Thoth   Challenge 3

_____

For client at IP 138.47.102.161 and at time 2022-10-14 11:21:41, the unique secret word can be obtained by performing a Vigenere cipher of the word "mflxucofuvhwmd" with the key "ultimagradus".EOFFor ?

Decoded from 11:21 to 11:25

Steps

1. Our group started with the initial encoded text file on Moodle. After using an online tool to convert each "l" to a 1 and each "O" to a 0, we used the first program (binary decoder) to find the following message:
   ```
   Chat server at wys-cygkzwv-mbnwbj-sdkaa lgl yiwyg-dsqig kwl
   ggy-mzvofzh-tul-loh xty wys-cygkmjww-mncbj-gzzxu xgjm
   nmnzem-olklm-lzhoxfvo-hcvxl-pmfwlji-bswmxr-apjwx
   Ciphertext in this message is encrypted using Vigenere with the
   key "I love this stuff"
   ```

2. Following the instructions in the message, we used program 2 (viginere) to find the following text:
   ```
   one-hundred-thirty-eight dot forty-seven dot
   one-hundred-and-two dot one-hundered-sixty-seven port
   thirty-three-thousand-three-hundred-thirty-three
   ```

3. By translating the text from the end of step 2, we found the IP 138.47.102.167 and port 33333. We used [a modified version of program 4 (chat timing)](#) to find both the timing and messages from the remote server. The program determined that a valid cut-off would be 0.150 seconds per character, and after 4 minutes of waiting and reading, we arrived at the final message. Below is the text we read while waiting.

```
Thank God you guys are using percentages! I'm one of the
3/2 of Americans who don't understand fractions. It is said
that if you line up all the cars in the world end to end,
someone would be stupid enough to try and pass them. I
before E, except when you run a feisty heist on a weird
beige foreign neighbor...and caffeine-string atheists
reinventing protein at their leisure...plebeians may deign
to forfeit either that or seize the language and reinvent
it... A successful life is one that is lived through
understanding and pursuing one's own path, not chasing
after the dreams of others. -- Chin Ning Chu If it is
important to you, you'll find a way. If not, you'll find an
excuse. Skills can be taught. Character you either have or
you don't have. -- Anthony Bourdain Never trust an atom.
They make up everything. It's difficult to make
predictions, especially when you're talking about the
future. It's time to kick ass and chew bubble gum, and I'm
all out of gum. -- Duke Nukem I'm not insensitive; I just
don't care. I would rather have questions that can't be
answered than answers that can't be questioned. -- Richard
Feynman (attributed) Ineptocracy: A system of government
where the least capable to lead are elected by the least
capable of producing, and where the members of society
least likely to sustain themselves or succeed are rewarded
with goods and services paid for by the confiscated wealth
of a diminishing number of producers. 82.7% of all
statistics are made up on the spot. -- Steven Wright Stop
Global Whining. We don't have time to stop for gas--we're
already late.
```

Contributions

Brendan Guillory
Helped to write the modified version of Program 4. Plugged laptop into ethernet to run script which eventually decoded the final message.

Cameron Robertson
Prepared all previous codes for the challenge and began converting the binary. Also tested and understood a modified chat timing code for the challenge today.

Christian Evans
Converted I and O's to binary using an online website. Using prog01 "binary decoder" to get message. Brendan Guillory did this as well, deciphering the Viginere Cipher and began connection to the server.

Cody Woessner
Windows update kept me from starting my computer. I did code review of the code we used on the challenge.

Drew Young
Helped solve some of the issues that came up when deciphering and i helped with entertaining while waiting for the Chat program to decipher.

Frankie Lavall
I got all of my applications and files ready, but I knew that we had code created beforehand and it had been tested so we knew that it would work on the main machine. So I mostly waited for the process to finish. It was mostly smooth, helped change the ip and port from word form to decimal form.

Tristen Barton
Brendan's input: Tristen was unfortunately not feeling well. He stated this to us in Discord more than an hour before class started.