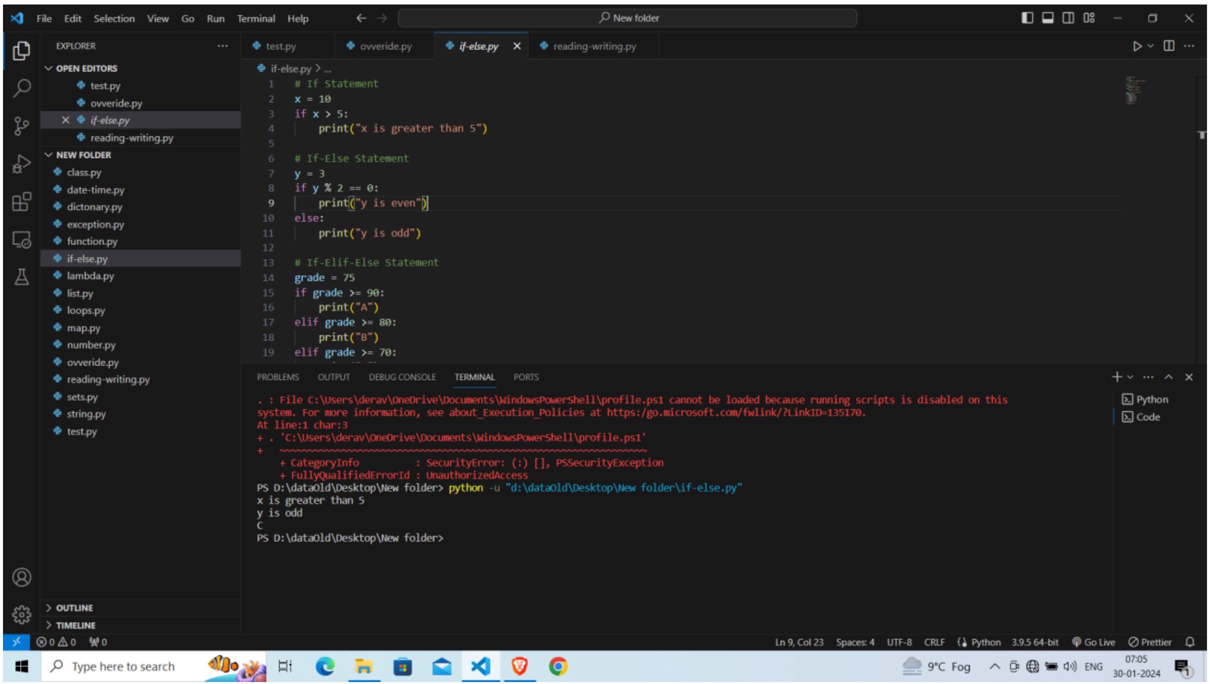
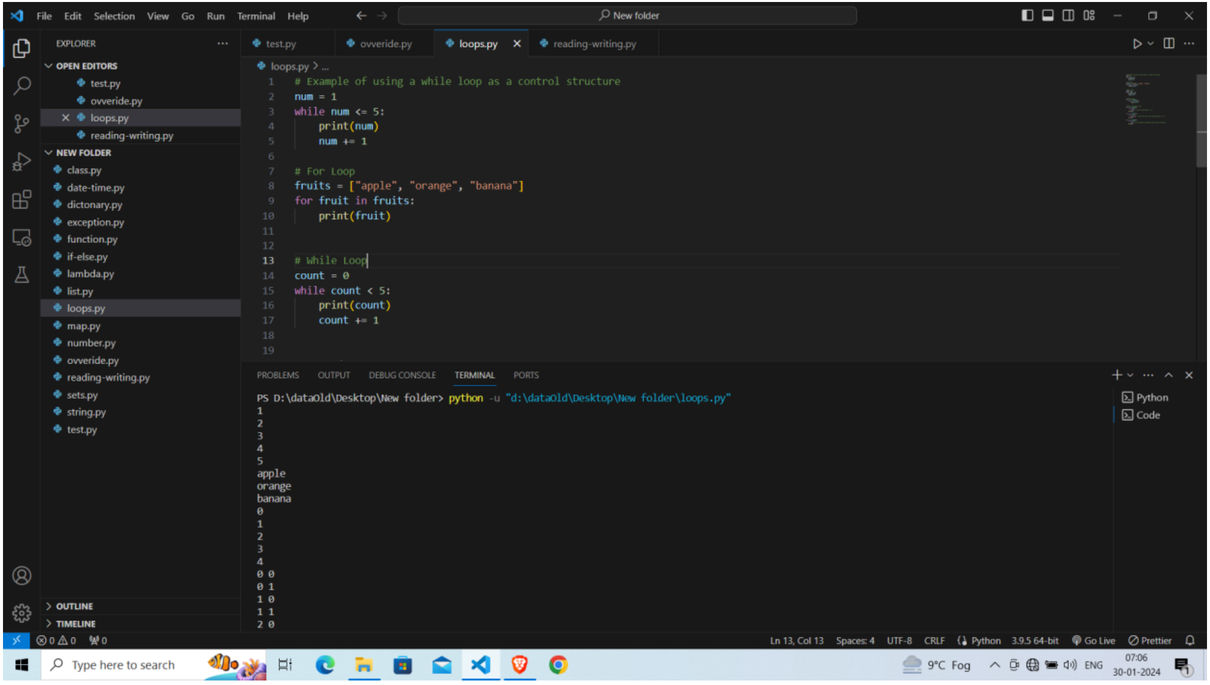
Assignment – 7

OUTPUTS SCREEN SHOTS:



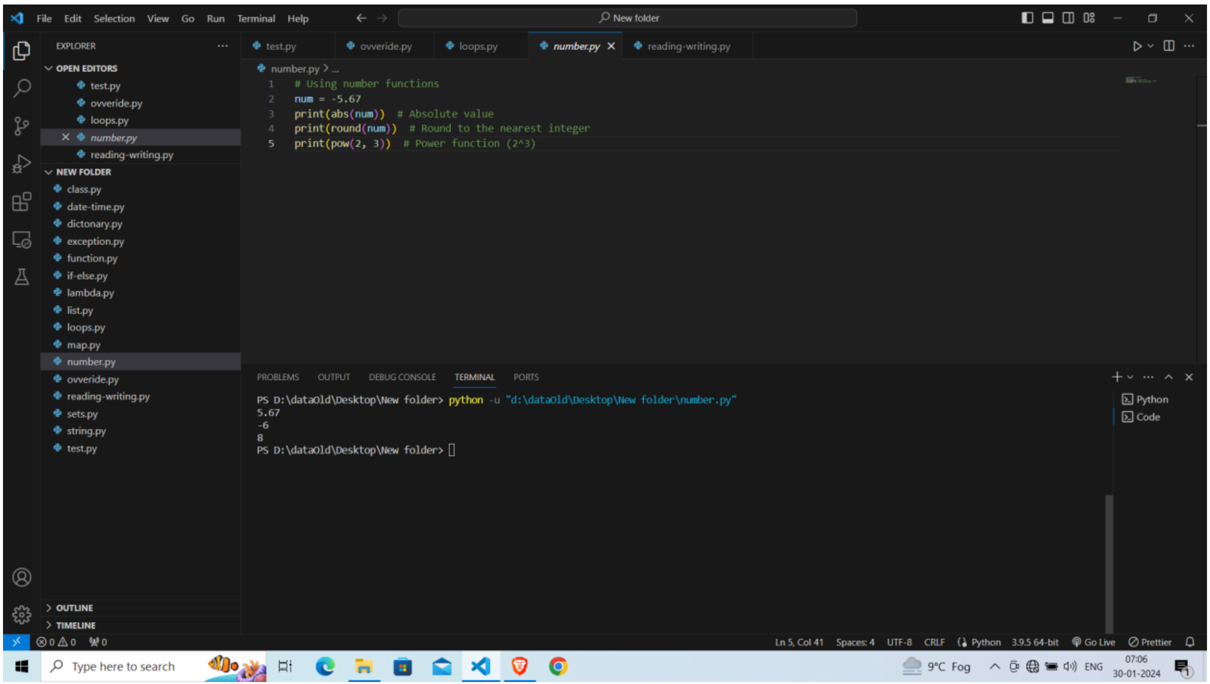
```python
# If Statement
x = 10
if x > 5:
    print("x is greater than 5")

# If-Else Statement
y = 3
if y % 2 == 0:
    print("y is even")
else:
    print("y is odd")

# If-Elif-Else Statement
grade = 75
if grade >= 90:
    print("A")
elif grade >= 80:
    print("B")
elif grade >= 70:
```

```
. : File C:\Users\derav\OneDrive\Documents\WindowsPowerShell\profile.ps1 cannot be loaded because running scripts is disabled on this
system. For more information, see about_Execution_Policies at https:/go.microsoft.com/fwlink/?LinkID=135170.
At line:1 char:3
+ . 'C:\Users\derav\OneDrive\Documents\WindowsPowerShell\profile.ps1'
+   ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
    + CategoryInfo          : SecurityError: (:) [], PSSecurityException
    + FullyQualifiedErrorId : UnauthorizedAccess
PS D:\dataOld\Desktop\New folder> python -u "d:\dataOld\Desktop\New folder\if-else.py"
x is greater than 5
y is odd
C
PS D:\dataOld\Desktop\New folder>
```



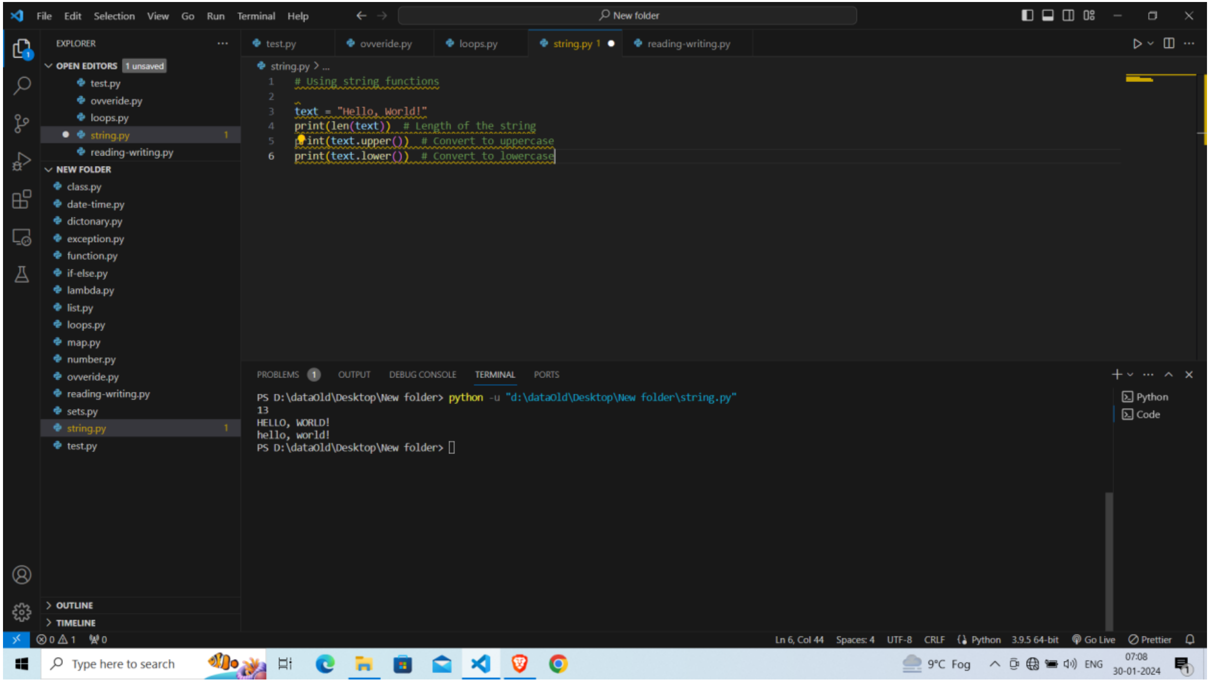
```python
# Example of using a while loop as a control structure
num = 1
while num <= 5:
    print(num)
    num += 1

# For Loop
fruits = ["apple", "orange", "banana"]
for fruit in fruits:
    print(fruit)


# While Loop
count = 0
while count < 5:
    print(count)
    count += 1
```

```
PS D:\dataOld\Desktop\New folder> python -u "d:\dataOld\Desktop\New folder\loops.py"
1
2
3
4
5
apple
orange
banana
0
1
2
3
4
0 0
0 1
1 0
1 1
2 0
```



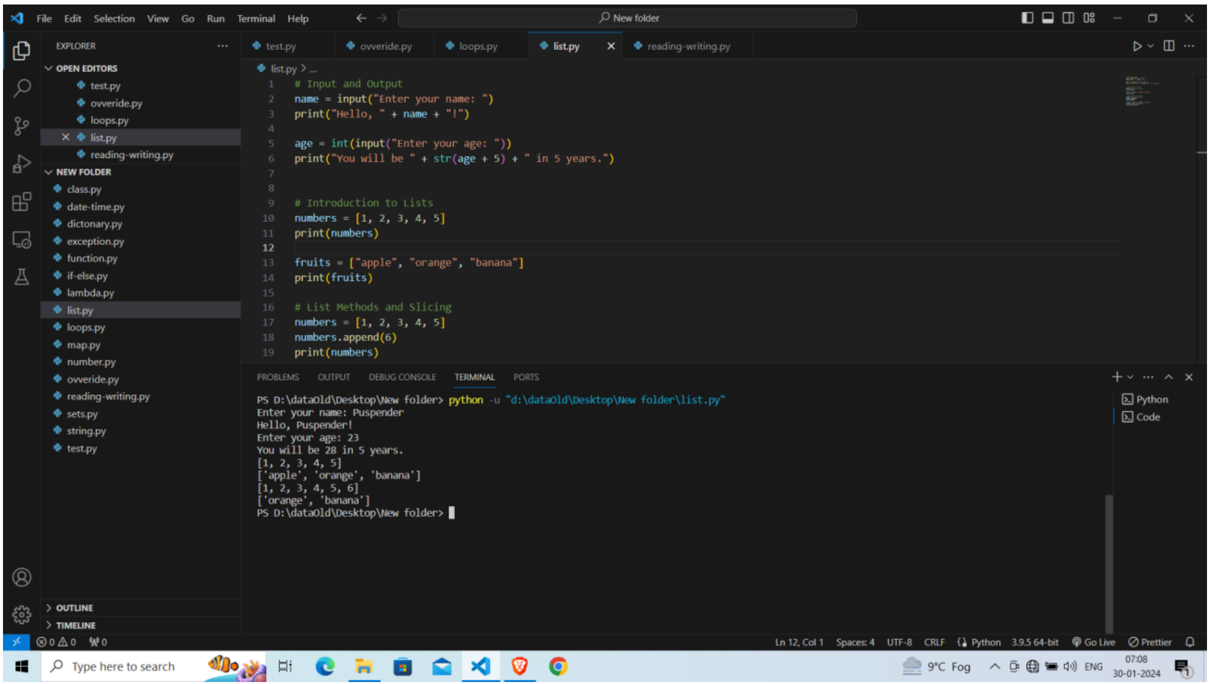
```python
# Using number functions
num = -5.67
print(abs(num))  # Absolute value
print(round(num))  # Round to the nearest integer
print(pow(2, 3))  # Power function (2^3)
```

```
PS D:\dataOld\Desktop\New folder> python -u "d:\dataOld\Desktop\New folder\number.py"
5.67
-6
8
PS D:\dataOld\Desktop\New folder> 
```



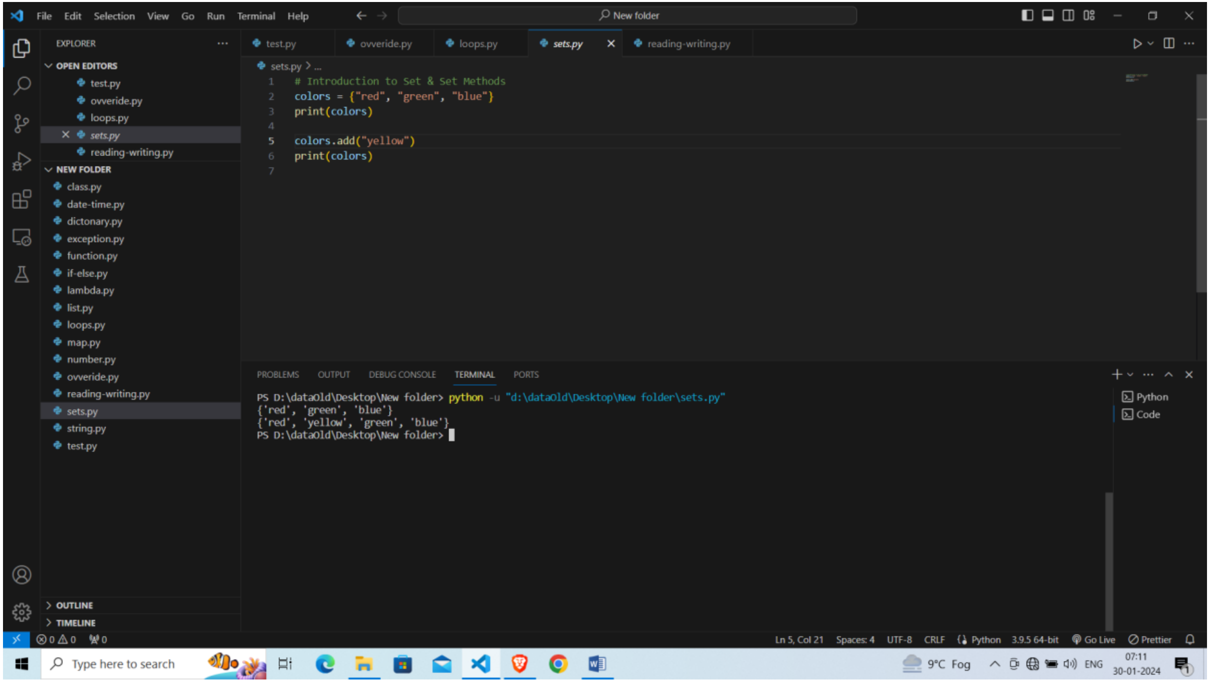
```python
# Using string functions

text = "Hello, World!"
print(len(text))  # Length of the string
print(text.upper())  # Convert to uppercase
print(text.lower())  # Convert to lowercase
```

```
PS D:\dataOld\Desktop\New folder> python -u "d:\dataOld\Desktop\New folder\string.py"
13
HELLO, WORLD!
hello, world!
PS D:\dataOld\Desktop\New folder> 
```



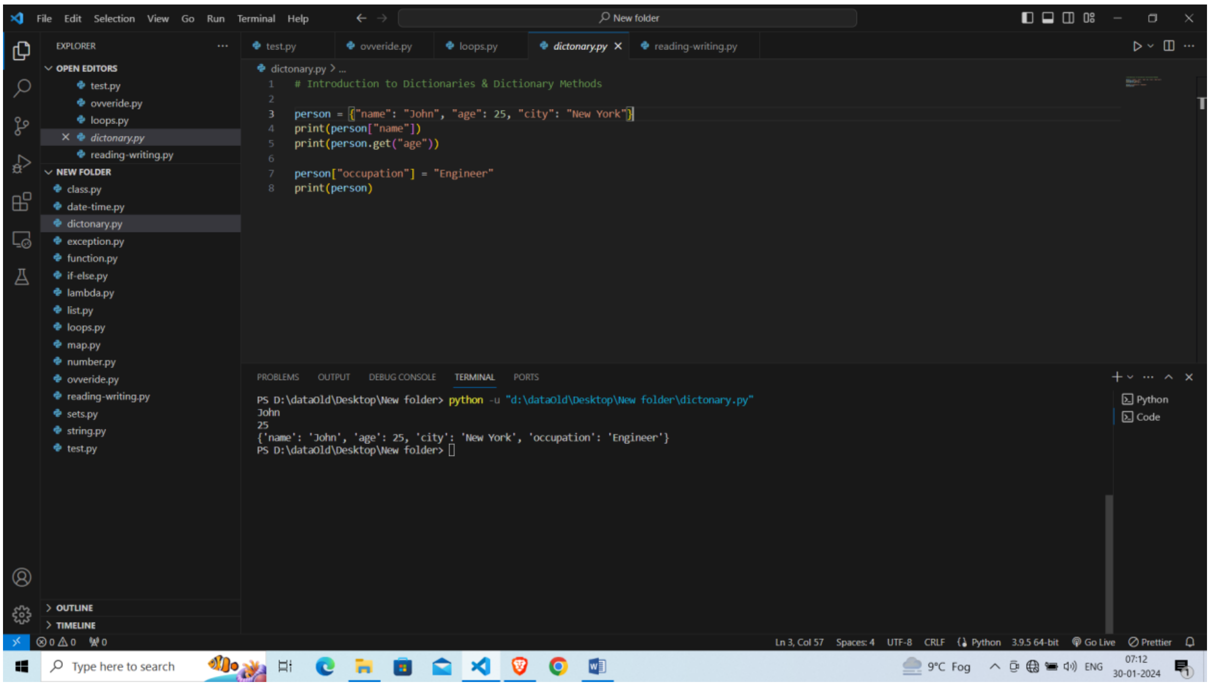
```python
# Input and Output
name = input("Enter your name: ")
print("Hello, " + name + "!")

age = int(input("Enter your age: "))
print("You will be " + str(age + 5) + " in 5 years.")


# Introduction to Lists
numbers = [1, 2, 3, 4, 5]
print(numbers)

fruits = ["apple", "orange", "banana"]
print(fruits)

# List Methods and Slicing
numbers = [1, 2, 3, 4, 5]
numbers.append(6)
print(numbers)
```

```
PS D:\dataOld\Desktop\New folder> python -u "d:\dataOld\Desktop\New folder\list.py"
Enter your name: Puspender
Hello, Puspender!
Enter your age: 23
You will be 28 in 5 years.
[1, 2, 3, 4, 5]
['apple', 'orange', 'banana']
[1, 2, 3, 4, 5, 6]
['orange', 'banana']
PS D:\dataOld\Desktop\New folder> 
```



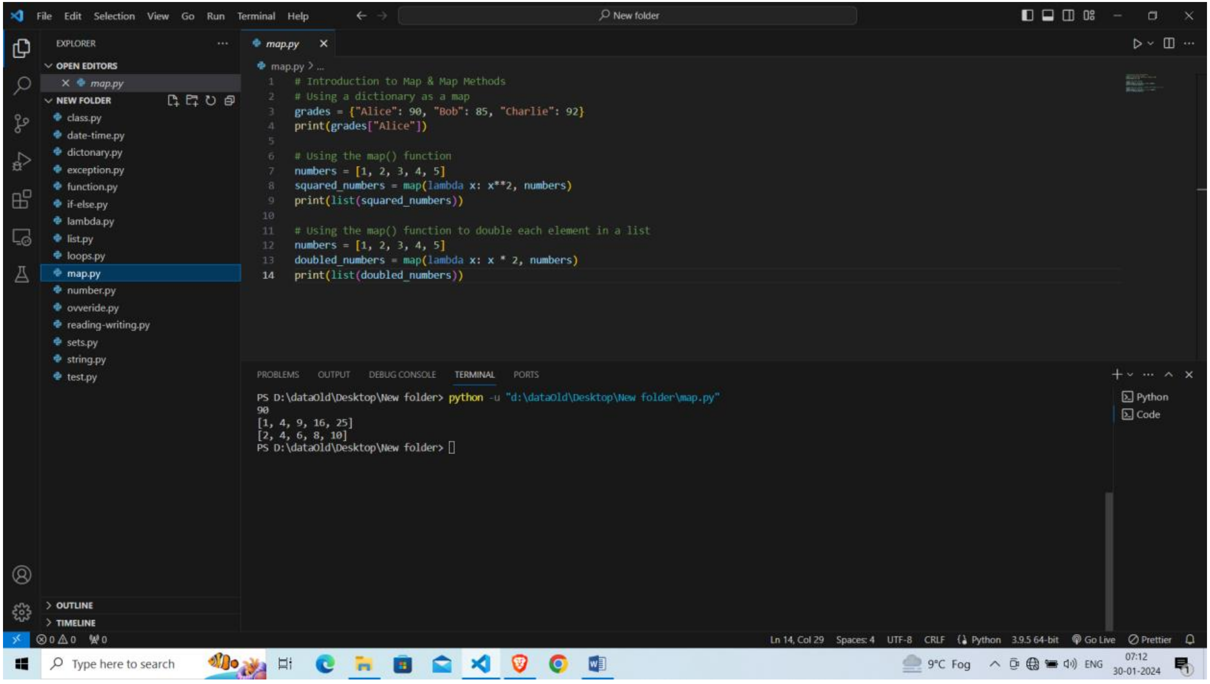
```python
# Introduction to Set & Set Methods
colors = {"red", "green", "blue"}
print(colors)

colors.add("yellow")
print(colors)
```

```
PS D:\dataOld\Desktop\New folder> python -u "d:\dataOld\Desktop\New folder\sets.py"
{'red', 'green', 'blue'}
{'red', 'yellow', 'green', 'blue'}
PS D:\dataOld\Desktop\New folder> 
```



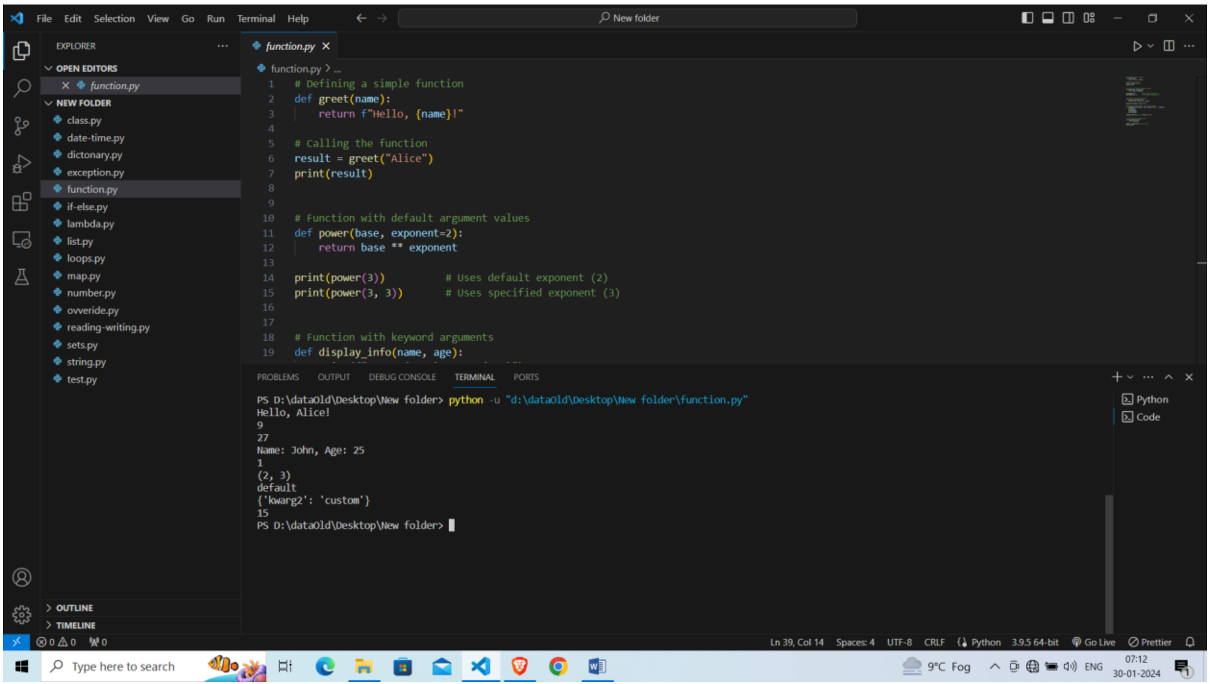
```python
# Introduction to Dictionaries & Dictionary Methods

person = {"name": "John", "age": 25, "city": "New York"}
print(person["name"])
print(person.get("age"))

person["occupation"] = "Engineer"
print(person)
```

```
PS D:\dataOld\Desktop\New folder> python -u "d:\dataOld\Desktop\New folder\dictonary.py"
John
25
{'name': 'John', 'age': 25, 'city': 'New York', 'occupation': 'Engineer'}
PS D:\dataOld\Desktop\New folder> 
```



```python
# Introduction to Map & Map Methods
# Using a dictionary as a map
grades = {"Alice": 90, "Bob": 85, "Charlie": 92}
print(grades["Alice"])

# Using the map() function
numbers = [1, 2, 3, 4, 5]
squared_numbers = map(lambda x: x**2, numbers)
print(list(squared_numbers))

# Using the map() function to double each element in a list
numbers = [1, 2, 3, 4, 5]
doubled_numbers = map(lambda x: x * 2, numbers)
print(list(doubled_numbers))
```

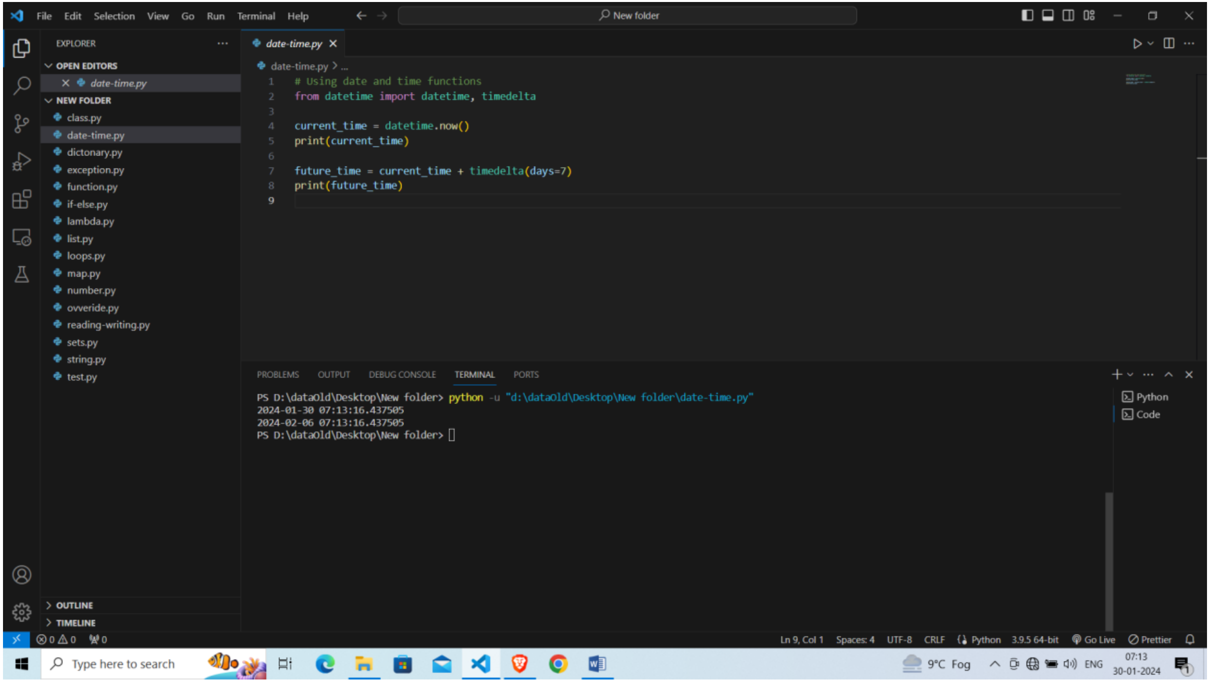
```
PS D:\dataOld\Desktop\New folder> python -u "d:\dataOld\Desktop\New folder\map.py"
90
[1, 4, 9, 16, 25]
[2, 4, 6, 8, 10]
PS D:\dataOld\Desktop\New folder> 
```



function.py > ...

```python
# Defining a simple function
def greet(name):
    return f"Hello, {name}!"

# Calling the function
result = greet("Alice")
print(result)


# Function with default argument values
def power(base, exponent=2):
    return base ** exponent

print(power(3))          # Uses default exponent (2)
print(power(3, 3))       # Uses specified exponent (3)


# Function with keyword arguments
def display_info(name, age):
```

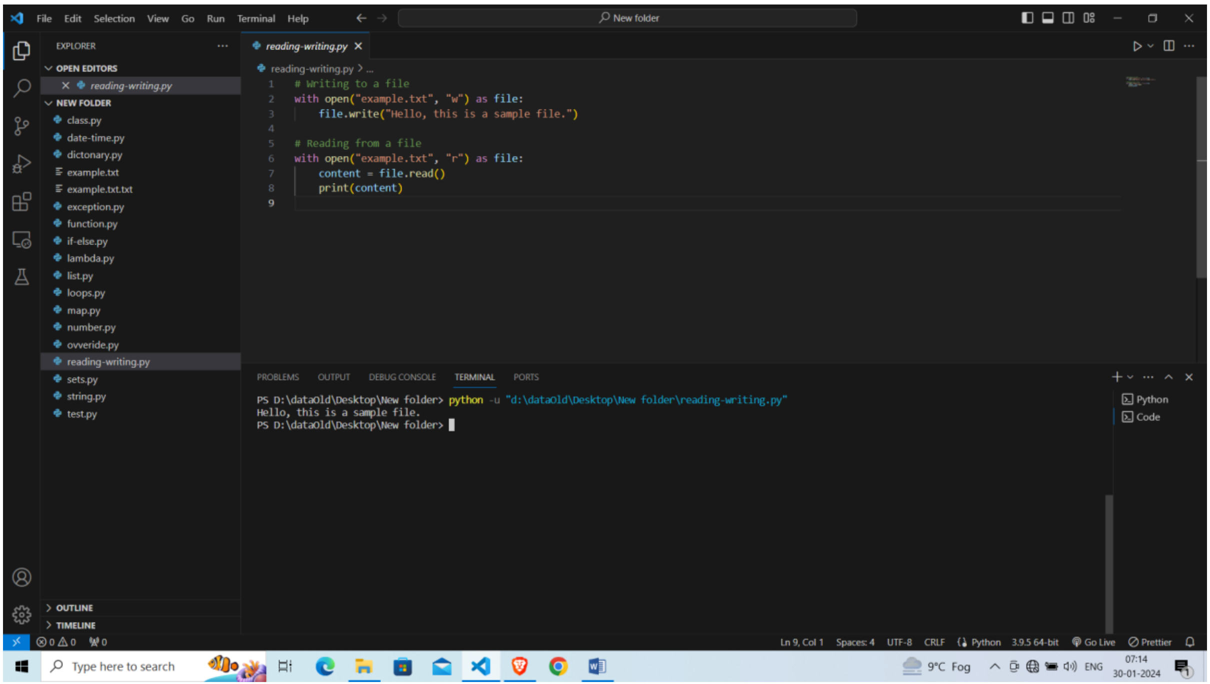
```
PS D:\dataOld\Desktop\New folder> python -u "d:\dataOld\Desktop\New folder\function.py"
Hello, Alice!
9
27
Name: John, Age: 25
1
(2, 3)
default
{'kwarg2': 'custom'}
15
PS D:\dataOld\Desktop\New folder> 
```



date-time.py > ...

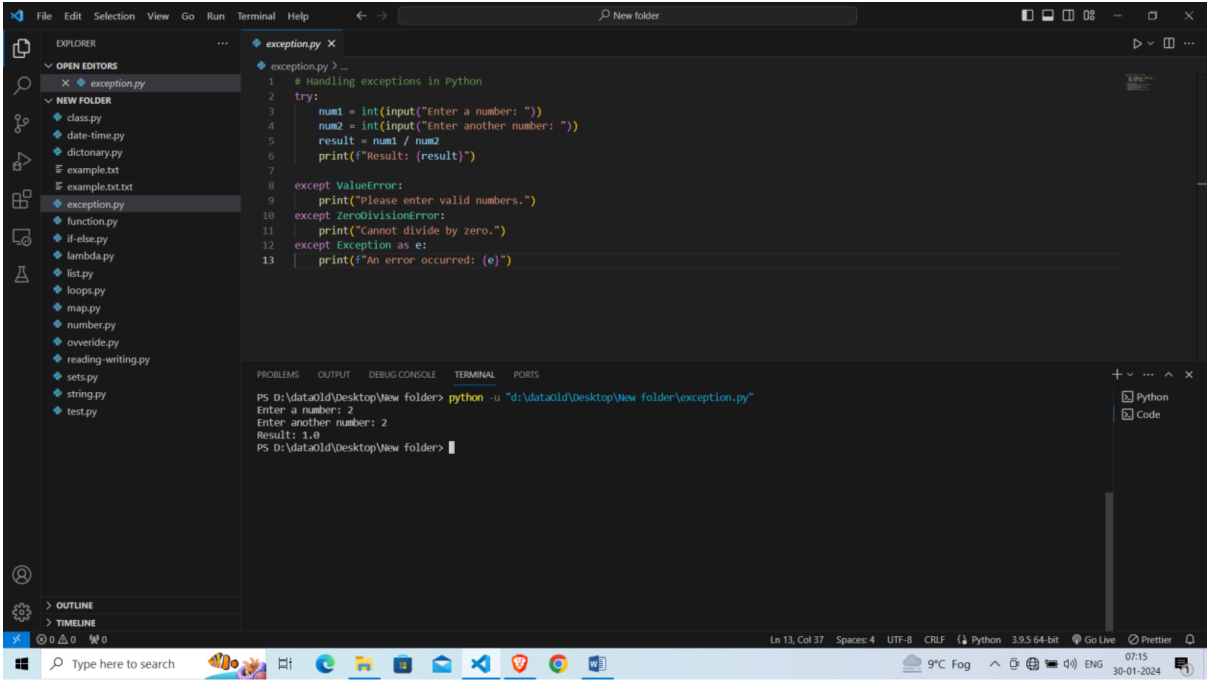
```python
# Using date and time functions
from datetime import datetime, timedelta

current_time = datetime.now()
print(current_time)

future_time = current_time + timedelta(days=7)
print(future_time)

```

```
PS D:\dataOld\Desktop\New folder> python -u "d:\dataOld\Desktop\New folder\date-time.py"
2024-01-30 07:13:16.437505
2024-02-06 07:13:16.437505
PS D:\dataOld\Desktop\New folder> 
```



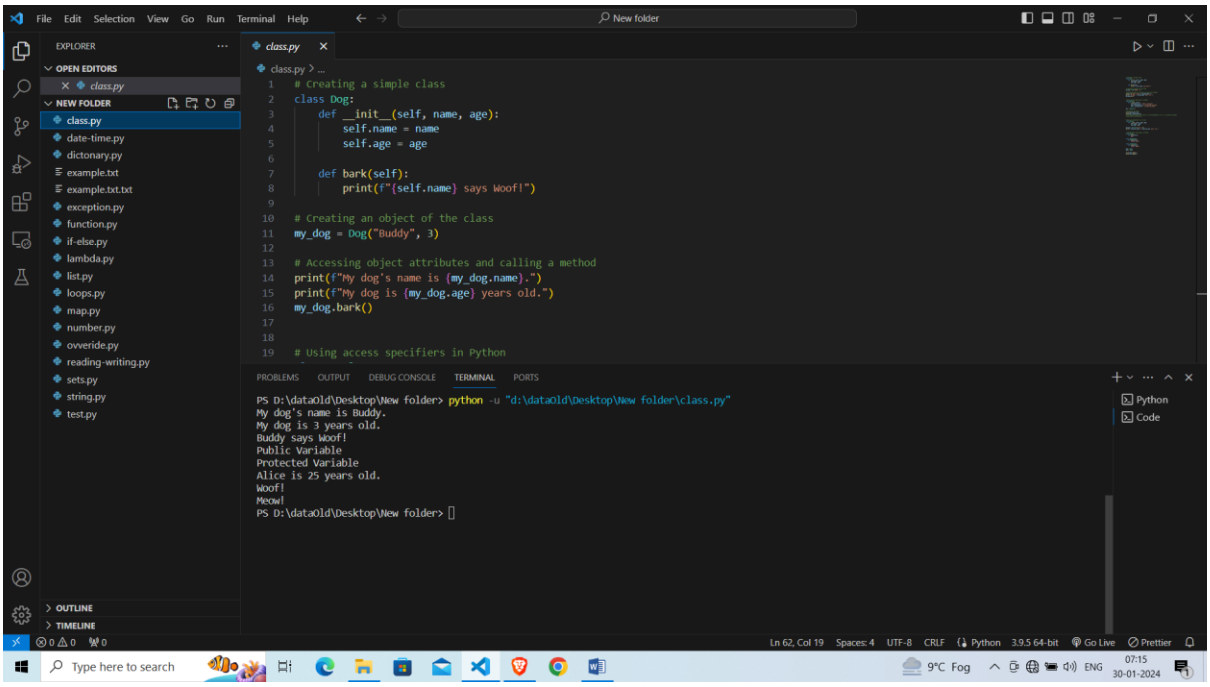
```python
# Writing to a file
with open("example.txt", "w") as file:
    file.write("Hello, this is a sample file.")

# Reading from a file
with open("example.txt", "r") as file:
    content = file.read()
    print(content)
```

```
PS D:\dataOld\Desktop\New folder> python -u "d:\dataOld\Desktop\New folder\reading-writing.py"
Hello, this is a sample file.
PS D:\dataOld\Desktop\New folder>
```



```python
# Handling exceptions in Python
try:
    num1 = int(input("Enter a number: "))
    num2 = int(input("Enter another number: "))
    result = num1 / num2
    print(f"Result: {result}")

except ValueError:
    print("Please enter valid numbers.")
except ZeroDivisionError:
    print("Cannot divide by zero.")
except Exception as e:
    print(f"An error occurred: {e}")
```

```
PS D:\dataOld\Desktop\New folder> python -u "d:\dataOld\Desktop\New folder\exception.py"
Enter a number: 2
Enter another number: 2
Result: 1.0
PS D:\dataOld\Desktop\New folder>
```



```python
# Creating a simple class
class Dog:
    def __init__(self, name, age):
        self.name = name
        self.age = age

    def bark(self):
        print(f"{self.name} says Woof!")

# Creating an object of the class
my_dog = Dog("Buddy", 3)

# Accessing object attributes and calling a method
print(f"My dog's name is {my_dog.name}.")
print(f"My dog is {my_dog.age} years old.")
my_dog.bark()


# Using access specifiers in Python
```

```
PS D:\dataOld\Desktop\New folder> python -u "d:\dataOld\Desktop\New folder\class.py"
My dog's name is Buddy.
My dog is 3 years old.
Buddy says Woof!
Public Variable
Protected Variable
Alice is 25 years old.
Woof!
Meow!
PS D:\dataOld\Desktop\New folder>
```