

ASSIGNMENT
ON
PROBLEM SOLVING AND ADVANCED PROGRAMMING CONCEPTS
COURSE CODE: ETCCPP171



SUBMITTED BY:
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PROGRAM: MCA(AI&ML)

ASSIGNMENT 01

```
# ======  
# Name: Diya Das  
# Date: 12-Nov-2025  
# Assignment Title: Assignment 01 - Attendance Tracker  
# Course: MCA (AI & ML)  
# ======  
  
# Importing required module for bonus task  
from datetime import datetime  
# -----  
# Task 1: Setup & Introduction  
# -----  
print("=*50)  
print("WELCOME TO THE PYTHON ATTENDANCE TRACKER TOOL")  
print("=*50)  
print("This tool helps record and manage attendance easily.")  
print("It collects student names with check-in times, validates inputs,")  
print("and displays a clean attendance summary.\n")  
# -----  
# Task 2: Input & Data Collection  
# -----  
attendance = {}  
try:  
    n = int(input("Enter the number of attendance entries you want to record: "))  
except ValueError:  
    print("Invalid input! Please enter a valid number.")  
n = 0  
for i in range(n):  
    print(f"\n--- Entry {i+1} ---")
```

```
while True:
    name = input("Enter student name: ").strip()
    # Task 3: Data Validation
    if name == "":
        print("Name cannot be empty. Please re-enter.")
        continue
    if name in attendance:
        print("Duplicate entry! This student is already marked present.")
        continue
    time = input("Enter check-in time (e.g., 09:15 AM): ").strip()
    if time == "":
        print("Check-in time cannot be empty. Please re-enter.")
        continue
    attendance[name] = time
    print("Record added successfully.")
    break

# -----
# Task 4: Attendance Summary Generation
# -----
print("\n\nATTENDANCE SUMMARY".center(50, "-"))
print(f"{'Student Name':<25} {'Check-in Time':<15}")
print("-"*45)
for name, time in attendance.items():
    print(f"{name:<25} {time:<15}")
    print("-"*45)
print(f"Total Students Present: {len(attendance)}")

# -----
# Task 5: Absentee Validation (Optional)
# -----
try:
```

```

total_students = int(input("\nEnter total number of students in class (for absentee check):"))

absentees = total_students - len(attendance)

if absentees < 0:

    absentees = 0

print(f"Total Present: {len(attendance)}")

print(f"Total Absent: {absentees}")

except ValueError:

    print("Skipped absentee check (invalid input).")

# -----

# Task 6: Save Attendance Report to File (Bonus)

# -----

save_choice = input("\nDo you want to save the attendance record to a file? (yes/no):").lower()

if save_choice == "yes":

    try:

        with open("attendance_log.txt", "w") as file:

            file.write("ATTENDANCE LOG\n")

            file.write("-"*40 + "\n")

            file.write(f"{'Student Name':<25} {'Check-in Time':<15}\n")

            file.write("-"*40 + "\n")

            for name, time in attendance.items():

                file.write(f"{'name':<25} {'time':<15}\n")

                file.write("-"*40 + "\n")

                file.write(f"Total Present: {len(attendance)}\n")



        if 'total_students' in locals():

            file.write(f"Total Absent: {absentees}\n")



        file.write(f"Report Generated On: {datetime.now().strftime('%Y-%m-%d %H:%M:%S')}\n")

```

```
print("Attendance successfully saved to 'attendance_log.txt'")  
except Exception as e:  
    print(f'Error while saving file: {e}')  
else:  
    print("Record not saved.")  
  
print("\nThank you for using the Python Attendance Tracker!")  
print("=*50)
```

OUTPUT:

```
PS C:\Users\ddiya\OneDrive\Desktop\attendance_tracker> & "C:/Program Files/Python312/python.exe" c:/Users/ddiya/OneDrive/Desktop/attendance_tracker/tracker.py
=====
WELCOME TO THE PYTHON ATTENDANCE TRACKER TOOL
=====

This tool helps record and manage attendance easily.
It collects student names with check-in times, validates inputs,
and displays a clean attendance summary.

Enter the number of attendance entries you want to record: 5

--- Entry 1 ---
Enter student name: Anisha
Enter check-in time (e.g., 09:15 AM): 5:00pm
Record added successfully.

--- Entry 2 ---
Enter student name: Rriyam
Enter check-in time (e.g., 09:15 AM): 6:00pm
Record added successfully.

--- Entry 3 ---
Enter student name: tiya
Enter check-in time (e.g., 09:15 AM): 7:00pm
Record added successfully.

--- Entry 4 ---
Enter student name: yuyu
Enter check-in time (e.g., 09:15 AM): 7:00pm
Record added successfully.

--- Entry 5 ---
Enter student name: riri
Enter check-in time (e.g., 09:15 AM): 7:00
Record added successfully.
-----
```

```
ATTENDANCE SUMMARY-----
Student Name           Check-in Time
-----
Anisha                5:00pm
Rriyam                6:00pm
tiya                  7:00pm
yuyu                  7:00pm
riri                  7:00
-----
Total Students Present: 5

Enter total number of students in class (for absentee check): 2
Total Present: 5
Total Absent: 0

Do you want to save the attendance record to a file? (yes/no): yes
Attendance successfully saved to 'attendance_log.txt'

Thank you for using the Python Attendance Tracker!
=====

PS C:\Users\ddiya\OneDrive\Desktop\attendance_tracker>
```

The screenshot shows a code editor interface with two tabs open: 'tracker.py' and 'attendance_log.txt'. The 'attendance_log.txt' tab is active, displaying the contents of the log file.

```
1 ATTENDANCE LOG
2 =====
3 Student Name      Check-in Time
4 -----
5 Anisha            5:00pm
6 Rriyam           6:00pm
7 tiya              7:00pm
8 yuyu              7:00pm
9 niri              7:00
10 -----
11 Total Present: 5
12 Total Absent: 0
13 Report Generated On: 2025-11-12 22:54:46
14
```

GITHUB LINK: https://github.com/ddiya3790-svg/Attendance_tracker/tree/main