```
import sklearn,sklearn.datasets
import numpy,numpy.random
import scipy
import torch
import matplotlib
from matplotlib import pyplot as plt

def getDistanceMatrix(X):

    D = scipy.spatial.distance.cdist(X,X)
    D = D / D.mean() * 10
    return torch.tensor(D)


def getObjective(Y,D):

    E = torch.cdist(Y,Y)
    J = ((torch.triu(D - E)**2).sum()/torch.triu(D**2).sum())**.5

    return J

def plotEmbeddings(Yhist,T):

    plt.figure(figsize=(12,8))

    for s,i in enumerate([0,3,4,5,6,10]):
        ax = plt.subplot(2,3,s+1)
        ax.set_xlim(-15,15);
        ax.set_ylim(-15,15);
        ax.set_title(f'checkpoint {i}')
        ax.scatter(*Yhist[i].T,c=T,cmap='tab10',s=40,alpha=0.5);

    plt.show()
```