

**MES College Marampally**  
**Department of Computer Applications**  
**Java Programming – Lab Cycle VI**

1. Create a package named **math** and define a class named **Calculator** inside it. The **Calculator** class should have methods for **addition**, **subtraction**, **multiplication**, and **division**. Write a program outside the package that imports the **Calculator** class and performs arithmetic operations using the imported class.
2. Create a package named **geometry** and define classes **Circle** and **Rectangle** inside it. Each class should have methods to calculate the **area** and **perimeter** of the corresponding shape. Write a program outside the package that imports the **Circle** and **Rectangle** classes and calculates the area and perimeter of specific shapes.
3. Create a package named **employees** and define an abstract class **Employee** inside it. The **Employee** class should have abstract methods for calculating the salary and displaying employee details. Implement two subclasses, **Manager** and **Engineer**, which provide the specific implementations for the abstract methods. Write a program outside the package that imports the **Manager** and **Engineer** classes and demonstrates their usage.
4. Create a package named **bank** and define a class named **Account** inside it. The **Account** class should have methods for depositing and withdrawing funds. Implement another class named **Bank** outside the package that imports the **Account** class and simulates banking operations such as creating accounts, depositing funds, and withdrawing funds.
5. Create a package named **shopping** and define classes **Product** and **Cart** inside it. The **Product** class should represent a product with properties such as name, price, and quantity. The **Cart** class should have methods for adding products, calculating the total price, and displaying the items in the cart. Write a program outside the package that imports the **Product** and **Cart** classes and simulates shopping by adding products to the cart and calculating the total price.