Output Text: Charles Marc Herve Perceval Leclerc born 16 October 1997 is a Monegasque racing driver, currently racing in Formula One for Scuderia Ferrari. He won the GP3 Series championship in 2016 and the FIA Formula 2 Championship in 2017. Leclerc made his Formula One debut in 2018 for Sauber, a team affiliated with Ferrari, for which he was part of the Ferrari Driver Academy.

Integer used for creating BV: 1616

BV of integer: 0000011001010000

Explanation of code: p.s class provided lecture code was extensively used to make the cryptbreak function.

Cryptbreak Function –

I initialize blocksize to 16 and set bv_iv to a binary representation of 6966. This number is the same as the reduced passphrase "size to a bit array of size 16, this is done to make computation a bit quicker.

Then I open the file and convert it to a BV that's represented by encrypted_bv. The next code block is taken from lecture code and uses differential XORing to decrypt the message and convert it back to readable text before reading it.

Rest of the code –

Supporting code to change directory for working in my own machine, and import statements at the start

Cryptbreak_wrapper exists to simplify the cryptbreak for multiprocess pool jobs

The main function initialized multiprocess to distribute the bruteforce efforts among multiple CPU cores. The main function also times the total runtime of this process for the sake of statistics.