

Caesar Cipher

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Q.) Plaintext:- SOMETIMES YOU SUCCEED AND OTHER TIMES YOU LEARN

A:- Alphabet & values

A	B	C	D	E	F	G	H	I
1	2	3	4	5	6	7	8	9
J	K	L	M	N	O	P	Q	R
10	11	12	13	14	15	16	17	18
S	T	U	V	W	X	Y	Z	
19	20	21	22	23	24	25	26	

We know, for Caesar Cipher, key = 3.
So letters A to W:-
$$\text{Ciphertext}(\text{letter}) = \text{Plaintext}(\text{letter}) + 3$$

E.g:-
$$\begin{aligned}\text{Cipher}(L) &= \text{Plain}(L) + 3 \\ \text{Cipher}(L) &= 12 + 3 = 15 \\ \text{Cipher}(L) &= O\end{aligned}$$

and for letters X, Y & Z:-
$$\begin{aligned}\text{Cipher}(\text{letter}) &= \text{Plain}(\text{letter}) - 23 \\ \text{Cipher}(X) &= \text{Plain}(X) - 23 \\ \text{Cipher}(X) &= 24 - 23 = 1 \\ \text{Cipher}(X) &= A\end{aligned}$$

Hence, applying Caesar Cipher on given plaintext,
we get:- ~~VR~~ VRPHWLPHV BRX VXFFHHG VRPHWLPHV
BRX OHDUQ

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caesar_cipher.py > ...
1  def encrypt(text,s):
2      result = ""
3      for i in range(len(text)):
4          char = text[i]
5
6          if (char.isupper()):
7              result = result + chr((ord(char)+s-65)%26+65)
8          elif char == ' ':
9              result = result + " "
10         else:
11             result = result + chr((ord(char)+s-97)%26+97)
12     return result
13
14 text = input("Enter a sample plain text :")
15 s = int(input("Enter key/cipher :"))
16 print("Plaintext :"+text)
17 print("Key :"+ str(s))
18 print("Ciphertext :"+ encrypt(text,s))
```

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PS D:\Kritarth\sem 6\cryptography and system security> python caesar_cipher.py
Enter a sample plain text :SOMETIMES YOU SUCCEED SOMETIMES YOU LEARN
Enter key/cipher :3
Plaintext :SOMETIMES YOU SUCCEED SOMETIMES YOU LEARN
Key :3
Ciphertext :VRPHWLPHV BRX VXFFHHG VRPHWLPHV BRX OHDUQ
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