

*Pledge: I pledge my honor that I have abided by the Stevens Honor System. - Eric Altenburg*

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**Problem 3: Crypt-analyze this!**

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The text reads:

1. Testing testing can you read this
2. Yep I can read you perfectly fine
3. Awesome one time pad is working
4. Yay we can make fun of Nikos now
5. I hope no student can read this
6. That would be quite embarrassing
7. Luckily OTP is perfectly secure
8. Didnt Nikos say there was a catch
9. Maybe but I didnt pay attention
10. We should really listen to Nikos
11. Nah we are doing fine without him

To successfully decipher this, I used crib dragging which has been implemented many times by other programmers online. Here is the website I used specifically: [https://toolbox.lotusfa.com/crib\\_drag/](https://toolbox.lotusfa.com/crib_drag/). This website requires that I input 2 ciphertexts and then some crib words. The latter is rather difficult without the context of the ciphertexts and relies on some probability with you knowing which words to use for the crib; however, given this circumstance, Alice and Bob were likely talking about Nikos since he thinks they were planning behind his back. So with this information, "Nikos" was the initial crib I used.

After obtaining the plaintext, I then XOR'd it with the ciphertexts to obtain the key. Then to get the rest of the words I used this XOR calculator <http://xor.pw/#> where I changed the input 1 to be ASCII (base 256), input 2 to be hex (base 16), and the output to be ASCII (base 256). I put in the key as input 1, and each of the ciphertexts for input 2 and I got the respective plaintexts. The key is *youfoundthekey!congratulations!!!*.