Home Assignment <15>: Modeling an IT Organization

Learning Objective:

The objective of this assignment is to understand inheritance by creating a base `Employee` class and extending it to represent specialized roles in an IT organization.

Expected Completion Time:

Best Case: 15 minutes
Average Case: 25 minutes

Assignment Details:

Create a Python program to represent employees in an IT organization using inheritance.

Requirements:

a) Create a base class `Employee` with the following attributes:
- `name` → string
- `emp_id` → string
- `department` → string

b) Add a method `display_info()` in `Employee` to print employee details.
c) Create a subclass `Manager` that inherits from `Employee` and adds an attribute:
- `team_size` → integer
  Override `display_info()` to also show team size.

d) Create another subclass `Developer` that inherits from `Employee` and adds an attribute:
- `programming_language` → string
  Override `display_info()` to also show programming language.

e) In the main section (`if __name__ == "__main__":`):
- Create one `Manager` and one `Developer` object with different details.
- Call their `display_info()` methods to demonstrate inheritance and method overriding.

Hints:

1. Use `super().__init__()` in subclasses to call the parent constructor.
2. Method overriding allows you to extend the functionality of the parent's `display_info()`.
3. Demonstrate how both roles reuse common properties (`name`, `emp_id`, `department`).

Expected Outcome:

Upon completion of this assignment, you should be able to:

- Implement a base class and subclasses in Python.
- Use inheritance to share common attributes and methods.
- Apply method overriding to customize subclass behavior.
- Relate inheritance to real-world IT organizational structures.