1.Create a project to demonstrate microservices with Spring

BootRestApiOneApplication.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);


}

}
```

```
}
```

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);
}
}
```

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;
 }
}
```

application.properties:

```
server.port=808
spring.application.name=RestApiOne
```

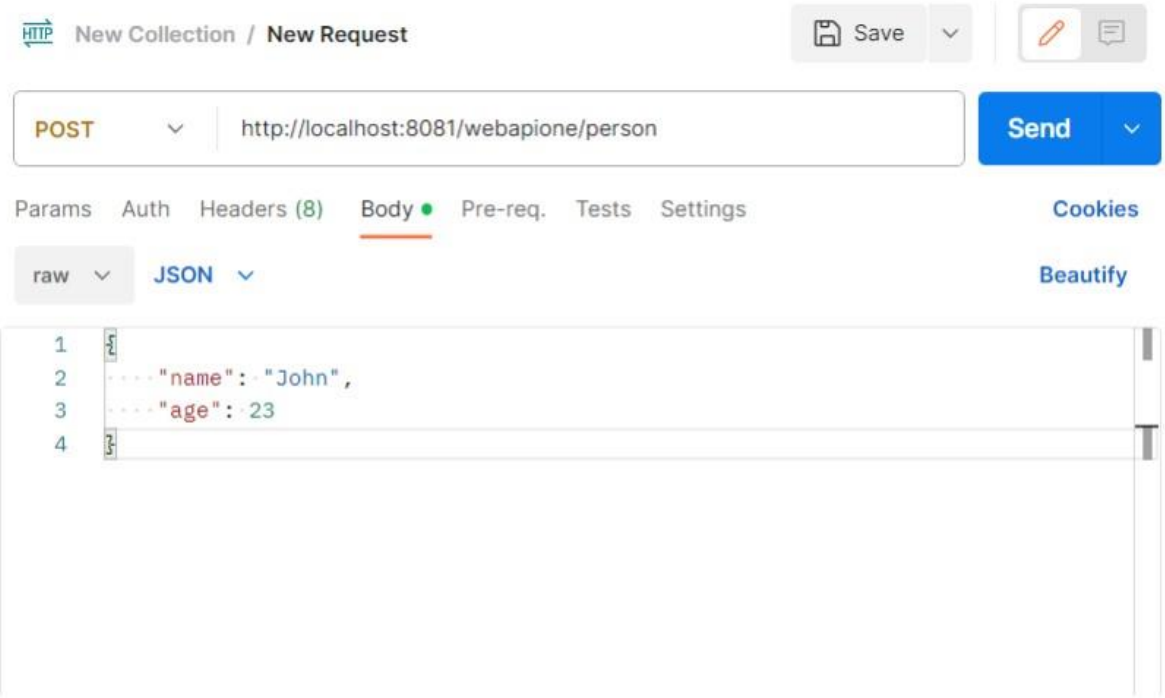
pom.xml :

```
<?xml version="1.0" encoding="UTF-8"?> <project
xmlns="http://maven.apache.org/POM/4.0.0"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
https://maven.apache.org/xsd/maven-4.0.0.xsd">
<modelVersion>4.0.0</modelVersion>
<parent>
<groupId>org.springframework.boot</groupId>
<artifactId>spring-boot-starter-parent</artifactId>
<version>3.1.0</version>
<relativePath/> <!-- lookup parent from repository --> </parent>
<groupId>com.example</groupId>
<artifactId>RestApiOne</artifactId>
```

```
<version>0.0.1-SNAPSHOT</version>

<name>RestApiOne</name>

<description>Demo project for Spring Boot </description>

<properties>

<java.version>20</java.version>

</properties>

<dependencies>

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-data-jpa</artifactId>

</dependency>

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-web</artifactId>

</dependency>

<dependency>

<groupId>com.h2database</groupId>

<artifactId>h2</artifactId>

<scope>runtime</scope>

</dependency>

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-test</artifactId>
<scope>test</scope>

</dependency>

</dependencies>
```

```
<build>

<plugins>

<plugin>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-maven-plugin</artifactId>

</plugin>

</plugins>

</build>

</project>
```

Output :



POST http://localhost:8081/webapione/person

```
{
    "name": "John",
    "age": 23
}
```

RestApiTwoApplication.java:

```
 package com.example.test; import

org.springframework.boot.SpringApplic

ation; import
```

```
      org.springframework.boot.autoconfigur
      e.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);
 }
}
```

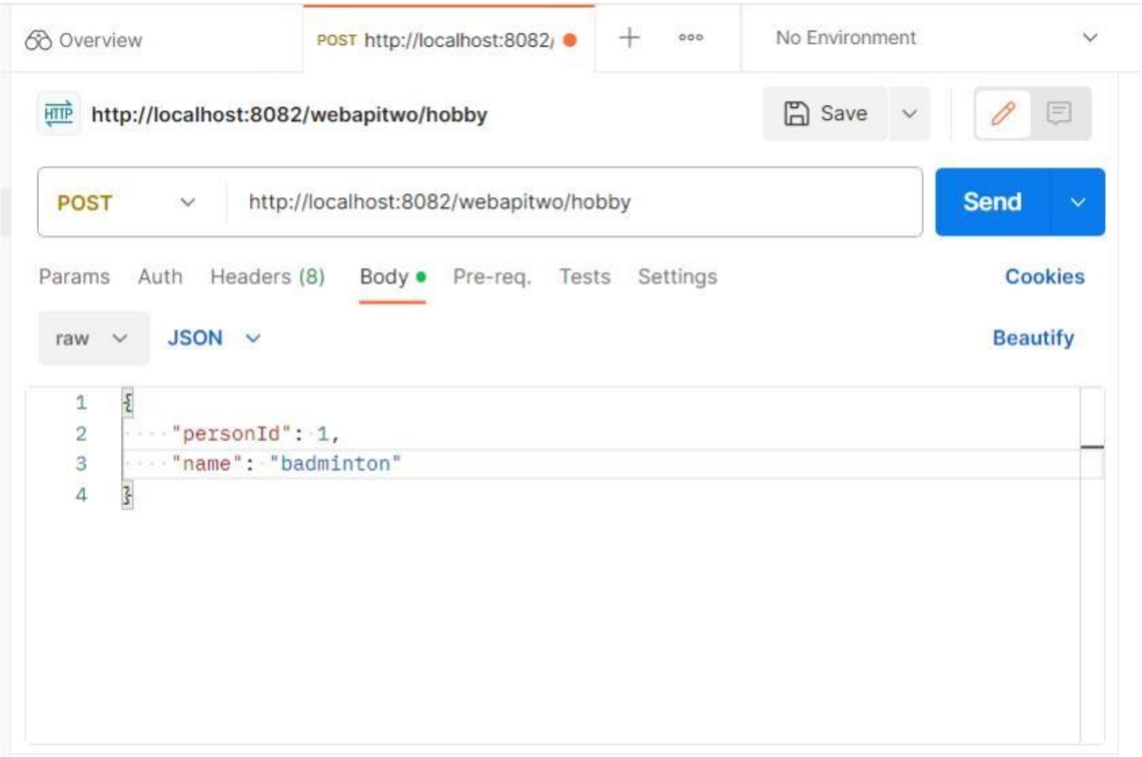
HobbyController.java:

```
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
```

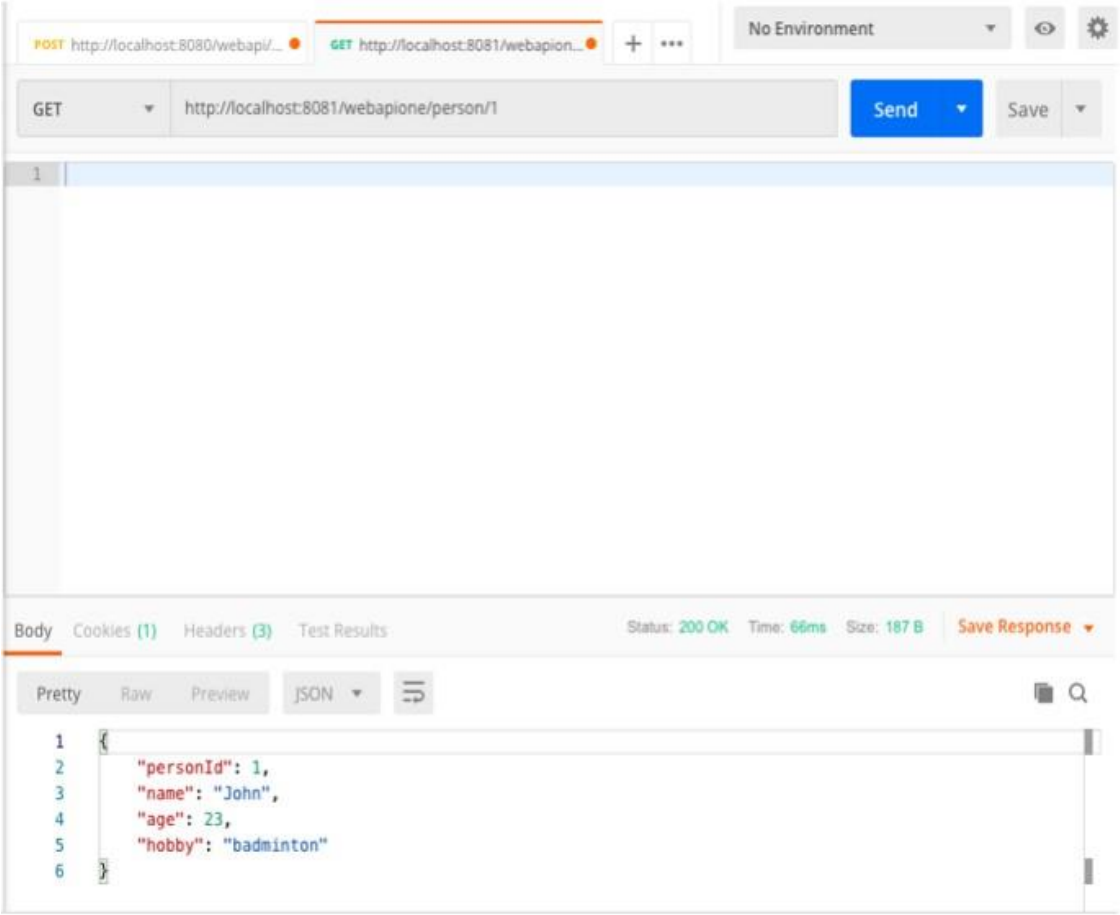
Output:



http://localhost:8082/webapitwo/hobby

POST http://localhost:8082/webapitwo/hobby

```
{
    "personId": 1,
    "name": "badminton"
}
```



GET http://localhost:8081/webapione/person/1

Status: 200 OK Time: 66ms Size: 187 B

```
{
    "personId": 1,
    "name": "John",
    "age": 23,
    "hobby": "badminton"
}
```