Capture the flag (Casino)

Team: Pinky Pinky Unicorn
Wang Zijia 1002885 |Zhu Bo 1002856 | Wang Cheng 1002953 |Wan Zhijun 1003101

Introduction

This CTF consists of three parts.
You can refer to the instructions under each part.
Note: The answer for each part will be in readable text.

The final flag will be *CTF{ANS1+ANS2+ANS3}*, where ANS1, ANS2, and ANS3 are the result of challenge1, challenge2 and challenge3 respectively. (note: there is no space between your answers and + sign.)
For example, the answer for challenge 1,2,3 are 'yes1', 'yes2', 'yes3' respectively. Then the final flag will be *CTF{yes1+yes2+yes3}*

Challenge 1

For this challenge, stream cipher will be applied.
It will be helpful if you can observe the necessary elements in the picture. Your starting point is hidden 'inside' the page.

you can find your challenge 1 here:
https://ctfnew50042-api-heroku.herokuapp.com/

Challenge 2

This challenge makes use of steganography concepts, meaning important data for retrieving the flag is hidden in files provided, as well as cryptography concept RSA learnt in class. You may need an external tool.
(FYI, Steganography is a technique used to conceal almost any type of data in any other type of digital content. The content to be concealed through steganography is often encrypted before being incorporated into the data stream.)

You can find your challenge 3 here:
https://ctfnew50042-api-heroku.herokuapp.com/challenge2

Challenge 3

In this challenge modified AES-ECB encryption is used. This challenge makes use of the concept that attacker can still retrieve data from an AES-ECB encrypted image due to the pattern being similar to the plain version.
Hint:
1. Are there really "two locks"?
2. Please use Python2 for this problem and install pycrypto before running.

You can find your challenge 3 here:
https://ctfnew50042-api-heroku.herokuapp.com/challenge3