

Prodigy Cyber Security Internship --Task-01

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Task: Caesar Cipher

Language: Python

Date: 04/11/2025

Objective

To implement Caesar Cipher encryption and decryption using Python.

Description

Caesar Cipher shifts characters by a fixed number to encrypt and decrypt text.

Algorithm

1. Take input text
2. Take shift value
3. Convert each character using shift
4. Show encrypted and decrypted text

Code

```
def caesar_cipher(text, shift, mode):  
    result = ""  
  
    for char in text:  
        if char.isalpha():  
            ascii_offset = 65 if char.isupper() else 97  
  
            if mode == "encrypt":  
                result += chr((ord(char) - ascii_offset + shift) % 26 + ascii_offset)  
  
            elif mode == "decrypt":  
                result += chr((ord(char) - ascii_offset - shift) % 26 + ascii_offset)  
  
        else:  
            result += char  
  
    return result  
  
message = input("Enter your message: ")
```

```
shift = int(input("Enter shift value: "))
```

```
encrypted = caesar_cipher(message, shift, "encrypt")
```

```
print("Encrypted text:", encrypted)
```

```
decrypted = caesar_cipher(encrypted, shift, "decrypt")
```

```
print("Decrypted text:", decrypted)
```

Output Screenshots



The screenshot shows a code editor with a file named 'caesar_cipher.py'. The code implements a Caesar cipher with a function 'caesar_cipher' that takes 'text', 'shift', and 'mode' as arguments. It iterates through each character in the text, checking if it is an alphabet character. If it is, it calculates the ASCII offset (65 for uppercase, 97 for lowercase) and applies the shift. If the mode is 'encrypt', it adds the shift; if 'decrypt', it subtracts the shift. The result is then converted back to a character and appended to the result string. Non-alphabet characters are added to the result as-is. The main part of the code prompts the user for a message and a shift value, then calls the 'caesar_cipher' function to encrypt and decrypt the message, printing the results.

```
caesar_cipher.py X
caesar_cipher.py > ...
1  def caesar_cipher(text, shift, mode):
2      result = ""
3      for char in text:
4          if char.isalpha():
5              ascii_offset = 65 if char.isupper() else 97
6              if mode == "encrypt":
7                  result += chr((ord(char) - ascii_offset + shift) % 26 + ascii_offset)
8              elif mode == "decrypt":
9                  result += chr((ord(char) - ascii_offset - shift) % 26 + ascii_offset)
10         else:
11             result += char
12     return result
13
14 message = input("Enter your message: ")
15 shift = int(input("Enter shift value: "))
16
17 encrypted = caesar_cipher(message, shift, "encrypt")
18 print("Encrypted text:", encrypted)
19
20 decrypted = caesar_cipher(encrypted, shift, "decrypt")
21 print("Decrypted text:", decrypted)
22
```

```
PROBLEMS  DEBUG CONSOLE  TERMINAL  PORTS  OUTPUT  powershell + - [ ] [X] ...

PS C:\Users\Abhinandan\Desktop\Prodigy_Task01> python caesar_cipher.py
>>
Enter your message: HELLO WORLD
Enter shift value: 3
Encrypted text: KHOOR ZRUOG
Decrypted text: HELLO WORLD
PS C:\Users\Abhinandan\Desktop\Prodigy_Task01> █
```

Conclusion

Successfully implemented Caesar Cipher in Python and verified output.