שם: שחר אשר
ת.ז. 209305408

מבוא להצפנה – תרגיל 2

1.

a.

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b. [0, 1, 2, 2, 1, 2, 2, 1, 0, 2, 2, 1, 2, 1, 1]
c.       [0, 1, 2, 2, 1, 2, 2, 1, 0, 2, 2, 1, 2, 1, 1]
d. for 2 we have 3 equal elements (Adjustments)
e.          [0, 1, 2, 2, 1, 2, 2, 1, 0, 2, 2, 1, 2, 1, 1]
f. for 3 we have 7 equal elements (Adjustments)
g.             [0, 1, 2, 2, 1, 2, 2, 1, 0, 2, 2, 1, 2, 1, 1]
h. for 4 we have 4 equal elements (Adjustments)
i. ====================================
j. ====================================
k. A1 = [0.7, 0.2, 0.1]
l. A2 = [0.1, 0.7, 0.2]
m. A3 = [0.2, 0.1, 0.7]
n.
o. ====================================
p. The key of the first letter:
q.
r. The first of the blocks are: [0, 2, 2, 2, 2]
s. The Vector of the frequencies of the first letter is: V1 =
   [0.2, 0.0, 0.8]
t. Now we will calculate the dot products of the matrix V1 with
   the matrix A1, A2, A3
u. A1V1 = 0.22
v. A2V1 = 0.18000000000000002
w. A3V1 = 0.6
x. The maximal value is for i = 2 and the key of the first letter
   is: 2
y.
z. ====================================
aa.The key of the second letter:
bb.
cc.The second of the blocks are: [1, 1, 1, 2, 1]
dd.The Vector of the frequencies of the second letter is: V2 =
   [0.0, 0.8, 0.2]
ee.Now we will calculate the dot products of the matrix V2 with
   the matrix A1, A2, A3
ff.A1V2 = 0.18000000000000002
gg.A2V2 = 0.6
hh.A3V2 = 0.22
ii.The maximal value is for i = 1 and the key of the second
   letter is: 1
jj.====================================
kk.The key of the third letter:
ll.
mm.The third of the blocks are: [2, 2, 0, 1, 1]
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nn.The Vector of the frequencies of the third letter is: V3 =
   [0.2, 0.4, 0.4]
oo.Now we will calculate the dot products of the matrix V3 with
   the matrix A1, A2, A3
pp.A1V3 = 0.26
qq.A2V3 = 0.38
rr.A3V3 = 0.36
ss.The maximal value is for i = 1 and the key of the third letter
   is: 1
tt.====================================
uu.The encrypt key is: [2, 1, 1]
vv.The decrypt key is: [1, 2, 2]
ww.====================================
xx.The key of the decrypt text is: 122 122 122 122 122
yy.The decrypt text is: 101 001 002 010 000
zz.====================================
```