**WEEK - 8**

**Name-** Aditya Mishra

**Registration Number-** RA2111003011817

**Section-** M2

**4.** Closure

A Closure is a function object that remembers values in enclosing scopes even if they are not present in memory. We have a closure in Python when a nested function references a value in its enclosing scope.

def multiplier\_of(n):

def multiplier(number):

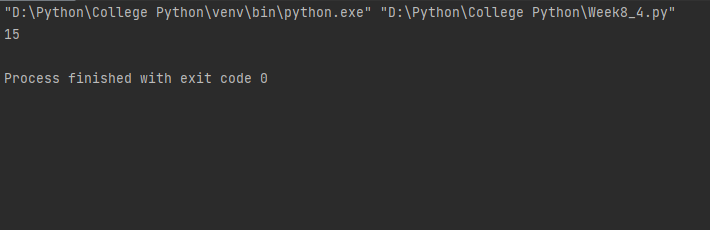
return number\*n

return multiplier

**Code-**

def multiplier\_of(n):  
 def multiplier(number):  
 return number\*n  
 return multiplier  
closure = multiplier\_of(5)  
print(closure(3))

**Output-**

****

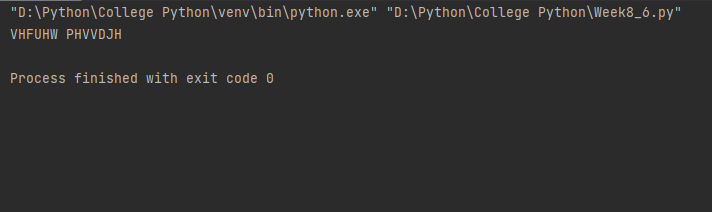
**6.** Map

A secret message needs to be sent. Use the map function to encrypt the message using Caesar cipher.

**Code-**

def caesar\_cipher\_encrypt(message, shift):  
 message = message.upper()  
  
 def shift\_char(char):  
 if char.isalpha():  
 code = ord(char) - ord('A')  
  
 shifted\_code = (code + shift) % 26  
  
 return chr(shifted\_code + ord('A'))  
 else:  
 return char  
  
 encrypted\_message = ''.join(map(shift\_char, message))  
  
 return encrypted\_message  
  
message = "SECRET MESSAGE"  
shift = 3  
encrypted\_message = caesar\_cipher\_encrypt(message, shift)  
print(encrypted\_message)

**Output-**

****