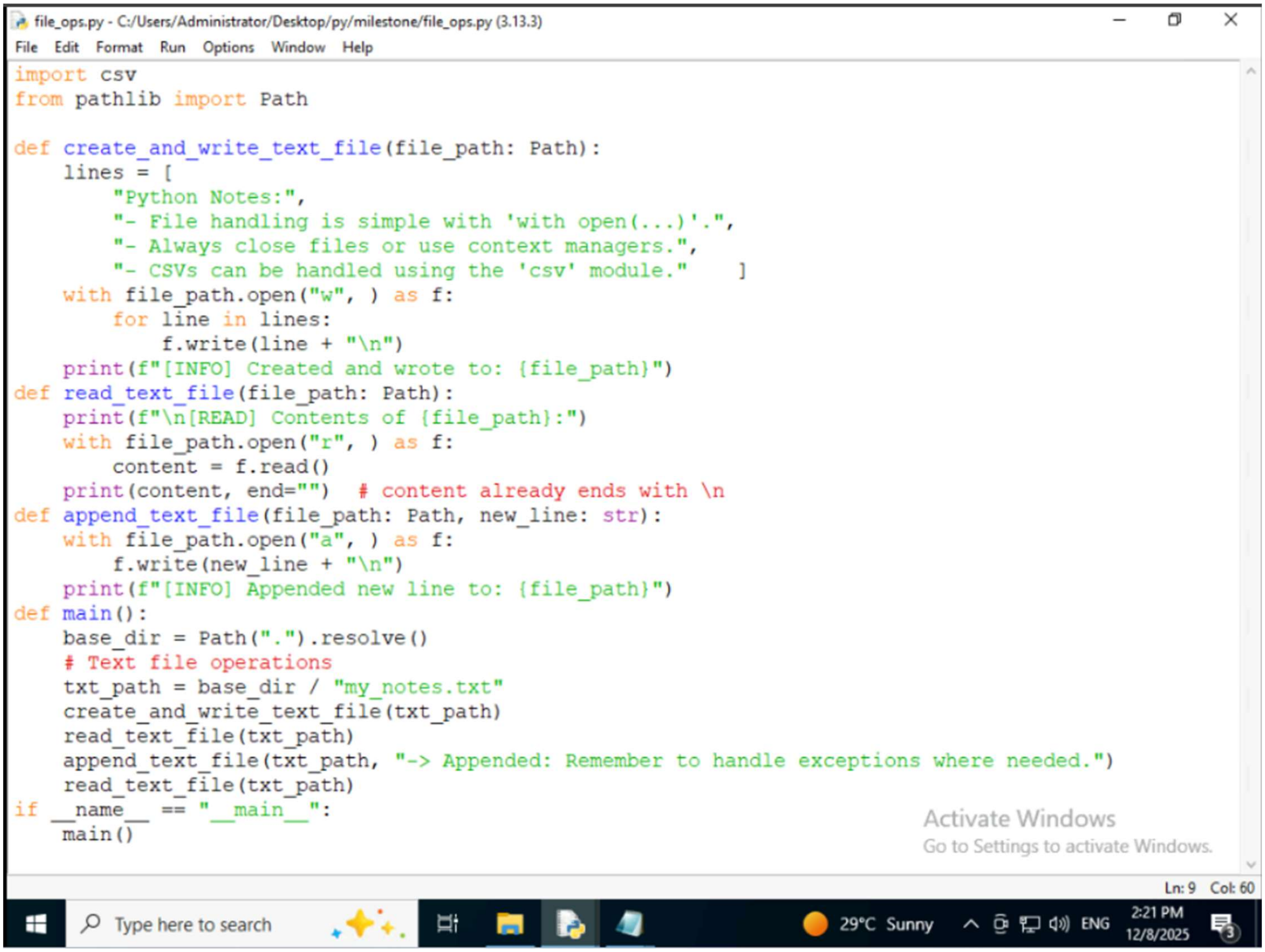
Question 1

Practice common operations with text (.txt) and Comma Separated Values (.csv) files in Python. Sub-tasks:

Create a new text file named my_notes.txt and write a few lines of text into it.


file_ops.py - C:/Users/Administrator/Desktop/py/milestone/file_ops.py (3.13.3)
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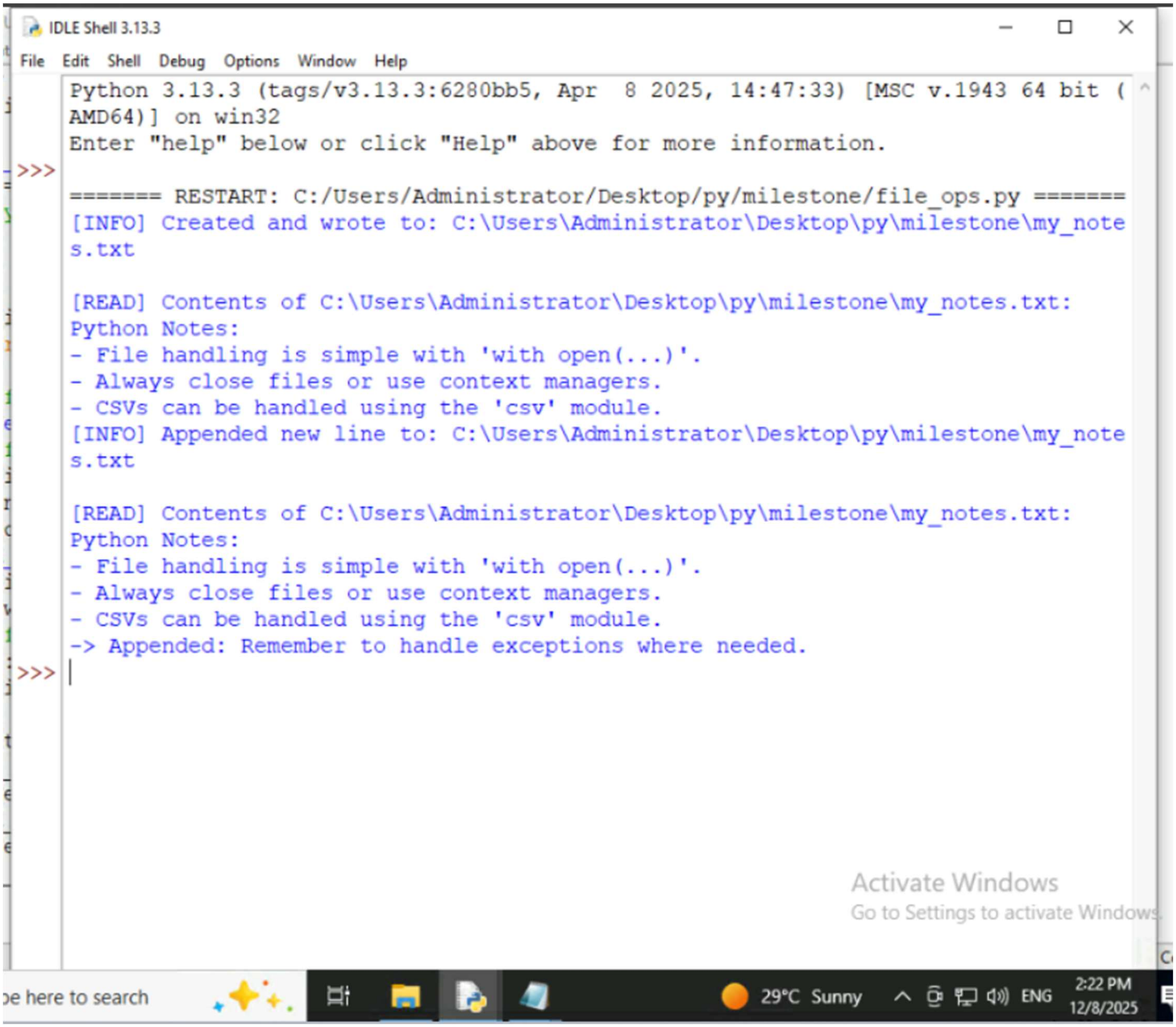
```python
import csv
from pathlib import Path

def create_and_write_text_file(file_path: Path):
    lines = [
        "Python Notes:",
        "- File handling is simple with 'with open(...)'.",
        "- Always close files or use context managers.",
        "- CSVs can be handled using the 'csv' module."    ]
    with file_path.open("w", ) as f:
        for line in lines:
            f.write(line + "\n")
    print(f"[INFO] Created and wrote to: {file_path}")
def read_text_file(file_path: Path):
    print(f"\n[READ] Contents of {file_path}:")
    with file_path.open("r", ) as f:
        content = f.read()
    print(content, end="")  # content already ends with \n
def append_text_file(file_path: Path, new_line: str):
    with file_path.open("a", ) as f:
        f.write(new_line + "\n")
    print(f"[INFO] Appended new line to: {file_path}")
def main():
    base_dir = Path(".").resolve()
    # Text file operations
    txt_path = base_dir / "my_notes.txt"
    create_and_write_text_file(txt_path)
    read_text_file(txt_path)
    append_text_file(txt_path, "-> Appended: Remember to handle exceptions where needed.")
    read_text_file(txt_path)
if __name__ == "__main__":
    main()
```

Read the entire content of my_notes.txt and print it to the console.

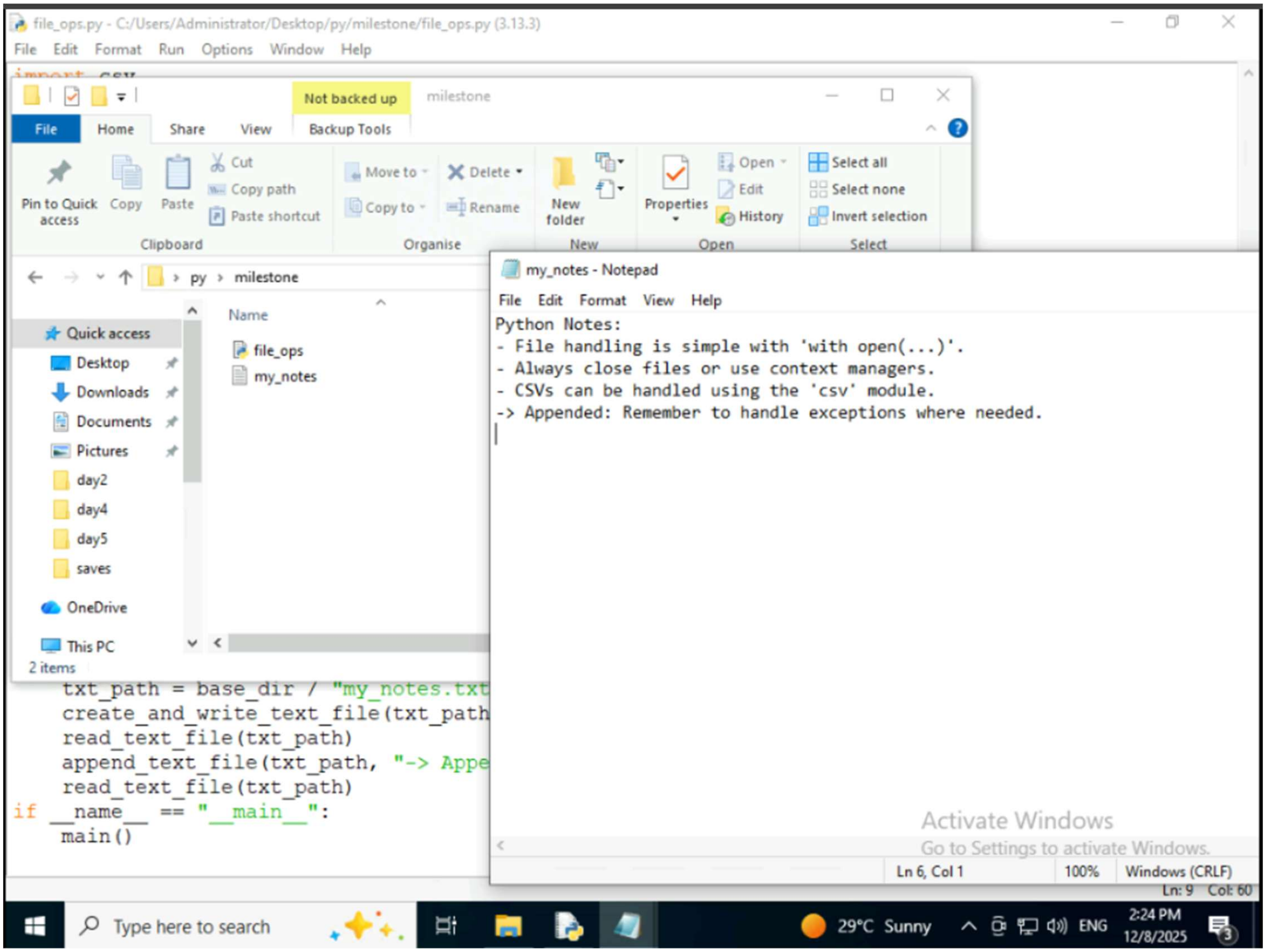


```
Python 3.13.3 (tags/v3.13.3:6280bb5, Apr  8 2025, 14:47:33) [MSC v.1943 64 bit (
AMD64)] on win32
Enter "help" below or click "Help" above for more information.
>>>
======= RESTART: C:/Users/Administrator/Desktop/py/milestone/file_ops.py =======
[INFO] Created and wrote to: C:\Users\Administrator\Desktop\py\milestone\my_note
s.txt

[READ] Contents of C:\Users\Administrator\Desktop\py\milestone\my_notes.txt:
Python Notes:
- File handling is simple with 'with open(...)'.
- Always close files or use context managers.
- CSVs can be handled using the 'csv' module.
[INFO] Appended new line to: C:\Users\Administrator\Desktop\py\milestone\my_note
s.txt

[READ] Contents of C:\Users\Administrator\Desktop\py\milestone\my_notes.txt:
Python Notes:
- File handling is simple with 'with open(...)'.
- Always close files or use context managers.
- CSVs can be handled using the 'csv' module.
-> Appended: Remember to handle exceptions where needed.
>>> 
```

Append a new line of text to the existing my_notes.txt file.



file_ops.py - C:/Users/Administrator/Desktop/py/milestone/file_ops.py (3.13.3)
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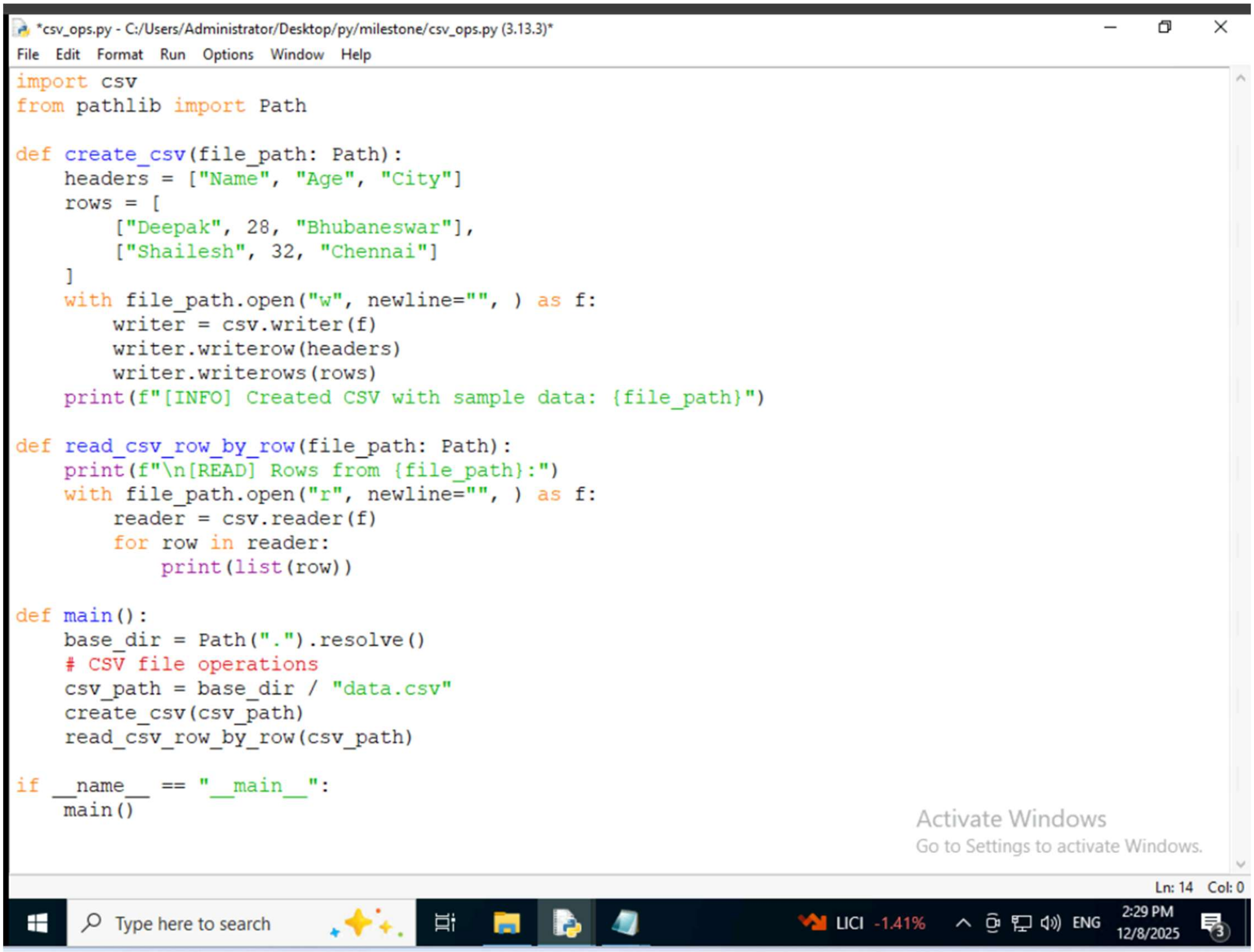
12/8/2025

```
Python Notes:
- File handling is simple with 'with open(...)'.
- Always close files or use context managers.
- CSVs can be handled using the 'csv' module.
-> Appended: Remember to handle exceptions where needed.
```

```
import csv
    txt_path = base_dir / "my_notes.txt
    create_and_write_text_file(txt_path
    read_text_file(txt_path)
    append_text_file(txt_path, "-> Appe
    read_text_file(txt_path)
if __name__ == "__main__":
    main()
```

Create a new CSV file named data.csv and write some sample data (e.g., headers like "Name", "Age", "City" and at least two rows of data) into it.


csv_ops.py - C:/Users/Administrator/Desktop/py/milestone/csv_ops.py (3.13.3)
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```python
import csv
from pathlib import Path

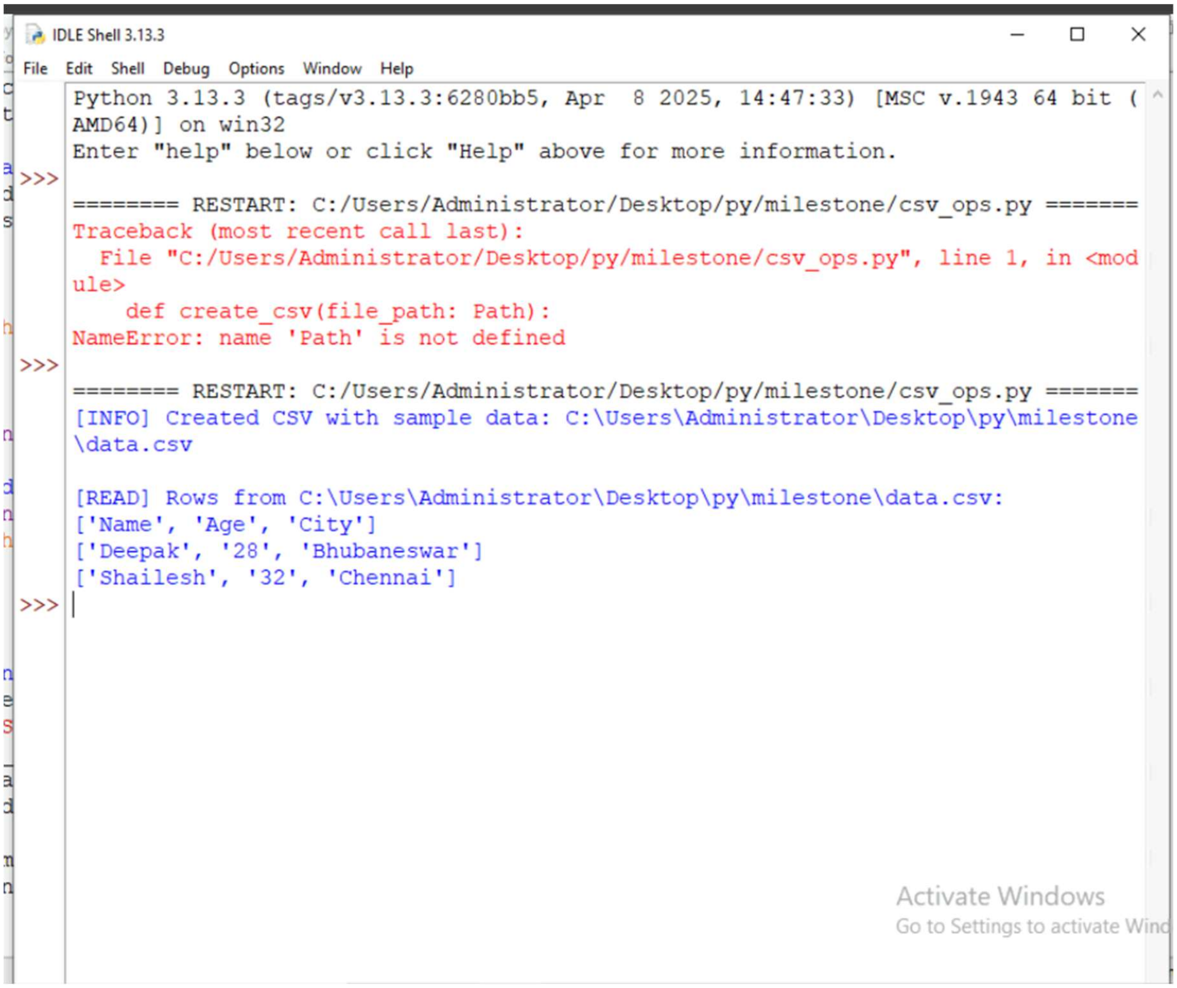
def create_csv(file_path: Path):
    headers = ["Name", "Age", "City"]
    rows = [
        ["Deepak", 28, "Bhubaneswar"],
        ["Shailesh", 32, "Chennai"]
    ]
    with file_path.open("w", newline="", ) as f:
        writer = csv.writer(f)
        writer.writerow(headers)
        writer.writerows(rows)
    print(f"[INFO] Created CSV with sample data: {file_path}")

def read_csv_row_by_row(file_path: Path):
    print(f"\n[READ] Rows from {file_path}:")
    with file_path.open("r", newline="", ) as f:
        reader = csv.reader(f)
        for row in reader:
            print(list(row))

def main():
    base_dir = Path(".").resolve()
    # CSV file operations
    csv_path = base_dir / "data.csv"
    create_csv(csv_path)
    read_csv_row_by_row(csv_path)

if __name__ == "__main__":
    main()
```

Read data.csv row by row and print each row as a list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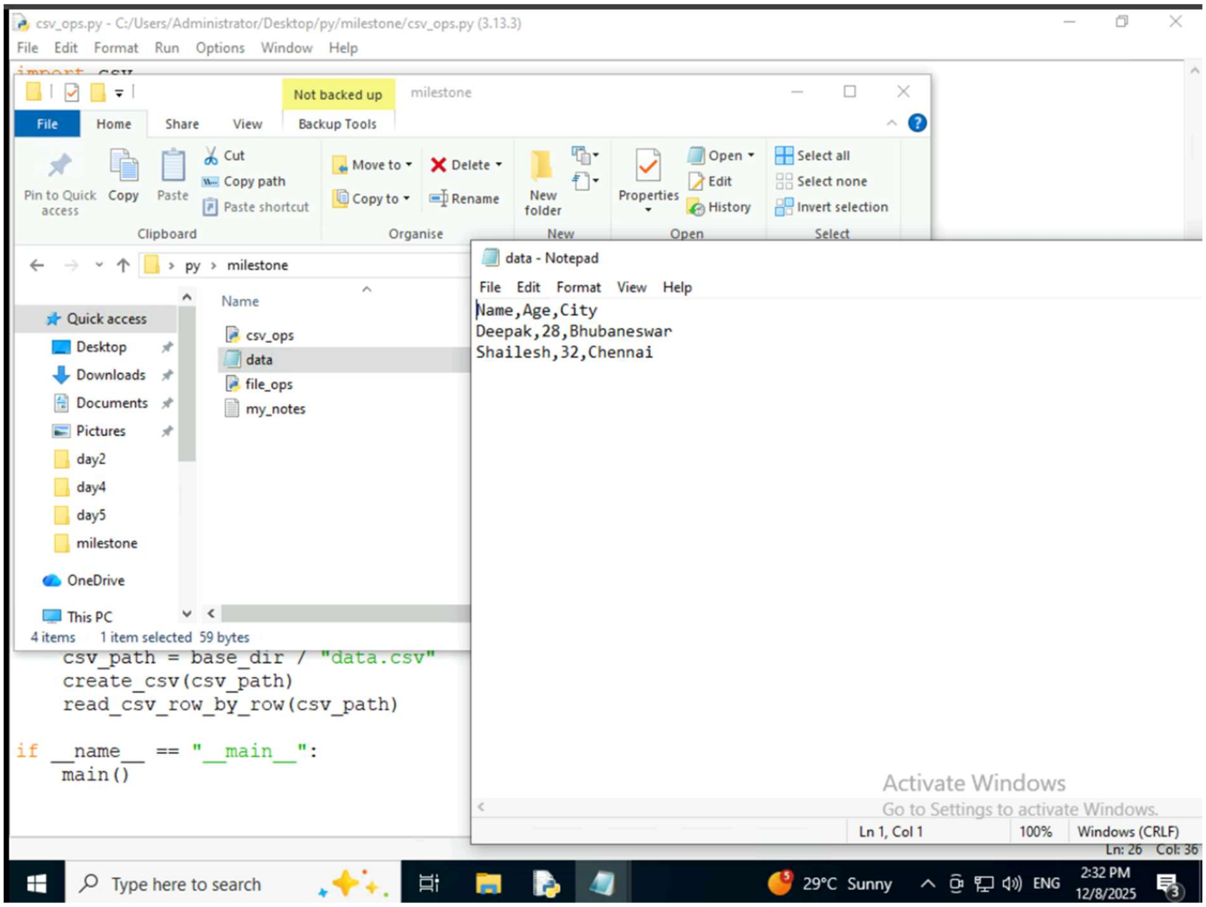
AMD64)] on win32
Enter "help" below or click "Help" above for more information.
>>> 
======== RESTART: C:/Users/Administrator/Desktop/py/milestone/csv_ops.py =======
Traceback (most recent call last):
  File "C:/Users/Administrator/Desktop/py/milestone/csv_ops.py", line 1, in <mod
ule>
    def create_csv(file_path: Path):
NameError: name 'Path' is not defined
>>> 
======== RESTART: C:/Users/Administrator/Desktop/py/milestone/csv_ops.py =======
[INFO] Created CSV with sample data: C:\Users\Administrator\Desktop\py\milestone
\data.csv

[READ] Rows from C:\Users\Administrator\Desktop\py\milestone\data.csv:
['Name', 'Age', 'City']
['Deepak', '28', 'Bhubaneswar']
['Shailesh', '32', 'Chennai']
>>> 
```



```
import csv
```

```
    csv_path = base_dir / "data.csv"
    create_csv(csv_path)
    read_csv_row_by_row(csv_path)

if __name__ == "__main__":
    main()
```

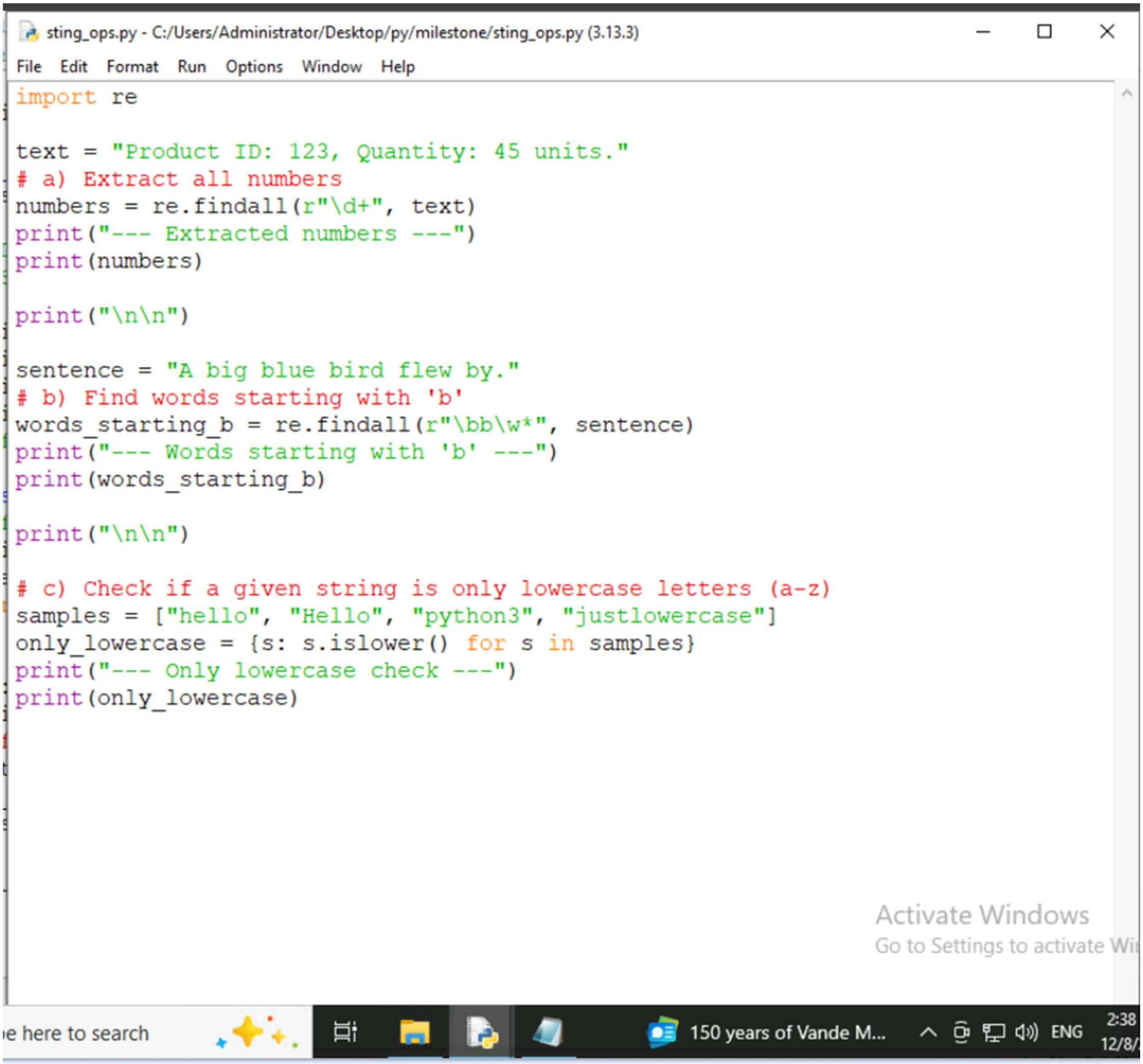
```
Name,Age,City
Deepak,28,Bhubaneswar
Shailesh,32,Chennai
```

Question 2

Practice extracting specific pieces of information from text using basic regex patterns.

Sub-tasks:

- **Extract all numbers (e.g., "123", "45") from the string "Product ID: 123, Quantity: 45 units."**
- **Find all words that start with the letter 'b' in the sentence "A big blue bird flew by."**
- **Check if a given string consists only of lowercase letters (a-z).**



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```
import re

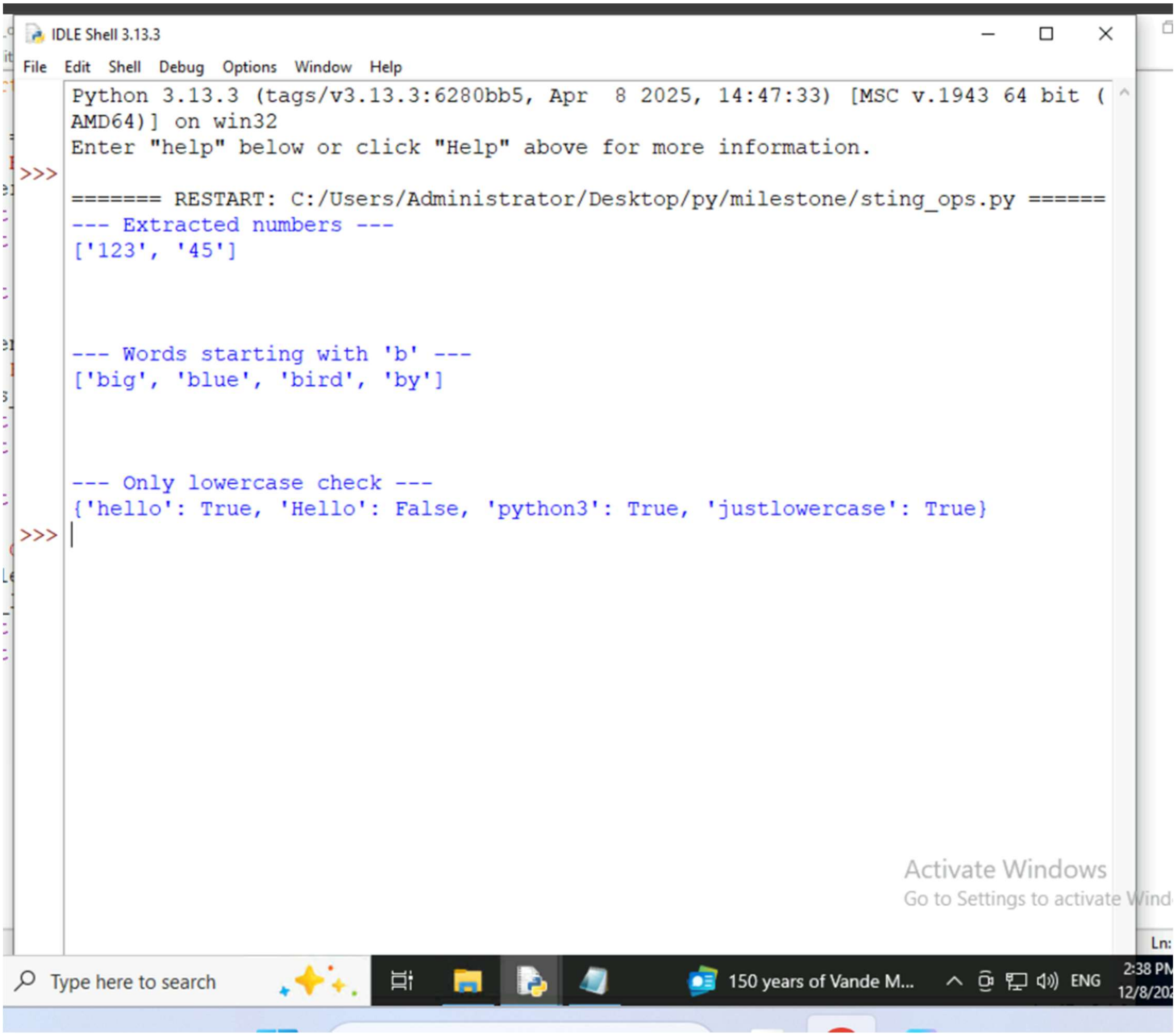
text = "Product ID: 123, Quantity: 45 units."
# a) Extract all numbers
numbers = re.findall(r"\d+", text)
print("--- Extracted numbers ---")
print(numbers)

print("\n\n")

sentence = "A big blue bird flew by."
# b) Find words starting with 'b'
words_starting_b = re.findall(r"\bb\w*", sentence)
print("--- Words starting with 'b' ---")
print(words_starting_b)

print("\n\n")

# c) Check if a given string is only lowercase letters (a-z)
samples = ["hello", "Hello", "python3", "justlowercase"]
only_lowercase = {s: s.islower() for s in samples}
print("--- Only lowercase check ---")
print(only_lowercase)
```



```
Python 3.13.3 (tags/v3.13.3:6280bb5, Apr  8 2025, 14:47:33) [MSC v.1943 64 bit (
AMD64)] on win32
Enter "help" below or click "Help" above for more information.
>>>
======= RESTART: C:/Users/Administrator/Desktop/py/milestone/sting_ops.py ======
--- Extracted numbers ---
['123', '45']



--- Words starting with 'b' ---
['big', 'blue', 'bird', 'by']



--- Only lowercase check ---
{'hello': True, 'Hello': False, 'python3': True, 'justlowercase': True}
>>>
```