Symfony – ORM, Routing & Twig

1. Présentation

Ce TP consiste à créer une application Symfony via Composer, intégrer les composants web (webapp), comprendre l'architecture MVC, manipuler les contrôleurs, les routes et les templates Twig .

2. Objectif

- Installer Symfony via Composer
- Ajouter les composants web
- Comprendre la structure du projet
- Créer des contrôleurs
- Gérer les routes
- Manipuler Twig
- Tester l'application dans le navigateur

3. Environnement technique

- OS : Windows
- PHP : 8.2.x
- Composer : 2.x
- Symfony : version 7.x
- Serveur : PHP Built-in Server

4. Installation du projet Symfony

4.1 Création du projet

```
composer create-project symfony/skeleton nom_projet
```

Capture – Création projet

```
C:\Users\alexi>composer create-project Symfony/skeleton:"7.4.*" sf-080120261500
Creating a "Symfony/skeleton:7.4.*" project at "./sf-080120261500"
Installing symfony/skeleton (v7.4.99)
      Failed to download symfony/skeleton from dist: The zip extension and unzip/7z commands are both mi
ssing, skipping.
The php.ini used by your command-line PHP is: C:\xampp\php\php.ini
      Now trying to download from source
  - Syncing symfony/skeleton (v7.4.99) into cache
  - Installing symfony/skeleton (v7.4.99): Cloning bf1abda299 from cache
Created project in C:\Users\alexi\sf-080120261500
Loading composer repositories with package information
Updating dependencies
Lock file operations: 1 install, 0 updates, 0 removals
  - Locking symfony/flex (v2.10.0)
Writing lock file
Installing dependencies from lock file (including require-dev)
Package operations: 1 install, 0 updates, 0 removals
      Failed to download symfony/flex from dist: The zip extension and unzip/7z commands are both missin
g, skipping.
The php.ini used by your command-line PHP is: C:\xampp\php\php.ini
      Now trying to download from source
  - Syncing symfony/flex (v2.10.0) into cache
  - Installing symfony/flex (v2.10.0): Cloning 9cd3847759 from cache
Generating autoload files
1 package you are using is looking for funding.
Use the `composer fund` command to find out more!

Run composer recipes at any time to see the status of your Symfony recipes.

Loading composer repositories with package information
Restricting packages listed in "symfony/symfony" to "7.4.*"
Updating dependencies
Lock file operations: 30 installs, 0 updates, 0 removals
  - Locking psr/cache (3.0.0)
  - Locking psr/container (2.0.2)
  - Locking psr/event-dispatcher (1.0.0)
  - Locking psr/log (3.0.2)
  - Locking symfony/cache (v7.4.5)
  - Locking symfony/cache-contracts (v3.6.0)
  - Locking symfony/config (v7.4.4)
  - Locking symfony/console (v7.4.4)
  - Locking symfony/dependency-injection (v7.4.5)
  - Locking symfony/deprecation-contracts (v3.6.0)
  - Locking symfony/dotenv (v7.4.0)
  - Locking symfony/error-handler (v7.4.4)
  - Locking symfony/event-dispatcher (v7.4.4)
  - Locking symfony/event-dispatcher-contracts (v3.6.0)
  - Locking symfony/filesystem (v7.4.0)
  - Locking symfony/finder (v7.4.5)
  - Locking symfony/framework-bundle (v7.4.5)
```

```
 - Installing symfony/dotenv (v7.4.0): Cloning 1658a4d34d from cache
 - Installing psr/event-dispatcher (1.0.0): Cloning dbefd12671 from cache
 - Installing symfony/event-dispatcher-contracts (v3.6.0): Cloning 59eb412e93 from cache
 - Installing symfony/routing (v7.4.4): Cloning 0798827fe2 from cache
 - Installing symfony/polyfill-php85 (v1.33.0): Cloning d4e5fcd4ab from cache
 - Installing symfony/http-foundation (v7.4.5): Cloning 446d0db2b1 from cache
 - Installing symfony/event-dispatcher (v7.4.4): Cloning dc2c0eba1a from cache
 - Installing symfony/var-dumper (v7.4.4): Cloning 0e4769b46a from cache
 - Installing psr/log (3.0.2): Cloning f16e1d5863 from cache
 - Installing symfony/error-handler (v7.4.4): Cloning 8da531f364 from cache
 - Installing symfony/http-kernel (v7.4.5): Cloning 229eda4770 from cache
 - Installing symfony/finder (v7.4.5): Cloning ad4daa7c38 from cache
 - Installing symfony/filesystem (v7.4.0): Cloning d551b38811 from cache
 - Installing symfony/var-exporter (v7.4.0): Cloning 03a60f169c from cache
 - Installing symfony/dependency-injection (v7.4.5): Cloning 76a02cddca from cache
 - Installing symfony/config (v7.4.4): Cloning 4275b53b8a from cache
 - Installing symfony/cache (v7.4.5): Cloning 8dde98d5a4 from cache
 - Installing symfony/framework-bundle (v7.4.5): Cloning dcf89ca671 from cache
 - Installing symfony/yaml (v7.4.1): Cloning 24dd4de28d from cache
Generating autoload files
27 packages you are using are looking for funding.
Use the `composer fund` command to find out more!

Symfony operations: 4 recipes (8d9a2e7f773d2ecc28a72cfe41518010)
 - Configuring symfony/flex (>=2.4): From github.com/symfony/recipes:main
 - Configuring symfony/framework-bundle (>=7.4): From github.com/symfony/recipes:main
 - Configuring symfony/console (>=5.3): From github.com/symfony/recipes:main
 - Configuring symfony/routing (>=7.4): From github.com/symfony/recipes:main
Executing script cache:clear [OK]
Executing script assets:install public [OK]

 What's next?

Some files have been created and/or updated to configure your new packages.
Please review, edit and commit them: these files are yours.

 symfony/framework-bundle  instructions:

 * Run your application:
   1. Go to the project directory
   2. Create your code repository with the git init command
   3. Download the Symfony CLI at https://symfony.com/download to install a development web server

 * Read the documentation at https://symfony.com/doc

No security vulnerability advisories found.

No security vulnerability advisories found.

C:\Users\alexi>
```
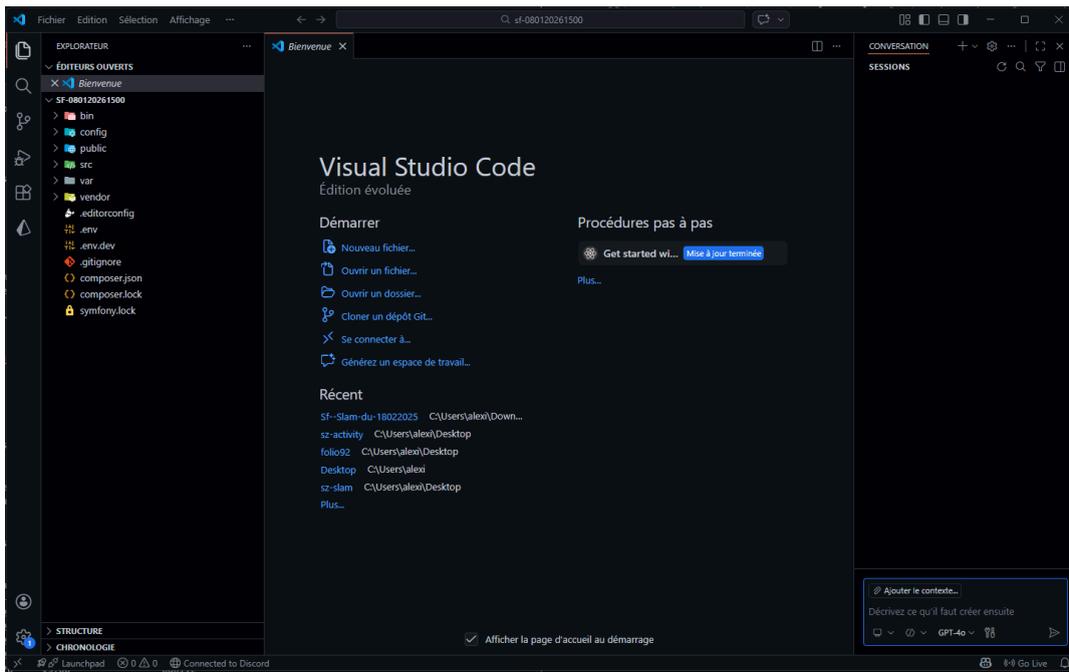
4.2 Ouverture dans VS Code

```
code .
```

Capture – Projet ouvert dans VSC

```
C:\Users\alexi\sf-080120261500>code ./

C:\Users\alexi\sf-080120261500>
```

4.3 Installation des composants WebApp

```
composer require webapp
```

Cela ajoute :

- Doctrine

- Twig

- Security

- Migrations

- Debug tools

Capture – Installation WebApp

```
PS C:\Users\alexi\sf-080120261500> composer require webapp
./composer.json has been updated
Running composer update symfony/webapp-pack
Loading composer repositories with package information
Restricting packages listed in "symfony/symfony" to "7.4.*"
Updating dependencies
Lock file operations: 106 installs, 0 updates, 0 removals
  - Locking composer/semver (3.4.4)
  - Locking doctrine/collections (2.6.0)
  - Locking doctrine/dbal (4.4.1)
  - Locking doctrine/deprecations (1.1.6)
  - Locking doctrine/doctrine-bundle (2.18.2)
  - Locking doctrine/doctrine-migrations-bundle (3.7.0)
  - Locking doctrine/event-manager (2.1.1)
  - Locking doctrine/inflector (2.1.0)
  - Locking doctrine/instantiator (2.0.0)
  - Locking doctrine/lexer (3.0.1)
  - Locking doctrine/migrations (3.9.6)
  - Locking doctrine/orm (3.6.2)
  - Locking doctrine/persistence (4.1.1)
  - Locking doctrine/sql-formatter (1.5.4)
  - Locking egulias/email-validator (4.0.4)
  - Locking masterminds/html5 (2.10.0)
  - Locking monolog/monolog (3.10.0)
  - Locking myclabs/deep-copy (1.13.4)
  - Locking nikic/php-parser (v5.7.0)
  - Locking phar-io/manifest (2.0.4)
  - Locking phar-io/version (3.2.1)
  - Locking phpdocumentor/reflection-common (2.2.0)
  - Locking phpdocumentor/reflection-docblock (5.6.6)
  - Locking phpdocumentor/type-resolver (1.12.0)
  - Locking phpstan/phpdoc-parser (2.3.2)
  - Locking phpunit/php-code-coverage (11.0.12)
  - Locking phpunit/php-file-iterator (5.1.1)
  - Locking phpunit/php-invoker (5.0.1)
  - Locking phpunit/php-text-template (4.0.1)
  - Locking phpunit/php-timer (7.0.1)
  - Locking phpunit/phpunit (11.5.54)
  - Locking psr/clock (1.0.0)
  - Locking psr/link (2.0.1)
  - Locking sebastian/cli-parser (3.0.2)
```

5. Structure du projet

Après installation, le projet devient plus "riche" .

Arborescence principale :

```
src/
templates/
config/
public/
migrations/
```

Capture – Structure dossier enrichi

```
● PS C:\Users\alexi\sf-080120261500> ls


    Répertoire : C:\Users\alexi\sf-080120261500


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
d-----        18/02/2026     13:13                assets
d-----        18/02/2026     13:12                bin
d-----        18/02/2026     13:01                config
d-----        18/02/2026     13:12                migrations
d-----        18/02/2026     13:01                public
d-----        18/02/2026     13:12                src
d-----        18/02/2026     13:12                templates
d-----        18/02/2026     13:12                tests
d-----        18/02/2026     13:12                translations
d-----        18/02/2026     13:13                var
d-----        18/02/2026     13:12                vendor
-a----        18/02/2026     13:01            257 .editorconfig
-a----        18/02/2026     13:12           2217 .env
-a----        18/02/2026     13:01            113 .env.dev
-a----        18/02/2026     13:12            103 .env.test
-a----        18/02/2026     13:12            363 .gitignore
-a----        18/02/2026     13:12            331 compose.override.yaml
-a----        18/02/2026     13:12            884 compose.yaml
-a----        18/02/2026     13:13           3454 composer.json
-a----        18/02/2026     13:13         381893 composer.lock
-a----        18/02/2026     13:13            796 importmap.php
-a----        18/02/2026     13:12           1410 phpunit.dist.xml
-a----        18/02/2026     13:13           9415 symfony.lock

○ PS C:\Users\alexi\sf-080120261500>
```

6. Commandes Symfony usuelles

Afficher toutes les commandes disponibles :

```
php bin/console
```

Capture – Liste commandes Symfony

```
PS C:\Users\alexi\sf-080120261500> php bin/console
Symfony 7.4.5 (env: dev, debug: true)

Usage:
  command [options] [arguments]

Options:
  -h, --help            Display help for the given command. When no command is given display help for the list command
      --silent          Do not output any message
  -q, --quiet           Only errors are displayed. All other output is suppressed
  -V, --version         Display this application version
      --ansi|--no-ansi  Force (or disable --no-ansi) ANSI output
  -n, --no-interaction  Do not ask any interactive question
  -e, --env=ENV         The Environment name. [default: "dev"]
      --no-debug        Switch off debug mode.
      --profile         Enables profiling (requires debug).
  -v|vv|vvv, --verbose  Increase the verbosity of messages: 1 for normal output, 2 for more verbose output and 3 for d
ebug

Available commands:
  about                         Display information about the current project
  completion                    Dump the shell completion script
  help                          Display help for a command
  list                          List commands
 asset-map
  asset-map:compile             Compile all mapped assets and writes them to the final public output dire
ctory
 assets
  assets:compress               Pre-compresses files to serve through a web server
  assets:install                Install bundle's web assets under a public directory
 cache
  cache:clear                   Clear the cache
  cache:pool:clear              Clear cache pools
  cache:pool:delete             Delete an item from a cache pool
  cache:pool:invalidate-tags    Invalidate cache tags for all or a specific pool
  cache:pool:list               List available cache pools
  cache:pool:prune              Prune cache pools
  cache:warmup                  Warm up an empty cache
 config
  config:dump-reference         Dump the default configuration for an extension
 dbal
  dbal:run-sql                  Executes arbitrary SQL directly from the command line.
 debug
  debug:asset-map               Output all mapped assets
  debug:autowiring              List classes/interfaces you can use for autowiring
  debug:config                  Dump the current configuration for an extension
  debug:container               Display current services for an application
  debug:dotenv                  List all dotenv files with variables and values
  debug:event-dispatcher        Display configured listeners for an application
  debug:firewall                Display information about your security firewall(s)
  debug:form                    Display form type information
```

```
   make:fixtures                          Create a new class to load Doctrine fixtures
   make:form                              Create a new form class
   make:listener                          [make:subscriber] Creates a new event subscriber class or a new event lis
tener class
   make:message                           Create a new message and handler
   make:messenger-middleware              Create a new messenger middleware
   make:migration                         Create a new migration based on database changes
   make:registration-form                 Create a new registration form system
   make:reset-password                    Create controller, entity, and repositories for use with symfonycasts/res
et-password-bundle
   make:schedule                          Create a scheduler component
   make:security:custom                   Create a custom security authenticator.
   make:security:form-login               Generate the code needed for the form_login authenticator
   make:serializer:encoder                Create a new serializer encoder class
   make:serializer:normalizer             Create a new serializer normalizer class
   make:stimulus-controller               Create a new Stimulus controller
   make:test                              [make:unit-test|make:functional-test] Create a new test class
   make:twig-component                    Create a Twig (or Live) component
   make:twig-extension                    Create a new Twig extension with its runtime class
   make:user                              Create a new security user class
   make:validator                         Create a new validator and constraint class
   make:voter                             Create a new security voter class
   make:webhook                           Create a new Webhook
 messenger
   messenger:consume                      Consume messages
   messenger:failed:remove                Remove given messages from the failure transport
   messenger:failed:retry                 Retry one or more messages from the failure transport
   messenger:failed:show                  Show one or more messages from the failure transport
   messenger:setup-transports             Prepare the required infrastructure for the transport
   messenger:stats                        Show the message count for one or more transports
   messenger:stop-workers                 Stop workers after their current message
 router
   router:match                           Help debug routes by simulating a path info match
 secrets
   secrets:decrypt-to-local               Decrypt all secrets and stores them in the local vault
   secrets:encrypt-from-local             Encrypt all local secrets to the vault
   secrets:generate-keys                  Generate new encryption keys
   secrets:list                           List all secrets
   secrets:remove                         Remove a secret from the vault
   secrets:reveal                         Reveal the value of a secret
   secrets:set                            Set a secret in the vault
 security
   security:hash-password                 Hash a user password
 server
   server:dump                            Start a dump server that collects and displays dumps in a single place
   server:log                             Start a log server that displays logs in real time
 translation
   translation:extract                    Extract missing translations keys from code to translation files
   translation:pull                       Pull translations from a given provider.
   translation:push                       Push translations to a given provider.
 PS C:\Users\alexi\sf-080120261500>
```

7. Lancement de l'application

```
php -S localhost:8000 -t public
```

Capture – Serveur lancé

Accès navigateur :

```
http://localhost:8000
```

Capture – Page Welcome Symfony 7

```
 PS C:\Users\alexi\sf-080120261500> php -S localhost:8008 -t public
[Wed Feb 18 13:16:52 2026] PHP 8.2.12 Development Server (http://localhost:8008) started
[Wed Feb 18 13:17:23 2026] [::1]:64151 Accepted
[Wed Feb 18 13:17:23 2026] [::1]:56858 Accepted
[Wed Feb 18 13:17:24 2026] [::1]:64151 [404]: GET /
[Wed Feb 18 13:17:24 2026] [::1]:64151 Closing
[Wed Feb 18 13:17:24 2026] [::1]:56858 [200]: GET /_wdt/styles
[Wed Feb 18 13:17:24 2026] [::1]:56858 Closing
[Wed Feb 18 13:17:24 2026] [::1]:62479 Accepted
[Wed Feb 18 13:17:25 2026] [::1]:62479 [200]: GET /_wdt/df1e5f?XDEBUG_IGNORE=1
[Wed Feb 18 13:17:25 2026] [::1]:62479 Closing
```

8. Création d'un contrôleur – Home

8.1 Génération

```
php bin/console make:controller Home
```

Capture – Création contrôleur Home


```
 PS C:\Users\alexi\sf-080120261500> php bin/console make:controller Home

 Do you want to generate PHPUnit tests? [Experimental] (yes/no) [no]:
 > no

 created: src/Controller/HomeController.php
 created: templates/home/index.html.twig


 Success!


 Next: Open your new controller class and add some pages!
 PS C:\Users\alexi\sf-080120261500>
```

Fichiers générés :

- src/Controller/HomeController.php
- templates/home/index.html.twig

8.2 Définition de la route

Exemple dans le contrôleur :

```
#[Route('/', name: 'home')]
public function index(): Response
{
    return $this->render('home/index.html.twig');
}
```

Capture – Code contrôleur

```php
src > Controller > HomeController.php > ...
  1    <?php
  2
  3    namespace App\Controller;
  4
  5    use Symfony\Bundle\FrameworkBundle\Controller\AbstractController;
  6    use Symfony\Component\HttpFoundation\Response;
  7    use Symfony\Component\Routing\Attribute\Route;
  8
       0 references
  9    final class HomeController extends AbstractController
 10    {
 11        #[Route(path: '/home', name: 'app_home')]
          0 references
 12        public function index(): Response
 13        {
 14            return $this->render(view: 'home/index.html.twig', parameters: [
 15                'controller_name' => 'HomeController',
 16            ]);
 17        }
 18    }
 19
```

9. Personnalisation du contrôleur

Ajout de paramètres Request :

```php
public function index(Request $request): Response
{
    $name = $request->query->get('name');
}
```

Capture – Home ++

```php
src > Controller > HomeController.php > ...
  1  <?php
  2
  3  namespace App\Controller;
  4
  5  use Symfony\Bundle\FrameworkBundle\Controller\AbstractController;
  6  use Symfony\Component\HttpFoundation\Response;
  7  use Symfony\Component\Routing\Attribute\Route;
  8  //
  9  use Symfony\Component\HttpFoundation\Request;
 10
 11
 12
     2 references
 13  final class HomeController extends AbstractController
 14  {
 15      /*
 16       * http://localhost:8008
 17       * http://localhost:8008?name=Heyrick
 18       */
 19      #[Route(path: "/", name: "home")]
         4 references
 20      public function index(Request $request): Response
 21      {
 22          $name = "Hello " . ($request->query->get(key: 'name') ? $request->query->get(key:
 23          $week = array('Lunes','Martes','Miercoles','Junes','Vienes');
 24          /*
 25           *-------------------------------------------------
 26           * Cette fois-ci, on appelle un fichier 'view'
 27           * avec des parametres (ici 'name', 'hash2', 'week')
 28           * à utiliser dans la vue
 29           *-------------------------------------------------
 30           */
 31          //dd($name);
 32          return $this->render(view: 'home/index.html.twig', parameters: [
 33              'name' => $name,
 34              'hash2' => "Jour ouvrables",
 35              'week' => $week
 36          ]);
 37
 38      }// EO index(
 39
 40  }// EO class HomeController
 41
```

10. Twig – Templates

Twig permet :

- Héritage via `{% extends %}`
- Blocs `{% block %}`
- Variables `{{ variable }}`
- Boucles `{% for %}`
- Conditions `{% if %}`

📸 **Capture – Template modifié (page 16)**

11. Création d'un second contrôleur – Recipe

11.1 Génération

```
php bin/console make:controller Recipe
```

Capture – Création RecipeController

11.2 Routes dynamiques

Exemple :

```
#[Route('/recipe/{slug}', name: 'recipe.show')]
```

Capture – Route dynamique

```php
src > Controller > RecipeController.php > ...
 1   <?php
 2
 3   namespace App\Controller;
 4
 5   use Symfony\Bundle\FrameworkBundle\Controller\AbstractController;
 6   use Symfony\Component\HttpFoundation\Response;
 7   use Symfony\Component\Routing\Attribute\Route;
 8   //
 9   use Symfony\Component\HttpFoundation\Request;
10   use Symfony\Component\HttpFoundation\JsonResponse;
11
12
13
     0 references
14   final class RecipeController extends AbstractController
15   {
16 >    /* ...
42       #[Route(
43           path: '/recipe/{slug}-{id}',
44           name: 'recipe.show',
45           requirements:['id' => '\d+', '$slug' => '[a-z0-9-]+'])]
         0 references
46       public function show(Request $request, string $slug, int $id): Response
47       {
48           return new JsonResponse(data: [
49               'id' => $id,
50               'slug' => $slug
51           ]);
52
53       }// EO swow(
54       /*
55        * http://localhost:8008/recipe
56        */
57       #[Route(path: '/recipe', name: 'recipe.index')]
         0 references
58       public function index(Request $request): Response
59       {
60
61           return new Response(content: 'Recipes');
62
63       }// EO index(
64
65
66   }// EO class RecipeController
67
```

11.3 Affichage des routes

```
php bin/console debug:router
```

Capture – Liste routes

12. Résultat final

L'application affiche :

- Page Home
- Page Recipe
- Routes dynamiques
- Variables Twig

Capture – Résultat final navigateur
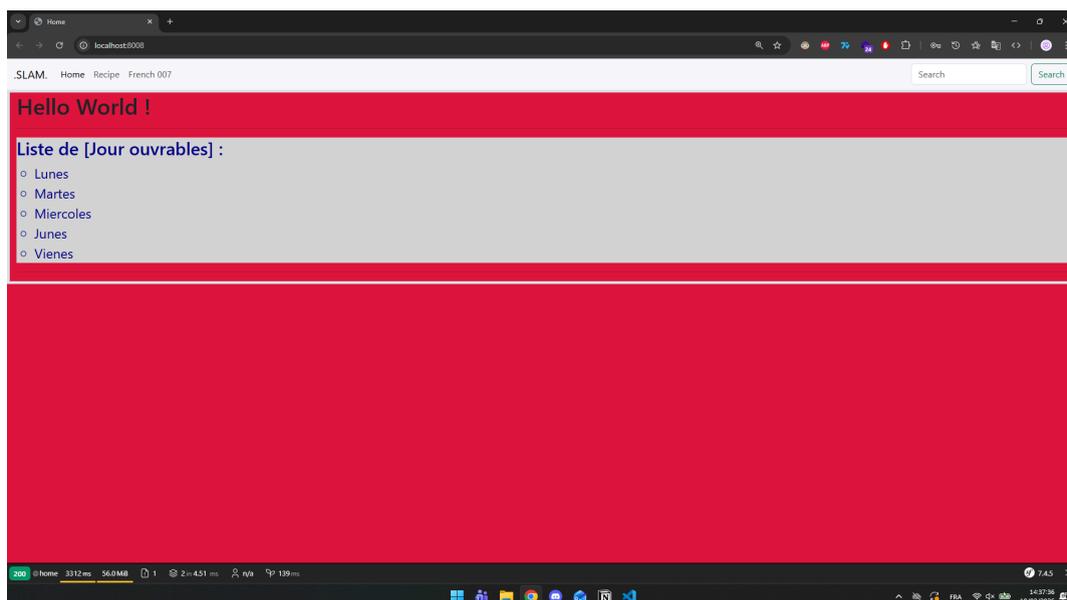
13. Difficultés rencontrées

Problème	Solution
Route non trouvée	Vérifier annotations
Erreur template	Vérifier chemin Twig
Contrôleur déjà existant	Supprimer ou renommer
Serveur non lancé	Lancer `php -S`

14. Résultats

- Projet Symfony fonctionnel
- Architecture MVC maîtrisée
- Routing dynamique opérationnel
- Utilisation de Twig validée

15. Compétences mobilisées

- PHP orienté objet
- Symfony CLI
- Routing
- Twig
- Architecture MVC
- Gestion serveur local

16. Conclusion

Ce TP a permis de comprendre la structure d'une application Symfony complète, l'importance du contrôleur, la gestion des routes et l'utilisation du moteur de template Twig .

Il constitue une base solide pour passer à :

- Doctrine ORM
- Gestion base de données
- CRUD complet
- Sécurité (authentification)

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