Q1 Commands
10 Points

List the commands used in the game to reach the ciphertext.

> read

Q2 Cryptosystem
10 Points

What cryptosystem was used in this level?

> Vigenere cipher where key length is 49 or keyword: JCJCFFCCCB

Q3 Analysis
20 Points

What tools and observations were used to figure out the cryptosystem?

NOTE: Failing to provide proper analysis would result in zero marks for this assignment.

> After getting the cipher text, we tried to decode it with all the cipher methods available online (https://www.educba.com/types-of-cipher/) . Firstly, we tried to perform Caesar cipher on the ciphered text, but we got a meaningless statement. Next, we tried with monoalphabetic substitution and homophonic substitution cipher using online tools, resulting in the same. Then, we tried Vigenere cipher which is a kind of polyalphabetic cipher. On reading about this cipher we learned that it is a repeating Caeser cipher where the gap between the repeated words gives the key length.
>
> In the given cipher text, the word "vjg" is repeated after 49 letters space, hence the key length is 49. We used this

information and an online Vigenere decoder tool (https://www.dcode.fr/vigenere-cipher) to decrypt the text into a meaningful sentence.

There is another approach that includes the clue from cave man's pattern. On counting the horizontal lines from all directions we get the string 9 2 9 2 5 5 2 2 2 1. On decoding this string to alphabetical letters using the mapping A-0 to Z-25 we get the keyword as JCJCFFCCCB. Now, we used this keyword in the same decoder for Vigenere cipher as mentioned above, we got the same plain text.

Q4 Decryption Algorithm
15 Points

Briefly describe the decryption algorithm used. Also mention the plaintext you deciphered. (Use less than 350 words)

The cryptography algorithm used in this level is Vigenere cipher. To decrypt the plain text using this cipher we have different methods such as knowing the key or password, knowing the key length, knowing a plaintext, and knowing a partial key. We can use key length and keyword out of these methods to decode the cipher text as all other parameters are unknown. In this cipher, instead of using a single fixed substitution alphabet, a different alphabet is used at each position in the text, which is determined by a repeating keyword. This keyword is used as the key, which is repeated so that it is the same length as the plaintext. In the given cipher text, the word "vjg" is repeated after 49 letters space, hence the key length is 49. Finally, we got the plain text using the key length=49 or the keyword = JCJCFFCCCB and an online decoder.

The plaintext we got after decrypting is:
Be wary of the next chamber, there is very little joy there. Speak out the password "the_cave_man_be_pleased" to go through. May you have the strength for the next chamber. To find the exit, you first will need to utter magic words there.

Q5 Password
10 Points

What was the final command used to clear this level?

> the_cave_man_be_pleased

Q6 Codes
0 Points

Upload any code that you have used to solve this level

📄 No files uploaded

Q7 Team Name
0 Points

> force_de_fem

Assignment 2   🟢 **Graded**

Group

Kriti Majumdar
Srujana Sabbani
ASHEE JAIN

✏️ View or edit group

Total Points

45 / 65 pts

Question 1

Commands   **10** / 10 pts

Question 2

Cryptosystem   **10** / 10 pts

Question 3

Analysis   **15** / 20 pts

Question 4

Decryption Algorithm   R   **0** / 15 pts

Question 5

Password   **10** / 10 pts

Question 6

Codes   **0** / 0 pts

Question 7

Team Name   **0** / 0 pts