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Assignment 1

Theoretical Questions

- ① Char "hello n jello"
OCT "150, 145, 154, 154, 157, 012, 152, 145, 154, 154, 157"

To Get Base 64 encoding, we take 2 OCT characters

OCT: 150 145 154 154 157 012 152 145 154 154 157

Dec: 1, 40, 12, 44, 13, 33, 47, 1, 17, 47, 13, 33, 47

Base 64: → B, o, M, p, S, N, h, v, B, R, q, M, p, S, N, h, v

"hello n jello" $\xrightarrow{\text{Base 64}}$ "BoMpsNhvBRqMpsNhv"

- ② The files might be having additional whitespaces that weren't in the original text. and the reason might be because the text isn't divided exactly into the blocksize which means some have to be padded explaining the difference

<u>First Dump</u> Dec	<u>First Dump</u> Dec
6 → 6	6 → 6
8 → 8	C → 12
6 → 6	6 → 6
5 → 5	F → 15
6 → 6	0 → 0
C → 12	A → 10

using the order given "codebook"

		<u>original</u>	<u>encrypted</u>	<u>hex</u>
0	→ 6			
1	→ 0			
2	→ 13	6	→ 14	→ E
3	→ 4	8	→ 7	→ 7
4	→ 3	6	→ 14	→ E
5	→ 1	5	→ 1	→ 1
6	→ 14	6	→ 14	→ E
7	→ 8	12	→ 5	→ 5
8	→ 7	6	→ 14	→ E
9	→ 12	12	→ 5	→ 5
10	→ 9	6	→ 14	→ E
11	→ 15	15	→ 10	→ A
12	→ 5	0	→ 6	→ 6
13	→ 2	10	→ 9	→ 9
14	→ 11			
15	→ 10			

Encrypted output

• E7 E1 E5 E5 EA 69

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