

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 a dark theme. On the left, the 'EXPLORER' sidebar is open, showing a file tree with 'tracker.py' and 'attendance_log.txt'. The 'attendance_log.txt' file is selected and its content is displayed in the main editor area. The content of the file is an attendance log with a header, a table of student names and check-in times, and summary statistics.

```
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 riri              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