

Sam Farmer

Growing up I never imagined I would play bass guitar for the Dave Matthews Band. And indeed it never happened.

But I have become a passionate and pretty good web developer.



Intro to ORM

15 things you should know about ORM

Before we get started

Building ORM apps in ColdFusion is

Fun!

About Me

Live in Washington, DC

Happily married, two great daughters, ride my bike, play soccer and huge Arsenal fan

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What we will cover today

Introduction to Object-Relational Mapping

A little bit about Hibernate

Mostly building ORM apps in ColdFusion

What is Object-Relational Mapping?

Thinking of all data as objects

Mapping between objects

Artist has one-to-many pieces of Art

Mapping of objects to a database

What is Hibernate?

Open source Java library

80k lines of code

25k lines of unit tests

DB Agnostic

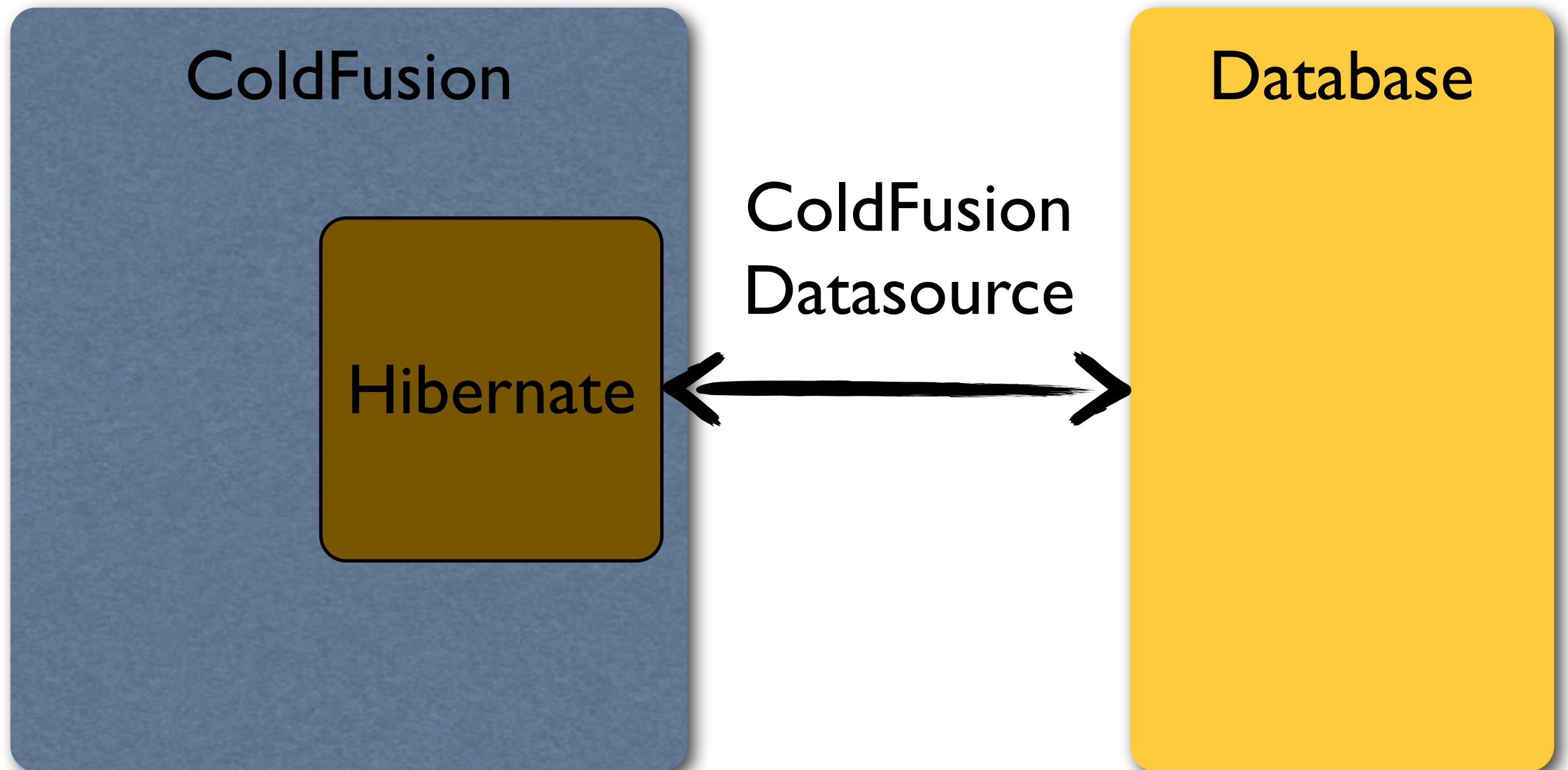
Fast, built in caching

ColdFusion 9

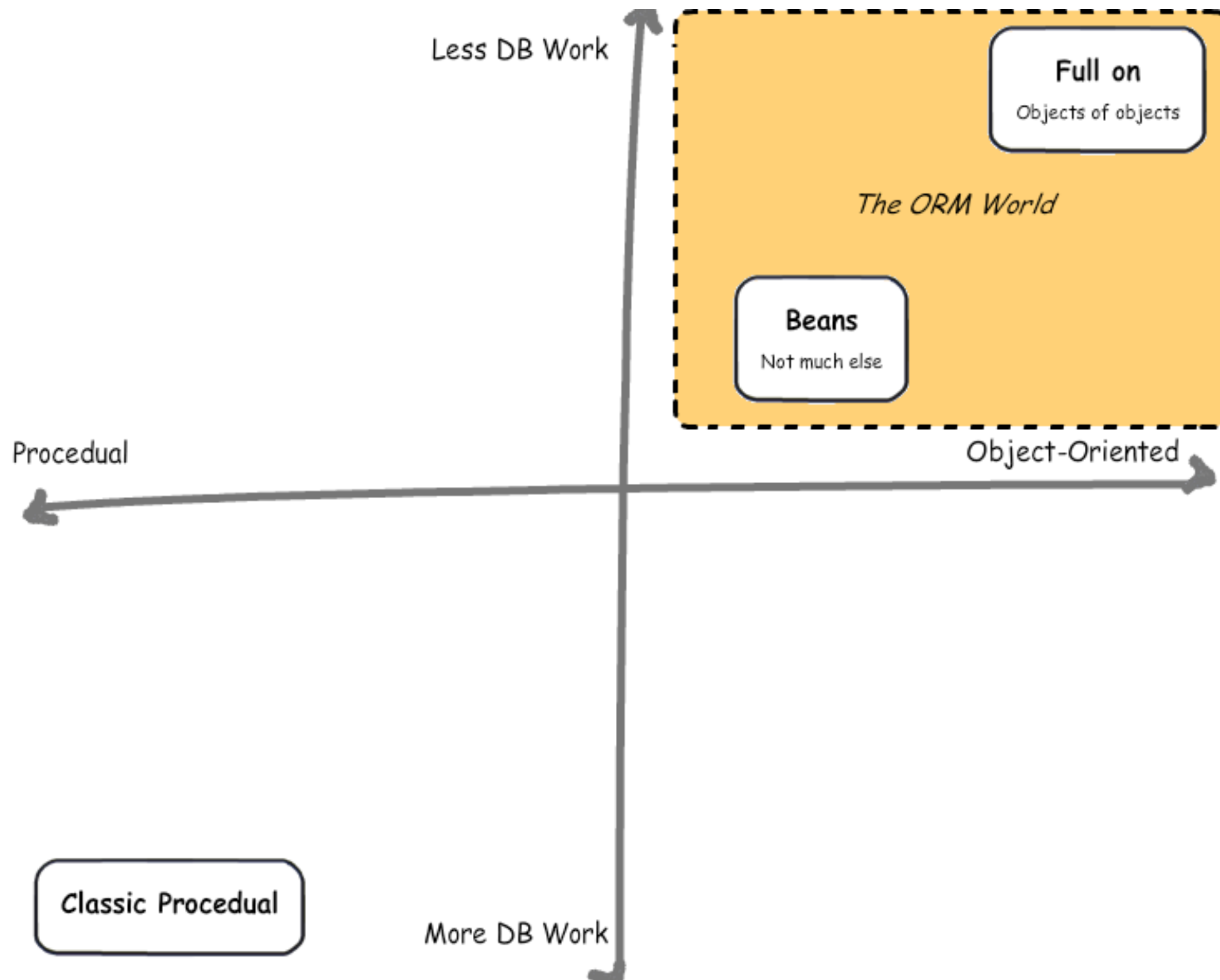
uses Hibernate

access to Hibernate directly (advanced features)

Hibernate & ColdFusion



Where does ORM fit into development



Lets see some code

1. Configuration

Application.cfc

```
component
{
this.datasource="cfartgallery";
this.ormenabled=true;
}
```

art.cfc

```
component persistent="true"
{
}
```

artists.cfc

```
component persistent="true"
{
}
```

2. Getting data

```
<cfset art = entityLoad("art")>
```

```
<cfdump var="#art#" showudfs="false">
```

array		
1	component presentations.orm10.ex1.art	
	PROPERTIES	price 10000
		artname charles1
		description Pastels/Charcoal
		artid 1
		issold 1
		mediaid 1
		largeimage aiden01.jpg
		artistid 1
2	component presentations.orm10.ex1.art	
	PROPERTIES	price 13900
		artname Michael
		description Pastels/Charcoal
		artid 2
		issold 0
		mediaid 1
		largeimage aiden02.jpg
		artistid 1

2. Getting data

```
<cfset art = entityLoad("art",  
  filter → { price=30000 },  
  sort → "artname desc",  
  paging → {maxResults=5})>  
<cfdump var="#art#">
```

array		
1	component presentations.orm10.ex1.art	
PROPERTIES	mediaid	1
	price	30000
	description	Acrylic
	issold	1
	artname	Naked
	largeimage	jeff03.jpg
	artistid	4
	artid	18
METHODS		
2	component presentations.orm10.ex1.art	
PROPERTIES	mediaid	1
	price	30000
	description	Charcoal
	issold	1
	artname	Do it
	largeimage	austin05.jpg
	artistid	2
	artid	15
METHODS		
3	component presentations.orm10.ex1.art	
PROPERTIES	mediaid	6
	price	30000
	description	Photograph
	issold	1
	artname	Blue Moon
	largeimage	anthony05.jpg
	artistid	19
	artid	50
METHODS		

3. Working with objects

Entity names unique across application

Entity functions do not use paths

Arrays of components

Accessors added by default

getXXX() and setXXX()

can be turned off per property

*Accessors can be used on non-persistent CFC's as well

3. Working with objects

```
<cfset arts = entityLoad("art")>
<cfoutput>
<cfloop array="#arts#" index="art">
  <div>
    <strong>#art.getArtName()#</strong><br>
    #art.getDescription()#<br>
    #dollarFormat( art.getPrice() )#
    <br><br>
  </div>
</cfloop>
</cfoutput>
```


3. Working with objects

Michael

Pastels/Charcoal

\$13,900.00

Freddy

Pastels/Charcoal

\$12,500.00

Paulo

Pastels/Charcoal

\$11,100.00

4. Adding Data

```
art = entityNew("art");  
    art.setArtName( "Geese" );  
    art.setPrice( 500 );  
    art.setArtID( 1000 );  
entitySave( art );
```

5. Updating Data

unique record



```
art = entityload("art", {artID=1000}, true);  
art.setArtName("Awesome");
```

6. Deleting Data

```
art = entityLoad("art", {artID=1000}, true);  
entityDelete(art);
```

The new SQL-less CRUD:

entityNew() entitySave()
entityLoad() or ORMExecuteQuery()
setXXX()
entityDelete()

7. flushAtRequestEnd

Application.cfc

```
this.ormsettings={  
    flushatrequestend="[true] | false" };
```

ColdFusion Request

If using ORM start
Hibernate Session

7. flushAtRequestEnd

ColdFusion Session

DOES NOT EQUAL

Hibernate Session

7. flushAtRequestEnd True Example

Application.cfc

```
this.ormSettings={flushAtRequestEnd=true};
```

SomeOtherFile.cfc

```
passValidation = false;  
art = entityload("art", {artID=1000}, true);  
art.setArtName("DMB");
```

```
/* do validation */  
if ( ! passValidation ) {  
    ormClearSession();  
}
```


7. flushAtRequestEnd False Example

Application.cfc

```
this.ormSettings={flushAtRequestEnd=false};
```

SomeOtherFile.cfc

```
passValidation = false;  
transaction action="begin" {  
    art = entityload("art",{artID=1000}, true);  
    art.setArtName("Dave Matthews Band");  
    /*    do validation    */  
    if ( ! passValidation ) {  
        transaction action="rollback";  
    }  
}
```


8. Relationships

Mapping between objects

Artist has one-to-many pieces of Art

Art has many-to-one Artist

8. Relationships

Artist has one-to-many pieces of Art

```
component persistent="true" table="ARTISTS"  
{  
  property name="artistid" fieldtype="id"  
  generated="never";  
  property name="firstName" ormtype="string" length="20";  
  property name="lastName" ormtype="string" length="20";  
  
  property name="art" fieldtype="one-to-many"  
  cfc="Art" fkcolumn="artistID"  
  orderby="artname";  
}
```

8. Relationships

```
<cfset artist =  
entityLoad("arti  
,  
{artistid=1})>
```

```
<cfdump  
var="#artist#">
```

array		
1	component presentations.orm10.relationships.Artist	
PROPERTIES	artistid	1
	firstName	Aiden
	lastName	Donolan
	art	array 1 component presentations.orm10.relationships.Art PROPERTIES artid3 artnameFreddy descriptionPastels/Charcoal price12500 artist[see cfc1 for Artist details] METHODS 2 component presentations.orm10.relationships.Art PROPERTIES artid5 artnameMary descriptionPastels/Charcoal price13550 artist[see cfc1 for Artist details] METHODS

8. Relationships

Art **has many-to-one** Artist

```
component persistent="true"
{
property name="artid" fieldtype="id" generated="never";
property name="artname" ormtype="string" length="50";
property name="description" ormtype="text";
property name="price" ormtype="int";

property name="artist" fieldtype="many-to-one"
cfc="Artist";
}
```

8. Relationships

```
<cfset art = entityLoad("art", {artid=1})>  
<cfdump var="#art#">
```

array		
1	component presentations.orm10.relationships.Art	
PROPERTIES	artid	1
	artname	charles1
	description	Pastels/Charcoal
	price	10000
	artist	component presentations.orm10.relationships.Artist
	component presentations.orm10.relationships.Artist	
METHODS	PROPERTIES	
	artistid	1
	firstName	Aiden
	lastName	Donolan
	art	
	METHODS	

8. Relationships

Helper Functions:

add

```
addArt();
```

get

```
getArt();
```

has

```
hasArt();
```

remove

```
removeArt();
```

9. Nulls exist

Or rather not exist!

```
art = entityLoad("art",  
                 {artID=9999}, true);  
if ( isNull( art ) ) {  
    //id not found  
}
```


10. Overriding Accessors

```
component persistent="true"
{
property name="mediaID" fieldtype="id";
property name="mediaType";
function getMediaType() {
    return uCase( variables.type );
}
function setMediaType( mediaType ) {
    variables.mediaType =
        lCase( arguments.mediaType );
}
}
```


11. Overriding Column Names

```
component persistent="true"
{
property name="mediaID" fieldtype="id";
property name="type"
        column="mediaType";

function getType() {
    return uCase( variables.type );
}
}
```


12. SQL is still your buddy



13. HQL

Returns objects

Similar to SQL

Case sensitive for property and object

13. HQL

```
getArtist = ormExecuteQuery(  
    "FROM Artist  
        WHERE firstName like :firstname  
        OR lastName like :lastname  
        ORDER BY lastname ",  
    {firstname="A%", lastname="B%"}  
);
```

13. HQL

```
<cfquery name="getArtists" dbtype="hql">  
FROM Artist  
WHERE firstName like <cfqueryparam value="A%">  
    OR lastName like <cfqueryparam value="B%">  
ORDER BY lastname  
</cfquery>
```

9.0.1 and up

13. HQL

array										
1	component <u>presentations.orm10.relationships.Artist</u>									
	PROPERTIES	<table><tr><td>artistid</td><td>4</td></tr><tr><td>firstName</td><td>Jeff</td></tr><tr><td>lastName</td><td>Baclawski</td></tr><tr><td>art</td><td></td></tr></table>	artistid	4	firstName	Jeff	lastName	Baclawski	art	
artistid	4									
firstName	Jeff									
lastName	Baclawski									
art										
	METHODS									
2	component <u>presentations.orm10.relationships.Artist</u>									
	PROPERTIES	<table><tr><td>artistid</td><td>13</td></tr><tr><td>firstName</td><td>Emma</td></tr><tr><td>lastName</td><td>Buntel</td></tr><tr><td>art</td><td>array [empty]</td></tr></table>	artistid	13	firstName	Emma	lastName	Buntel	art	array [empty]
artistid	13									
firstName	Emma									
lastName	Buntel									
art	array [empty]									
	METHODS									

14. ormReload()

Reloads all settings

Needed after any change

Use sparingly in production

```
function onRequestStart() {  
    ormReload();  
}
```

15. Create database

```
this.ormsettings = {dbupdate="update"}
```

```
update | dropcreate | [none]
```


Resources

cf-orm-dev on Google Groups:

<http://groups.google.com/group/cf-orm-dev>

<http://www.coldfusionormbook.com/>

Resources

ColdFusion 9.0 Resources

[Configuring and Administering Adobe ColdFusion 9](#)

[Adobe ColdFusion 9 CFML Reference](#)

[Developing Adobe ColdFusion 9 Applications](#)

[Installing Adobe ColdFusion 9](#)

[ColdFusion 9 ActionScript Language Reference](#)

Developing ColdFusion 9 Applications

- + [What's New in ColdFusion 9](#)
- + [Introduction](#)
- + [Introducing ColdFusion](#)
- + [The CFML Programming Language](#)
- + [Building Blocks of ColdFusion Applications](#)
- + [Developing CFML Applications](#)
- + [Accessing and Using Data](#)
- + [ColdFusion ORM](#)

Developing Adobe ColdFusion 9 Applications

Web Help

Welcome to Adobe® ColdFusion® 9 Help on the web, part of the Adobe Community Help environment. Comments from users and expert moderators provide additional tips and solutions. You can see that if you are not connected to the Internet, a subset of Help opens.

Community Help

Community Help brings together Help, instruction, support articles, videos, blogs, and examples. The Adobe custom search engine helps you find the best content available whether it's product or community Help are included whenever you search Community Help.

To access Community Help, go to http://www.adobe.com/go/lr_ColdFusion_community_en.

Questions?

I'll try to answer!

16-20

16. Relationships can return structures

17. Pre- and Post- events

18. `entityLoadByPK = entityLoad( , , true)`

19. Multiple datasource set up (9.0.1+)

20. `mappedSuperClass`, fancy way of saying
extends (9.0.1+)

21-

21. Secondary cache

22. logSQL=true will show Hibernate's SQL

23. entityToQuery()