JPA

Program to persist employee

**package** com.cg.jpastart.entities;

**import** javax.persistence.EntityManager;

**import** javax.persistence.EntityManagerFactory;

**import** javax.persistence.Persistence;

**public** **class** EmployeeTest {

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

EntityManagerFactory entityManagerFactory=Persistence.*createEntityManagerFactory*("JPA-PU");

EntityManager entityManager = entityManagerFactory.createEntityManager();

entityManager.getTransaction().begin();

Employee emp = **new** Employee();

emp.setEmployeeName("rushi");

emp.setEmployeeSalary(65000);

entityManager.persist(emp);

entityManager.getTransaction().commit();

System.***out***.println("Employee added to database");

entityManager.close();

entityManagerFactory.close();

}

}

**Program to find employee**

**package** com.cg.jpastart.entities;

**import** javax.persistence.EntityManager;

**import** javax.persistence.EntityManagerFactory;

**import** javax.persistence.Persistence;

**public** **class** EmployeeTest {

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

EntityManagerFactory entityManagerFactory=Persistence.*createEntityManagerFactory*("JPA-PU");

EntityManager entityManager = entityManagerFactory.createEntityManager();

entityManager.getTransaction().begin();

Employee emp=entityManager.find(Employee.**class**,5);

**if**(emp==**null**)

{

System.***out***.println("Employee not found");

}

**else**

{

System.***out***.println(emp.getEmployeeName()+" "+emp.getEmployeeSalary());

}

entityManager.getTransaction().commit();

//System.out.println("Employee added to database");

entityManager.close();

entityManagerFactory.close();

}

}

Program to detach entity

**package** com.cg.jpastart.entities;

**import** javax.persistence.EntityManager;

**import** javax.persistence.EntityManagerFactory;

**import** javax.persistence.Persistence;

**public** **class** EmployeeTest {

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

EntityManagerFactory entityManagerFactory=Persistence.*createEntityManagerFactory*("JPA-PU");

EntityManager entityManager = entityManagerFactory.createEntityManager();

entityManager.getTransaction().begin();

Employee emp=entityManager.find(Employee.**class**,5);

**if**(emp==**null**)

{

System.***out***.println("Employee not found");

}

**else**

{

entityManager.detach(emp);

emp.setEmployeeSalary(5000);

System.***out***.println(emp.getEmployeeName()+" "+emp.getEmployeeSalary());

}

entityManager.getTransaction().commit();

//System.out.println("Employee added to database");

entityManager.close();

entityManagerFactory.close();

}

}

Program to clear all the entities from entity manager

**package** com.cg.jpastart.entities;

**import** javax.persistence.EntityManager;

**import** javax.persistence.EntityManagerFactory;

**import** javax.persistence.Persistence;

**public** **class** EmployeeTest {

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

EntityManagerFactory entityManagerFactory=Persistence.*createEntityManagerFactory*("JPA-PU");

EntityManager entityManager = entityManagerFactory.createEntityManager();

entityManager.getTransaction().begin();

Employee emp=entityManager.find(Employee.**class**,5);

**if**(emp==**null**)

{

System.***out***.println("Employee not found");

}

**else**

{

entityManager.clear();

emp.setEmployeeSalary(5000);

System.***out***.println(emp.getEmployeeName()+" "+emp.getEmployeeSalary());

}

entityManager.getTransaction().commit();

//System.out.println("Employee added to database");

entityManager.close();

entityManagerFactory.close();

}

}

Program to delete the employee(first find it and then delete it)

**package** com.cg.jpastart.entities;

**import** javax.persistence.EntityManager;

**import** javax.persistence.EntityManagerFactory;

**import** javax.persistence.Persistence;

**public** **class** EmployeeTest {

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

EntityManagerFactory entityManagerFactory=Persistence.*createEntityManagerFactory*("JPA-PU");

EntityManager entityManager = entityManagerFactory.createEntityManager();

entityManager.getTransaction().begin();

Employee emp=entityManager.find(Employee.**class**,1);

**if**(emp==**null**)

{

System.***out***.println("Employee not found");

}

**else**

{

entityManager.remove(emp);

}

entityManager.getTransaction().commit();

//System.out.println("Employee added to database");

entityManager.close();

entityManagerFactory.close();

}

}

=========================================================================================

To update employee

**package** com.cg.jpastart.entities;

**import** javax.persistence.EntityManager;

**import** javax.persistence.EntityManagerFactory;

**import** javax.persistence.Persistence;

**public** **class** EmployeeTest {

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

EntityManagerFactory entityManagerFactory=Persistence.*createEntityManagerFactory*("JPA-PU");

EntityManager entityManager = entityManagerFactory.createEntityManager();

entityManager.getTransaction().begin();

Employee emp=entityManager.find(Employee.**class**,2);

**if**(emp==**null**)

{

System.***out***.println("Employee not found");

}

**else**

{

emp.setEmployeeName("Gaurav");

entityManager.merge(emp);

System.***out***.println();

}

entityManager.getTransaction().commit();

//System.out.println("Employee added to database");

entityManager.close();

entityManagerFactory.close();

}

}

To get all the recods

**package** com.cg.jpastart.entities;

**import** java.util.List;

**import** javax.persistence.EntityManager;

**import** javax.persistence.EntityManagerFactory;

**import** javax.persistence.Persistence;

**import** javax.persistence.Query;

**public** **class** EmployeeTest {

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

EntityManagerFactory entityManagerFactory=Persistence.*createEntityManagerFactory*("JPA-PU");

EntityManager entityManager = entityManagerFactory.createEntityManager();

entityManager.getTransaction().begin();

Query qry=entityManager.createQuery("from Employee");

List list=qry.getResultList();

**for**(Object obj : list)

{

Employee emp = (Employee)obj;

System.***out***.println(emp.getEmployeeId()+" "+emp.getEmployeeName()+" "+emp.getEmployeeSalary());

}

entityManager.getTransaction().commit();

entityManager.close();

entityManagerFactory.close();

}

}

Typed Query

**package** com.cg.jpastart.entities;

**import** java.util.List;

**import** javax.persistence.EntityManager;

**import** javax.persistence.EntityManagerFactory;

**import** javax.persistence.Persistence;

**import** javax.persistence.TypedQuery;

**public** **class** EmployeeTest {

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

EntityManagerFactory entityManagerFactory=Persistence.*createEntityManagerFactory*("JPA-PU");

EntityManager entityManager = entityManagerFactory.createEntityManager();

entityManager.getTransaction().begin();

TypedQuery<Employee> qry=entityManager.createQuery("from Employee",Employee.**class**);

List<Employee> list = qry.getResultList();

**for**(Employee emp :list)

{

System.***out***.println(emp.getEmployeeId()+" "+emp.getEmployeeName()+" "+emp.getEmployeeSalary());

}

entityManager.getTransaction().commit();

entityManager.close();

entityManagerFactory.close();

}

}

Using qry.getSingleResult()

**package** com.cg.jpastart.entities;

**import** java.util.List;

**import** javax.persistence.EntityManager;

**import** javax.persistence.EntityManagerFactory;

**import** javax.persistence.Persistence;

**import** javax.persistence.TypedQuery;

**public** **class** EmployeeTest {

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

EntityManagerFactory entityManagerFactory=Persistence.*createEntityManagerFactory*("JPA-PU");

EntityManager entityManager = entityManagerFactory.createEntityManager();

entityManager.getTransaction().begin();

TypedQuery<Employee> qry=entityManager.createQuery("from Employee where employeeId=4"

+ "",Employee.**class**);

Employee emp = qry.getSingleResult();

System.***out***.println(emp.getEmployeeId()+" "+emp.getEmployeeName()+" "+emp.getEmployeeSalary());

entityManager.getTransaction().commit();

entityManager.close();

entityManagerFactory.close();

}

}

Program to use set parameters

**package** com.cg.jpastart.entities;

**import** javax.persistence.EntityManager;

**import** javax.persistence.EntityManagerFactory;

**import** javax.persistence.Persistence;

**import** javax.persistence.Query;

**import** javax.persistence.TypedQuery;

**public** **class** EmployeeTest {

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

EntityManagerFactory entityManagerFactory=Persistence.*createEntityManagerFactory*("JPA-PU");

EntityManager entityManager = entityManagerFactory.createEntityManager();

entityManager.getTransaction().begin();

TypedQuery<Employee> qry=entityManager.createQuery("from Employee where employeeId=?"

+ "",Employee.**class**);

qry.setParameter(1, 3);

Employee emp = qry.getSingleResult();

System.***out***.println(emp.getEmployeeId()+" "+emp.getEmployeeName()+" "+emp.getEmployeeSalary());

;

entityManager.getTransaction().commit();

entityManager.close();

entityManagerFactory.close();

}

}

Named Parameters(instead of ?)

**package** com.cg.jpastart.entities;

**import** javax.persistence.EntityManager;

**import** javax.persistence.EntityManagerFactory;

**import** javax.persistence.Persistence;

**import** javax.persistence.Query;

**import** javax.persistence.TypedQuery;

**public** **class** EmployeeTest {

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

EntityManagerFactory entityManagerFactory=Persistence.*createEntityManagerFactory*("JPA-PU");

EntityManager entityManager = entityManagerFactory.createEntityManager();

entityManager.getTransaction().begin();

TypedQuery<Employee> qry=entityManager.createQuery("from Employee where employeeId=:id"

+ "",Employee.**class**);

qry.setParameter("id", 3);

Employee emp = qry.getSingleResult();

System.***out***.println(emp.getEmployeeId()+" "+emp.getEmployeeName()+" "+emp.getEmployeeSalary());

;

entityManager.getTransaction().commit();

entityManager.close();

entityManagerFactory.close();

}

}

To directly write named query annotation

**package** com.cg.jpastart.entities;

**import** javax.persistence.Column;

**import** javax.persistence.Entity;

**import** javax.persistence.GeneratedValue;

**import** javax.persistence.Id;

**import** javax.persistence.NamedQuery;

**import** javax.persistence.Table;

@Entity

@Table(name="employee\_tbl")

@NamedQuery(name="viewAllEmployee",query="from Employee")

**public** **class** Employee {

@Id

@GeneratedValue

@Column(name="emp\_id")

**private** **int** employeeId;

@Column(name="emp\_name",length=15)

**private** String employeeName;

@Column(name="emp\_salary")

**private** **int** employeeSalary;

**public** Employee() {

**super**();

}

**public** Employee(**int** employeeId, String employeeName, **int** employeeSalary) {

**super**();

**this**.employeeId = employeeId;

**this**.employeeName = employeeName;

**this**.employeeSalary = employeeSalary;

}

**public** **int** getEmployeeId() {

**return** employeeId;

}

**public** **void** setEmployeeId(**int** employeeId) {

**this**.employeeId = employeeId;

}

**public** String getEmployeeName() {

**return** employeeName;

}

**public** **void** setEmployeeName(String employeeName) {

**this**.employeeName = employeeName;

}

**public** **int** getEmployeeSalary() {

**return** employeeSalary;

}

**public** **void** setEmployeeSalary(**int** employeeSalary) {

**this**.employeeSalary = employeeSalary;

}

}

**package** com.cg.jpastart.entities;

**import** java.util.List;

**import** javax.persistence.EntityManager;

**import** javax.persistence.EntityManagerFactory;

**import** javax.persistence.Persistence;

**import** javax.persistence.TypedQuery;

**public** **class** EmployeeTest {

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

EntityManagerFactory entityManagerFactory=Persistence.*createEntityManagerFactory*("JPA-PU");

EntityManager entityManager = entityManagerFactory.createEntityManager();

entityManager.getTransaction().begin();

TypedQuery<Employee> qry=entityManager.createNamedQuery("viewAllEmployee", Employee.**class**);

List<Employee> list = qry.getResultList();

**for**(Employee emp:list)

{

System.***out***.println(emp.getEmployeeId()+" "+emp.getEmployeeName()+" "+emp.getEmployeeSalary());

}

entityManager.getTransaction().commit();

entityManager.close();

entityManagerFactory.close();

}

}

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Program to learn association onetoone

**package** com.test;

**import** javax.persistence.EntityManager;

**import** javax.persistence.EntityManagerFactory;

**import** javax.persistence.Persistence;

**public** **class** TestMapping {

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

EntityManagerFactory entityManagerFactory=Persistence.*createEntityManagerFactory*("JPA-PU");

EntityManager entityManager = entityManagerFactory.createEntityManager();

entityManager.getTransaction().begin();

Employee emp = **new** Employee();

emp.setEmployeeName("Sourabh");

Department dept = **new** Department();

dept.setDepartmentName("Sales");

emp.setDepartment(dept);

entityManager.persist(emp);

entityManager.persist(dept);

entityManager.getTransaction().commit();

System.***out***.println("Employee added");

entityManager.close();

entityManagerFactory.close();

}

}

package com.test;

import javax.persistence.Column;

import javax.persistence.Entity;

import javax.persistence.GeneratedValue;

import javax.persistence.Id;

import javax.persistence.JoinColumn;

import javax.persistence.OneToOne;

import javax.persistence.Table;

@Entity

@Table(name="emp\_tbl")

public class Employee {

@Id

@GeneratedValue

@Column(name="emp\_id")

private int employeeId;

@Column(name="emp\_name",length=10)

private String employeeName;

@OneToOne

@JoinColumn(name="dept\_id")

private Department department;

public int getEmployeeId() {

return employeeId;

}

public void setEmployeeId(int employeeId) {

this.employeeId = employeeId;

}

public String getEmployeeName() {

return employeeName;

}

public void setEmployeeName(String employeeName) {

this.employeeName = employeeName;

}

public Department getDepartment() {

return department;

}

public void setDepartment(Department department) {

this.department = department;

}

}

package com.test;

import javax.persistence.Column;

import javax.persistence.Entity;

import javax.persistence.GeneratedValue;

import javax.persistence.Id;

import javax.persistence.Table;

@Entity

@Table(name="dept\_tbl")

public class Department {

@Id

@GeneratedValue

@Column(name="dept\_id")

private int deparmentId;

@Column(name="dept\_name",length=10)

private String departmentName;

public int getDeparmentId() {

return deparmentId;

}

public void setDeparmentId(int deparmentId) {

this.deparmentId = deparmentId;

}

public String getDepartmentName() {

return departmentName;

}

public void setDepartmentName(String departmentName) {

this.departmentName = departmentName;

}

}

Program to use cascade

@OneToOne(cascade=CascadeType.***ALL,*** ***fetch=FetchType.LAZY***)

@JoinColumn(name="dept\_id")

**private** Department department;

Program to delete using cascade type as all

**package** com.test;

**import** javax.persistence.EntityManager;

**import** javax.persistence.EntityManagerFactory;

**import** javax.persistence.Persistence;

**public** **class** TestMapping {

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

EntityManagerFactory entityManagerFactory=Persistence.*createEntityManagerFactory*("JPA-PU");

EntityManager entityManager = entityManagerFactory.createEntityManager();

entityManager.getTransaction().begin();

Employee emp =entityManager.find(Employee.**class**, 7);

//Department dept;

System.***out***.println(emp.getEmployeeName()+" "+emp.getDepartment().getDepartmentName());

entityManager.remove(emp);

entityManager.getTransaction().commit();

System.***out***.println("Employee deleted");

/\* entityManager.getTransaction().begin();

emp =entityManager.find(Employee.class, 5);

System.out.println(emp.getEmployeeName()+" "+emp.getDepartment().getDepartmentName());

entityManager.remove(emp);

entityManager.getTransaction().commit();\*/

entityManager.close();

entityManagerFactory.close();

}

}

OneToOne(mappedBy="department")

**private** Employee emp;

Program to

**package** com.cg.jpastart.entities;

**import** java.util.List;

**import** javax.persistence.EntityManager;

**import** javax.persistence.EntityManagerFactory;

**import** javax.persistence.Persistence;

**import** javax.persistence.TypedQuery;

**public** **class** Client1 {

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

EntityManagerFactory factory = Persistence.*createEntityManagerFactory*("JPA-PU");

EntityManager em = factory.createEntityManager();

em.getTransaction().begin();

String qryStr ="from Employee where department.id=10";

TypedQuery<Employee> qry = em.createQuery(qryStr, Employee.**class**);

List<Employee> list=qry.getResultList();

**for**(Employee emp:list)

{

System.***out***.println(emp.getName()+" "+emp.getDepartment().getName());

}

em.getTransaction().commit();

System.***out***.println("Added Success");

em.close();

factory.close();

}

}