

DSE 2144– Advanced Programming Language Lab
Week 5 – Date: 05th September 2024

Exercise 1: Student Grades Management System

Create a simple student grades management system which perform the following functions (Use a dictionary where the keys are student names, and the values are lists of grades.):

- **Add a student:** Add a student's name and their grades for multiple subjects.
- **Update a Grade:** Update a specific grade for a student in each subject.
- **Remove a student:** Remove a student from the system.
- **Get Average Grade:** Calculate and return the average grade for a student across all subjects.
- **Get Subject Average:** Calculate and return the average grade for a specific subject.
- **List All Students:** List all students with their average grades for each subject and overall.
- **Get Highest Grade:** Find the highest grade in a specific subject.

Exercise 2: Employee Management System

Implement Employee Management System using nested dictionaries and lists and implement following functions to handle different operations.

- **add_employee():** Adds a new employee or updates an existing employee's details.
- **update_salary():** Updates the salary of an existing employee.
- **add_performance_score():** Adds a performance score to an employee's record.
- **remove_employee():** Removes an employee from the records.
- **get_average_salary_by_department():** Computes the average salary of employees in a specified department.
- **get_employee_with_highest_performance():** Finds the employee with the highest average performance score.
- **list_employees_by_department():** Lists all employees in a specified department.