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	
Submitted by: Ram Kumar Singh	Faculty: Ms. Neha Kaushik

GitHub Link : https://github.com/Ram0kr0singh/Student_Attendance_Tracker_0002.git
Assignment: Student Attendance Tracker

INPUT :-

```python
# ------------------------------------------------------
# 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"\nEntry {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()
```

```python
            if time == "":
                print("Check-in time cannot be empty. Please re-enter. \n")
            else:
                break

        attendance_records[name] = time

    return attendance_records


def display_summary(attendance):
    """Display formatted attendance summary table."""
    print("\n\n========== Attendance Summary ==========")
    print(f"{'Student Name':<25} {'Check-in Time':<15}")
    print("-" * 40)

    for name, time in attendance.items():
        print(f"{name:<25} {time:<15}")

    print("-" * 40)
    print(f"Total Students Present: {len(attendance)}")


def calculate_absentees(present_count):
    """Optional absentee calculation."""
    choice = input("\nDo you want to calculate absentees? (yes/no): ").lower()

    if choice == "yes":
        total_students = int(input("Enter total number of students in class: "))
        absentees = total_students - present_count

        print(f"\nTotal Present: {present_count}")
        print(f"Total Absent: {absentees}")

        return absentees

    return None


def save_to_file(attendance, absentees=None):
    """Optional saving to a text file."""
    choice = input("\nDo you want to save this attendance record? (yes/no): ").lower()

    if choice == "yes":
        timestamp = datetime.now().strftime("%d-%m-%Y  %I:%M %p")
        with open("attendance_log.txt", "w") as file:
            file.write("Attendance Report\n")
            file.write("-" * 40 + "\n")
            for student, time in attendance.items():
                file.write(f"{student:<25} {time:<15}\n")
            file.write("-" * 40 + "\n")
            file.write(f"Total Present: {len(attendance)}\n")
            if absentees is not None:
                file.write(f"Total Absent: {absentees}\n")
            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))
       save_to_file(attendance_data, abs_value)


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

OUTPUT :-

Terminal output (top screenshot):

```
PS R:\Coding\1. KRMU\Python\Sem 1\Student Attendence Tracker\Student_Attendance_Tracker_0002> python -u "r:\Coding\1. KRMU\Python\
_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 Attendence Tracker\Student_Attendance_Tracker_0002>
```

attendance_log.txt (bottom screenshot):

```
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
```

Terminal output (bottom screenshot):

```
Attendance report saved to attendance_log.txt

Thank you for using the Attendance Tracker!
PS R:\Coding\1. KRMU\Python\Sem 1\Student Attendence Tracker\Student_Attendance_Tracker_0002>
```