'''

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The following code is a python script to take as input the occurence of IOCs in various ransomwares, then compute a score for each of the IoCS

Version 0.1: Proof of concept by taking example values to score the IoCs

Missing features:

1. Loading weights and IOC occurences from a loaded txt/log file instead of hardcoded values

(Skeleton can be coded while we wait for dynamic analysis process to be complete)

2. Sigmoid function to place an upper ceiling on the score values

3. Using scores to rank the IOCS

(sorting algorithm to be used to sort the IOC indices based on score and then use the IOCs list to print the respective IOCs)

'''

#Initializing values

RansomwareNames=["Cryptowall", "Cryptolocker", "CTB Locker", "Locky", "Teslacrypt", "Torrentlocker", "Winlocker"]

IOCs=["Delete Shadow Copy", "I2P Anonymity Network", "Connect to tor2web", "Request to high Entropy Domain Name",

"File Encryption", "Encrypts File Name", "Locks Screen", "Deletes original Files from disk",

"Import and Links to Crypto Libraries", "Packed/obfuscated", "Create RWX memory"]

```
weights=[1,2,1,3,1,2,1,1,3,2,1]

#Below matrix is such that IOC_Occurences[i,j] represnts whether IOCs[j] is detected from RansomwareNames[i]

IOC_Occurences=[[1,1,1,1,1,1,0,0,1,1,1],
                [1,0,1,0,1,0,0,0,0,1,0],
                [0,0,0,0,1,0,0,0,0,1,0],
                [1,0,1,1,1,0,0,0,0,0,0],
                [1,0,1,0,1,0,0,0,0,1,1],
                [1,0,1,0,1,0,0,0,0,1,0],
                [0,0,0,0,0,0,1,1,0,0,0]]


#The scores are respectively calculated as the following matrix/vector product: Scores= IOC_Occurences*(Weights)^T

sum=0

Scores=[]

for i in range(len(IOC_Occurences)):
   for j in range(len(weights)):
      sum+=(IOC_Occurences[i][j]*weights[j])
   Scores.append(sum)
   sum=0


print(Scores)
```