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import numpy as np

import matplotlib.pyplot as plt

import math

def weighted_majority(d, T, n=100):
    """
    d -- number of experts
    T -- number of rounds
    """
    nu = math.sqrt(2*math.log(T)/d)
    w = np.ones(d)
    for t in range(1,T+1):
        v = []
        for i in range (1, d+1):
            cost_i = np.random.binomial(n, 1-(i/(2*d)), d)/n
            v.append(cost_i)
        np_v = np.array(v)
        cost = sum(v*w)
        w = [x * cost for x in w]
    return w

def plot_loss(loss, round, d, T):
    plt.plot(loss, round, 'b.')
    plt.title("cumulative loss, d="+d+",T="+T)
    plt.xlabel("round")
    plt.ylabel("loss")
    # plt.grid()
    plt.legend()

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plt.savefig("cumulative_loss.png")  
plt.show()  
plt.clf()
```

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def plot_regret(regret, round, d, T):  
    plt.plot(regret, round, 'b.')  
    plt.title("regret of the weighted majority algorithm, d="+d+",T="+T)  
    plt.xlabel("round")  
    plt.ylabel("loss")  
    # plt.grid()  
    plt.legend()  
    plt.savefig("regret.png")  
    plt.show()  
    plt.clf()
```

```
print(weighted_majority(d=10, T=100))  
#plot_loss(loss, round d=10, T=100)
```