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Q3 Write a program for the encryption and decryption of the Vigenere cypher on the input plaintext = "Cryptography" with a key = "Monarchy".

→ PYTHON

```
def generateKey(string, key):
    key = list(key)
    if len(string) == len(key)
        return(key)
    else:
        for i in range(len(string) - len(key)):
            key.append(key[i % len(key)])
    return("".join(key))
def encryption(string, key):
    cipher_text = []
    for i in range(len(string)):
        x = (ord(string[i]) + ord(key[i])) % 26
        x += ord('A')
```

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        cipher_text.append(chr(x))
    return("".join(cipher_text))

def decryption(ciphertext, key):
    org_text = []
    for i in range(len(cipher_text)):
        x = (ord(cipher_text[i]) - ord(key[i])+26)%26
        x += ord('A')
        org_text.append(chr(x))
    return("".join(org_text))

if __name__ == "__main__":
    string = "cryptography"
    key = "Monarchy"
    keyw = generateKey(string, key)
    ciphertext = encryption(string, keyw)
    print("Ciphertext:", ciphertext)
    print("Original/Decrypted text:", decryption(ciphertext, key))
```

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