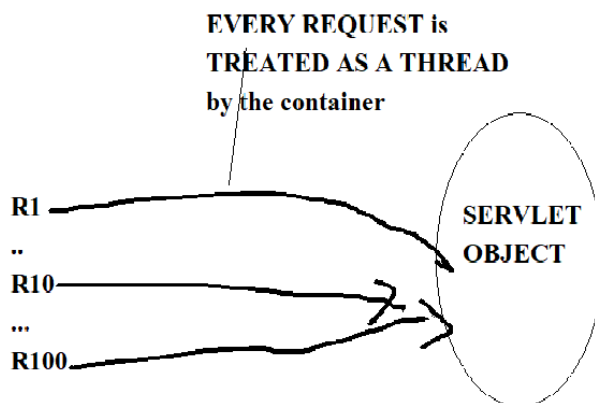


Servlet Life cycle	JSP life cycle
Constructor of servlet	Internal servlet constructor
Init	_jspInit
Service	_jspService
doGet / doPost	-----"-----
Destroy	_jspDestroy

SERVLET ----single object



**Multithreaded Servlet Model , One servlet object is shared by many THREADS , hence we should not have properties in servlet class as they might face RACE CONDITION !!**

SERVLET was better server side option as compared to CGI scripts !!!

For Request a new process was forked in CGI !!!

WHERE AS servlet uses just ONE process and many threads within that process!!!

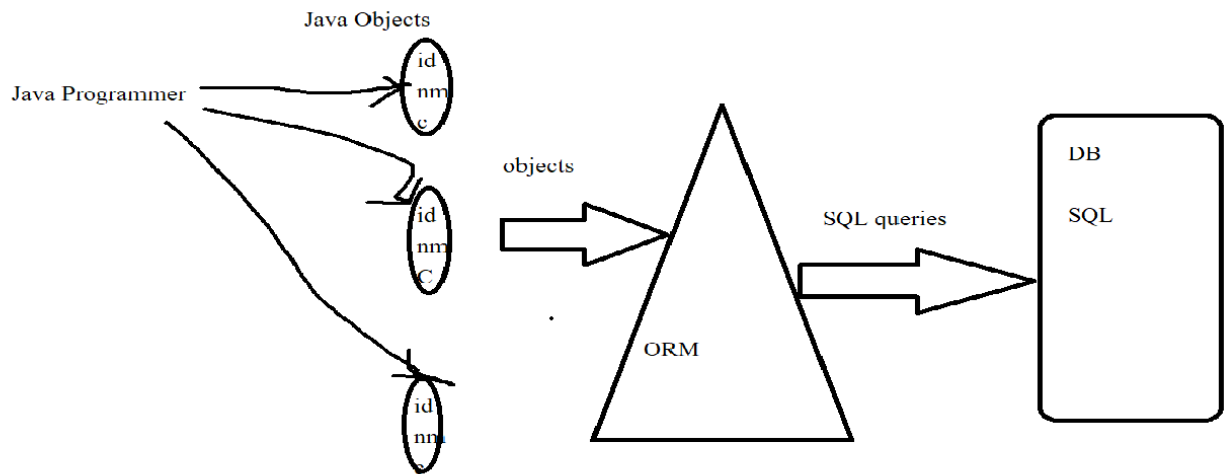
---

Hibernate -----

Java/JEE is owned by Oracle

Hibernate.org is an independent VENDOR !! Library --- API ???

ORM = Object Relational Mapping }}}} **Persistence**



**Java Programmer** is DECOUPLED from SQL !!!!

Java Programmer	ORM
Class	Table
Property of class	Table column
Instance of class	INSERT row in table
Change the property of the object	Update row in table
Remove/delete API	Delete row in table
findAll	Select queries

Readymade -----Database ( MySQL )

----- ORM ( Hibernate ---- download the zip file of the latest stable version )

**Java code that uses ORM API --- WE write**

STEPS to write hibernate application -----

1. Create a core java project
2. Build path = add all the jars from hibernate-release/lib/required  
+  
mysql-connector.jar
3. Write an xml file } **hibernate.cfg.xml**  
 WE( programmer)  
 Give info about connectivity details  
 +  
 Give instructions about using  
 Sql dialect  
 DDL  
 Connection pool size  
 ...  
 ...  
 ....  
 +  
 Classes to be mapped to tables

## To the Hibernate Container

4. Write the entity class(es) !!!! ( classes that are MAPPED to TABLES )
5. Create Session and perform operations

SQL DIALECTS -----

```
CREATE TABLE Persons (  
    PersonID int primary key,  
    LastName varchar(255),  
    FirstName varchar(255),  
    Address varchar(255),  
    City varchar(255)  
);
```

1. **CREATE TABLE** customers
2. ( customer\_id number(10) NOT NULL,
3. customer\_name varchar2(50) NOT NULL,
4. city varchar2(50)
5. );

```
CREATE TABLE customers( customer_id INT GENERATED ALWAYS AS IDENTITY,  
customer_name VARCHAR(255) NOT NULL, PRIMARY KEY(customer_id) );
```

---

Entity ===== MAPPED CLASS !!!

---

Container MANAGES the **LIFE CYCLE** OF THE COMPONENTS !!!

Container : Web Container

Components : Web components ( servlets , jsp )

Container : Hibernate CONTEXT !!!

Component : Entity !!!

Entity LIFE CYCLE managed by Hibernate **Persistence Context**

States of entity life cycle -----

Managed State = Persistence Context is TRACKING the entity object !!

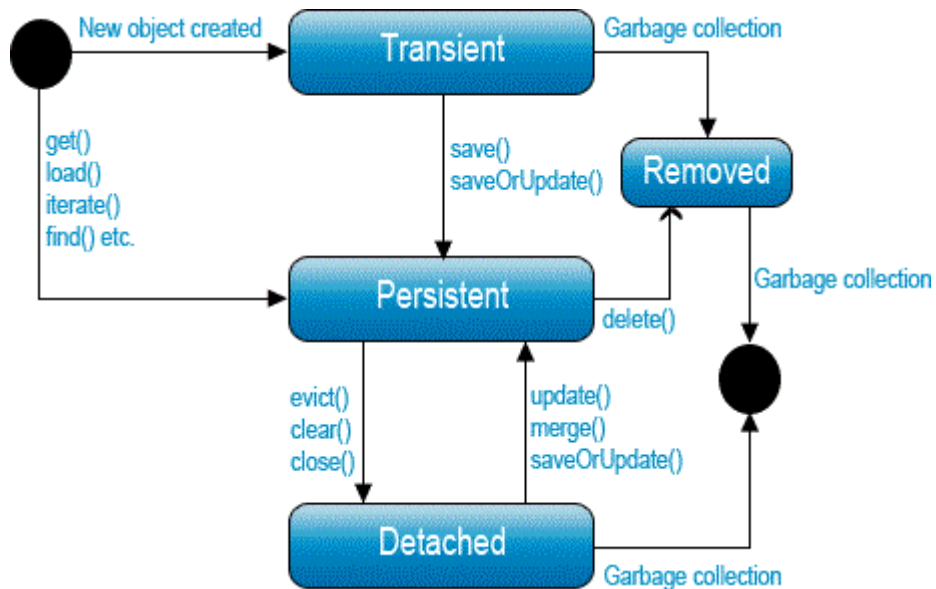
It tries to keep the **entity state** sync up with **table row state**

The other states are not managed = Persistence Context is not knowing about the entity

Transient State

Detached State

Removed State



**MANAGED = PERSISTENT**

**CRUD = Create , Read , Update, Delete**

**HW -----**

1. Try the code written in class !!!
2. Create table using hibernate grocery\_product ---col = product\_id, product\_name, product\_desc, unit , cost, expiry\_date  
Perform crud operations on this table using hibernate

Switch case program

1. Add a new prod
  2. Change the product properties
  3. Delete a product
  4. Show details of a product with a given id
  5. Quit
-

