The Great Wyly Escape

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Project description:

The Great Wyly Escape is a text- based escape room game is which the players need to use various decryption tools to decipher and find codes needed to move from floor to floor or room to room. Students will need to look/interact with objects in the rooms in order to find the clues to figure out which cipher to use for decryption.

BOM:

No hardware is needed for deployment. All that needs to be sent is a folder that contains an executable, and textfiles named README, and two other folders, one holding images for the game and the other holding clues for one of the rooms.

Cyber Storm setup and deployment:

Students should just need to download a folder. Inside the folder should be an executable, two folders (one named images and the other clues), and a text file named README that contains hints and tips the players may need to complete the challenge.

Student introduction:

Dr. Anky and Timo have decided to go to the extreme this Cyberstorm and has locked the Cyberstorm participants at the top of Wyly Tower! In order to escape, participants have to search each floor to find clues and figure out the key code for each floor. Better hurry, the library needs to close at some time after all!

Solution:

As the project is split up into 3 separate sections with no cryptographic elements shared across them, the solution will be split into 3 sections too.

*Floor 1:*

1. Enter ‘go south’
2. Look at items (‘chair’, “caution\_sign’, ’table’)
3. Get ciphertext and key for Vigenere from ‘caution\_sign’ description
   1. Ciphertext: “Zzk wtzip s roiw? Eva ulipazb oarb hgzyo dzcow eck...”
   2. Key: ‘slow’
   3. Plaintext: “How about a game? The caution sign looks loose too…”
4. Enter ‘take caution\_sign’
5. Look at new sticky note item à ‘look sticky\_note’
6. Enter ‘look keypad’ or ‘use keypad’ and note its presence for later
7. Enter ‘use game\_board’
8. Hope you win the coin flip game, then enter ‘take short\_note’
9. Enter ‘use short\_note’ to read it
10. Take ciphertext “g(7;c9#yk\_5;bvzk” from short\_note description and use Caesar Cipher shift ‘64’ hinted at earlier to decode
    1. Ciphertext: “wqkoapq ue g(7;c9#yk\_5;bvzk
    2. Key: 64mod26 = 12 (or the letter ‘m’ given a=0, z = 25)
    3. Plaintext: keycode is u(7;q9#my\_5;pjny
11. Type ‘enter u(7;q9#my\_5;pjny’ to use the keypad and get notification of keypad\_hints and plaque grabbable
12. Enter ‘take plaque’ and ‘use plaque’ to get message describing password to next floor (and how to use it)

(13ex) If the description is not enough, enter ‘look keypad\_hint<x>’ in order and copy the string of W’s and ?’s for use

(14ex) Change W’s and ?’s to ones and zero’s respectively.

(15ex) decode resulting binary BinaryDecoder –if there is an error, swap zeroes and ones

keypad\_hint plaintext:

We follow in the footsteps of our nourishing mother's first baby bird who flew the nest in MDCCCXCVII.

keypad\_hint<2-4> plaintext:

OneZeroOneOneZeroOneOneOneOneZeroZeroOneOneOneOneZeroOneZeroZeroZeroOneOneZeroOneOneZeroZeroZeroOneOneZeroOneOneZeroZeroZeroZeroOneOneZeroOneZeroOneOneZeroOneOneOneOneZeroZeroOneZeroZeroZeroZeroOneZeroZeroZeroOneZeroZeroZeroOneZeroZeroOneOneOneOneZeroOneZeroZeroZeroOneOneZeroOneOneZeroZeroOneOneZeroOneOne

(16ex) change The word One to ‘1’ and Zero to ‘0’ and then flip the bits to get a new binary string to decode (or make Zeros ‘1’ and Ones ‘0’)

(16ex) plaintext: HarryHoward

(Final) enter ‘go elevator’ then ‘harryhoward’ (case does not matter) to move to next floor

*Floor 2:*

1. Read the riddle on the note.
2. Read the book to get the ciphertext in the folder.
3. Solve the viegnere cipher using the alphabet a-z1-9 and the keyword centennial.
4. Take the top text out of the key you just created and save the key in a text file.
5. Look at the weird clocktower photo.
6. Use the thing.py with the weird photo in your clue folder and the key you just generated.
7. Make sure you change the input files to the correct one.
8. Look at the created clocktower photo.
9. Find the code on the cloud. It’s “11:05”.
10. Return to elevator and enter the cod*e.*

*Floor 3:*

1. Look at the stick\_note to get the cipher text.
2. Look at the banner to figure out the keyword for the vigener cipher is one of the tenets of tech.
3. Find the tenets of tech listed on the Traditions page of the tech website which also contains the latin spellings on the tenets.
4. The correct keyword is the latin spelling of hope (spes).
5. The alphabet also needs to be set to A-Z0-9
6. Enter the code given to move onto the next room.
7. Look at the couch cushion to figure out the shift for the caesar cipher is 12 for the 12 tenets of tech.
8. Look at the salad to find the cipher text.
9. Decrpyt the cipher text using the correct shift and also with the alphabet set to 0-9A-Z.
10. Enter the given code (wheninrome)
11. Go to the next room and look at the poster.
12. See the SHA and figure out you need to encode with SHA 256.
13. Figure out the answer to the question on the poster.
14. Enter the given encoded text in the elevator to finish the floor.

Scoring:

For each room completed, the teams will earn 1/3 of the total pts.