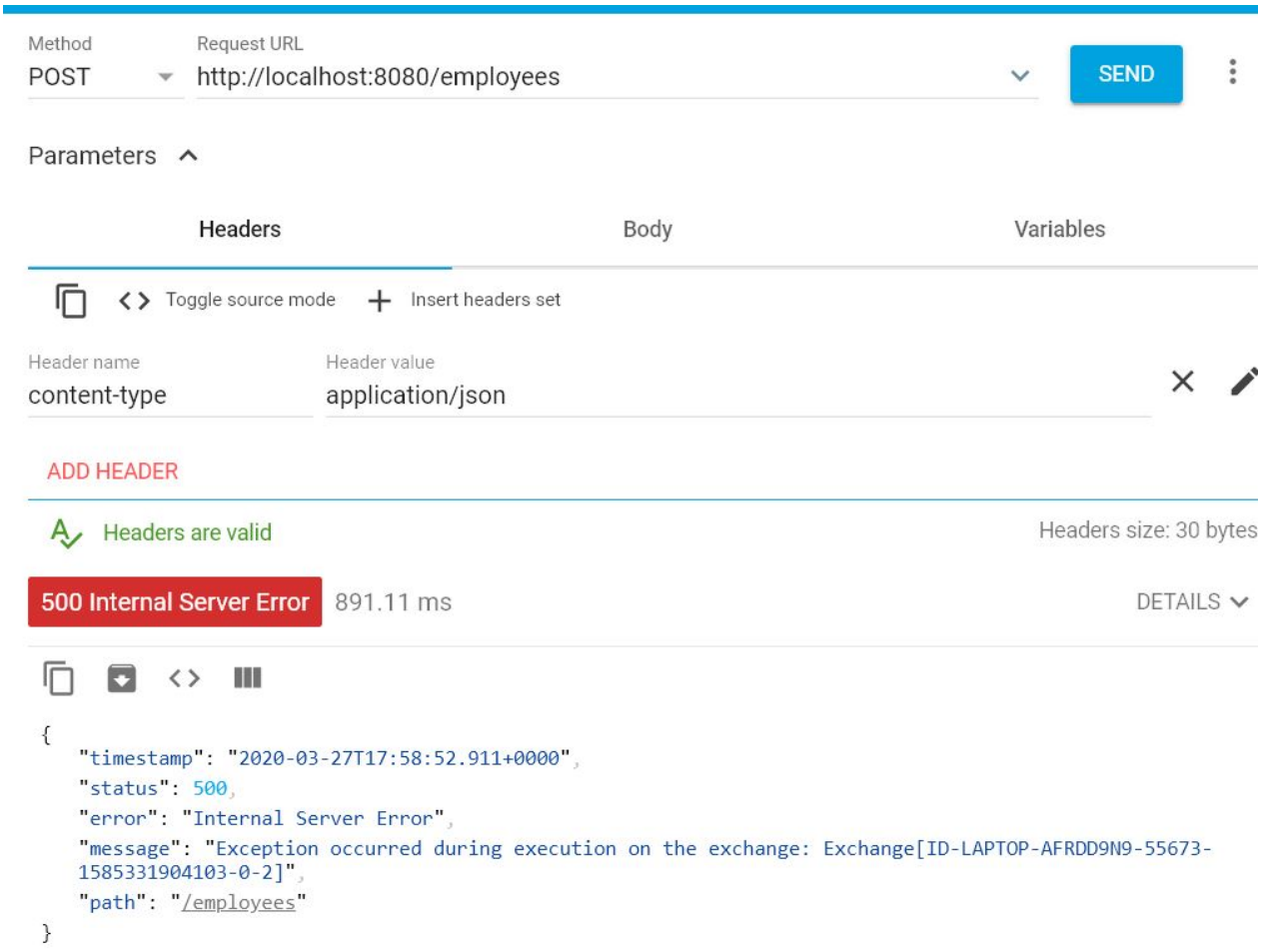
Spring Boot + Apache Camel SQL component + Transaction Management Example

```
package com.javainuse.service.impl;

import java.util.ArrayList;
import java.util.HashMap;
import java.util.List;
import java.util.Map;

import javax.sql.DataSource;

import org.apache.camel.Exchange;
import org.apache.camel.Processor;
import org.apache.camel.builder.RouteBuilder;
import org.apache.camel.component.sql.SqlComponent;
import org.apache.camel.spring.spi.SpringTransactionPolicy;
import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.context.annotation.Bean;
import org.springframework.jdbc.datasource.DataSourceTransactionManager;
import org.springframework.stereotype.Service;
import org.springframework.transaction.PlatformTransactionManager;

import com.javainuse.model.Employee;

@Service
public class EmployeeServiceImpl extends RouteBuilder {

        @Autowired
        DataSource dataSource;

        public DataSource getDataSource() {
                return dataSource;
        }

        public void setDataSource(DataSource dataSource) {
                this.dataSource = dataSource;
        }

        @Bean
        public SqlComponent sql(DataSource dataSource) {
                SqlComponent sql = new SqlComponent();
                sql.setDataSource(dataSource);
                return sql;
        }

    // Create Transaction Manager
        @Bean
        public PlatformTransactionManager transactionManager(DataSource
dataSource) {
                return new DataSourceTransactionManager(dataSource);
        }

    // Specify Spring Transaction Management Policy
        @Bean(name = "PROPAGATION_REQUIRED")
        public SpringTransactionPolicy
propogationRequired(PlatformTransactionManager transactionManager) {
                SpringTransactionPolicy propagationRequired = new
SpringTransactionPolicy();
                propagationRequired.setTransactionManager(transactionManager);
```

```
propagationRequired.setPropagationBehaviorName("PROPAGATION_REQUIRED");
                return propagationRequired;
        }

        @Override
        public void configure() throws Exception {

                 //Insert Route

from("direct:insert").transacted("PROPAGATION_REQUIRED").log("Processing message:
").process(new Processor() {
                        public void process(Exchange xchg) throws Exception {
                            //take the Employee object from the exchange and
create the parameter map
                                Employee employee =
xchg.getIn().getBody(Employee.class);
                                Map<String, Object> employeeMap = new
HashMap<String, Object>();
                                employeeMap.put("EmpId", employee.getEmpId());
                                employeeMap.put("EmpName",
employee.getEmpName());
                                xchg.getIn().setBody(employeeMap);
                        }
                }).to("sql:INSERT INTO employee(EmpId, EmpName) VALUES (:#EmpId,
:#EmpName)").
                        process(new Processor() {
                                        public void process(Exchange xchg) throws
Exception {
                                        // throw an exception after insert
statement.
                                                System.out.println("Exception
Occurred");
                                                throw new Exception();
                                        }
                                });

        // Select Route
        from("direct:select").to("sql:select * from employee").process(new
Processor() {
                        public void process(Exchange xchg) throws Exception {
                        //the camel sql select query has been executed. We get
the list of employees.
                                ArrayList<Map<String, String>> dataList =
(ArrayList<Map<String, String>>) xchg.getIn().getBody();
                                List<Employee> employees = new
ArrayList<Employee>();
                                System.out.println(dataList);
                                for (Map<String, String> data : dataList) {
                                        Employee employee = new Employee();
                                        employee.setEmpId(data.get("empId"));
                                        employee.setEmpName(data.get("empName"));
                                        employees.add(employee);
                                }
                                xchg.getIn().setBody(employees);
                        }
                });
```

```
        }
}
```

Restart the application again. Again send the POST request. An exception is thrown, but this time the insertions get reverted.



If we check the database there will not be any records

[Download Source Code]

```
mysql> select * from employee;
Empty set (0.04 sec)
```

Download it -
Spring Boot + Apache Camel SQL component + Transaction Management

See Also

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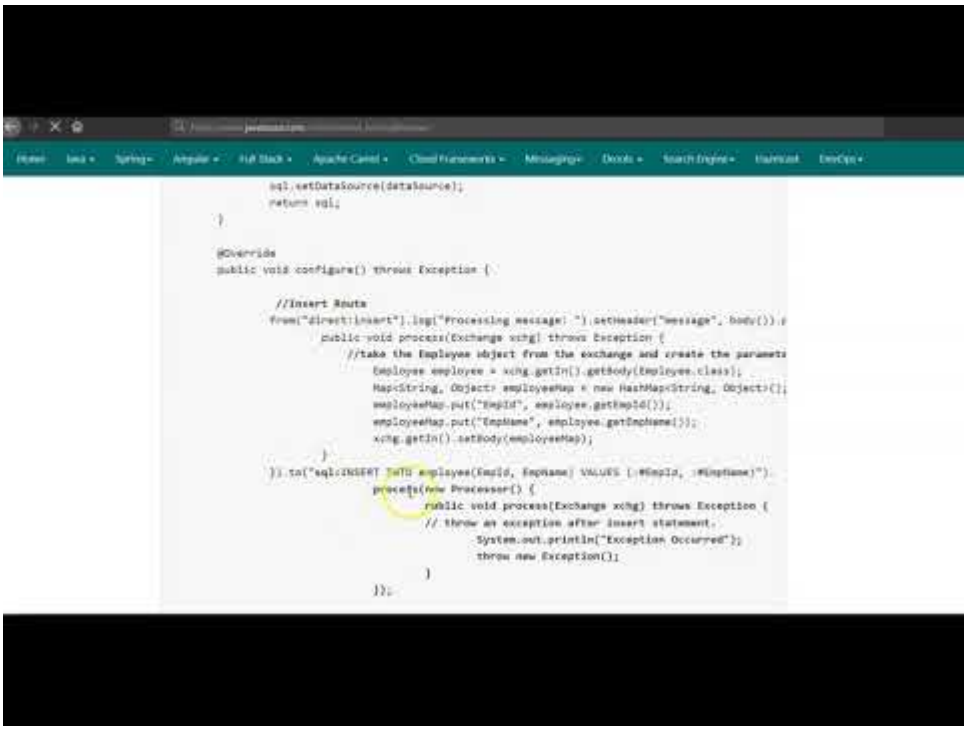
Spring Boot Interview Questions

In previous tutorial we had implemented Spring Boot + Apache Camel SQL Component + MySQL Example for inserting and retrieving records from MySQL. **For this tutorial we had not implemented any Transaction Management, so all transactions were auto commit by default.** In this tutorial we will be implementing transaction Management for the Apache Camel Insert Route we had implemented before. As we are making use of Apache Camel SQL component which in turn makes use of Spring JDBC we will be implementing transaction management using Spring Transaction. In previous tutorial series we had implemented Spring Boot Transaction Management Examples. We had also taken a look at what is Transaction Propagation and how to implement it using Spring Boot. In this tutorial we will be making use of transaction propagation type of **PROPAGATION_REQUIRED**.

We will be modifying the code we had developed in previous tutorial for Apache Camel + Spring SQL Component + MySQL Example

Video

This tutorial is explained in the below Youtube Video.



Watch Video At: https://youtu.be/mPLJxQVlYg4

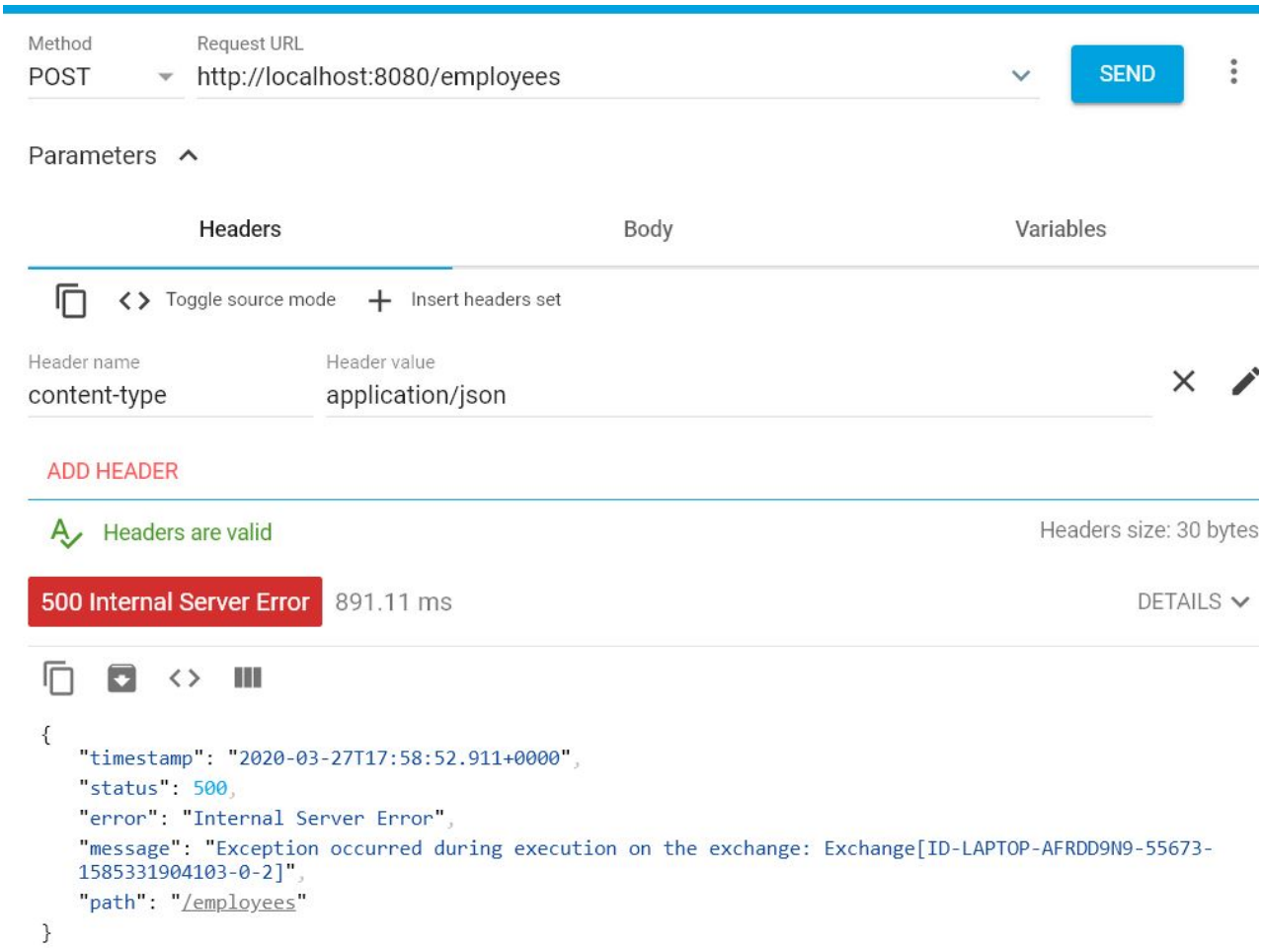
Exception thrown in Camel route without Transaction Management

Initially we will be taking a look at the application behaviour without transaction Management. So we will be throwing an exception after the values are inserted in MySQL database. As no transaction management has been implemented so auto commit is true and the insert is not rolled back. We will modify the Service class where we have configured the camel route. In the insert route after inserting the data we will be throwing an exception.

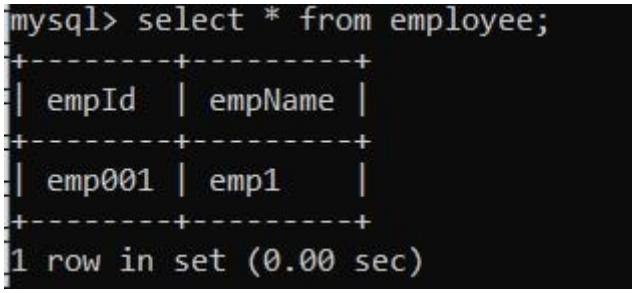
```
package com.javainuse.service.impl;

import java.util.ArrayList;
import java.util.HashMap;
import java.util.List;
import java.util.Map;

import javax.sql.DataSource;

import org.apache.camel.Exchange;
import org.apache.camel.Processor;
import org.apache.camel.builder.RouteBuilder;
import org.apache.camel.component.sql.SqlComponent;
import org.apache.camel.spring.spi.SpringTransactionPolicy;
import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.context.annotation.Bean;
import org.springframework.jdbc.datasource.DataSourceTransactionManager;
import org.springframework.stereotype.Service;
import org.springframework.transaction.PlatformTransactionManager;

import com.javainuse.model.Employee;

@Service
public class EmployeeServiceImpl extends RouteBuilder {

	@Autowired
	DataSource dataSource;

	public DataSource getDataSource() {
		return dataSource;
	}

	public void setDataSource(DataSource dataSource) {
		this.dataSource = dataSource;
	}

	@Bean
	public SqlComponent sql(DataSource dataSource) {
		SqlComponent sql = new SqlComponent();
		sql.setDataSource(dataSource);
		return sql;
	}

	@Override
	public void configure() throws Exception {

		 //Insert Route
		from("direct:insert").log("Processing message:
").setHeader("message", body()).process(new Processor() {
			public void process(Exchange xchg) throws Exception {
			    //take the Employee object from the exchange and
create the parameter map
				Employee employee =
xchg.getIn().getBody(Employee.class);
				Map<String, Object> employeeMap = new
HashMap<String, Object>();
				employeeMap.put("EmpId", employee.getEmpId());
				employeeMap.put("EmpName", employee.getEmpName());
				xchg.getIn().setBody(employeeMap);
```

```
                        }
                }).to("sql:INSERT INTO employee(EmpId, EmpName) VALUES (:#EmpId,
:#EmpName)").
                                process(new Processor() {
                                        public void process(Exchange xchg) throws
Exception {
                                        // throw an exception after insert
statement.
                                                System.out.println("Exception
Occurred");
                                                throw new Exception();
                                        }
                                });

        // Select Route
        from("direct:select").to("sql:select * from employee").process(new
Processor() {
                        public void process(Exchange xchg) throws Exception {
                        //the camel sql select query has been executed. We get the
list of employees.
                                ArrayList<Map<String, String>> dataList =
(ArrayList<Map<String, String>>) xchg.getIn().getBody();
                                List<Employee> employees = new ArrayList<Employee>
();

                                System.out.println(dataList);
                                for (Map<String, String> data : dataList) {
                                        Employee employee = new Employee();
                                        employee.setEmpId(data.get("empId"));
                                        employee.setEmpName(data.get("empName"));
                                        employees.add(employee);
                                }
                                xchg.getIn().setBody(employees);
                        }
                });
        }
}
```

Start the application.
Send a POST request to insert new employee detail-



This will throw an exception. However we observe that the insertion in employee table is not reverted. So it is auto commit by default.



Exception thrown in Camel route with Transaction Management

We now define transaction management for the Apache Camel Route. We do so making use of the Camel SpringTransactionPolicy. So after the exception is thrown the insert statement will be rolled back.