**Complexity of Hot Chilly**

Hot Chilly is a computer-user interaction problem, i.e the game is played between the computer and then user . Now lets deal with the time complexity of the game .Here we neglect the time taken by the user to make his move. Hence after the user’s move the time taken by the computer is considered as the final time complexity of the game. In the code we have a 2 loops which are not nested.

Here one loop runs for (n) times and the other loop runs for (n-1) times. Hence the complexity of the code now drops to the summation of n and n-1 , which becomes (2n-1).

Thus we can generalize that the complexity of the code for all the cases is ‘n’ / O(n).

**Complexity of Encryption**

Encryption is based on the input of the file i.e, larger the file larger is the encrypted code generated .Hence the complexity of the code is always determined by the user input, hence the complexity is, some constant C multiplied by ‘n’ .

Therefore the complexity of the Encryption code is, O(C\*n) for the worst case and the best case complexity is ‘n’ .

**Complexity of Decryption**

The time taken to crack the encoded text is larger than encrypting the text as the code generated is longer than that of the text. Since we take 2 characters at a time the complexity is increased by 2 i.e, (2\*C\*n) . OR, we can write it as O(2\*C\*n)