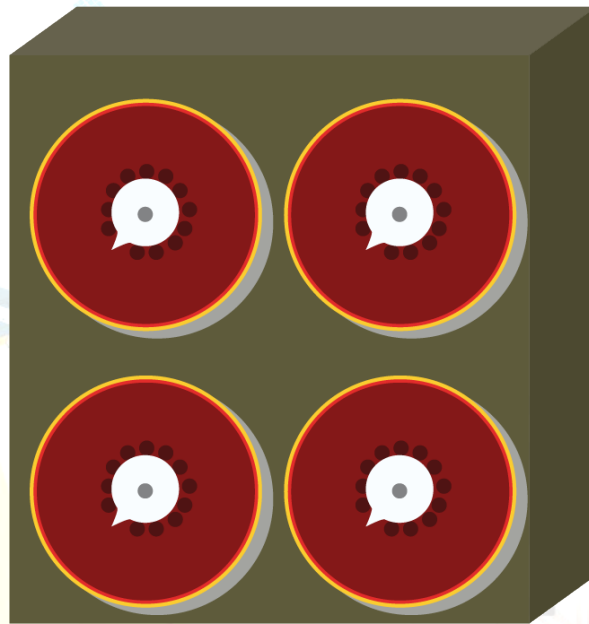


CONCORDIA ENGINEERING WEEK COMPETITIONS



CODING CHALLENGE

MARCH 8TH, 2017



ENG WEEK 2017

CODING CHALLENGE

Bad news! They know we were able to successfully crack their messages. They have made changes to their configuration that will make it harder to decipher the messages, but not impossible.

Here is what we know:

Our spies confirmed the changes made in the enigma machine. The enemy has changed Rotor I. Luckily, they were able to take a picture of the new rotor inside the enigma but the bad news is that only a part of the rotor is visible and your program must find the remaining combinations.

Here is the new configuration we know:

Rotor I: OQJDHAGTYEWIMXZB????????

Rotor II: AJDKSIRUXBLHWTMCQGZNPYFVOE

Rotor III: QWERTYUIOPASDFGHJKLZXCVBMN

Reflector: YRUHQSLDPXNGOKMIEBFZCWVJAT

As far as we know, there were no changes made to the rotations so:

Where Rotor I turns every letter, Rotor II turns every second letter, and Rotor III turns every third letter and we can confirm that space characters are still replaced with "QQ"

Your program should:

1. Read a file given in the arguments and generate a file called enigma.txt where the first line is the full combination found for the rotor with the missing sequence and the following lines are the translated/encrypted message.
2. Submit your code in a zip file with a readme file with the team members' names as well as instructions on how to run the code.

IMPORTANT TIP: Our intelligence informs us that the messages always start with the same first line. This is crucial information. Good luck.

EXTRA POINTS:

1. If your solution is capable of reading any given combination of an enigma machine, you will be awarded extra points. Example: config file where line 1 = Rotor I, line 2 = Rotor II, line 3 = Rotor3, line 4 = reflector and line 5 = rotation configuration. **DOCUMENT YOUR ASSUMPTIONS IN THE README FILE.**
2. If your solution can find the combination for any sequence in Rotor I (not just the sequence given).
3. If your solution can find missing letters on any of the rotors (always 1 rotor), you will earn extra points. Example: missing letters on rotor II instead of rotor I. **DOCUMENT YOUR ASSUMPTIONS IN THE README FILE.**

P.S. As this is WAR, time is our most precious resource, a faster and optimized solution will guarantee us (and you) the victory!