Softsinc Internship Program 2025 – Week 1 Task Summary
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- 1. Calculator (CLI Tool)
A simple command-line calculator that: Handles invalid inputs using try-except Performs basic arithmetic operations (+, -, *, /) Prevents division by zero Is structured as a function within a modular file

- 2. Unit Converter using lambda and map() A lightweight CLI tool to convert units: Converts distances from kilometers to meters and miles Uses lambda functions for transformation Applies map() for list-wide conversion Demonstrates functional programming in Python

- 3. File Organizer Script Script that: Scans a directory Lists all .txt and .csv files Copies them to a new folder using os and shutil Helps practice file and directory manipulation

- 4. Password Generator (CLI Tool) A secure password generator that: Lets user choose length and character types (uppercase, numbers, symbols) Uses random and string modules Part of the CLI toolkit challenge (calculator + file organizer + password generator)
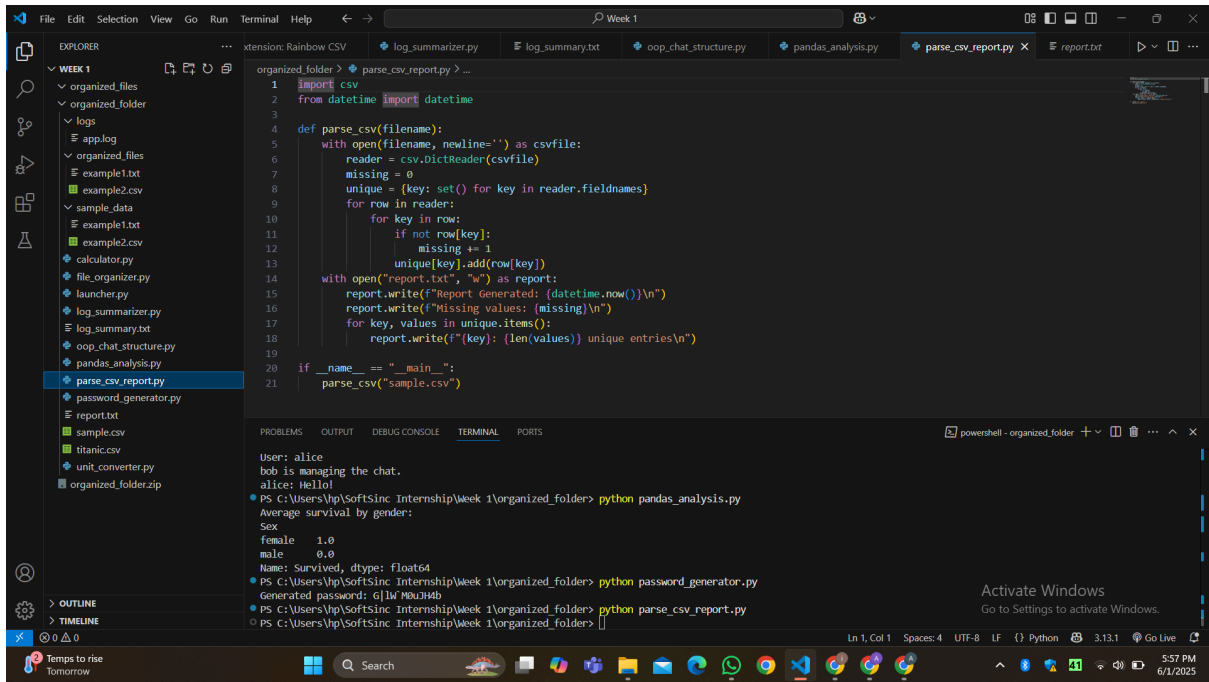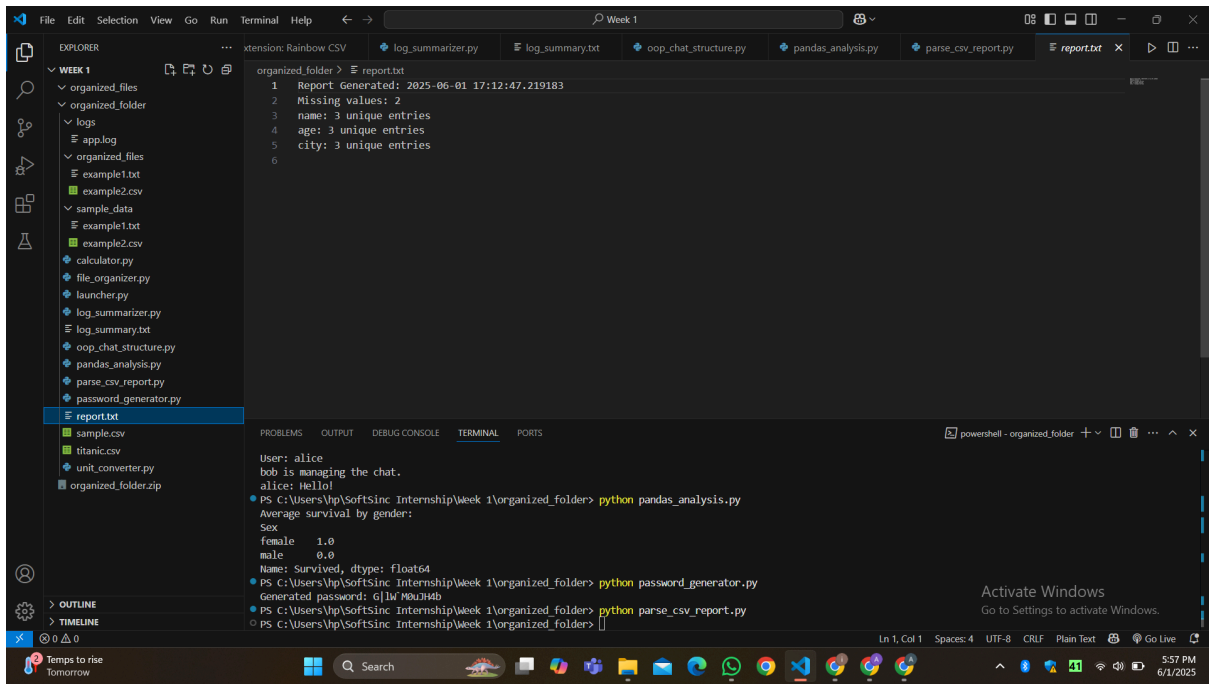
- 5. OOP Chat App Simulation Object-oriented structure simulating a basic messaging app: User, Intern, and Mentor classes show inheritance Message class shows composition Uses magic methods like __str__ Demonstrates abstraction, encapsulation, and polymorphism

- 6. CSV Parsing and Summary Report Python script that: Reads CSV files manually and using csv module Finds and reports missing values Counts unique values per column Writes summary with timestamp to .txt or .csv

- 7. Log Summarizer Automation Tool that: Scans .log and .txt files in a directory Extracts lines with errors or warnings Writes a summarized report to a file Simulates real-world log analysis automation

- 8. Data Analysis with Pandas A Jupyter Notebook that: Loads a dataset (e.g., Titanic) Applies filters, groupby, and sorting Handles missing and duplicate data Extracts 5+ insights Optional visualization using matplotlib or seaborn

- 9. Git & GitHub Pro Workflow Version control workflow included: Two branches: main and dev Daily commits to dev and weekly merge into main README file with project overview and screenshots GitHub Action set up to run flake8 for code linting downloadable pdf needed

report.txt (top screenshot)

```
1    Report Generated: 2025-06-01 17:12:47.219183
2    Missing values: 2
3    name: 3 unique entries
4    age: 3 unique entries
5    city: 3 unique entries
6
```

Terminal (top):

```
User: alice
bob is managing the chat.
alice: Hello!
PS C:\Users\hp\SoftSinc Internship\Week 1\organized_folder> python pandas_analysis.py
Average survival by gender:
Sex
female    1.0
male      0.0
Name: Survived, dtype: float64
PS C:\Users\hp\SoftSinc Internship\Week 1\organized_folder> python password_generator.py
Generated password: G|lW`M0uJH4b
PS C:\Users\hp\SoftSinc Internship\Week 1\organized_folder> python parse_csv_report.py
PS C:\Users\hp\SoftSinc Internship\Week 1\organized_folder>
```

parse_csv_report.py (bottom screenshot)

```python
import csv
from datetime import datetime

def parse_csv(filename):
    with open(filename, newline='') as csvfile:
        reader = csv.DictReader(csvfile)
        missing = 0
        unique = {key: set() for key in reader.fieldnames}
        for row in reader:
            for key in row:
                if not row[key]:
                    missing += 1
                unique[key].add(row[key])
    with open("report.txt", "w") as report:
        report.write(f"Report Generated: {datetime.now()}\n")
        report.write(f"Missing values: {missing}\n")
        for key, values in unique.items():
            report.write(f"{key}: {len(values)} unique entries\n")

if __name__ == "__main__":
    parse_csv("sample.csv")
```

Terminal (bottom):

```
User: alice
bob is managing the chat.
alice: Hello!
PS C:\Users\hp\SoftSinc Internship\Week 1\organized_folder> python pandas_analysis.py
Average survival by gender:
Sex
female    1.0
male      0.0
Name: Survived, dtype: float64
PS C:\Users\hp\SoftSinc Internship\Week 1\organized_folder> python password_generator.py
Generated password: G|lW`M0uJH4b
PS C:\Users\hp\SoftSinc Internship\Week 1\organized_folder> python parse_csv_report.py
PS C:\Users\hp\SoftSinc Internship\Week 1\organized_folder>
```

file_organizer.py

```python
import os
import shutil

def organize_files(source_dir, target_dir):
    if not os.path.exists(target_dir):
        os.makedirs(target_dir)
    for file in os.listdir(source_dir):
        if file.endswith(".txt") or file.endswith(".csv"):
            full_path = os.path.join(source_dir, file)
            shutil.copy(full_path, os.path.join(target_dir, file))
    print(f"Copied .txt and .csv files to {target_dir}")

if __name__ == "__main__":
    organize_files("sample_data", "organized_files")
```

Terminal:
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bob is managing the chat.
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Average survival by gender:
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PS C:\Users\hp\SoftSinc Internship\Week 1\organized_folder>
```

calculator.py

```python
def calculator():
    print("Simple Calculator")
    try:
        a = float(input("Enter first number: "))
        op = input("Enter operation (+, -, *, /): ")
        b = float(input("Enter second number: "))
        if op == '+':
            print("Result:", a + b)
        elif op == '-':
            print("Result:", a - b)
        elif op == '*':
            print("Result:", a * b)
        elif op == '/':
            if b != 0:
                print("Result:", a / b)
            else:
                print("Error: Cannot divide by zero.")
        else:
            print("Invalid operation.")
    except ValueError:
        print("Invalid input. Please enter valid numbers.")

if __name__ == "__main__":
```

Terminal:
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bob is managing the chat.
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