**מבוא להצפנה – תרגיל 2**

1. [0, 1, 2, 2, 1, 2, 2, 1, 0, 2, 2, 1, 2, 1, 1]
2. [0, 1, 2, 2, 1, 2, 2, 1, 0, 2, 2, 1, 2, 1, 1]
3. for 2 we have 3 equal elements (Adjustments)
4. [0, 1, 2, 2, 1, 2, 2, 1, 0, 2, 2, 1, 2, 1, 1]
5. for 3 we have 7 equal elements (Adjustments)
6. [0, 1, 2, 2, 1, 2, 2, 1, 0, 2, 2, 1, 2, 1, 1]
7. for 4 we have 4 equal elements (Adjustments)
8. =====================================
9. =====================================
10. A1 = [0.7, 0.2, 0.1]
11. A2 = [0.1, 0.7, 0.2]
12. A3 = [0.2, 0.1, 0.7]
13. =====================================
14. The key of the first letter:
15. The first of the blocks are: [0, 2, 2, 2, 2]
16. The Vector of the frequencies of the first letter is: V1 = [0.2, 0.0, 0.8]
17. Now we will calculate the dot products of the matrix V1 with the matrix A1, A2, A3
18. A1V1 = 0.22
19. A2V1 = 0.18000000000000002
20. A3V1 = 0.6
21. The maximal value is for i = 2 and the key of the first letter is: 2
22. =====================================
23. The key of the second letter:
24. The second of the blocks are: [1, 1, 1, 2, 1]
25. The Vector of the frequencies of the second letter is: V2 = [0.0, 0.8, 0.2]
26. Now we will calculate the dot products of the matrix V2 with the matrix A1, A2, A3
27. A1V2 = 0.18000000000000002
28. A2V2 = 0.6
29. A3V2 = 0.22
30. The maximal value is for i = 1 and the key of the second letter is: 1
31. =====================================
32. The key of the third letter:
33. The third of the blocks are: [2, 2, 0, 1, 1]
34. The Vector of the frequencies of the third letter is: V3 = [0.2, 0.4, 0.4]
35. Now we will calculate the dot products of the matrix V3 with the matrix A1, A2, A3
36. A1V3 = 0.26
37. A2V3 = 0.38
38. A3V3 = 0.36
39. The maximal value is for i = 1 and the key of the third letter is: 1
40. =====================================
41. The encrypt key is: [2, 1, 1]
42. The decrypt key is: [1, 2, 2]
43. =====================================
44. The key of the decrypt text is: 122 122 122 122 122
45. The decrypt text is: 101 001 002 010 000
46. =====================================