

AI Assisted Coding – Lab 4 Report

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Task 1 — Leap Year Check (Zero-Shot)

Question: Generate a Python program to check whether a year is a leap year.

Algorithm

1. Read year input.
2. Check if divisible by 400.
3. Else check divisible by 4 and not by 100.
4. Decide leap or not.
5. Print result.

Pseudocode

```
input year
if year % 400 == 0 OR (year % 4 == 0 AND year % 100 != 0)
    print Leap year
else
    print Not leap year
```

The screenshot shows a code editor interface with a dark theme. On the left, there is a file navigation bar with icons for file operations. The main area contains Python code for checking if a year is a leap year. The code uses an if-else conditional statement with logical operators to determine if a year is divisible by 400, 4, or 100. The code is numbered from 1 to 7. Below the code editor, there is a terminal window showing the execution of the script. The terminal output shows two test runs: one for the year 4 (which is printed as 'Leap year') and another for the year 2024 (which is also printed as 'Leap year'). The terminal tabs at the bottom include 'PROBLEMS', 'OUTPUT', 'DEBUG CONSOLE', 'TERMINAL' (which is underlined), and 'PORTS'.

```
day5.py > ...
1   year = int(input("Enter year: "))
2
3   if (year % 400 == 0) or (year % 4 == 0 and year % 100 != 0):
4       print("Leap year")
5   else:
6       print("Not a leap year")
7
```

```
python -u "/Users/mohammadmuneerahmed/Documents/training2.py/day5.py"
● mohammadmuneerahmed@Muneers-MacBook-Air training2.py % python -u "/Users/mohammadmuneerahmed/Documents/training2.py/day5.py"
Enter year: 4
Leap year
● mohammadmuneerahmed@Muneers-MacBook-Air training2.py % python -u "/Users/mohammadmuneerahmed/Documents/training2.py/day5.py"
Enter year: 2024
Leap year
◇ mohammadmuneerahmed@Muneers-MacBook-Air training2.py %
```

Task 2 — CM to Inches (One-Shot)

Question: Convert centimeters to inches using one example.

Algorithm

1. Read cm value.
2. Divide by 2.54.
3. Round result.
4. Print inches.

Pseudocode

```
input cm
inches = cm / 2.54
print inches
```

```
day5.py > ...
1 cm = float(input("Enter length in cm: "))
2 inches = cm / 2.54
3 print("Inches:", round(inches, 2))
4

PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS

python -u "/Users/mohammadmuneerahmed/Documents/training2.py/day5.py"
● mohammadmuneerahmed@Muneers-MacBook-Air training2.py % python -u "/Users/mohammadmuneerahmed/Documents/training2.py/day5.py"
Enter length in cm: 43
Inches: 16.93
◇ mohammadmuneerahmed@Muneers-MacBook-Air training2.py %
```

Task 3 — Name Formatting (Few-Shot)

Question: Format full name as Last, First.

Algorithm

1. Read full name.
2. Split into parts.
3. Extract first and last.
4. Print last, first.

Pseudocode

```
input name
parts = split(name)
first = parts[0]
last = parts[-1]
print last, first
```

The screenshot shows a terminal window with the following content:

```
day5.py > ...
1  text = input("Enter a string: ").lower()
2
3  count = 0
4  for ch in text:
5      if ch in "aeiou":
6          count += 1
7
8  print("Vowel count:", count)
9
```

Below the code, the terminal tabs are shown: PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL (underlined), and PORTS.

```
python -u "/Users/mohammadmuneerahmed/Documents/training2.py/day5.py"
● mohammadmuneerahmed@Muneers-MacBook-Air training2.py % python -u "/Users/mohammadmuneerahmed/Documents/training2.py/day5.py"
Enter a string: abdsdg
Vowel count: 1
◇ mohammadmuneerahmed@Muneers-MacBook-Air training2.py %
```

Task 4 — Vowel Count Comparison

Question: Generate vowel count logic.

Algorithm

1. Read string.
2. Convert to lowercase.
3. Loop characters.
4. Count vowels.
5. Print total.

Pseudocode

```
input text
count = 0
for ch in text
    if ch in vowels
        count++
print count
```

The screenshot shows a terminal window with the following content:

```
day5.py > ...
1 filename = input("Enter file name with .txt: ")
2
3 with open(filename, "r") as f:
4     lines = f.readlines()
5
6 print("Number of lines:", len(lines))
7
```

Below the code, the terminal shows the command being run and its output:

```
python -u "/Users/mohammadmuneerahmed/Documents/training2.py/day5.py"
○ mohammadmuneerahmed@luneers-MacBook-Air training2.py % python -u "/Users/mohammadmuneerahmed/Documents/training2.py/day5.py"
Enter file name with .txt: [REDACTED]
```

Task 5 — File Line Count (Few-Shot)

Question: Read a text file and count lines.

Algorithm

1. Read filename.
2. Open file.
3. Read lines.
4. Count lines.
5. Print count.

Pseudocode

```
input filename
open file
lines = readlines
print len(lines)
```

```
(day5.py) > ...
1 full_name = input("Enter full name: ").strip()
2
3 parts = full_name.split()
4
5 if len(parts) >= 2:
6     first = parts[0]
7     last = parts[-1]
8     print(f"{last}, {first}")
9 else:
10    print("Invalid name")
11

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

python -u "/Users/mohammadmuneerahmed/Documents/training2.py/day5.py"
● mohammadmuneerahmed@Muneer-MacBook-Air training2.py % python -u "/Users/mohammadmuneerahmed/Documents/training2.py/day5.py"
Enter full name: muneer ahmed
ahmed, muneer
◇ mohammadmuneerahmed@Muneer-MacBook-Air training2.py %
```