**Exercise 11: Implementing Dependency Injection**

**Scenario:**

Developing a customer management application where the service class depends on a repository class. Use Dependency Injection to manage these dependencies.

### ****1.Create Java Project****

Project Name: DependencyInjectionExample

### ****2. Define Repository Interface****

public interface CustomerRepository {

String findCustomerById(int id);

}

### ****3. Implement Concrete Repository****

public class CustomerRepositoryImpl implements CustomerRepository {

@Override

public String findCustomerById(int id) {

// Simulated database lookup

return "Customer with ID: " + id + " is John Doe";

}

}

### ****4. Define Service Class****

public class CustomerService {

private CustomerRepository customerRepository;

// Constructor Injection

public CustomerService(CustomerRepository customerRepository) {

this.customerRepository = customerRepository;

}

public void getCustomerDetails(int id) {

String customer = customerRepository.findCustomerById(id);

System.out.println(customer);

}

}

### ****5. Test the Dependency Injection Implementation****

public class Main {

public static void main(String[] args) {

// Manually injecting the dependency

CustomerRepository repository = new CustomerRepositoryImpl();

CustomerService service = new CustomerService(repository);

// Use service to fetch customer details

service.getCustomerDetails(101);

}

}

OUTPUT:

