Case Study: Order & Payment Microservices with Zipkin Tracing Business

application.properties

```
spring.application.name=zipkin-orders-service
server.port=8081
management.zipkin.tracing.endpoint=http://localhost:9411/api/v2/spans
management.tracing.sampling.probability=1.0
```

Order.java

```
package com.example.zipkinordersservice.model;
public class Order {
private Long id;
private String productName;
private double price;
public Order(Long id, String productName, double price) {
this.id = id;
this.productName = productName;
this.price = price;
}
public Long getId() {
return id;
}
public String getProductName() {
return productName;
}
public double getPrice() {
return price;
}
}
```

AppConfig

```
package com.example.zipkinordersservice.config;
import org.springframework.context.annotation.Bean;
 import org.springframework.context.annotation.Configuration;
 import org.springframework.web.client.RestTemplate;

@Configuration
public class AppConfig {
@Bean
public RestTemplate restTemplate() {
return new RestTemplate();
}
}
```

OrderService

```
package com.example.zipkinordersservice.service;
import io.micrometer.tracing.Tracer;
import io.micrometer.tracing.Span;
import java.util.ArrayList;
import java.util.List;
import org.springframework.stereotype.Service;
import org.springframework.web.client.RestTemplate;
import com.example.zipkinordersservice.model.Order;
@Service
public class OrderService {
private final RestTemplate restTemplate;
private final Tracer tracer;
private final List orders = new ArrayList<>();
public OrderService(RestTemplate restTemplate, Tracer tracer) {
this.restTemplate = restTemplate;
this.tracer = tracer;
}
public String placeOrder(Order order) {
orders.add(order);
Span newSpan = tracer.nextSpan().name("place-order").start();
try (Tracer.SpanInScope ws = tracer.withSpan(newSpan)) {
String paymentServiceUrl = "http://localhost:8082/payments";
String paymentResponse =
restTemplate.postForObject(paymentServiceUrl, order, String.class);
return "Order placed for: " + order.getProductName() + ". " +
paymentResponse;
}
finally {
newSpan.end();
}
}
public List getOrders() {
return orders;
}
}
```

OrderController

```
package com.example.zipkinordersservice.controller;
import java.util.List;

import org.springframework.web.bind.annotation.GetMapping;
import org.springframework.web.bind.annotation.PostMapping;
import org.springframework.web.bind.annotation.RequestBody;
import org.springframework.web.bind.annotation.RestController;
import com.example.zipkinordersservice.model.Order;
import com.example.zipkinordersservice.service.OrderService;
@RestController
public class OrderController {
private final OrderService orderService;
public OrderController(OrderService orderService) {
this.orderService = orderService;
}
@GetMapping("/orders")
public List getOrders() {
return orderService.getOrders();
}
@PostMapping("/orders")
public String placeOrder(@RequestBody Order order) {
return orderService.placeOrder(order);
}
}
```