// Interface

public interface ECommerceService {

void execute(Object... args);

}

// Service implementations

public class AuthService implements ECommerceService {

@Override

public void execute(Object... args) {

String username = (String) args[0];

String password = (String) args[1];

System.out.println("Login: " + username);

}

}

public class SearchService implements ECommerceService {

@Override

public void execute(Object... args) {

String query = (String) args[0];

System.out.println("Search for: " + query);

}

}

public class RecommendationService implements ECommerceService {

@Override

public void execute(Object... args) {

String userId = (String) args[0];

System.out.println("Recommendations for user: " + userId);

}

}

public class ChatbotService implements ECommerceService {

@Override

public void execute(Object... args) {

String message = (String) args[0];

System.out.println("Chatbot response to: " + message);

}

}

public class PaymentService implements ECommerceService {

@Override

public void execute(Object... args) {

String method = (String) args[0];

int amount = (Integer) args[1];

System.out.println("Payment of $" + amount + " using " + method);

}

}

public class SustainabilityService implements ECommerceService {

@Override

public void execute(Object... args) {

String userId = (String) args[0];

System.out.println("Sustainable suggestions for user: " + userId);

}

}

// Factory class

public class ServiceFactory {

public ECommerceService getService(String type) {

switch (type) {

case "auth": return new AuthService();

case "search": return new SearchService();

case "recommend": return new RecommendationService();

case "chat": return new ChatbotService();

case "payment": return new PaymentService();

case "sustain": return new SustainabilityService();

default: throw new IllegalArgumentException("Unknown service type.");

}

}

}

// Main class using only the factory

public class Main {

public static void main(String[] args) {

ServiceFactory factory = new ServiceFactory();

factory.getService("auth").execute("ali", "12345");

factory.getService("search").execute("organic shoes");

factory.getService("recommend").execute("user\_01");

factory.getService("chat").execute("What are the most eco-friendly sneakers?");

factory.getService("payment").execute("paypal", 199);

factory.getService("sustain").execute("user\_01");

}

}

