**Exercise 11: Implementing Dependency Injection**

public class Main {

    public static void main(String[] args) {

        CustomerRepository repository = new CustomerRepositoryImpl();

        CustomerService service = new CustomerService(repository);

        Customer customer = service.getCustomerById("C001");

        if (customer != null) {

            System.out.println("Customer ID: " + customer.getId());

            System.out.println("Customer Name: " + customer.getName());

        } else {

            System.out.println("Customer not found.");

        }

    }

}

class Customer {

    private String id;

    private String name;

    public Customer(String id, String name) {

        this.id = id;

        this.name = name;

    }

    public String getId() {

        return id;

    }

    public String getName() {

        return name;

    }

}

interface CustomerRepository {

    Customer findCustomerById(String id);

}

class CustomerRepositoryImpl implements CustomerRepository {

    @Override

    public Customer findCustomerById(String id) {

        if (id.equals("C001")) {

            return new Customer("C001", "Ananthika");

        }

        return null;

    }

}

class CustomerService {

    private CustomerRepository repository;

    public CustomerService(CustomerRepository repository) {

        this.repository = repository;

    }

    public Customer getCustomerById(String id) {

        return repository.findCustomerById(id);

    }

}

Output:

