Adriana_Machado_Decryption_Only

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```python
In [ ]: print("Welcome back! Arendt is pleased to see you, again. Please enter your encryption
        z = input()

In [ ]: z = list(map(int, z.split(',')))
        p = 13 # integer greater than or equal to 13
        q = 17 # integer greater than or equal to 17
        n = p * q # public key
        e = 5 # public key
        i = 2

In [ ]: def f(n):

            """phi function of n
            Argument: n
            Output: p*q-p-q+1"""

            return int((p - 1)*(q - 1))

In [ ]: d = int(((i * f(n)) + 1) / e) # private key

In [ ]: num_caps_alpha = {1:"A", 2:"B", 3:"C", 4:"D", 5:"E", 6:"F", 7:"G", 8:"H", 9:"I", 10:"J"

In [ ]: def e_decryption(list):

            """
            To return the decrypted list of integers representing the cyphered user input
            Argument: encryption list
            Output: cypher list"""

            e_to_d= []
            for number in list:
                decrypted = int((number**d)%n)
                e_to_d.append(decrypted)

            return e_to_d

        decryption = e_decryption(z)
```

```
In [ ]: def reverse_cypher(decryption):

            """To send the decrypted message back through the cypher and get the original mess
            Argument: Decryption list
            Output: Decyphered list"""

            d_to_l = []
            for int in decryption:
                letter = num_caps_alpha.get(int)
                d_to_l.append(letter)
            return d_to_l

        r_cypher = reverse_cypher(decryption)

In [ ]: cypher_string = ""
        print("Your original input text was: ", cypher_string.join(r_cypher))
        print("ET VOILÀ!!!")
```