



# Vidyavardhini's College of Engineering and Technology

## Department of Artificial Intelligence & Data Science

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**Course Outcome 2 : Analyze and Illustrate Inheritance and Exception Handling Mechanisms.**

**Experiment 03 : Programs on various types of inheritance and Exception handling.**

### **Problem Statement:**

Write a Java program that demonstrates the following types of inheritance using classes:

1. Single Inheritance:
  - Create a base class **Person** with attributes **name** and **age**.
  - Create a derived class **Student** that inherits from **Person** and adds attributes like **course** and **rollNumber**.
2. Multilevel Inheritance:
  - Extend **Student** into a subclass **GraduateStudent** with an additional attribute **graduationYear**.
3. Hierarchical Inheritance:
  - Create other subclasses like **Teacher** and **Administrator** that also inherit from **Person** and include relevant attributes.

In the **main()** method, create objects of each class and display their details to demonstrate each type of inheritance.

### **Expected Output Example :**

Student Details:

Name: Rahul

Age: 20

Course: B.Tech

Roll Number: 123

Graduate Student Details:

Name: Anjali

Age: 22

Course: M.Tech

Roll Number: 456

Graduation Year: 2023

Teacher Details:

Name: Meera

Age: 35

Subject: Mathematics

Administrator Details:

Name: Raj

Age: 40

Department: HR