Doctrine2 in 10 Minutes

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What is Doctrine2?

Doctrine2 consists of two distinct libraries:

1) **DBAL** (Database Abstraction Layer)

2) **ORM** (Object Relational Mapper)

You can use just the DBAL or both the DBAL & ORM

Database Abstraction Layer (DBAL)

"A lightweight runtime layer around a PDO-like API with a lot of additional, horizontal features like database schema introspection and manipulation through an OO API."

Like PDO, but driver independent and with more extra features

Executing Queries

```php
<?php

$statement = $conn->execute('SELECT * FROM user WHERE username = ?', array('jwage'));
$user = $statement->fetch();

/*
array(
  0 => 'jwage',
  1 => 'changeme
)
*/
```

Schema Information

```php
$sm = $conn->getSchemaManager();

$databases = $sm->listDatabases();

$columns = $sm->listTableColumns('user');

$foreignKeys = $sm->listTableForeignKeys('user');
```

Altering schemas

```php
<?php

$schema = new \Doctrine\DBAL\Schema\Schema();
$myTable = $schema->createTable("my_table");
$myTable->addColumn("id", "integer", array("unsigned" => true));
$myTable->addColumn("username", "string", array("length" => 32));
$myTable->setPrimaryKey(array("id"));
$myTable->addUniqueIndex(array("username"));
$schema->createSequence("my_table_seq");

$myForeign = $schema->createTable("my_foreign");
$myForeign->addColumn("id", "integer");
$myForeign->addColumn("user_id", "integer");
$myForeign->addForeignKeyConstraint($myTable, array("user_id"), array("id"), array("onUpdate" => "CASCADE"));

$queries = $schema->toSql($myPlatform); // get queries to create this schema.
$dropSchema = $schema->toDropSql($myPlatform); // get queries to safely delete this schema.
```

Object Relational Mapper (ORM)

- Takes a normal PHP object and persists its properties as a row in a table

- Takes a row in a table and maps the values to the properties of an object

Start with a normal PHP Object

```php
class User
{
    private $id;

    private $name;

    private $email;

    public function setName($name)
    {
        $this->name = $name;
    }

    // ...
}
```
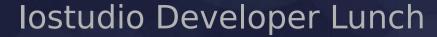
Tell Doctrine how to persist via annotations

```php
/**
 * @Entity @Table(name="users")
 */
class User
{
    /** @Id @Column(type="integer") @GeneratedValue */
    private $id;

    /** @Column(length=50) */
    private $name;

    /** @Column(length=200) */
    private $email;

    // ...
}
```

Persist the object

```php
use Doctrine\ORM\EntityManager

$connectionOptions = array(
  'driver' => 'pdo_sqlite',
  'path'   => 'database.sqlite',
);
$em = EntityManager::create($connectionOptions);

$user = new User();
$user->setName('Iostudio');
$em->persist($user);
$em->flush();
```

Retrieve the object

```php
$query = $em->createQuery('SELECT u FROM \User u WHERE u.name = ?');

// returns an array of User objects
$users = $query->execute(array('Iostudio'));
```

Questions?

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