Q1 Commands
10 Points

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

1) go
2) go
3) read

Q2 Cryptosystem
10 Points

What cryptosystem was used in this level?

Vigenere Cipher was used in this level.

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.

While going through the results after the second command, we observed a human-like pattern. In the results, it was written that the lines in the horizontal dimension on each row account for a digit by counting it. So, we guessed that this sequence of digits would be our key for decryption.

We went through the ciphertext by taking the words one by one. By observing the first word in ciphertext which was 'Kg', we tried different crypto algorithms on that like caesar cipher and permutation cipher, but nothing logical was getting as plaintext output after decryption.

Afterwards, we made use of the key we got('9292552221') and tried the algorithms which make use of the key.
Out of all guesses like Playfair cipher, Railfence cipher, vigenere cipher etc. Vigener cipher was the one which was giving us the most logical word after decryption. The result we got was 'Be'.

This is how we came to the conclusion of our cryptoanalysis that the cipher used here was 'Vigenere cipher'. Afterwards, we decrypted the later words by using decrypting algorithm of the Vigenere cipher.

Q4 Decryption Algorithm
15 Points

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

To decrypt the text using the Vigenère Cipher, you need to use the given keyword "9292552221" as the key. Here's how you can do it:

Repeat the keyword until its length matches the length of the ciphertext. For example, if the ciphertext has length N and the keyword has length K, repeat the keyword (floor(N/K) + 1) times.

For each letter in the ciphertext, find its corresponding letter in the keyword and convert it to its numerical representation. For example, the first letter in the ciphertext 'K' is encrypted using the first letter of the keyword '9', which is the 9th letter of the alphabet.

Using the keyword's numerical representation, subtract the value of the letter from the corresponding letter in the ciphertext to get the plaintext. For example, the value of 'K' is 11, and the value of '9' is 9, so 11-9=2. The 2nd letter of the alphabet is 'B'.

Repeat the process for all letters in the ciphertext to get the complete plaintext.

By using the Vigenère Cipher, the given ciphertext: "Kg fcwd qh vin pnzy hjcocnt, cjjwg ku wnth nnyvng kxa cjjwg.Urfjm xwy yjg rbbufqwi 'vjg_djxn_ofs_dg_rmncbgi' yq iq uqtxwlm.Oca zxw qcaj vjg tctnplyj hqs cjn pjcv ejbvdnt. Yt hkpe cjn gcnv, aqv okauy bknn ongm vt zvvgs vcpkh bqtft cjntj." can be decrypted to reveal the original message: "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

the_boys

Assignment 2

● Graded

Group

SANKET SANJAY KALE
ADITYA SUNILKUMAR KANKRIYA
PRATIK MAHIPAL PATIL
View or edit group

Total Points

50 / 65 pts

Question 1

Commands — **10** / 10 pts

Question 2

Cryptosystem — **10** / 10 pts

Question 3

Analysis — R **10** / 20 pts

Question 4

Decryption Algorithm — **10** / 15 pts

Question 5

Password — **10** / 10 pts

Question 6

Codes — **0** / 0 pts

Question 7

Team Name — **0** / 0 pts