The Model
Validation Loss Decreased(0.00959--->0.00959)    Saving The Model
Validation Loss Decreased(0.00959--->0.00959)    Saving The Model
Validation Loss Decreased(0.00959--->0.00959)    Saving The Model
Validation Loss Decreased(0.00959--->0.00959)    Saving The Model
Validation Loss Decreased(0.00959--->0.00959)    Saving The Model
Validation Loss Decreased(0.00959--->0.00959)    Saving The Model
Validation Loss Decreased(0.00959--->0.00959)    Saving The Model
Validation Loss Decreased(0.00959--->0.00959)    Saving The Model
Validation Loss Decreased(0.00959--->0.00959)    Saving The Model
Validation Loss Decreased(0.00959--->0.00959)    Saving The Model
Validation Loss Decreased(0.00959--->0.00959)    Saving The Model
Validation Loss Decreased(0.00959--->0.00959)    Saving The Model
Validation Loss Decreased(0.00959--->0.00959)    Saving The Model
Validation Loss Decreased(0.00959--->0.00959)    Saving The Model
Validation Loss Decreased(0.00959--->0.00959)    Saving The Model
```

```
Validation Loss Decreased(0.00959--->0.00959)    Saving The Model
Validation Loss Decreased(0.00959--->0.00958)    Saving The Model
Validation Loss Decreased(0.00958--->0.00958)    Saving The Model
Validation Loss Decreased(0.00958--->0.00958)    Saving The Model
Validation Loss Decreased(0.00958--->0.00958)    Saving The Model
Validation Loss Decreased(0.00958--->0.00958)    Saving The Model
Validation Loss Decreased(0.00958--->0.00958)    Saving The Model
Validation Loss Decreased(0.00958--->0.00958)    Saving The Model
Validation Loss Decreased(0.00958--->0.00958)    Saving The Model
Validation Loss Decreased(0.00958--->0.00958)    Saving The Model
Validation Loss Decreased(0.00958--->0.00958)    Saving The Model
Validation Loss Decreased(0.00958--->0.00958)    Saving The Model
Validation Loss Decreased(0.00958--->0.00958)    Saving The Model
Validation Loss Decreased(0.00958--->0.00958)    Saving The Model
Validation Loss Decreased(0.00958--->0.00958)    Saving The Model
Validation Loss Decreased(0.00958--->0.00958)    Saving The Model
Validation Loss Decreased(0.00958--->0.00958)    Saving The Model
Validation Loss Decreased(0.00958--->0.00958)    Saving The Model
Validation Loss Decreased(0.00958--->0.00957)    Saving The Model
Validation Loss Decreased(0.00957--->0.00957)    Saving The Model
Validation Loss Decreased(0.00957--->0.00957)    Saving The Model
Validation Loss Decreased(0.00957--->0.00957)    Saving The Model
Validation Loss Decreased(0.00957--->0.00957)    Saving The Model
Validation Loss Decreased(0.00957--->0.00957)    Saving The Model
Validation Loss Decreased(0.00957--->0.00957)    Saving The Model
Validation Loss Decreased(0.00957--->0.00957)    Saving The Model
Validation Loss Decreased(0.00957--->0.00957)    Saving The Model
Validation Loss Decreased(0.00957--->0.00957)    Saving The Model
Epoch 300            Training Loss: 0.01121               Val
idation Loss: 0.00957
Validation Loss Decreased(0.00957--->0.00957)    Saving The Model
Validation Loss Decreased(0.00957--->0.00957)    Saving The Model
Validation Loss Decreased(0.00957--->0.00957)    Saving The Model
Validation Loss Decreased(0.00957--->0.00957)    Saving The Model
Validation Loss Decreased(0.00957--->0.00957)    Saving The Model
Validation Loss Decreased(0.00957--->0.00957)    Saving The Model
Validation Loss Decreased(0.00957--->0.00956)    Saving The Model
Validation Loss Decreased(0.00956--->0.00956)    Saving The Model
Validation Loss Decreased(0.00956--->0.00956)    Saving The Model
Validation Loss Decreased(0.00956--->0.00956)    Saving The Model
Validation Loss Decreased(0.00956--->0.00956)    Saving The Model
Validation Loss Decreased(0.00956--->0.00956)    Saving The Model
Validation Loss Decreased(0.00956--->0.00956)    Saving The Model
Validation Loss Decreased(0.00956--->0.00956)    Saving The Model
Validation Loss Decreased(0.00956--->0.00956)    Saving The Model
Validation Loss Decreased(0.00956--->0.00956)    Saving The Model
Validation Loss Decreased(0.00956--->0.00956)    Saving The Model
Validation Loss Decreased(0.00956--->0.00956)    Saving The Model
Validation Loss Decreased(0.00956--->0.00956)    Saving The Model
Validation Loss Decreased(0.00956--->0.00956)    Saving The Model
Validation Loss Decreased(0.00956--->0.00956)    Saving The Model
Validation Loss Decreased(0.00956--->0.00956)    Saving The Model
Validation Loss Decreased(0.00956--->0.00955)    Saving The Model
Validation Loss Decreased(0.00955--->0.00955)    Saving The Model
Validation Loss Decreased(0.00955--->0.00955)    Saving The Model
Validation Loss Decreased(0.00955--->0.00955)    Saving The Model
Validation Loss Decreased(0.00955--->0.00955)    Saving The Model
Validation Loss Decreased(0.00955--->0.00955)    Saving The Model
```

```
Validation Loss Decreased(0.00955--->0.00954)    Saving The Model
Validation Loss Decreased(0.00954--->0.00954)    Saving The Model
Validation Loss Decreased(0.00954--->0.00954)    Saving The Model
Validation Loss Decreased(0.00954--->0.00953)    Saving The Model
Validation Loss Decreased(0.00953--->0.00953)    Saving The Model
Validation Loss Decreased(0.00953--->0.00953)    Saving The Model
Validation Loss Decreased(0.00953--->0.00953)    Saving The Model
Validation Loss Decreased(0.00953--->0.00952)    Saving The Model
Epoch 400            Training Loss: 0.01117                Val
idation Loss: 0.00953
Validation Loss Decreased(0.00952--->0.00952)    Saving The Model
Validation Loss Decreased(0.00952--->0.00952)    Saving The Model
Validation Loss Decreased(0.00952--->0.00952)    Saving The Model
Validation Loss Decreased(0.00952--->0.00952)    Saving The Model
Validation Loss Decreased(0.00952--->0.00952)    Saving The Model
Validation Loss Decreased(0.00952--->0.00952)    Saving The Model
Validation Loss Decreased(0.00952--->0.00952)    Saving The Model
Validation Loss Decreased(0.00952--->0.00952)    Saving The Model
Validation Loss Decreased(0.00952--->0.00951)    Saving The Model
Validation Loss Decreased(0.00951--->0.00948)    Saving The Model
Validation Loss Decreased(0.00948--->0.00947)    Saving The Model
Epoch 500            Training Loss: 0.01115                Val
idation Loss: 0.00951
Validation Loss Decreased(0.00947--->0.00947)    Saving The Model
Validation Loss Decreased(0.00947--->0.00946)    Saving The Model
Validation Loss Decreased(0.00946--->0.00946)    Saving The Model
Validation Loss Decreased(0.00946--->0.00946)    Saving The Model
Epoch 600            Training Loss: 0.01129                Val
idation Loss: 0.00965
Validation Loss Decreased(0.00946--->0.00938)    Saving The Model
Validation Loss Decreased(0.00938--->0.00936)    Saving The Model
Epoch 700            Training Loss: 0.01096                Val
idation Loss: 0.00940
Validation Loss Decreased(0.00936--->0.00930)    Saving The Model
Validation Loss Decreased(0.00930--->0.00926)    Saving The Model
Validation Loss Decreased(0.00926--->0.00924)    Saving The Model
Validation Loss Decreased(0.00924--->0.00922)    Saving The Model
Validation Loss Decreased(0.00922--->0.00920)    Saving The Model
Validation Loss Decreased(0.00920--->0.00918)    Saving The Model
Validation Loss Decreased(0.00918--->0.00916)    Saving The Model
Validation Loss Decreased(0.00916--->0.00913)    Saving The Model
Validation Loss Decreased(0.00913--->0.00911)    Saving The Model
Validation Loss Decreased(0.00911--->0.00909)    Saving The Model
Validation Loss Decreased(0.00909--->0.00907)    Saving The Model
Validation Loss Decreased(0.00907--->0.00906)    Saving The Model
Epoch 800            Training Loss: 0.01067                Val
idation Loss: 0.00905
Validation Loss Decreased(0.00906--->0.00905)    Saving The Model
Validation Loss Decreased(0.00905--->0.00904)    Saving The Model
Validation Loss Decreased(0.00904--->0.00904)    Saving The Model
Validation Loss Decreased(0.00904--->0.00903)    Saving The Model
Validation Loss Decreased(0.00903--->0.00899)    Saving The Model
Validation Loss Decreased(0.00899--->0.00898)    Saving The Model
Validation Loss Decreased(0.00898--->0.00893)    Saving The Model
Validation Loss Decreased(0.00893--->0.00889)    Saving The Model
Validation Loss Decreased(0.00889--->0.00889)    Saving The Model
Validation Loss Decreased(0.00889--->0.00888)    Saving The Model
Validation Loss Decreased(0.00888--->0.00887)    Saving The Model
Validation Loss Decreased(0.00887--->0.00886)    Saving The Model
Epoch 900            Training Loss: 0.01038                Val
idation Loss: 0.00909
```

```
Epoch 1000                Training Loss: 0.01021              Val
idation Loss: 0.00901
Epoch 1100                Training Loss: 0.00961              Val
idation Loss: 0.00936
Epoch 1200                Training Loss: 0.00904              Val
idation Loss: 0.00949
Epoch 1300                Training Loss: 0.00857              Val
idation Loss: 0.00928
Epoch 1400                Training Loss: 0.00850              Val
idation Loss: 0.00981
Epoch 1500                Training Loss: 0.00745              Val
idation Loss: 0.01158
Epoch 1600                Training Loss: 0.00634              Val
idation Loss: 0.01058
Epoch 1700                Training Loss: 0.00569              Val
idation Loss: 0.01096
Epoch 1800                Training Loss: 0.00531              Val
idation Loss: 0.01103
Epoch 1900                Training Loss: 0.00562              Val
idation Loss: 0.01075
Epoch 2000                Training Loss: 0.00494              Val
idation Loss: 0.01113
Epoch 2100                Training Loss: 0.00370              Val
idation Loss: 0.01226
Epoch 2200                Training Loss: 0.00415              Val
idation Loss: 0.01303
Epoch 2300                Training Loss: 0.00321              Val
idation Loss: 0.01287
Epoch 2400                Training Loss: 0.00315              Val
idation Loss: 0.01300
Epoch 2500                Training Loss: 0.00280              Val
idation Loss: 0.01359
Epoch 2600                Training Loss: 0.00280              Val
idation Loss: 0.01450
Epoch 2700                Training Loss: 0.00236              Val
idation Loss: 0.01523
Epoch 2800                Training Loss: 0.00232              Val
idation Loss: 0.01629
Stopping the training early          Model saved
        Training Loss:  0.0029418293852359056
        Validation Loss:  0.008861782029271126
```

Prediction
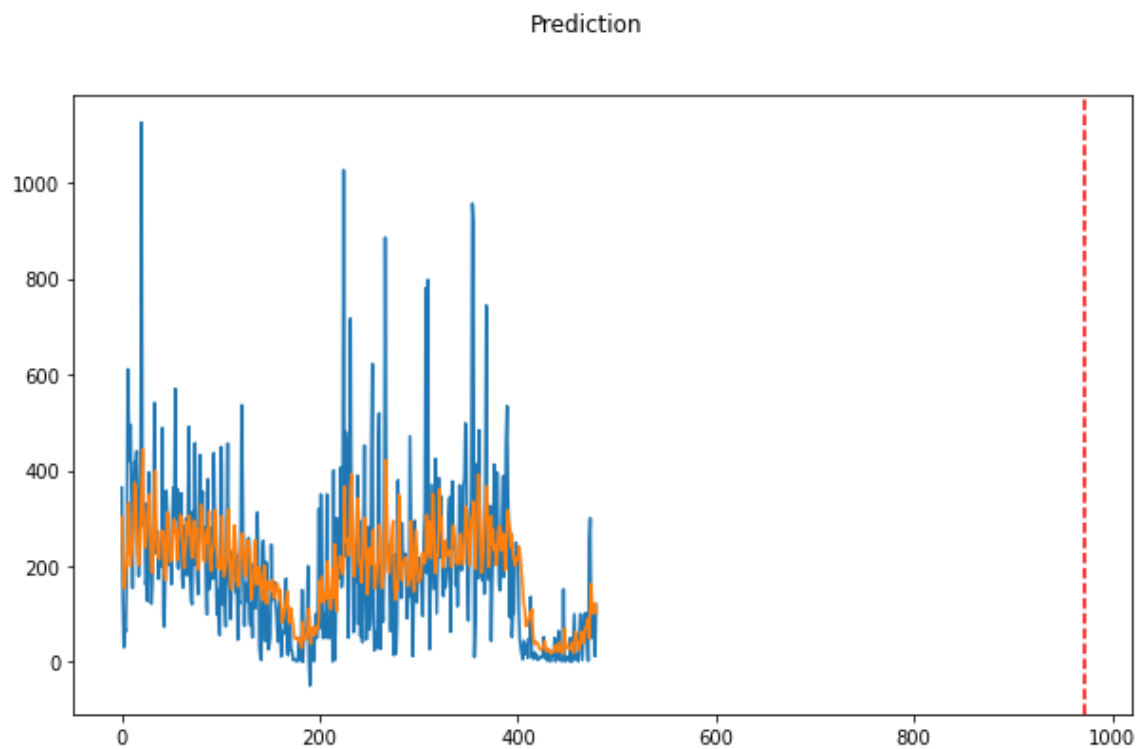

```
RMSE of validation set: 6.131459860735868
RMSE of entire data set: 3.764745720564102
```

In [ ]: