Mini Project Title: Employee Data Management System

# Contact for Queries

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(NOTE: Responses might be delayed owing to immediate availability.)

# Stage 1 Objectives:

* Design the basic structure of the Employee class.
* Implement a function to display employee details.
* Demonstrate the usage of basic data types like strings and dictionaries.
* Use control structures such as conditional statements and loops for simple operations.

## Concepts Employed:

* Understanding of basic data types: strings, dictionaries.
* Usage of control structures: conditional statements (if-else), loops (for loop).

# Stage 2 Objectives:

* Implement functions to add, update, and delete employee records using dictionaries.
* Explore the usage of lists and dictionaries for managing collections of data.
* Implement a function to display all employee records and search for a specific employee.

## Concepts Employed:

* Usage of collections: lists and dictionaries.
* Functions for performing operations on collections.
* Handling of collection operations like insertion, deletion, and retrieval.

# Stage 3 Objectives:

* Implement basic exception handling for scenarios such as invalid input or record not found.
* Utilize utility functions like map, filter, and reduce for data manipulation.
* Explore the concept of virtual environments for managing project dependencies (optional).

## Concepts Employed:

* Basic exception handling for error management.
* Utility functions like map, filter, and reduce for processing data.
* Virtual environments for managing project dependencies (optional).

# Stage 4 Objectives:

* Utilize regular expressions to validate and process employee information.
* In case of invalid input notify the user with the proper details and provide another opportunity to enter the correct data.
* Provide a randomized mechanism for increment between 10% to 20%.

## Concepts Employed:

* Regular expressions for pattern matching and data validation.
* Utilize exception handling to handle improper data inputs.
* Utilize looping constructs to execute input code till proper inputs are received.

# Stage 5 Objectives:

* Integrate the Employee Data Management System with exception handling, ensuring robustness.
* Explore the concepts of duck typing and object-oriented programming for code organization and flexibility.
* Store the data received into excel files by using the OpenPyXL module.
* Retrieve the data from the excel files to create a summary report on the number of employees, total salary drawn and department wise head count.

## Concepts Employed:

* Duck typing for flexible code design.
* Object-oriented programming principles for code organization and modularity.
* Exception handling for error management and recovery.
* Excel interfacing using OpenPyXL for data storage, manipulation and report generation.