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```
def encrypt(msg):
# function to decrypt msg
    encoded = ""
    for i in msg: # iterate through loop
        if i>="0" and i<="9":
                # if element is digit
            encoded += chr((int(i)**(k)+5)%26+
                                65)+""
        elif(i>="a" and i<="z"):
            # if element is lowercase alphabet
            encoded+=chr((ord(i)+3)%26)+""
        elif(i>="A" and i<="Z"):
            # for uppercase alphabet
            encoded+=chr((ord(i)+6)%26)+""
        else:
            # for special characters,,
            encoded += i + ""
    return encoded
```

"Assumptions for encryption: After shifting formula & I am converting into char again by using chr()"

```
def decrypt(msg):
    # to function decrypt msg
```

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''' The encryption function for alphabets is non invertible, therefore decryption is not possible for alphabets. Encryption function must always be invertible.

So, we assume that our decryption function will always produce upper case alphabets even if they dont correspond to the original text. Because it's not possible to uniquely determine the original msg '''

```
decoded = " "
alpha = (65+6) % 26 # Encryption value
                      for character 'A'

for i in ~~encoded~~ msg : # loop through msg
    if ord(i) in range(0, 26):
        decoded += chr((ord(c)-6) % 26 -
# for alphabet                alpha) % 26 + 65

    elif ord(i) in range(65, 65+26):
# for digit   rem = ((ord(0) -65) -5 % 26
  decryption  i=0
              while True :
                  if (i * i) % 26 == rem :
                      decoded += chr(i+48)
                  i += 1
    else:
        decoded += c # for special char

return decoded # return decoded msg
```

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```
def main()
    msg = input("Enter a message")
    encoded = encrypt(msg)
    print("Encrypted Message :", encoded)
    print("Decrypted Message :", decrypt(encoded))

if __name__ == "__main__":
    main() # calling main function
```