Rivermap Testing on Finance

Please Download the pickle file using the following command:

```
import pickle
data = pickle.load( open('{path}\testdata.pickle', "rb" ) )
```

where path is the location of the pickle file.

The Data dictionary contains two dataframes. One is the returns for a universe of stocks (variable: return). The returns are the next month return of individual stocks. Another one is the momentum indicator of individual stocks (variable: momentum).

The index of the dataframes is the dates and the column is the stock code.

Please perform the following tasks with Python coding.

Q1:

Please align the dataframes “return” and “momentum” so they have the same stock lists (764 stocks).

Q2:

Please run a cross-sectional regression for each month for the aligned data with “momentum” as independent variable and “return” as dependent variable. The regression form will be $return_{i,t} = \alpha_t + \beta_t(momentum_{i,t}) + \varepsilon_t$ where i is the stock and t is time. There will be 153 monthly regressions. Please exclude the observations with nan values in your regression.

Q3:

Please calculate the mean and standard deviation of β using the regression coefficient from the 153 monthly regressions.