Symfony with Doctrine (ORM)

Doctrine

The Doctrine Project is the home to several PHP libraries primarily focused on database storage and object mapping. The core projects are the Object Relational Mapper (ORM) and the Database Abstraction Layer (DBAL) it is built upon.

Symfony Components

- Console (scaffolding)
- Routing (URL rewriting)
- Doctrine (database Object Relational Mapping)
- Security (authentication)
- Form (form generation)
- Validator (input validation)
- Fixtures (dummy data generation)
- Profiler (debugging menu bar)
- Testing (generates tests)

Symfony Console

```
$ php bin/console

Available commands:
cache
  cache:clear                          Clears the cache

debug
  debug:autowiring                     Lists classes/interfaces you can use for autowiring
  debug:form                           Displays form type information
  debug:router                         Displays current routes for an application
  debug:twig                           Shows a list of twig functions, filters, globals and tests

doctrine
  doctrine:database:create             Creates the configured database
  doctrine:database:drop               Drops the configured database
  doctrine:database:import             Import SQL file(s) directly to Database.
  doctrine:migrations:migrate          [migrate] Execute a migration

make
  make:auth                            Creates a Guard authenticator of different flavors
  make:controller                      Creates a new controller class
  make:entity                          Creates or updates a Doctrine entity class, and optionally an
  make:fixtures                        Creates a new class to load Doctrine fixtures
  make:form                            Creates a new form class
  make:migration                       Creates a new migration based on database changes
  make:registration-form               Creates a new registration form system
  make:reset-password                  Create reset password controller, entity, and repositories
  make:user                            Creates a new security user class
  make:validator                       Creates a new validator and constraint class

router
  router:match                         Helps debug routes by simulating a path info mat
```

Doctrine Microposts entity 1

```php
<?php

namespace App\Entity;

use App\Repository\MicropostRepository;
use Doctrine\ORM\Mapping as ORM;

/**
 * @ORM\Table(name="microposts")
 * @ORM\Entity(repositoryClass=MicropostRepository::class)
 */
class Micropost
{
    /**
     * @ORM\Id
     * @ORM\GeneratedValue
     * @ORM\Column(type="integer")
     */
    private $id;

    /**
     * @ORM\Column(type="text", nullable=true)
     */
    private $content;

    /**
     * @ORM\ManyToOne(targetEntity=User::class, inversedBy="microposts")
     * @ORM\JoinColumn(nullable=false)
     */
    private $user;

    /**
     * @ORM\Column(type="datetime")
     */
    private $created_at;

    /**
     * @ORM\Column(type="datetime", nullable=true)
     */
    private $updated_at;
```

Doctrine Microposts entity 2

```
$ php bin/console make:migration
$ php bin/console doctrine:migrations:migrate
```

```
MariaDB [db_a12345]> show create table microposts;
```

```
CREATE TABLE `microposts` (
  `id` int(11) NOT NULL AUTO_INCREMENT,
  `user_id` int(11) NOT NULL,
  `content` longtext COLLATE utf8mb4_unicode_ci DEFAULT NULL,
  `created_at` datetime NOT NULL,
  `updated_at` datetime DEFAULT NULL,
  PRIMARY KEY (`id`),
  KEY `IDX_A51D467BA76ED395` (`user_id`),
  CONSTRAINT `FK_A51D467BA76ED395` FOREIGN KEY (`user_id`) REFERENCES `users` (`id`)
      ) ENGINE=InnoDB AUTO_INCREMENT=6 DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_unicode_ci
```

Doctrine Microposts Repository 1

```php
<?php

namespace App\Repository;

use App\Entity\Micropost;
use App\Entity\User;
use Doctrine\Bundle\DoctrineBundle\Repository\ServiceEntityRepository;
use Doctrine\Persistence\ManagerRegistry;
use Doctrine\ORM\EntityManagerInterface;

class MicropostRepository extends ServiceEntityRepository
{
    private $em;
    public function __construct(ManagerRegistry $registry, EntityManagerInterface $em)
    {
        parent::__construct($registry, Micropost::class);
        $this->em = $em;
    }

    public function get_posts()
     {
         $qb = $this->createQueryBuilder('m')
             ->innerJoin('m.user', 'u')
           ->addSelect('u');
         return $qb
             ->orderBy('m.updated_at', 'DESC')
             ->getQuery()
             ->getResult()
         ;
     }
```

Doctrine Microposts Repository 2

```
    public function new_blog($user,$blog)
    {
            $micropost = new Micropost();
            $micropost->setUser($user);
            $micropost->setContent($blog);
            $micropost->setCreated_at(new \DateTime());
            $micropost->setUpdated_at(new \DateTime());
            $this->em->persist($micropost);
            $this->em->flush();
    }
```

Symfony Security 1

$cat security.yaml

```
security:
    encoders:
        App\Entity\User:
            algorithm: md5
            encode_as_base64: false
            iterations: 0

        app_user_provider:
            entity:
                class: App\Entity\User
                property: email
    firewalls:
        dev:
            pattern: ^/(_(profiler|wdt)|css|images|js)/
            security: false
        main:
            anonymous: lazy
            provider: app_user_provider
            guard:
                authenticators:
                    - App\Security\LoginFormAuthenticator
            logout:
                path: logout
                target: blog.index
            remember_me:
                name: 'REMEMBERME'
                secret:   '%kernel.secret%'
                lifetime: 2592000 # 30 days in seconds
                remember_me_parameter: '_remember_me'
```

Symfony Security 2

```
<?php

namespace App\Security;
.
.
.
use Symfony\Component\Security\Guard\Authenticator\AbstractFormLoginAuthenticator;


class LoginFormAuthenticator extends AbstractFormLoginAuthenticator
{
    private $userRepository;
    private $router;
    private $csrfTokenManager;
    private $encoder;
    private $response;
    public function __construct(UserRepository $userRepository, RouterInterface $router,
CsrfTokenManagerInterface $csrfTokenManager, UserPasswordEncoderInterface $encoder)
    {
        $this->userRepository = $userRepository;
        $this->router = $router;
        $this->csrfTokenManager = $csrfTokenManager;
        $this->encoder = $encoder;
    }


    public function supports(Request $request)
    {
        // do your work when we're POSTing to the login page
        return $request->attributes->get('_route') === 'login'
            && $request->isMethod('POST');
    }
```

Symfony Security 3

```
    public function getCredentials(Request $request)
    {
        $credentials = [
            'email' => $request->request->get('email'),
            'password' => $request->request->get('password'),
            'token' => $request->request->get('token'),
        ];

        $request->getSession()->set(
            Security::LAST_USERNAME,
            $credentials['email']
        );

        return $credentials;
    }

    public function getUser($credentials, UserProviderInterface $userProvider)
    {
        $token = new CsrfToken('login_form', $credentials['token']);
        if (!$this->csrfTokenManager->isTokenValid($token)) {
            throw new InvalidCsrfTokenException();
        }

        return $this->userRepository->findOneBy(['email' => $credentials['email']]);
    }

    .
    .
    .
```

Symfony Form generation 1

```
use App\Form\RegisterType;

/**
  * @Route("/blog/register", name="register")
  */
 public function register(Request $request, EntityManagerInterface $em)
 {
      $form = $this->createForm(RegisterType::class);
      $form->handleRequest($request);

       if ($form->isSubmitted() && $form->isValid())
       {

            $form_data =  $form->getData();
            //process form inputs

            ...

       }


      $data['form'] = $form->createView();
      return $this->render('blog/register_template.html.twig', $data);
 }
```

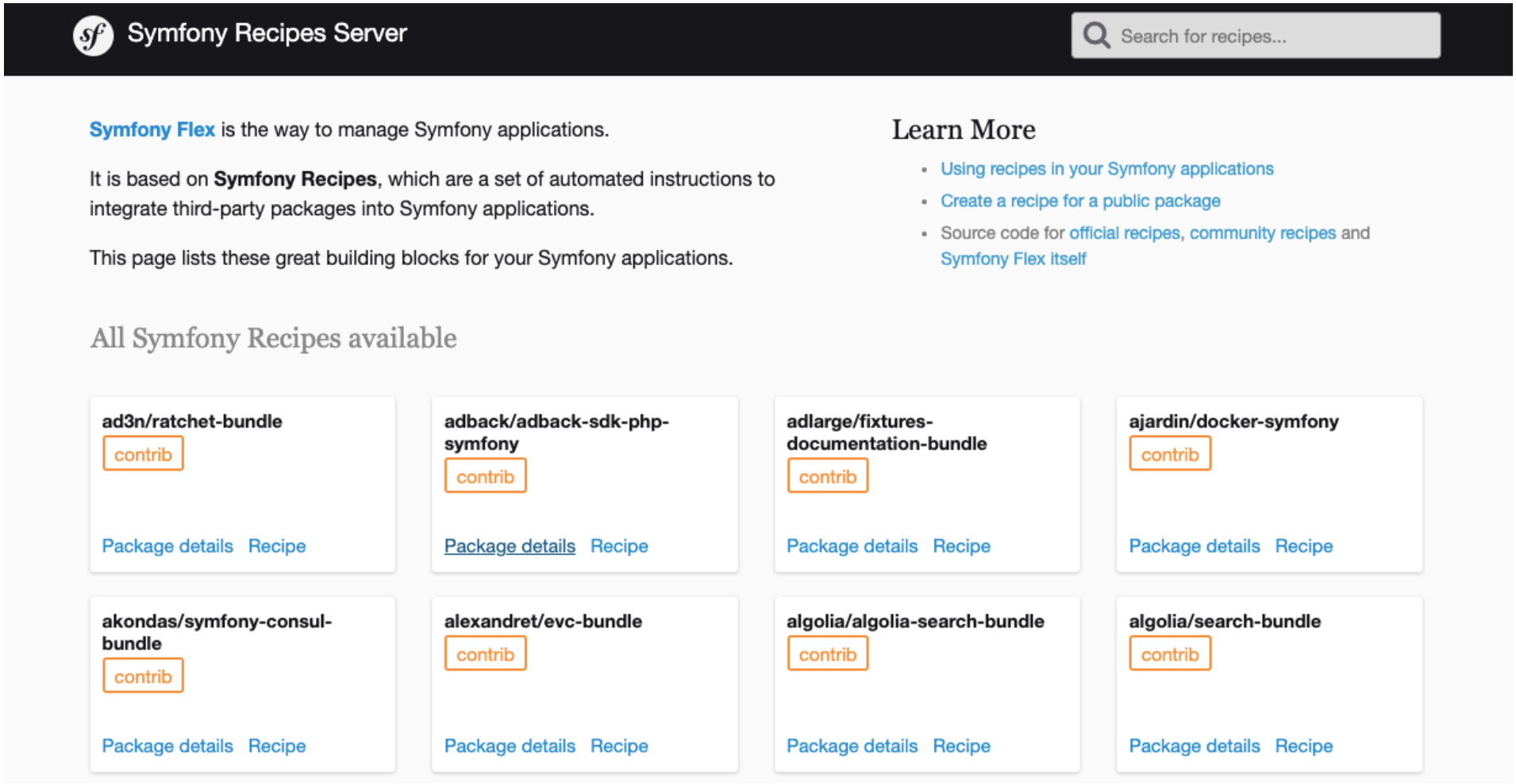
Symfony Form generation 2

```
<?php
namespace App\Form;

use App\Form\Model\UserRegistrationFormModel;
use Symfony\Component\Form\AbstractType;
use Symfony\Component\Form\FormBuilderInterface;
use Symfony\Component\Form\Extension\Core\Type\TextType;
use Symfony\Component\Form\Extension\Core\Type\PasswordType;
use Symfony\Component\Form\Extension\Core\Type\EmailType;
use Symfony\Component\OptionsResolver\OptionsResolver;
use Symfony\Component\Validator\Constraints\NotBlank;

class RegisterType extends AbstractType
{
    public function buildForm(FormBuilderInterface $builder, array $options)
    {
        $builder
            ->add('name', TextType::class, ['required' => false])
            ->add('email', EmailType::class, ['required' => false])
            ->add('password', PasswordType::class, ['required' => false, 'label' => 'Password',
'constraints' => [new NotBlank(['message' => 'Password must not be empty.'])]])
            ->add('passconf', PasswordType::class, ['required' => false, 'label' => 'Password
confirmation'])
        ;
    }

    public function configureOptions(OptionsResolver $resolver)
    {
        $resolver->setDefaults([
            'data_class' => UserRegistrationFormModel::class
        ]);
    }}
```

Symfony Form generation 3

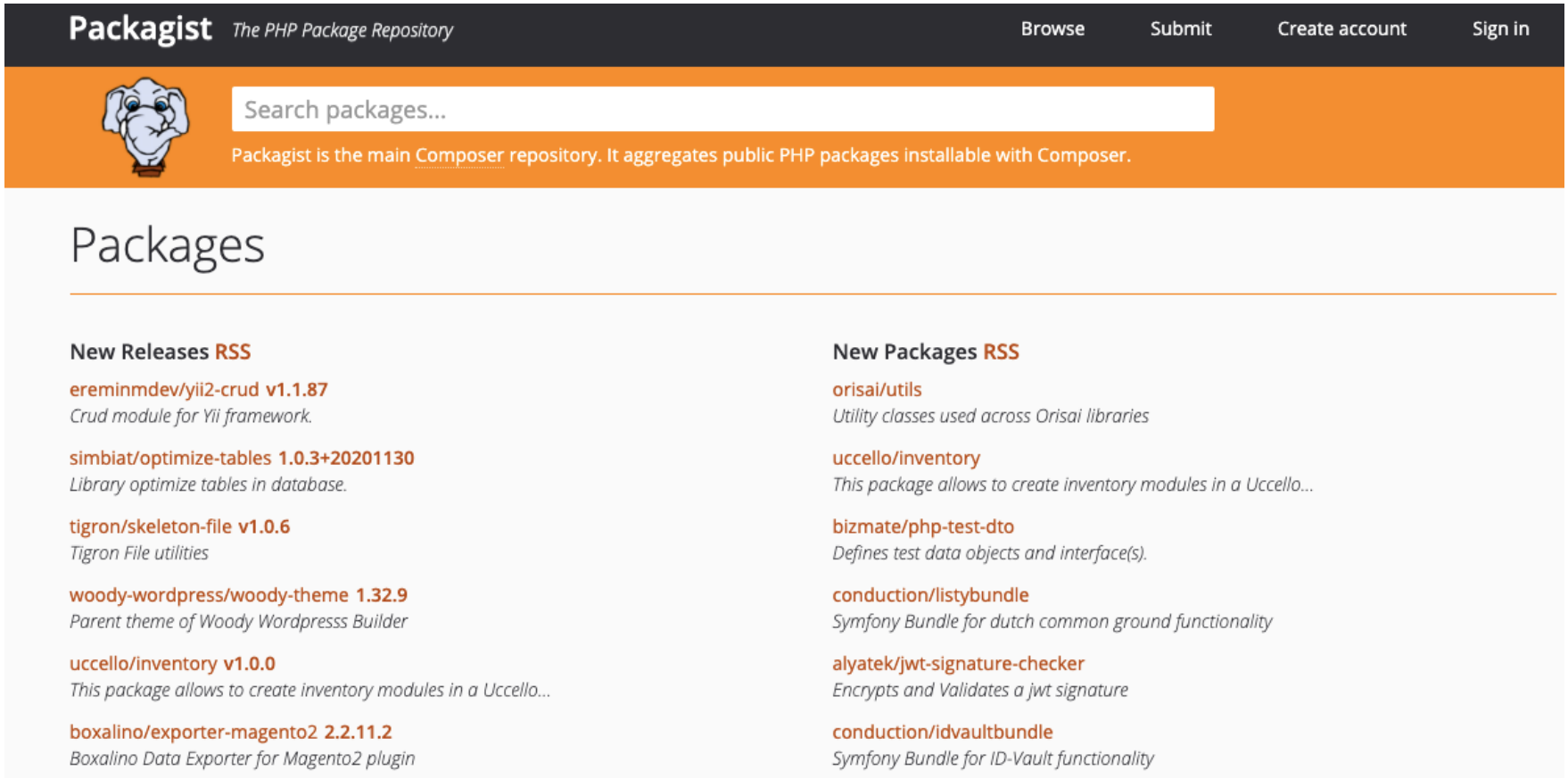
```
<div class="w3-padding-large">

  <h2 style="text-align:center;">Sign up</h2>

    {{ form_start(form, {'action': path('register'), 'method': 'POST',   'attr': {'class': 'w3-form w3-
card-4'}          }) }}
        {{ form_row(form.name, {'attr': {'class': 'w3-input'}}) }}
        {{ form_row(form.email, {'attr': {'class': 'w3-input'}}) }}
        {{ form_row(form.password,{'attr': {'class': 'w3-input'}}) }}
        {{ form_row(form.passconf, {'attr': {'class': 'w3-input'}}) }}

  <h3 style="text-align:center;">
      <input class="w3-btn w3-blue w3-round-large" name="submit" type="submit" value="Go" />
      <input class="w3-btn w3-red w3-round-large"  name="reset" type="reset" value="Clear" />

  </h3>

  {{ form_end(form) }}

</div>
```

Symfony Recipes (3rd party packages)



https://flex.symfony.com/

PHP packages



https://packagist.org/