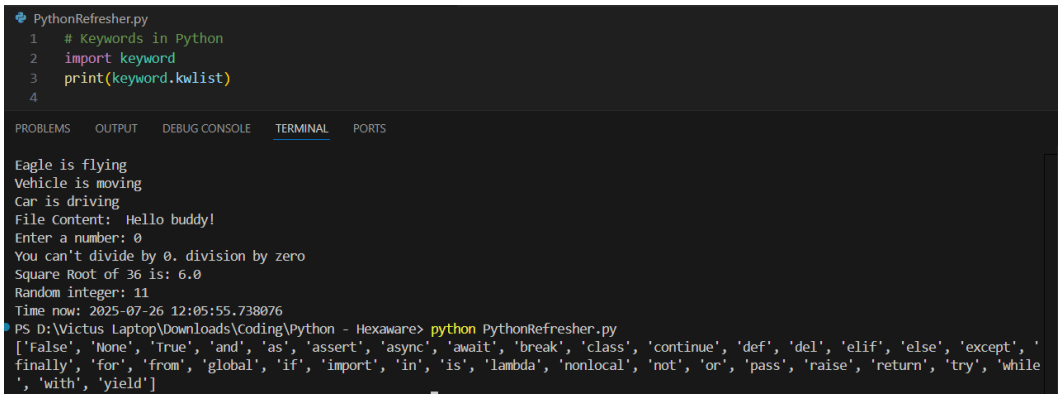
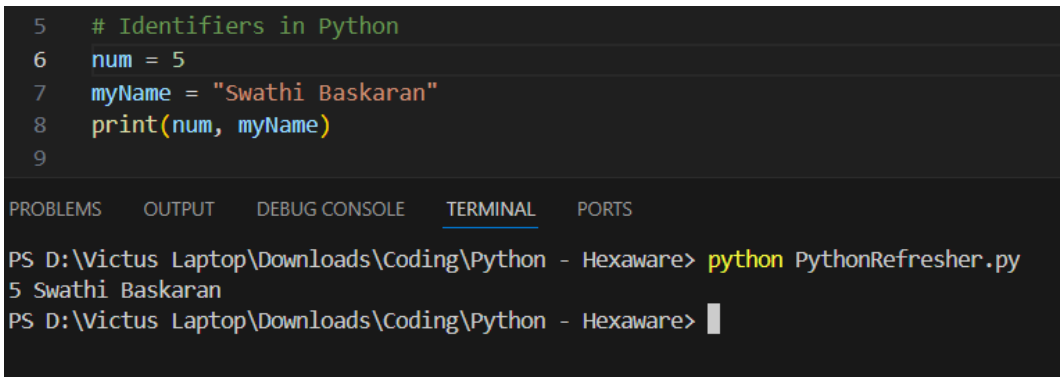
ASSIGNMENT (Python Refresher)

TRAINEE NAME: Swathi Baskaran

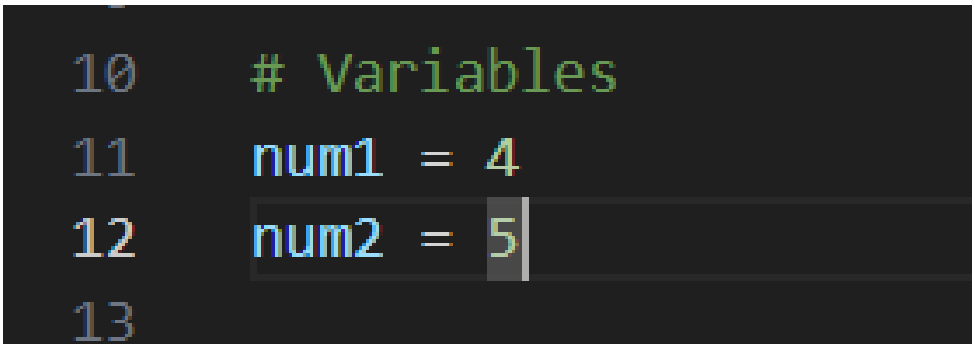
1. Keywords



2. Identifiers



3. Variables



4. Arithmetic Operators

```python
# Variables
num1 = 4
num2 = 5

# Arithmetic Operators
print("Addition", num1 + num2)
print("Subtraction",num1 - num2)
print("Multiplication",num1 * num2)
print("Division",num1 / num2)
print("Floor Division",num1 // num2)
print("Modulus",num1 % num2)
print("Exponent",num1 ** num2)
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
Addition 9
Subtraction -1
Multiplication 20
Division 0.8
Floor Division 0
Modulus 4
Exponent 1024
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

5. Assignment Operators

```python
# Assignment Operators
num1 = 6
num2 = 4
num2 += num1
print("Assignment Operator Usage [+=]: ", num2)
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
Assignment Operator Usage [+=]:  10
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

6. Comparison Operators

```python
# Comparison Operators
num1 = 4
num2 = 6
print("Comparison Operator: [==]", num1 == num2)
print("Comparison Operator: [!=]", num1 != num2)
print("Comparison Operator: [<]", num1 < num2)
print("Comparison Operator: [>]", num1 > num2)
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
Comparison Operator: [==] False
Comparison Operator: [!=] True
Comparison Operator: [<] True
Comparison Operator: [>] False
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

7. Logical Operators

```python
# Logical
num1 = 10
num2 = 12
print(num1 > 10 and num2 > 10)
print(num1 > 10 or num2 > 10)
value = True
print(not value)
```

```
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
False
True
False
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

8. Datatypes

```python
# Datatypes
var = 5
print(type(var))
var = "Swathi"
print(type(var))
var = True
print(type(var))
var = 78.9
print(type(var))
var = 5 + 6j
print(type(var))
```

```
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
<class 'int'>
<class 'str'>
<class 'bool'>
<class 'float'>
<class 'complex'>
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

9. Sequence

```python
# Sequence Datatypes
seq = [45, 567, 23, 67]
print("Type of Sequence: ", type(seq))
seq = {56, 23, 56, 34}
print("Type of Sequence: ", type(seq))
seq = {1: "Swathi", 2: "Baskaran"}
print("Type of Sequence: ", type(seq))
seq = (56, 34, 67)
print("Type of Sequence: ", type(seq))
```

```
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
Type of Sequence:  <class 'list'>
Type of Sequence:  <class 'set'>
Type of Sequence:  <class 'dict'>
Type of Sequence:  <class 'tuple'>
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

10. Boolean

```
67  # Boolean
68  value1 = True
69  value2 = False
70  print("Type of value1: ", type(value1))
71  print("Type of value2: ", type(value2))
72
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
Type of value1:  <class 'bool'>
Type of value2:  <class 'bool'>
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

11.If statement

```
73  # Control Structure
74  # If statement
75
76  var1 = 4
77  if var1 > 2:
78      print("Variable is greater than 2")
79
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
Variable is greater than 2
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

12.If – else statement

```
80  # If else statement
81  var1 = 1
82  if var1 > 2:
83      print(var1, "is greater than 2")
84  else:
85      print(var1, "is lesser than 2")
86
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
1 is lesser than 2
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

13.If – elif- else statement

```
87  # If elif else statement
88
89  var1 = 5
90  if var1 > 5:
91      print(var1, "is greater than 5")
92  elif var1 == 5:
93      print(var1, "is equal to 5")
94  else:
95      print(var1, "is lesser than 5")
96
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
5 is equal to 5
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

14.For loop

```
97  # For loop
98  for i in range(1,6):
99      print(i)
100
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
1
2
3
4
5
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

15.While loop

```
101  # While loop
102  i = 1
103  while i <= 5:
104      print("Number: ", i)
105      i += 1
106
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
Number:  1
Number:  2
Number:  3
Number:  4
Number:  5
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

16.Nested loop

```python
# Nested loop
num = 1
for i in range(1, 5):
    for j in range(1, 5):
        num += 1

print(num)
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
17
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

17.Break, Continue and Pass

```python
# Break
num = 5
for i in range(1, 10):
    if i == num:
        break
print(i)
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
5
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

18.Input and Output

```python
# Input and Output

name = input("Enter your name: ")
print("Your name: ",name)
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
Enter your name: Swathi
Your name:  Swathi
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

19.Introduction to Lists

```python
# Introduction to Lists
fruits = ["Apple", "Pear", "Watermelon", "Pineapple"]
print(fruits[0])
print(fruits[-2])
print(type(["a", [4,5]]))
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
Apple
Watermelon
<class 'list'>
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

20.List Methods and Slicing

```python
# List Methods and Slicing
numbers = [1, 2, 3]
numbers.append(4)
print(numbers)
numbers.insert(2, 6)
print(numbers)
numbers.remove(1)
print(numbers)
lastElement = numbers.pop()
print(lastElement)

print(numbers.index(2))
numbers.sort()
print(numbers)
numbers.reverse()
print(numbers)
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
[1, 2, 3, 4]
[1, 2, 6, 3, 4]
[2, 6, 3, 4]
4
0
[2, 3, 6]
[6, 3, 2]
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

21.Introduction to Dictionaries and Dictionary Methods

```
150   # Dictionary
151   profile = {"name": "Swathi", "age": 22, "gender" : "Female"}
152   print(profile["name"])
153   profile["age"] = 23
154   print(profile["age"])
155   print(profile.keys())
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
Swathi
23
dict_keys(['name', 'age', 'gender'])
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

22.Introduction to Set and Set Methods

```
157   # Set
158   a ={1, 2, 3, 4}
159   b = {3, 4, 5, 6}
160   print(a | b)
161   print(a & b)
162   print(a - b)
163   print(a ^ b)
164
165   a.add(23)
166   print(a)
167   a.update([5,6])
168   print(a)
169   a.remove(2)
170   print(a)
171   a.discard(4)
172   print(a)
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
{1, 2, 3, 4, 5, 6}
{3, 4}
{1, 2}
{1, 2, 5, 6}
{1, 2, 3, 4, 23}
{1, 2, 3, 4, 5, 6, 23}
{1, 3, 4, 5, 6, 23}
{1, 3, 5, 6, 23}
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

23.Introduction to Map and Map Methods

```python
# Maps
nums = [1,2,3,4]
squared = map(lambda x: x * x, nums)
print(list(squared))
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
[1, 4, 9, 16]
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

24.String Functions

```python
# String Functions
text = "   Swathi Baskaran    "
print(text.strip())
print(text.upper())
print(text.lower())
print(text.title())
print(text.replace("Baskaran", "Hexaware"))
print(text.split())
print("Hexaware".startswith("He"))
print("Hexaware".endswith("re"))
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
Swathi Baskaran
   SWATHI BASKARAN
   swathi baskaran
   Swathi Baskaran
   Swathi Hexaware
['Swathi', 'Baskaran']
True
True
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

25.Number Functions

```python
# Number Functions
a = -10
b = 2.45
print(abs(a))
print(round(b))
print(pow(2,6))
print(divmod(20,3))
print(int(b))
print(float(a))
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
10
2
64
(6, 2)
2
-10.0
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

26.Date and Time Function

```python
# Date and Time Function
from datetime import datetime, date, timedelta

now = datetime.now()
print("Now: " ,now)
today = date.today()
print("Today: ", today)
print(now.strftime("%Y-%m-%d %H:%M:%S"))

yesterday = today - timedelta(days = 1)
tomorrow = today + timedelta(days = 1)
print("Yesterday: ", yesterday)
print("Tomorrow: ", tomorrow)
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
Now:  2025-07-26 12:46:37.509794
Today:  2025-07-26
2025-07-26 12:46:37
Yesterday:  2025-07-25
Tomorrow:  2025-07-27
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

27.Python Functions

```python
# Python Functions
def greet(name):
    print("Hello,",name)

greet("Swathi")
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
Hello, Swathi
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

28.Default Argument Values

```python
# Default Argument Values
def greet(name = "Buddy"):
    print("Hello,",name)

greet()
greet("Swathi")
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
Hello, Buddy
Hello, Swathi
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

29.Keyword Arguments

```python
# Keyword Arguments
def describe_pet(name, gender):
    print(f"{name} is a {gender}")

describe_pet("Swathi", "female")
describe_pet("Ram", "male")
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
Swathi is a female
Ram is a male
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

30.Lambda Expressions

```python
# Lambda Expressions
square = lambda x: x * x
print(square(6))

nums = [1,2,3,4]
add = list(map(lambda x: x + 10, nums))
print(add)

nums = [(2,'u'), (5,'t'), (1,'h')]
nums.sort(key = lambda x: x[1])
print(nums)

nums = [1,2,3,4,5,6,7,8,9,10]
result = list(filter(lambda x: x%2 == 0, nums))
print(result)
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
36
[11, 12, 13, 14]
[(1, 'h'), (5, 't'), (2, 'u')]
[2, 4, 6, 8, 10]
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

31.OOPS, Class and Object

```python
# OOPS, Class and Object
class Greet():
    def __init__(self, name):
        self.name = name

    def greet(self):
        print(f"My name: {self.name}")

name = Greet("Swathi")
name.greet()
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
My name: Swathi
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

32.Access Specifiers

```python
# Access Specifiers
class Demo:
    def __init__(self):
        self.publicVar = "Public"
        self._protectedVar = "Protected"
        self.__privateVar = "Private"

```

33.Constructor

```python
# Constructor
class Student:
    def __init__(self, name, grade):
        self.name = name
        self.grade = grade
    def show(self):
        print(f"Name: {self.name}, Grade: {self.grade}")

student = Student("Swathi", "A")
student.show()
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
Name: Swathi, Grade: A
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

34.Inheritance

```python
# Inheritance
class Animal:
    def speak(self):
        print("Animal speaks")

class Dog(Animal):
    def bark(self):
        print("Dog barks")

d = Dog()
d.speak()
d.bark()
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
Animal speaks
Dog barks
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

35.Polymorphism

```python
class Bird:
    def fly(self):
        print("Bird is flying")
class Eagle:
    def fly(self):
        print("Eagle is flying")
def printFly(obj):
    obj.fly()

printFly(Bird())
printFly(Eagle())
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
Bird is flying
Eagle is flying
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

36.Method Overriding

```python
# Method overriding

class Vehicle:
    def move(self):
        print("Vehicle is moving")

class Car(Vehicle):
    def move(self):  # Overriding
        print("Car is driving")

v = Vehicle()
v.move()

c = Car()
c.move()
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
Vehicle is moving
Car is driving
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

37.File Handling

```python
# File Handling
with open("file2.txt", "r") as file:
    content = file.read()
    print("File Content: ", content)
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
File Content:  Hello buddy!
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

38.Exception Handling

```python
# Exception Handling
try:
    num = int(input("Enter a number: "))
    result = 10/num
    print("Result: ", result)

except ZeroDivisionError as e:
    print(f"You can't divide by 0. {str(e)}")
except ValueError as e:
    print(f"Invalid input. {str(e)}")
except Exception as e:
    print(f"Unexpected Error. {str(e)}")
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
Enter a number: 0
You can't divide by 0. division by zero
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

39.Python Modules

```python
# Python Modules

import math
num = 36
print("Square Root of",num, "is:", math.sqrt(num))
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
Square Root of 36 is: 6.0
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```

40.Standard Modules

```python
#Standard Modules

import random
print("Random integer:", random.randint(3, 20))

from datetime import datetime
print("Time now:", datetime.now())

```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware> python PythonRefresher.py
Random integer: 17
Time now: 2025-07-26 13:20:12.658158
PS D:\Victus Laptop\Downloads\Coding\Python - Hexaware>
```