**Employee Management**

**Database Schema:**

**EMPLOYEE TABLE:**

**CREATE** **TABLE** `employee` (

`EMPLOYEE\_ID` **INT**(11) **NOT** **NULL** **AUTO\_INCREMENT**,

`EMPLOYEE\_NAME` **VARCHAR**(50) **NULL** **DEFAULT** **NULL**,

`SALARY` **INT**(10) **NULL** **DEFAULT** **NULL**,

`DEPARTMENT` **INT**(10) **NULL**,

`DESIGNATION` **VARCHAR**(50) **NULL** **DEFAULT** **NULL**,

`CREATEDBY` **VARCHAR**(50) **NULL** **DEFAULT** **NULL**,

`MODIFIEDBY` **VARCHAR**(50) **NULL** **DEFAULT** **NULL**,

`MODIFIEDDATE` **DATE** **NULL** **DEFAULT** **NULL**,

`CREATEDDATE` **DATE** **NULL** **DEFAULT** **NULL**,

`MANAGER\_ID` **INT**(11) **NULL** **DEFAULT** **NULL**,

**PRIMARY** **KEY** (`EMPLOYEE\_ID`),

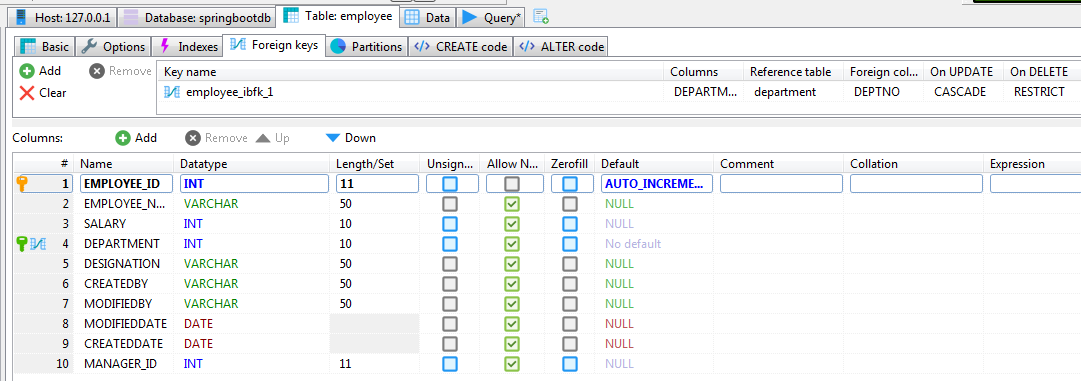
**INDEX** `employee\_ibfk\_1` (`DEPARTMENT`),

**CONSTRAINT** `employee\_ibfk\_1` **FOREIGN** **KEY** (`DEPARTMENT`) **REFERENCES** `department` (`DEPTNO`) **ON** **UPDATE** **CASCADE**

)

**AUTO\_INCREMENT**=13

;



**DEPARTMENT:**

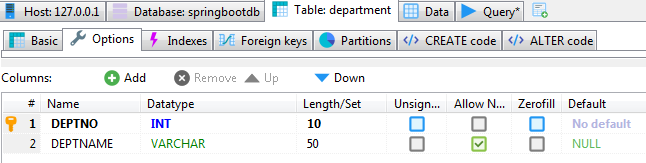
**CREATE** **TABLE** `department` (

`DEPTNO` **INT**(10) **NOT** **NULL**,

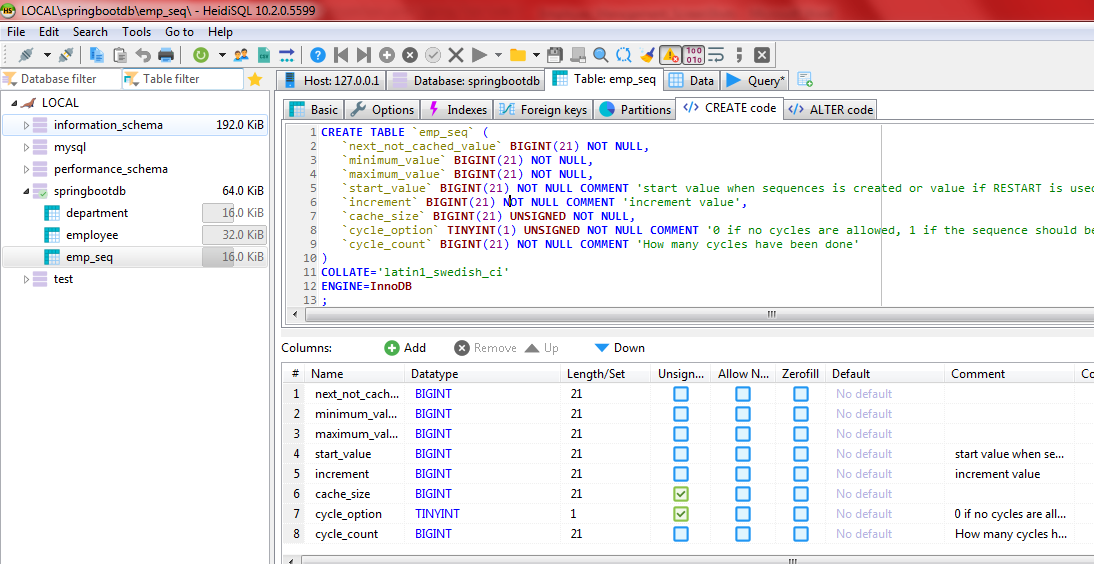
`DEPTNAME` **VARCHAR**(50) **NULL** **DEFAULT** **NULL**,

**PRIMARY** **KEY** (`DEPTNO`)

);

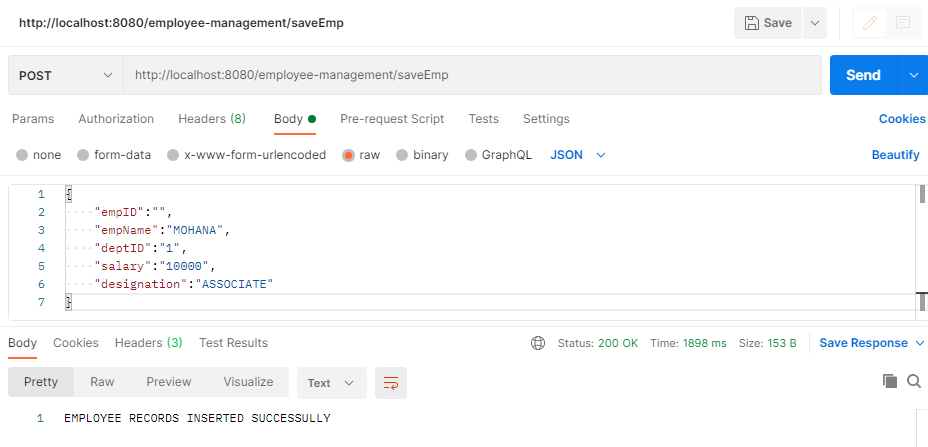


**SEQUENCE GENERATION FOR EMPLOYEE ID:**

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**REST API for following using Repositories:**

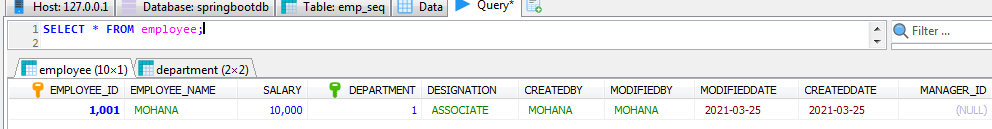
1. Creating an Employee



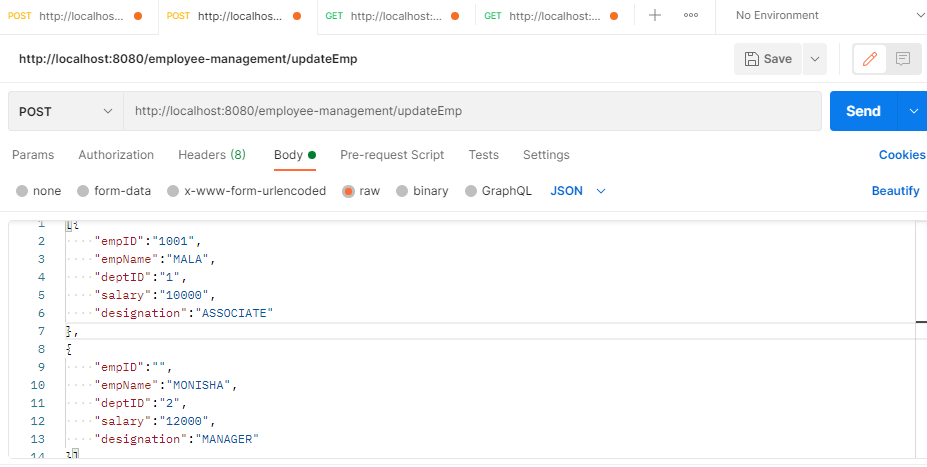
**Log Trace:**

Hibernate: select nextval(emp\_seq)

Hibernate: insert into employee (createdby, createddate, modifiedby, modifieddate, department, designation, employee\_name, manager\_id, salary, employee\_id) values (?, ?, ?, ?, ?, ?, ?, ?, ?, ?)



1. Update Employee name, Salary and department (one or more values)

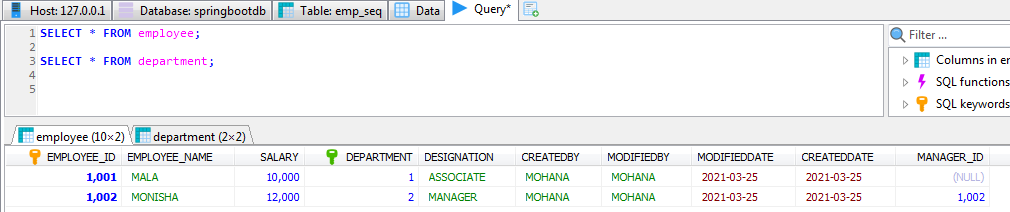


**Log Trace:**

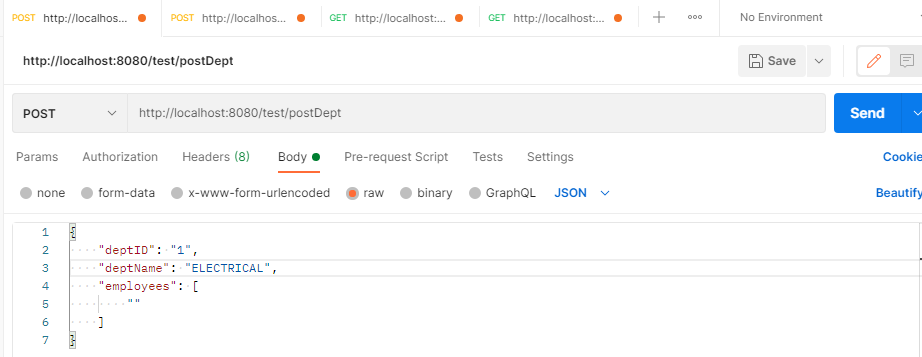
Hibernate: select employee0\_.employee\_id as employee1\_1\_0\_, employee0\_.createdby as createdb2\_1\_0\_, employee0\_.createddate as createdd3\_1\_0\_, employee0\_.modifiedby as modified4\_1\_0\_, employee0\_.modifieddate as modified5\_1\_0\_, employee0\_.department as departme6\_1\_0\_, employee0\_.designation as designat7\_1\_0\_, employee0\_.employee\_name as employee8\_1\_0\_, employee0\_.manager\_id as manager10\_1\_0\_, employee0\_.salary as salary9\_1\_0\_ from employee employee0\_ where employee0\_.employee\_id=?

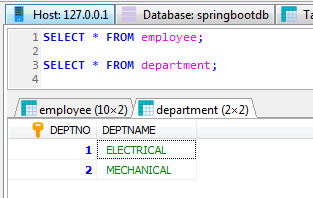
2021-03-25 19:56:51.480 WARN 5016 --- [nio-8080-exec-7] o.h.p.entity.AbstractEntityPersister : HHH000502: The [department] property of the [com.demo.model.Employee] entity was modified, but it won't be updated because the property is immutable.

Hibernate: update employee set createdby=?, createddate=?, modifiedby=?, modifieddate=?, department=?, designation=?, employee\_name=?, manager\_id=?, salary=? where employee\_id=?



1. Create department



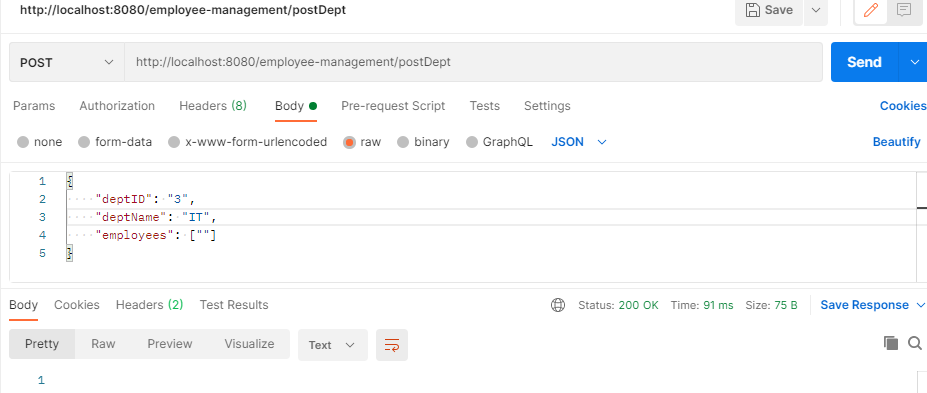


**Log Trace:**

Hibernate: select department0\_.deptno as deptno1\_0\_1\_, department0\_.deptname as deptname2\_0\_1\_, employees1\_.department as departme6\_1\_3\_, employees1\_.employee\_id as employee1\_1\_3\_, employees1\_.employee\_id as employee1\_1\_0\_, employees1\_.createdby as createdb2\_1\_0\_, employees1\_.createddate as createdd3\_1\_0\_, employees1\_.modifiedby as modified4\_1\_0\_, employees1\_.modifieddate as modified5\_1\_0\_, employees1\_.department as departme6\_1\_0\_, employees1\_.designation as designat7\_1\_0\_, employees1\_.employee\_name as employee8\_1\_0\_, employees1\_.manager\_id as manager10\_1\_0\_, employees1\_.salary as salary9\_1\_0\_ from department department0\_ left outer join employee employees1\_ on department0\_.deptno=employees1\_.department where department0\_.deptno=?

Hibernate: insert into department (deptname, deptno) values (?, ?)

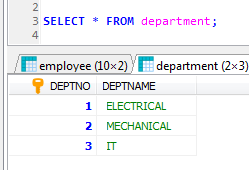
1. Update department name



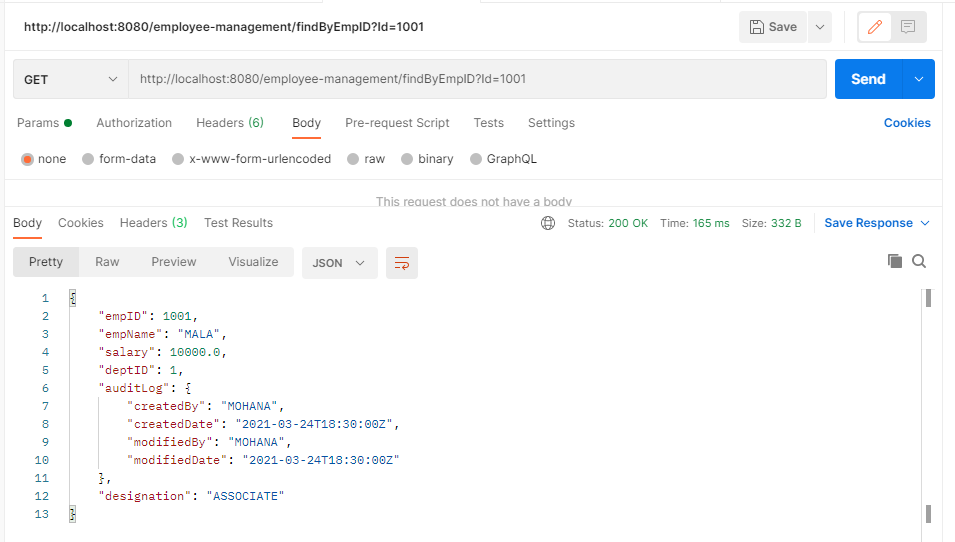
**Log Trace:**

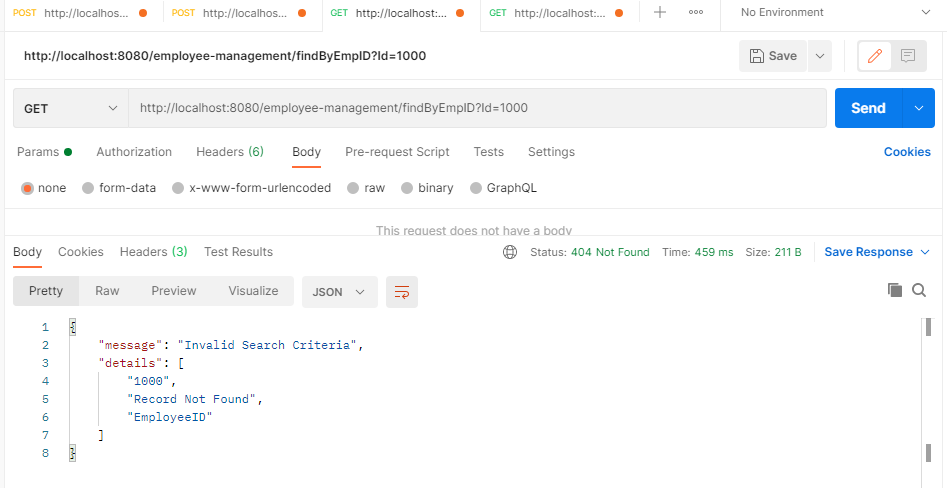
Hibernate: select department0\_.deptno as deptno1\_0\_1\_, department0\_.deptname as deptname2\_0\_1\_, employees1\_.department as departme6\_1\_3\_, employees1\_.employee\_id as employee1\_1\_3\_, employees1\_.employee\_id as employee1\_1\_0\_, employees1\_.createdby as createdb2\_1\_0\_, employees1\_.createddate as createdd3\_1\_0\_, employees1\_.modifiedby as modified4\_1\_0\_, employees1\_.modifieddate as modified5\_1\_0\_, employees1\_.department as departme6\_1\_0\_, employees1\_.designation as designat7\_1\_0\_, employees1\_.employee\_name as employee8\_1\_0\_, employees1\_.manager\_id as manager10\_1\_0\_, employees1\_.salary as salary9\_1\_0\_ from department department0\_ left outer join employee employees1\_ on department0\_.deptno=employees1\_.department where department0\_.deptno=?

Hibernate: update department set deptname=? where deptno=?



1. Get employee by Id

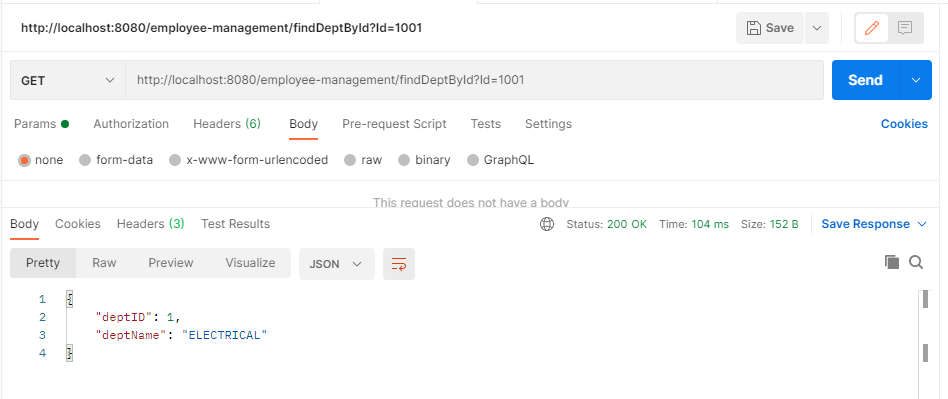


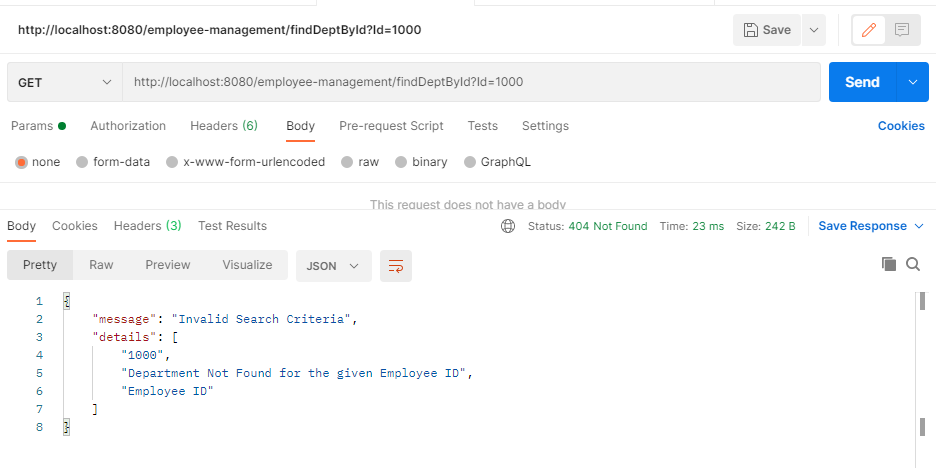


**Log Trace:**

Hibernate: select employee0\_.employee\_id as employee1\_1\_, employee0\_.createdby as createdb2\_1\_, employee0\_.createddate as createdd3\_1\_, employee0\_.modifiedby as modified4\_1\_, employee0\_.modifieddate as modified5\_1\_, employee0\_.department as departme6\_1\_, employee0\_.designation as designat7\_1\_, employee0\_.employee\_name as employee8\_1\_, employee0\_.manager\_id as manager10\_1\_, employee0\_.salary as salary9\_1\_ from employee employee0\_ where employee0\_.employee\_id=1001

1. Get department by Id

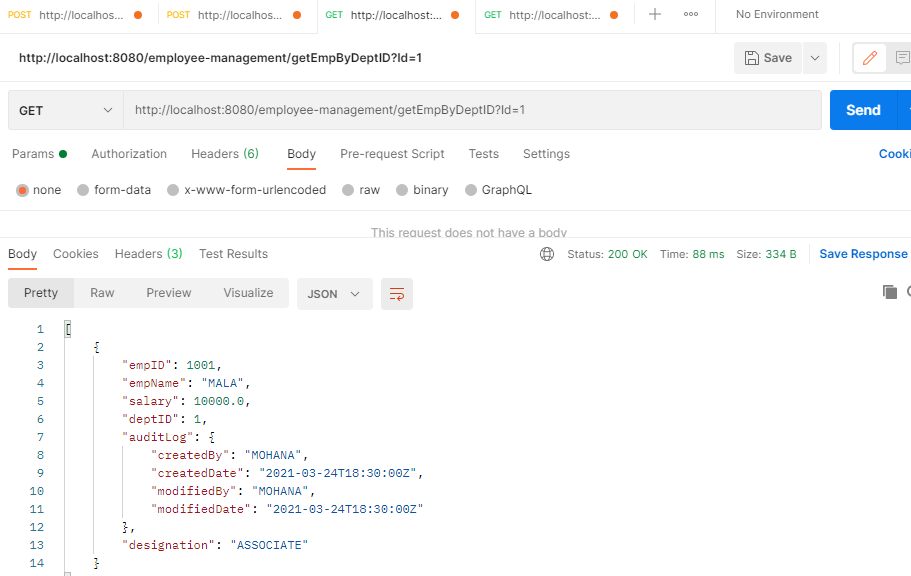


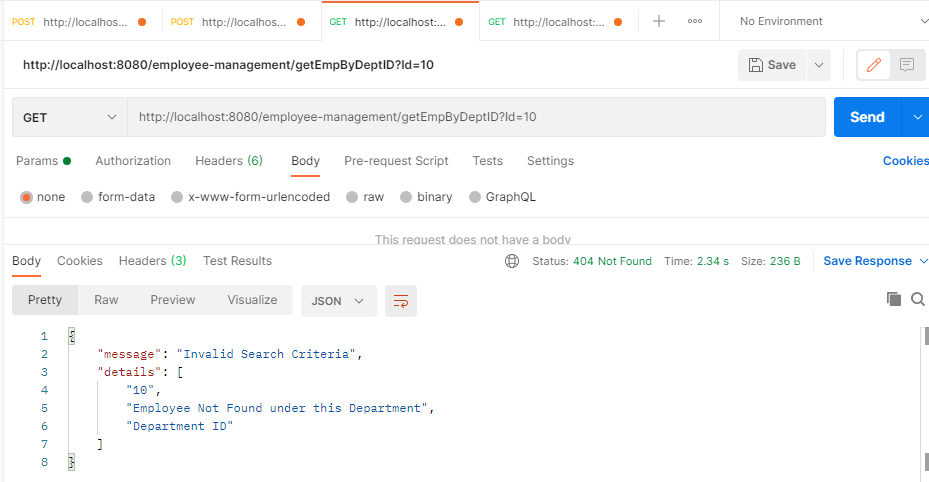


**Log Trace:**

Hibernate: select department0\_.deptno as deptno1\_0\_0\_, department0\_.deptname as deptname2\_0\_0\_ from department department0\_ where department0\_.deptno=?

1. Get all employees by department Id





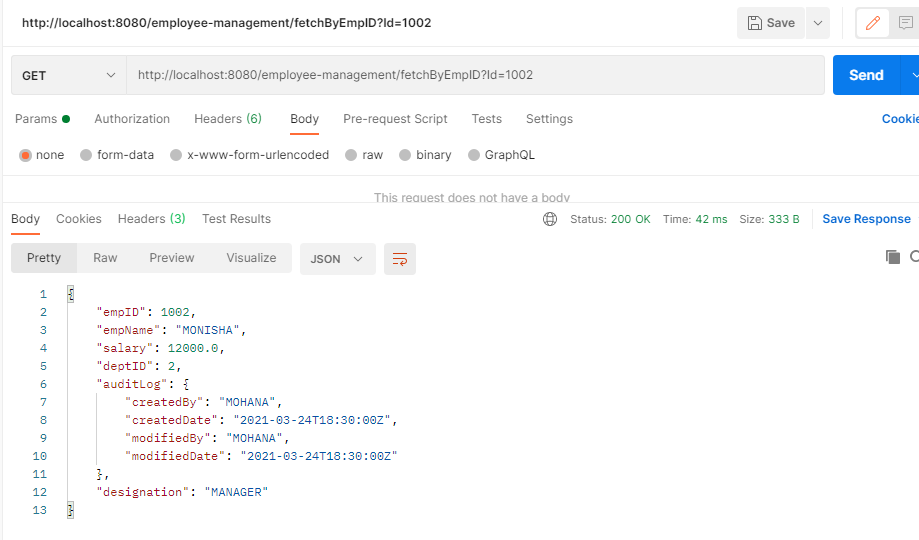
**Log Trace:**

Hibernate: select department0\_.deptno as deptno1\_0\_0\_, department0\_.deptname as deptname2\_0\_0\_ from department department0\_ where department0\_.deptno=?

Hibernate: select employees0\_.department as departme6\_1\_0\_, employees0\_.employee\_id as employee1\_1\_0\_, employees0\_.employee\_id as employee1\_1\_1\_, employees0\_.createdby as createdb2\_1\_1\_, employees0\_.createddate as createdd3\_1\_1\_, employees0\_.modifiedby as modified4\_1\_1\_, employees0\_.modifieddate as modified5\_1\_1\_, employees0\_.department as departme6\_1\_1\_, employees0\_.designation as designat7\_1\_1\_, employees0\_.employee\_name as employee8\_1\_1\_, employees0\_.manager\_id as manager10\_1\_1\_, employees0\_.salary as salary9\_1\_1\_ from employee employees0\_ where employees0\_.department=?

**Problem 1:**

1. Get Employee By ID using **Specifications**

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**Log Trace:**

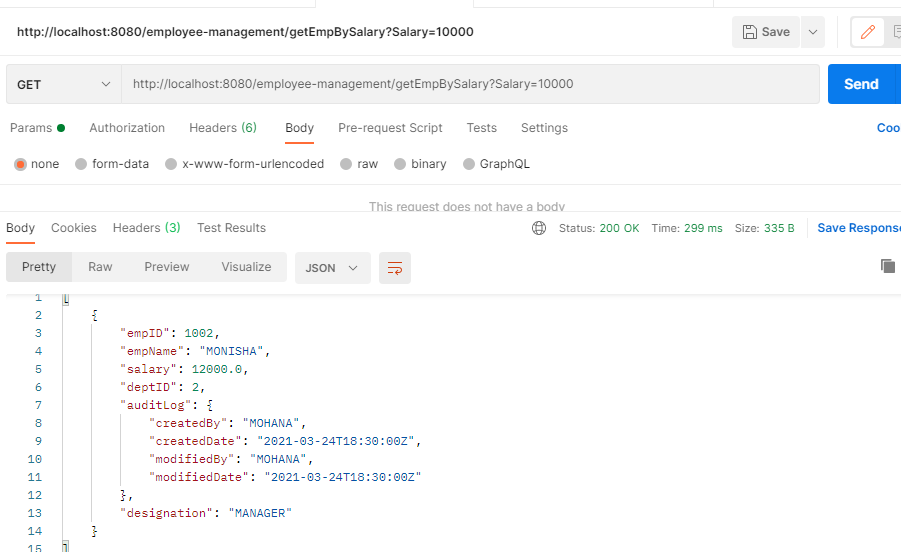
2021-03-25 19:42:51.793 INFO 5016 --- [nio-8080-exec-2] o.s.web.servlet.DispatcherServlet : Completed initialization in 21 ms

Hibernate: select employee0\_.employee\_id as employee1\_1\_, employee0\_.createdby as createdb2\_1\_, employee0\_.createddate as createdd3\_1\_, employee0\_.modifiedby as modified4\_1\_, employee0\_.modifieddate as modified5\_1\_, employee0\_.department as departme6\_1\_, employee0\_.designation as designat7\_1\_, employee0\_.employee\_name as employee8\_1\_, employee0\_.manager\_id as manager10\_1\_, employee0\_.salary as salary9\_1\_ from employee employee0\_ where employee0\_.employee\_id=1

Hibernate: select employee0\_.employee\_id as employee1\_1\_, employee0\_.createdby as createdb2\_1\_, employee0\_.createddate as createdd3\_1\_, employee0\_.modifiedby as modified4\_1\_, employee0\_.modifieddate as modified5\_1\_, employee0\_.department as departme6\_1\_, employee0\_.designation as designat7\_1\_, employee0\_.employee\_name as employee8\_1\_, employee0\_.manager\_id as manager10\_1\_, employee0\_.salary as salary9\_1\_ from employee employee0\_ where employee0\_.employee\_id=1001

Hibernate: select employee0\_.employee\_id as employee1\_1\_, employee0\_.createdby as createdb2\_1\_, employee0\_.createddate as createdd3\_1\_, employee0\_.modifiedby as modified4\_1\_, employee0\_.modifieddate as modified5\_1\_, employee0\_.department as departme6\_1\_, employee0\_.designation as designat7\_1\_, employee0\_.employee\_name as employee8\_1\_, employee0\_.manager\_id as manager10\_1\_, employee0\_.salary as salary9\_1\_ from employee employee0\_ where employee0\_.employee\_id=1002

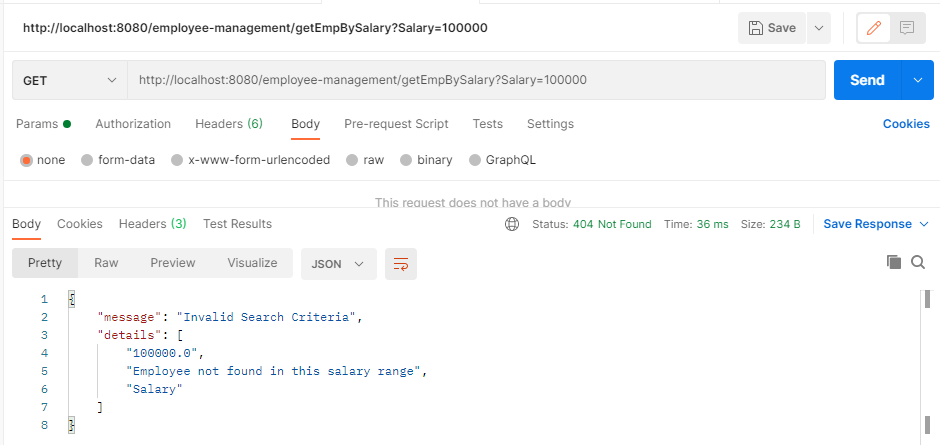
1. Get all employees whose salary greater than 10K (add new column salary) order by employee name Asc (case insensitive)



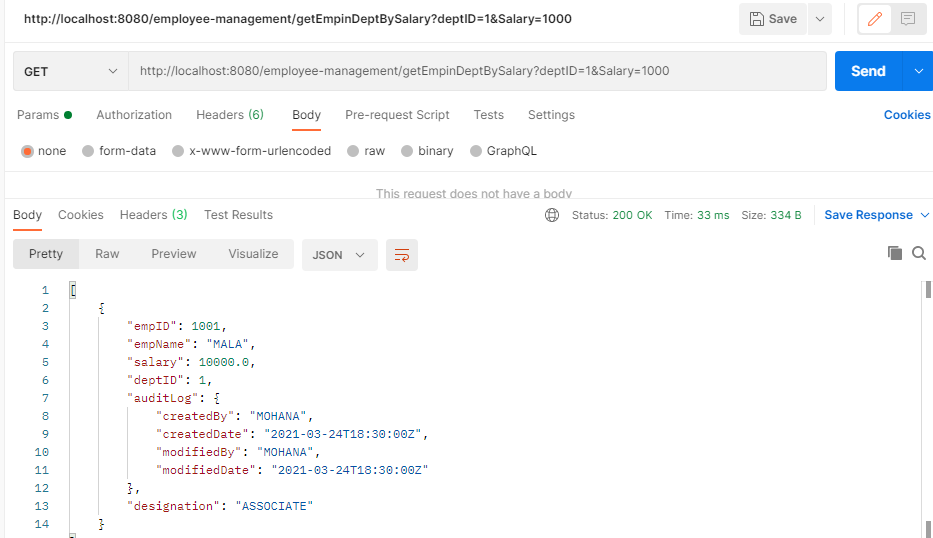
**Log Trace:**

Hibernate: SELECT E.EMPLOYEE\_ID FROM EMPLOYEE E

Hibernate: select employee0\_.employee\_id as employee1\_1\_, employee0\_.createdby as createdb2\_1\_, employee0\_.createddate as createdd3\_1\_, employee0\_.modifiedby as modified4\_1\_, employee0\_.modifieddate as modified5\_1\_, employee0\_.department as departme6\_1\_, employee0\_.designation as designat7\_1\_, employee0\_.employee\_name as employee8\_1\_, employee0\_.manager\_id as manager10\_1\_, employee0\_.salary as salary9\_1\_ from employee employee0\_ where (employee0\_.employee\_id in (1001 , 1002)) and employee0\_.salary>10000.0 order by employee0\_.employee\_name asc



1. Get all employees whose salary greater than 10K and for a given department Id order by Salary Desc



**Log Trace:**

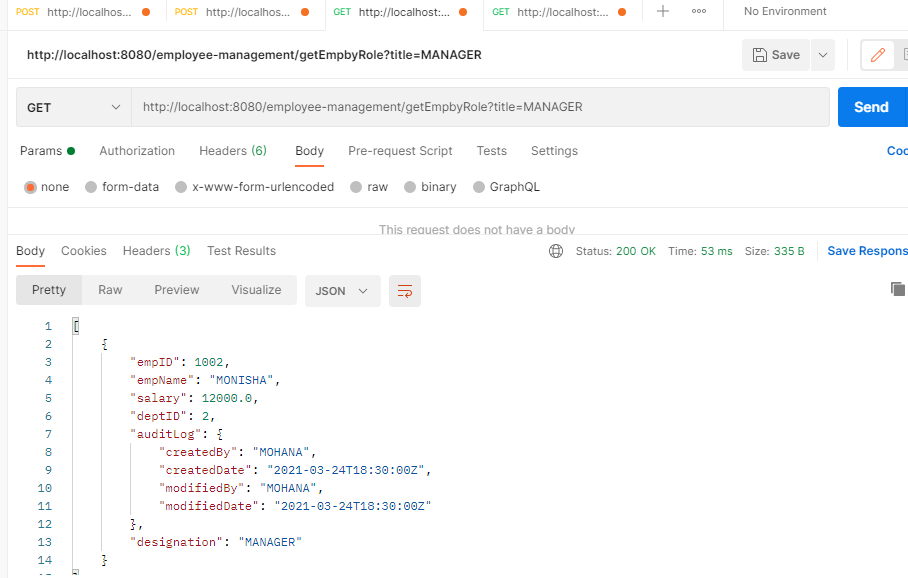
Hibernate: select department0\_.deptno as deptno1\_0\_0\_, department0\_.deptname as deptname2\_0\_0\_ from department department0\_ where department0\_.deptno=?

Hibernate: select employees0\_.department as departme6\_1\_0\_, employees0\_.employee\_id as employee1\_1\_0\_, employees0\_.employee\_id as employee1\_1\_1\_, employees0\_.createdby as createdb2\_1\_1\_, employees0\_.createddate as createdd3\_1\_1\_, employees0\_.modifiedby as modified4\_1\_1\_, employees0\_.modifieddate as modified5\_1\_1\_, employees0\_.department as departme6\_1\_1\_, employees0\_.designation as designat7\_1\_1\_, employees0\_.employee\_name as employee8\_1\_1\_, employees0\_.manager\_id as manager10\_1\_1\_, employees0\_.salary as salary9\_1\_1\_ from employee employees0\_ where employees0\_.department=?

Hibernate: select employee0\_.employee\_id as employee1\_1\_, employee0\_.createdby as createdb2\_1\_, employee0\_.createddate as createdd3\_1\_, employee0\_.modifiedby as modified4\_1\_, employee0\_.modifieddate as modified5\_1\_, employee0\_.department as departme6\_1\_, employee0\_.designation as designat7\_1\_, employee0\_.employee\_name as employee8\_1\_, employee0\_.manager\_id as manager10\_1\_, employee0\_.salary as salary9\_1\_ from employee employee0\_ where (employee0\_.employee\_id in (1001)) and employee0\_.salary>1000.0 order by employee0\_.salary desc

**Problem 2:**

1. Query to fetch employees based on given designation using Specification

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**Log Trace:**

Hibernate: SELECT E.EMPLOYEE\_ID FROM EMPLOYEE E

Hibernate: select employee0\_.employee\_id as employee1\_1\_, employee0\_.createdby as createdb2\_1\_, employee0\_.createddate as createdd3\_1\_, employee0\_.modifiedby as modified4\_1\_, employee0\_.modifieddate as modified5\_1\_, employee0\_.department as departme6\_1\_, employee0\_.designation as designat7\_1\_, employee0\_.employee\_name as employee8\_1\_, employee0\_.manager\_id as manager10\_1\_, employee0\_.salary as salary9\_1\_ from employee employee0\_ where employee0\_.designation=? and (employee0\_.employee\_id in (1001 , 1002))