NOVA CTF {2023} - Random Code
[MISC ENGINEERING CHALLENGE]

Given Description:

The team is ordered to infiltrate the Kremlin for information on Cobalt. While they are inside, Cobalt blows the team's cover and they escape before a bomb destroys much of the Kremlin. Jane and Benji escape, but Ethan is arrested by SVR agent Anatoly Sidorov and is blamed for the bombing.

Solution:
Random code.exe can be solved by reverse engineering the program, but it is much more complicated. So simply run it for multiple times till you reach the saturation of getting all the id and its associated flag.

- Then arrange them in order and decrypt using Vigenere decode
- code: XFZM{ 7s3 0v1l g4p 70 l4h3 4 900o x14a 15 70 r4m3 q4zj x14a5 }
- The key for Vigenere encode is : kremlin

The source code of exe is:

```
import random
import time
import PySimpleGUI as sg

flag = "XFZM{ 7s3 0v1l g4p 70 l4h3 4 900o x14a 15 70 r4m3 q4zj x14a5 }".split(" ")
value = random.choice(flag)
i = flag.index(value)
sg.Window(title="Random Flag", layout=[
   [sg.Text("So you got the flag!!\n")],
   [sg.Text(value)],
   [sg.Text("id: {i}".format(i = i+1))]
   ], margins=(50, 50)).read()
time.sleep(3)
```

Solving it - the flag is NOVA{ 7h3 0n1y w4y 70 h4v3 4 900d p14n 15 70 h4v3 m4ny p14n5 }