

Python Assignment - 1

School of Engineering & Technology

Department: SOET	Session: 2025-26
Program: MCA (AI & ML)	Semester: 1
Course Code: ETCCPP171	College Rollno: 2501940002
Course Name: Programming for Problem Solving Using Python	
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GitHub Link : https://github.com/Ram0kr0singh/Student_Attendance_Tracker_0002.git

Assignment: Student Attendance Tracker

INPUT :-

```
# -----
# Name: Ram Kumar Singh
# Date: 12 Nov 2025
# Assignment 01 - Student Attendance Tracker
# -----



01 from datetime import datetime
02
03
04 def collect_attendance():
05     """Collect student attendance records with validation."""
06     attendance_records = {}
07
08     print("\nWelcome to the Attendance Tracker System!")
09     print("Record attendance with student names and check-in times.\n")
10
11    try:
12        total_entries = int(input("How many attendance entries would you like to
13 record? "))
14    except ValueError:
15        print("Invalid number. Please restart and enter a valid integer.")
16        return {}
17
18    for entry in range(1, total_entries + 1):
19        print(f"\nEnter {entry}:")
20
21        while True:
22            name = input("Student Name: ").strip()
23            if name == "":
24                print("Name cannot be empty. Please re-enter.\n")
25            elif name in attendance_records:
26                print("This student is already recorded. Enter a different name.
27 \n")
28            else:
29                break
30
31        while True:
32            time = input("Check-in Time (e.g., 09:10 AM): ").strip()
```

```

33         if time == "":
34             print("Check-in time cannot be empty. Please re-enter. \n")
35         else:
36             break
37
38     attendance_records[name] = time
39
40 return attendance_records
41
42
43 def display_summary(attendance):
44     """Display formatted attendance summary table."""
45     print("\n\n===== Attendance Summary =====")
46     print(f"{'Student Name':<25} {'Check-in Time':<15}")
47     print("-" * 40)
48
49     for name, time in attendance.items():
50         print(f"{name:<25} {time:<15}")
51
52     print("-" * 40)
53     print(f"Total Students Present: {len(attendance)}")
54
55
56 def calculate_absentees(present_count):
57     """Optional absentee calculation."""
58     choice = input("\nDo you want to calculate absentees? (yes/no): ").lower()
59
60     if choice == "yes":
61         total_students = int(input("Enter total number of students in class: "))
62         absentees = total_students - present_count
63
64         print(f"\nTotal Present: {present_count}")
65         print(f"Total Absent: {absentees}")
66
67     return absentees
68
69 return None
70
71
72 def save_to_file(attendance, absentees=None):
73     """Optional saving to a text file."""
74     choice = input("\nDo you want to save this attendance record? (yes/no): ")
75     .lower()
76
77     if choice == "yes":
78         timestamp = datetime.now().strftime("%d-%m-%Y %I:%M %p")
79         with open("attendance_log.txt", "w") as file:
80             file.write("Attendance Report\n")
81             file.write("-" * 40 + "\n")
82             for student, time in attendance.items():
83                 file.write(f"{student:<25} {time:<15}\n")
84             file.write("-" * 40 + "\n")
85             file.write(f"Total Present: {len(attendance)}\n")
86             if absentees is not None:
87                 file.write(f"Total Absent: {absentees}\n")
88             file.write(f"Report Generated On: {timestamp}\n")

```

```

89
90     print("\nAttendance report saved to attendance_log.txt")
91
92
93 # ----- MAIN PROGRAM FLOW -----
94 attendance_data = collect_attendance()
95
96 if attendance_data:
97     display_summary(attendance_data)
98     abs_value = calculate_absentees(len(attendance_data))
99     save_to_file(attendance_data, abs_value)

print("\nThank you for using the Attendance Tracker!")

```

OUTPUT :-

The screenshot shows a Microsoft Visual Studio Code (VS Code) interface. The left sidebar has icons for Explorer, Search, Problems, and Terminal. The main area shows the file structure of a project named 'STUDENT_ATTENDANCE_TRACKER_0002'. Inside the project folder, there are files: 'Std_tracker.py' (marked as modified), 'attendance_log.txt' (marked as untracked), and 'README.md'. The terminal tab at the bottom is active, displaying the command: 'PS R:\Coding\1. KRMU\Python\Sem 1\Student Attendance Tracker\Student_Attendance_Tracker_0002> python -u "r:\Coding\1. KRMU\Python\Sem 1\Student Attendance Tracker\Student_Attendance_Tracker_0002\Std_tracker.py"'. Below this, the terminal output shows the program's interaction with the user:

```

Welcome to the Attendance Tracker System!
Record attendance with student names and check-in times.

How many attendance entries would you like to record? 4

Entry 1:
Student Name: Ram Kumar Singh
Check-in Time (e.g., 09:10 AM): 09:05 AM

Entry 2:
Student Name: Ram Kumar Singh
This student is already recorded. Enter a different name.

Student Name:
Name cannot be empty. Please re-enter.

Student Name: Manmeet
Check-in Time (e.g., 09:10 AM): 09:33 AM

Entry 3:
Student Name: Nitin
Check-in Time (e.g., 09:10 AM): 09:15

Entry 4:
Student Name: Harsh
Check-in Time (e.g., 09:10 AM): 10:30 AM

```

```
PS R:\Coding\1. KRMU\Python\Sem 1\Student Attendance Tracker\Student_Attendance_Tracker_0002> python -u "r:\Coding\1. KRMU\Python\Std_tracker.py"
Student Name: Harsh
Check-in Time (e.g., 09:10 AM): 10:30 AM

===== Attendance Summary =====
Student Name           Check-in Time
-----
Ram Kumar Singh        09:05 AM
Manmeet                09:33 AM
Nitin                  09:15
Harsh                  10:30 AM
-----
Total Students Present: 4

Do you want to calculate absentees? (yes/no): yes
Enter total number of students in class: 10

Total Present: 4
Total Absent: 6

Do you want to save this attendance record? (yes/no): yes
Attendance report saved to attendance_log.txt

Thank you for using the Attendance Tracker!
```

```
PS R:\Coding\1. KRMU\Python\Sem 1\Student Attendance Tracker\Student_Attendance_Tracker_0002> python -u "r:\Coding\1. KRMU\Python\Std_tracker.py"
attendance_log.txt U X
attendance_log.txt

1 Attendance Report
2 -----
3 Ram Kumar Singh        09:05 AM
4 Manmeet                09:33 AM
5 Nitin                  09:15
6 Harsh                  10:30 AM
7 -----
8 Total Present: 4
9 Total Absent: 6
10 Report Generated On: 12-11-2025 09:45 PM
11

Attendance report saved to attendance_log.txt

Thank you for using the Attendance Tracker!
```