```
Filename: MA_hdf5.py

Line #    Mem usage    Increment  Occurrences   Line Contents
=============================================================
    17    134.0 MiB    134.0 MiB           1   @profile
    18                                         def my_func():
    19                                             #time and memory
    20    134.0 MiB      0.0 MiB           1       start = time.time()
    21    134.0 MiB      0.0 MiB           1       tracemalloc.start()
    22                                             #reading hdf5 file
    23    134.8 MiB      0.8 MiB           1       hf = h5py.File('1.hdf5', 'r')
    24    134.8 MiB      0.0 MiB           1       hf.keys()
    25    142.8 MiB      8.1 MiB           1       train,test = 
np.array(hf.get('train')),np.array(hf.get('test'))
    26
    27                                             #1 
iteration****************************************
    28                                             # train autoregression
    29    162.1 MiB     19.3 MiB           1       model = ARIMA(train, order=(0, 
0, 1))
    30    967.3 MiB    805.2 MiB           1       model_fit = model.fit()
    31   1011.4 MiB     44.0 MiB           1       predictions = 
model_fit.predict(start=len(train), end=len(train)+len(test)-1, dynamic=False)
    32                                             #test accuracy
    33   1011.4 MiB      0.0 MiB           1       error1 = 
mean_squared_error(test, predictions)
    34   1011.4 MiB      0.0 MiB           1       print(error1)
    35                                             #metrics
    36   1011.4 MiB      0.0 MiB           1       end = time.time()
    37   1011.4 MiB      0.0 MiB           1       t1=end-start
    38   1011.4 MiB      0.0 MiB           1       
m1=tracemalloc.get_traced_memory()
    39   1011.4 MiB      0.0 MiB           1       d1=m1[1]-m1[0]
    40   1011.4 MiB      0.0 MiB           1       print("The time of execution of 
above program is :", t1/60)
    41   1011.4 MiB      0.0 MiB           1       print("(current memory usage) 
:",m1[0]/1000000)
    42   1011.4 MiB      0.0 MiB           1       print("(peak memory usage) 
:",m1[1]/1000000)
    43   1011.4 MiB      0.0 MiB           1       print("(memory usage) 
:",d1/1000000)
    44   1011.4 MiB      0.0 MiB           1       tracemalloc.stop()
```

```
Filename: MA_numpy.py

Line #    Mem usage    Increment  Occurrences   Line Contents
=============================================================
    16    129.0 MiB    129.0 MiB           1   @profile
    17                                         def my_func():
    18                                             #time and memory
    19    129.0 MiB      0.0 MiB           1       start = time.time()
    20    129.1 MiB      0.0 MiB           1       tracemalloc.start()
    21                                             # load dataset
    22    136.7 MiB      7.7 MiB           1       X = np.load('C:/Users/Mriank
Ghosh/Desktop/shell/dataset/MA_1m.npy')
    23                                             # split dataset
    24    136.7 MiB      0.0 MiB           1       train_size = int(len(X) * 0.80)
    25    136.7 MiB      0.0 MiB           1       train, test = X[0:train_size],
X[train_size:len(X)]
    26                                             #1
iteration****************************************
    27                                             # train moving average
    28                                             # fit model
    29    156.1 MiB     19.3 MiB           1       model = ARIMA(train, order=(0,
0, 1))
    30    960.5 MiB    804.5 MiB           1       model_fit = model.fit()
    31   1005.4 MiB     44.8 MiB           1       predictions =
model_fit.predict(start=len(train), end=len(train)+len(test)-1, dynamic=False)
    32                                             #test accuracy
    33   1005.4 MiB      0.0 MiB           1       error1 =
mean_squared_error(test, predictions)
    34   1005.4 MiB      0.0 MiB           1       print(error1)
    35                                             #metrics
    36   1005.4 MiB      0.0 MiB           1       end = time.time()
    37   1005.4 MiB      0.0 MiB           1       t1=end-start
    38   1005.4 MiB      0.0 MiB           1
m1=tracemalloc.get_traced_memory()
    39   1005.4 MiB      0.0 MiB           1       d1=m1[1]-m1[0]
    40   1005.4 MiB      0.0 MiB           1       print("The time of execution of
above program is :", t1/60)
    41   1005.4 MiB      0.0 MiB           1       print("(current memory usage)
:",m1[0]/1000000)
    42   1005.4 MiB      0.0 MiB           1       print("(peak memory usage)
:",m1[1]/1000000)
    43   1005.4 MiB      0.0 MiB           1       print("(memory usage)
:",d1/1000000)
    44   1005.4 MiB      0.0 MiB           1       tracemalloc.stop()
```

```
Filename: MA_pandas.py

Line #    Mem usage    Increment  Occurrences   Line Contents
=============================================================
    17    129.0 MiB    129.0 MiB           1   @profile
    18                                         def my_func():
    19                                             #time and memory
    20    129.0 MiB      0.0 MiB           1       start = time.time()
    21    129.0 MiB      0.0 MiB           1       tracemalloc.start()
    22                                             #loading dataset
    23    136.8 MiB      7.8 MiB           1       df = 
pd.DataFrame(np.load('C:/Users/Mriank Ghosh/Desktop/shell/dataset/MA_1m.npy'), 
columns = ['data'])
    24    136.9 MiB      0.1 MiB           1       X = df["data"]
    25                                             # split dataset
    26    136.9 MiB      0.0 MiB           1       train_size = int(len(X) * 0.80)
    27    136.9 MiB      0.0 MiB           1       train, test = X[0:train_size], 
X[train_size:len(X)]
    28                                             #1 
iteration****************************************
    29                                             # train autoregression
    30    162.4 MiB     25.5 MiB           1       model = ARIMA(train, order=(0, 
0, 1))
    31   1064.4 MiB    902.0 MiB           1       model_fit = model.fit()
    32   1069.2 MiB      4.8 MiB           1       predictions = 
model_fit.predict(start=len(train), end=len(train)+len(test)-1, dynamic=False)
    33                                             #test accuracy
    34   1069.2 MiB      0.0 MiB           1       error1 = 
mean_squared_error(test, predictions)
    35   1069.2 MiB      0.0 MiB           1       print(error1)
    36                                             #metrics
    37   1069.2 MiB      0.0 MiB           1       end = time.time()
    38   1069.2 MiB      0.0 MiB           1       t1=end-start
    39   1069.2 MiB      0.0 MiB           1       
m1=tracemalloc.get_traced_memory()
    40   1069.2 MiB      0.0 MiB           1       d1=m1[1]-m1[0]
    41   1069.2 MiB      0.0 MiB           1       print("The time of execution of 
above program is :", t1/60)
    42   1069.2 MiB      0.0 MiB           1       print("(current memory usage) 
:",m1[0]/1000000)
    43   1069.2 MiB      0.0 MiB           1       print("(peak memory usage) 
:",m1[1]/1000000)
    44   1069.2 MiB      0.0 MiB           1       print("(memory usage) 
:",d1/1000000)
    45   1069.2 MiB      0.0 MiB           1       tracemalloc.stop()
```