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Machine Learning homework 4

First of all I classified the countries as 'EUROPE' and 'NOT EUROPE':

```
def transform_data(y):  
    res = []  
    for i in y:  
        res.append('EUROPE' if i == 'EUROPE' else 'NOT EUROPE')  
    return res
```

This was done to define result as True or False

Then we iterate ESTIMATORS\_NUM times

```
def iterate(prev_alphas, iter_num):  
    # Stop condition for recursion  
    if iter_num >= ESTIMATORS_NUM - 1:  
        return prev_alphas  
    cur_alphas = []  
    # We select the f[t]  
    dt = f[iter_num + 1]  
    for j in range(len(y)):  
        sample = x[iter_num].reshape(1, -1)  
        # Add  $e^w$  or  $e^{-w}$  according to result of prediction  
        cur_alphas.append(prev_alphas[j] * math.exp(-w[iter_num] if dt.predict(sample) == y[j] else  
w[iter_num]))  
    return iterate(cur_alphas, iter_num + 1)
```

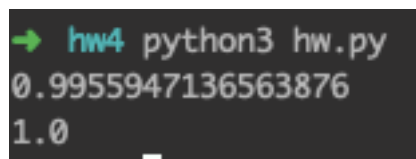
After all we normalise alphas:

```
alphas = iterate([1 / len(y) for i in range(len(y))], 0)
```

Then I select outliers indexes and drop them from our dataset:

```
if i not in outliers_indexes:  
    new_x.append(x[i])  
    new_y.append(y[i])
```

Then we retrain model and print the new score

A terminal window with a dark background. The prompt is a green arrow. The command 'hw4 python3 hw.py' is entered in green. The output '0.9955947136563876' is shown in white on the next line, and '1.0' is shown on the line below that.

```
→ hw4 python3 hw.py  
0.9955947136563876  
1.0
```

The score improved