

Microservices Communication in Spring Boot

RestApiOne

RestApiOneApplication.java

```
package com.example.test;

import org.springframework.boot.SpringApplication;
import org.springframework.boot.autoconfigure.SpringBootApplication;

@SpringBootApplication

public class RestApiOneApplication {

    public static void main(String[] args) {
        SpringApplication.run(RestApiOneApplication.class, args);
    }

}
```

PersonEntity.java

```
package com.example.test;

import jakarta.persistence.Column;
import jakarta.persistence.Entity;
import jakarta.persistence.GeneratedValue;
import jakarta.persistence.GenerationType;
import jakarta.persistence.Id;

@Entity

public class PersonEntity {

    @Id
```

```
@GeneratedValue(strategy = GenerationType.AUTO)
```

```
@Column(name = "id", updatable = false, nullable = false)
```

```
private Integer personId;
```

```
@Column
```

```
private String name;
```

```
@Column
```

```
private Integer age;
```

```
public PersonEntity() {
```

```
    super();
```

```
}
```

```
public PersonEntity(Integer personId, String name, Integer age) {
```

```
    super();
```

```
    this.personId = personId;
```

```
    this.name = name;
```

```
    this.age = age;
```

```
}
```

```
public Integer getPersonId() {
```

```
    return personId;
```

```
}
```

```
public void setPersonId(Integer personId) {
```

```
    this.personId = personId;
```

```
}
```

```
public String getName() {
```

```
    return name;
```

```
}
```

```
public void setName(String name) {  
    this.name = name;  
}
```

```
public Integer getAge() {  
    return age;  
}
```

```
public void setAge(Integer age) {  
    this.age = age;  
}  
}
```

PersonRepository.java

```
package com.example.test;
```

```
import org.springframework.data.jpa.repository.JpaRepository;  
import org.springframework.stereotype.Repository;
```

```
@Repository
```

```
public interface PersonRepository extends JpaRepository<PersonEntity, Integer> {  
  
}
```

PersonService.java

```
package com.example.test;
```

```
import java.util.HashMap;  
import java.util.Map;
```

```

import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.stereotype.Service;
import org.springframework.web.client.RestTemplate;

@Service
public class PersonService {

    @Autowired
    PersonRepository personRepository;

    RestTemplate restTemplate = new RestTemplate();

    public PersonResonse getPerson(int personId) {
        final String uri = "http://localhost:8082/webapitwo/hobby/{personId}";

        Map<String, Integer> params = new HashMap<String, Integer>();
        params.put("personId", personId);

        String result = restTemplate.getForObject(uri, String.class, params);
        PersonEntity pe = personRepository.findById(personId).get();
        PersonResonse pr = new PersonResonse();
        pr.setPersonId(pe.getPersonId());
        pr.setName(pe.getName());
        pr.setAge(pe.getAge());
        pr.setHobby(result);

        return pr;
    }

    public void addPerson(PersonEntity pe) {

```

```
personRepository.save(pe);  
}  
}
```

PersonResonse.java

```
package com.example.test;
```

```
public class PersonResonse {  
    private Integer personId;  
    private String name;  
    private Integer age;  
    private String hobby;
```

```
    public Integer getPersonId() {  
        return personId;  
    }
```

```
    public void setPersonId(Integer personId) {  
        this.personId = personId;  
    }
```

```
    public String getName() {  
        return name;  
    }
```

```
    public void setName(String name) {  
        this.name = name;  
    }
```

```
    public Integer getAge() {  
        return age;
```

```
}
```

```
public void setAge(Integer age) {  
    this.age = age;  
}
```

```
public String getHobby() {  
    return hobby;  
}
```

```
public void setHobby(String result) {  
    this.hobby = result;  
}  
}
```

PersonController.java

```
package com.example.test;
```

```
import org.springframework.beans.factory.annotation.Autowired;  
import org.springframework.web.bind.annotation.PathVariable;
```

```
import org.springframework.web.bind.annotation.RequestBody;  
import org.springframework.web.bind.annotation.RequestMapping;  
import org.springframework.web.bind.annotation.RequestMethod;  
import org.springframework.web.bind.annotation.RestController;
```

```
@RestController
```

```
@RequestMapping(path = "/webapione")
```

```
public class PersonController {
```

```
@Autowired
```

```
PersonService personService;
```

```
@RequestMapping("/person/{personId}")
```

```
public PersonResonse getPerson(@PathVariable int personId) {  
    return personService.getPerson(personId);  
}
```

```
@RequestMapping(method = RequestMethod.POST, value = "/person")
```

```
public void addPerson(@RequestBody PersonEntity pe) {  
    personService.addPerson(pe);  
}  
}
```

application.properties

```
server.port=8081
```

```
spring.application.name=RestApiOne
```

It will run on port:8081 and make a POST request

RestApiTwo

RestApiTwoApplication.java

```
package com.example.test;
```

```
import org.springframework.boot.SpringApplication;
```

```
import org.springframework.boot.autoconfigure.SpringBootApplication;
```

```
@SpringBootApplication
```

```
public class RestApiTwoApplication {
```

```
    public static void main(String[] args) {
```

```
        SpringApplication.run(RestApiTwoApplication.class, args);
```

```
    }
```

```
}
```

HobbyEntity.java

```
package com.example.test;
```

```
import jakarta.persistence.Column;
```

```
import jakarta.persistence.Entity;
```

```
import jakarta.persistence.GeneratedValue;
```

```
import jakarta.persistence.GenerationType;
```

```
import jakarta.persistence.Id;
```

```
@Entity
```

```
public class HobbyEntity {
```

```
    @Id
```

```
    @GeneratedValue(strategy = GenerationType.AUTO)
```

```
    @Column(name = "id", updatable = false, nullable = false)
```

```
    private Integer id;
```

```
    @Column
```

```
    private Integer personId;
```

```
    @Column
```

```
    private String name;
```

```
    public HobbyEntity() {
```

```
        super();
```

```
    }
```

```
    public HobbyEntity(Integer personId, String name) {
```

```
        super();
```



```
this.personId = personId;
```

```
this.name = name;
```

```
}
```

```
public Integer getPersonId() {
```

```
    return personId;
```

```
}
```

```
public void setPersonId(Integer personId) {
```

```
    this.personId = personId;
```

```
}
```

```
public String getName() {
```

```
    return name;
```

```
}
```

```
public void setName(String name) {
```

```
    this.name = name;
```

```
}
```

```
}
```

HobbyRepository.java

```
package com.example.test;
```

```
import org.springframework.data.jpa.repository.JpaRepository;
```

```
import org.springframework.data.jpa.repository.Query;
```

```
import org.springframework.stereotype.Repository;
```

```
@Repository
```

```
public interface HobbyRepository extends JpaRepository<HobbyEntity, Integer> {
```

```
@Query("SELECT h.name FROM HobbyEntity h WHERE h.personId=:personId")
public String findByPersonId(Integer personId);

}
```

HobbyService.java

```
package com.example.test;

import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.stereotype.Service;

@Service

public class HobbyService {

    @Autowired
    HobbyRepository hobbyRepository;

    public String findByPersonId(int personId) {
        return hobbyRepository.findByPersonId(personId);
    }

    public void addHobby(HobbyEntity he) {
        hobbyRepository.save(he);
    }
}
```

HobbyController.java

```
package com.example.test;

import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.web.bind.annotation.PathVariable;
```

```
import org.springframework.web.bind.annotation.RequestBody;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.RequestMethod;
import org.springframework.web.bind.annotation.RestController;
```

```
@RestController
```

```
@RequestMapping(path = "/webapitwo")
```

```
public class HobbyController {
```

```
@Autowired
```

```
HobbyService hobbyService;
```

```
@RequestMapping("/hobby/{personid}")
```

```
public String findByPersonId(@PathVariable int personid) {
```

```
    return hobbyService.findByPersonId(personid);
```

```
}
```

```
@RequestMapping(method = RequestMethod.POST, value = "/hobby")
```

```
public void addHobby(@RequestBody HobbyEntity he) {
```

```
    hobbyService.addHobby(he);
```

```
}
```

```
}
```

application.properties

```
server.port=8082
```

```
spring.application.name=RestApiTwo
```