



A project report:

“CMS project on Phalcon Framework”

For
Human Resources website

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Acknowledgements :

We would like to express our teacher **Ms. Sara Koulali** for giving us the opportunity to work under their guidance and help us gain immensely enriching professional experience. And give us valuable inputs and ideas right from the selection of topic for project till its successful completion.

Objectifs:

1. Understanding the MVC Architecture.
2. Implementing MVC patterns to solve our problem.

Problem statement:

Developing an application web which make facilities for recruiters to find experienced people's profiles in any working's field .

Problem solution:

Using Phalcon Framework , and implement MVC patterns to create web application (HR platform) .

Functional description:

- 1- the graduated people register in these platform .
- 2- they create their profiles (personal informations + certificates + contact).
- 3- Recruiters see the profiles.
- 4- Recruiter choose a target and contact it directly.

Working Area:

PhpStorm: cross-platform IDE for PHP. it provides an editor for PHP, HTML and JavaScript .

WAMP/XAMPP: web server solution and interpreters for scripts written in the PHP.

Git: is a distributed version-control system for tracking changes in source code during software development

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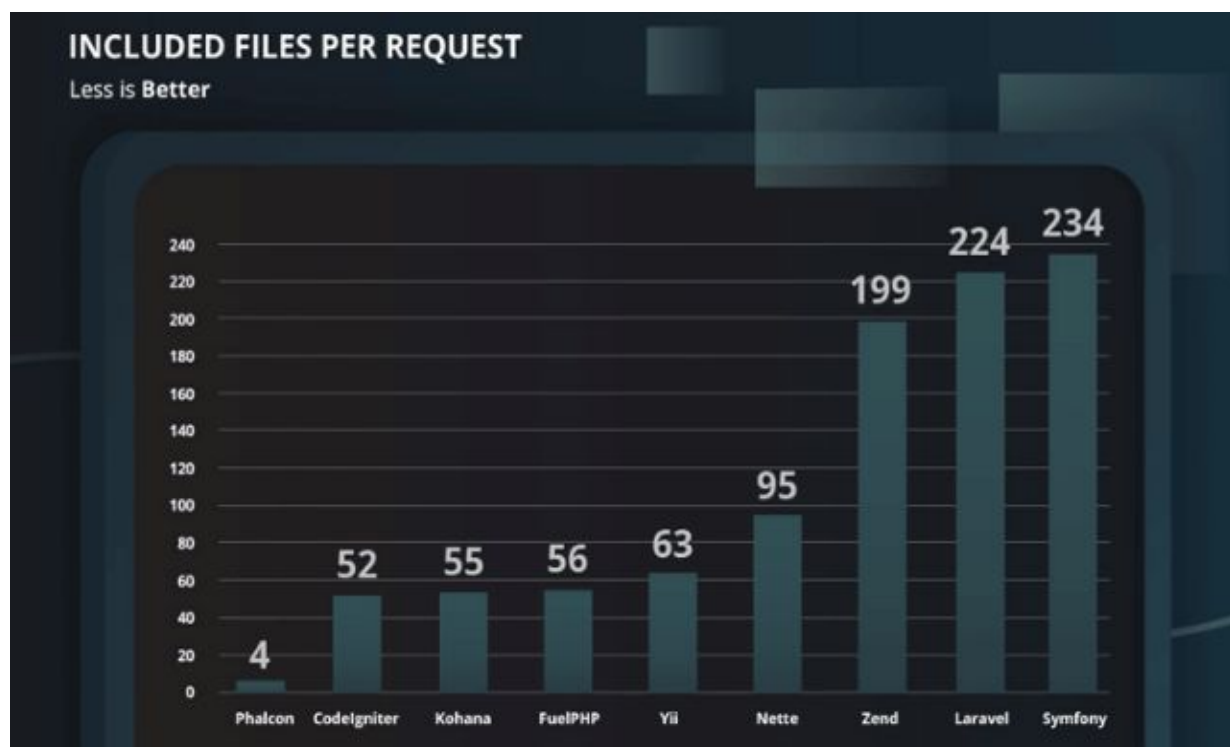
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Why Phalcon Framework:

I. What's phalcon:

phalcon is a high-performance PHP framework based on the model-view-controller (MVC) architecture. Its initial release dates back to 2012 and it has always been open-source. It offers some unique features in comparison to other frameworks (traditional or existing) in PHP. Following are some of the most prominent features of Phalcon:

1. Phalcon is famous for being the first framework to implement *object-relational mapping (ORM)* in C.
2. create an extension “php_phalcon.dll ” to a web server which enhances execution speeds, reduces resource utilization, and ensures higher request processing compared to other PHP frameworks.
3. Phalcon was able to complete over 1400 requests per second. Meanwhile other frameworks had a harder time.



II. Phalcon Vs Php Frameworks:

- **Phalcon Vs. Laravel :**

laravel can't compete with Phalcon when it comes down to speed. But , laravel is comparatively easier to learn and has better debugging support.

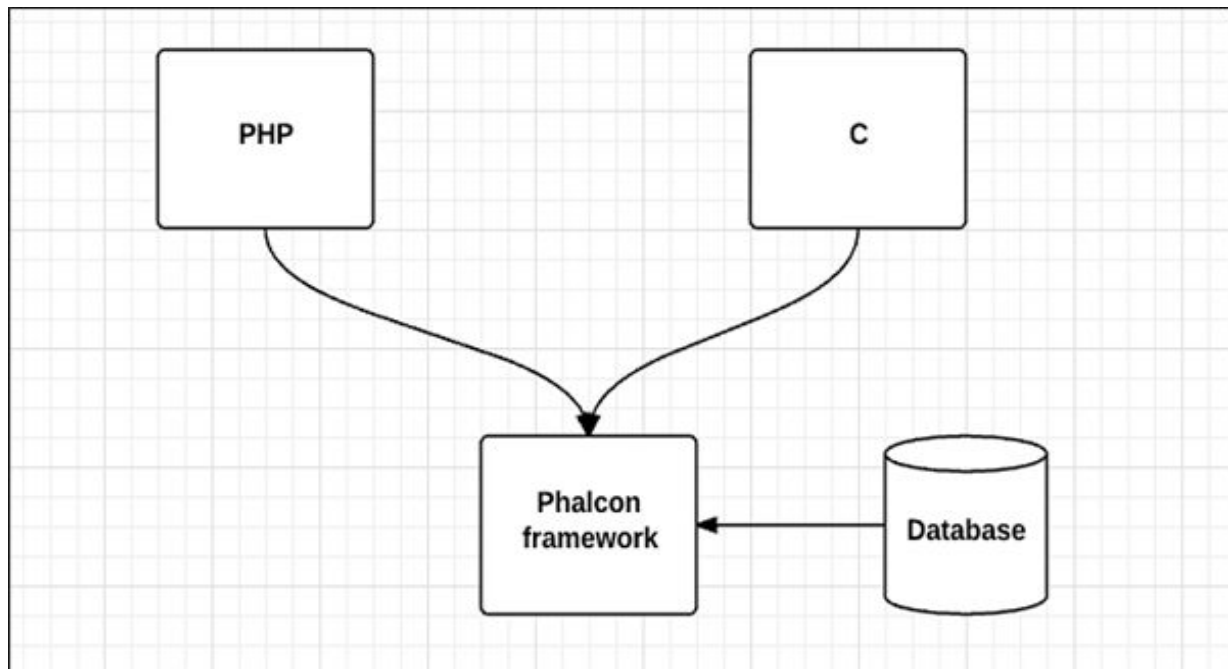
- **Phalcon Vs. CodeIgniter:**

CodeIgniter may be able to catch up with Phalcon with appropriate hardware optimization.

- **Phalcon Vs. Symfony :**

they are open-source projects with ORM support,Phalcon can process 50 percent more requests per second compared to Symfony.

Phalcon 's performance : Phalcon has a combination of both PHP and C; each of them can be used as a standalone module. The compilation of every request is considered on a higher speed in Phalcon which makes everything seem out-of-the-box.

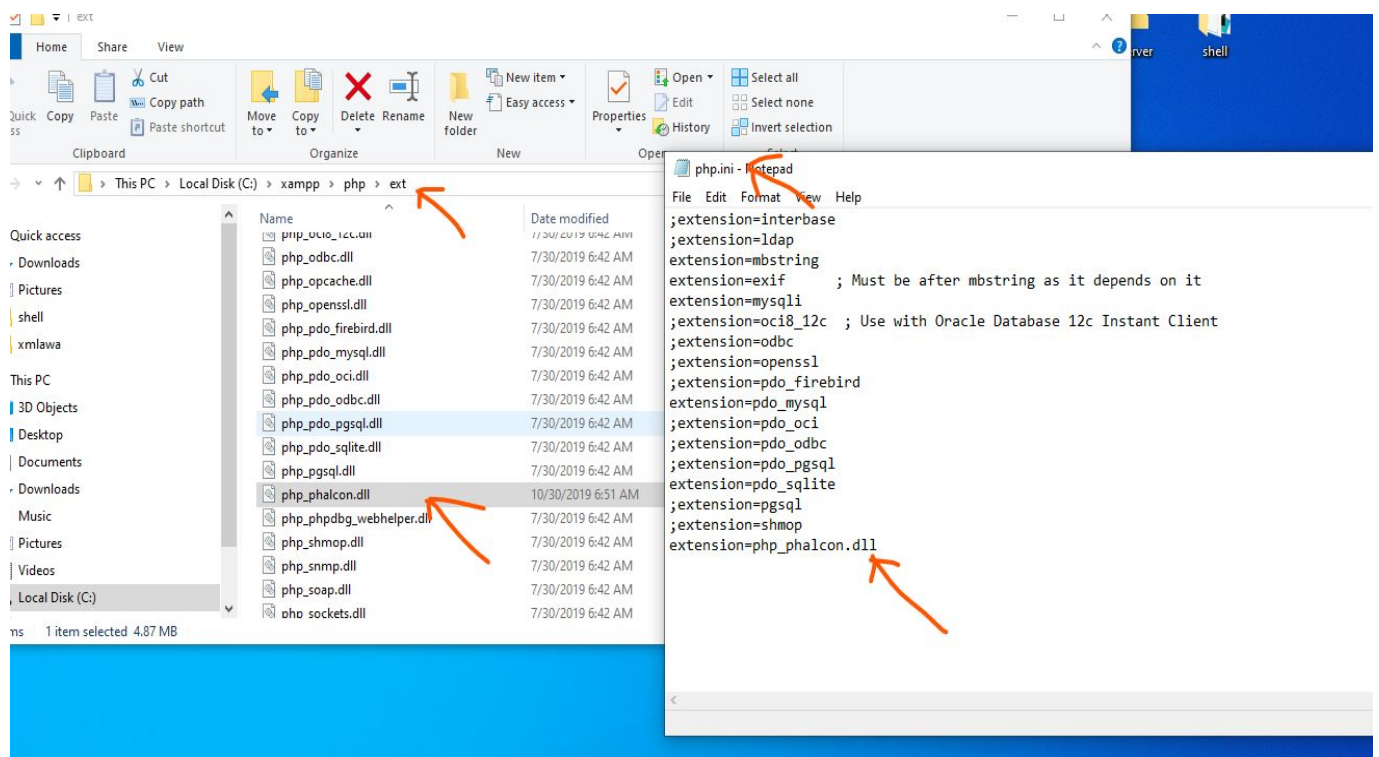


Phalcon- Environmental Setup:

Step 1 : Phalcon installation is completely dependent on dll file. DLL (Dynamic Link Library) creates the required package and plugins for Phalcon.

Step 2 : Download the required dll file from <https://phalcon.io/en-us/download/windows>. Check for the appropriate configuration of the system and download the required dll file. After downloading the file, extract **phalcon-php.dll** to **/php/ext** in the **xampp** folder.

Step 3 : Edit the path in **php.ini** file to get it configured in a similar manner of other .dll files.



Step 4 : Once the path is edited, **restart the xampp/wamp** stack. It will be clearly visible in the **dashboard**, once the dll file is properly set.

Step 5 : After downloading the package from <https://github.com/phalcon/phalcon-devtools>, set the **path variable** in the **system properties**.

The screenshot shows a web browser at the URL `127.0.0.1/dashboard/phpinfo.php`. A search bar at the top contains the word 'phalcon'. The page displays the Phalcon extension status, which is 'enabled'. Below this, a table lists various directives and their values.

Directive	Local Value	Master Value
phalcon.db.escape_identifiers	On	On
phalcon.db.force_casting	Off	Off
phalcon.orm.cast_on_hydrate	Off	Off
phalcon.orm.column_renaming	On	On
phalcon.orm.disable_assign_setters	Off	Off
phalcon.orm.enable_implicit_joins	On	On
phalcon.orm.enable_literals	On	On
phalcon.orm.events	On	On
phalcon.orm.exception_on_failed_save	Off	Off
phalcon.orm.ignore_unknown_columns	Off	Off
phalcon.orm.late_state_binding	Off	Off
phalcon.orm.not_null_validations	On	On
phalcon.orm.update_snapshot_on_save	On	On
phalcon.orm.virtual_foreign_keys	On	On

Step 6 : The dll files and Phalcon tools together help in creating the our web application. The user can verify through command prompt whether Phalcon framework has been successfully installed. The output will be displayed as shown in the following screenshot.

The screenshot illustrates the installation and verification of Phalcon. It shows a file explorer window with the 'Program Files' directory selected, highlighting the 'phalcon-devtools-master' folder. A web browser window displays the Phalcon GitHub repository page, showing 50 releases and 158 contributors. A command prompt window shows the output of the 'phalcon' command, displaying the Phalcon DevTools (3.0.5) and a list of available commands.

Available commands:

- info (alias of: i)
- commands (alias of: list, enumerate)
- controller (alias of: create-controller)
- module (alias of: create-module)
- model (alias of: create-model)
- all-models (alias of: create-all-models)
- project (alias of: create-project)
- scaffold (alias of: create-scaffold)
- migration (alias of: create-migration)
- webtools (alias of: create-webtools)

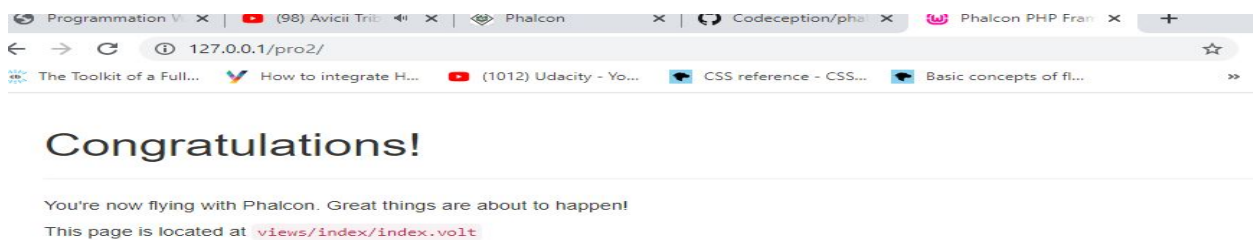
Step 7 : Once this necessary output is received, create a our project "pro2" using the following command ;

```
C:\wamp64\www>phalcon project pro2
Phalcon DevTools (3.0.5)

Success: Controller "index" was successfully created.
C:\wamp64\www\pro2\app\controllers\IndexController.php
Success: Project "pro2" was successfully created.

C:\wamp64\www>cd pro2
C:\wamp64\www\pro2>ld
```

Step 8 : The web application is successfully created. Click the following URL – <http://127.0.0.1/pro2>

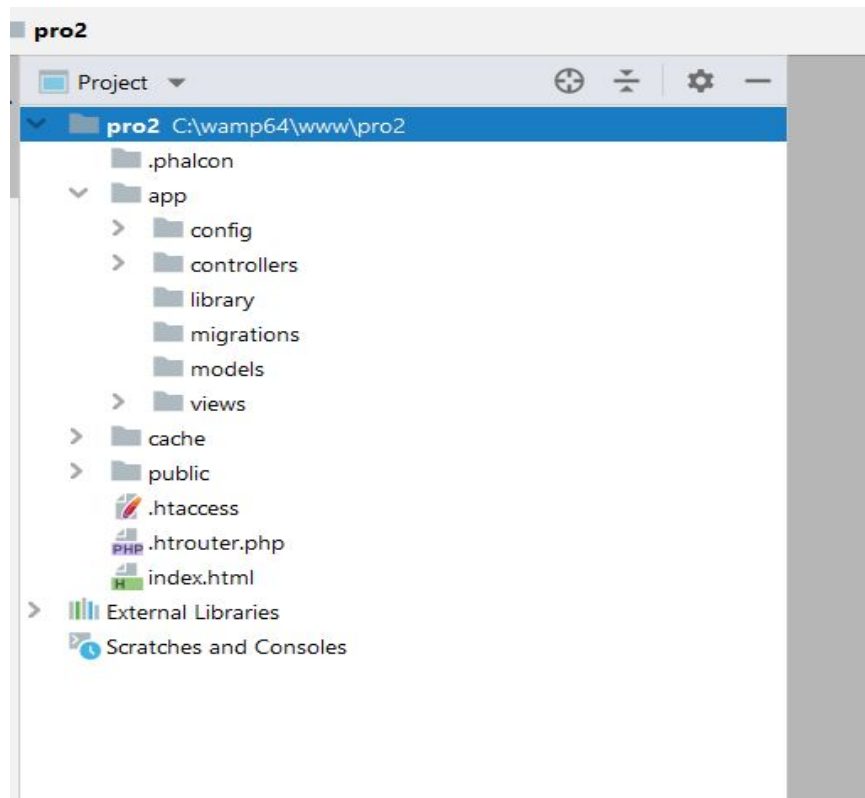


Phalcon- Application structure:

Once a project is created, the directory structure will be visible as follows in the **xampp/htdocs** folder. Following are the folders and sub-folders of the project:

app folder:

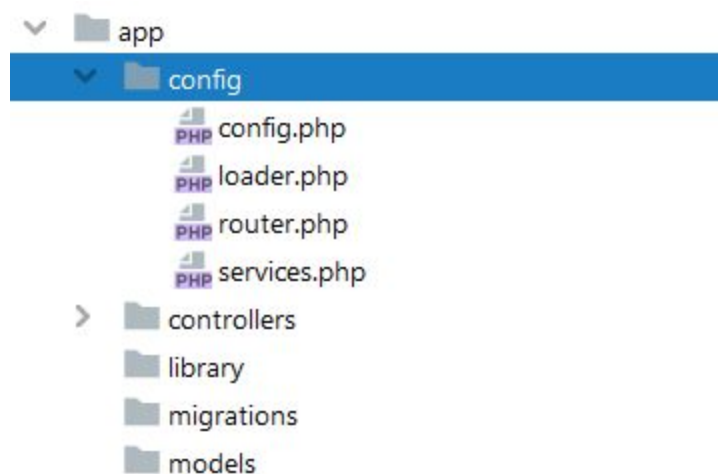
This folder consists of all vital script files and folders. The complete web application is designed on the basis of "app" folder. The configuration files help in assisting the necessary configuration for running the application smoothly.



It consists of config, controllers, library, migrations, models and views.

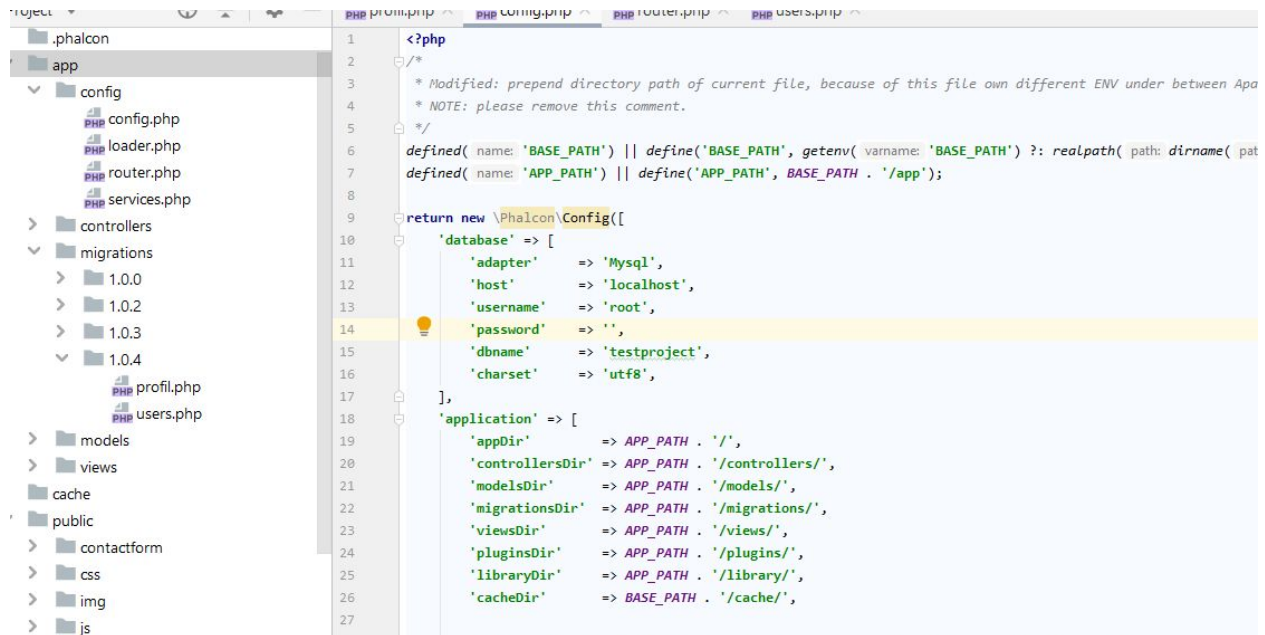
config folder:

All the configuration required for the web application in Phalcon is comprised in this folder.



All the configuration required for the web application in Phalcon is comprised in this folder. It includes information related to :

1 - database connectivity: config.php



2- Classes loading : loader.php

It extends the existing class of \Phalcon\Loader(). The loader class registers the directories which requires web application.

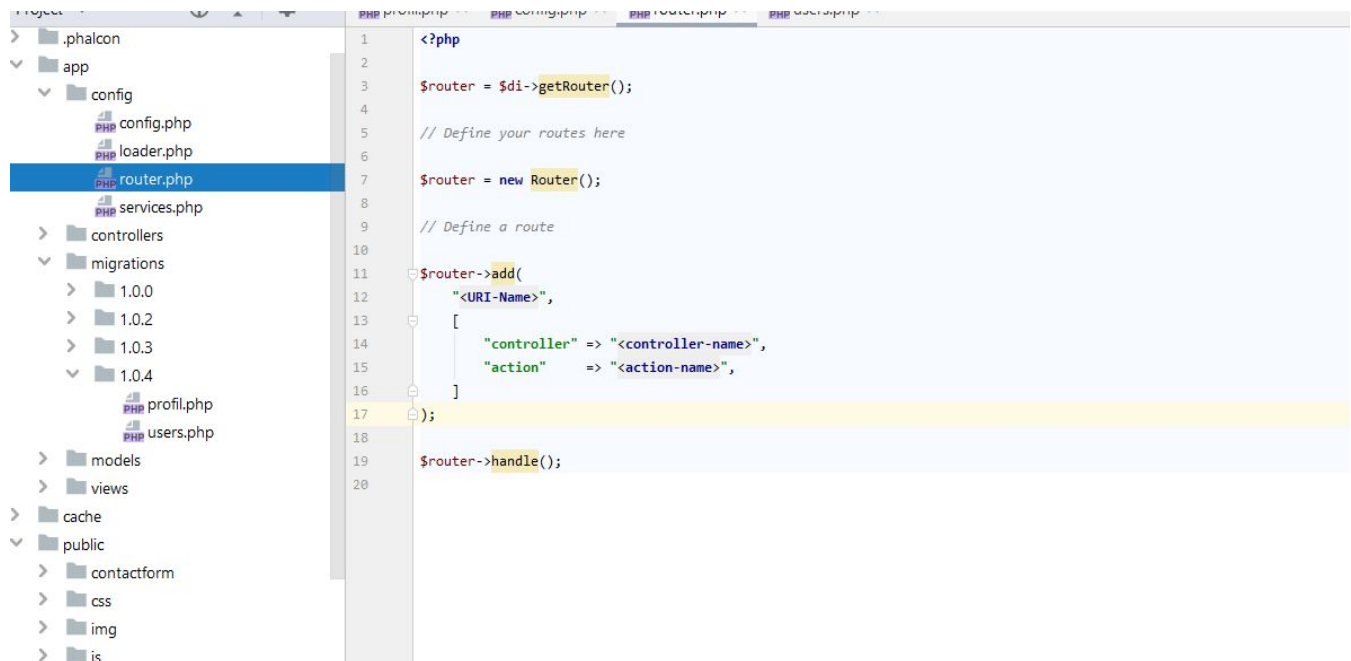
3 - Routing : router.php

The router component allows to define routes that are mapped to the controllers or handlers that should receive the request. A router parses a URI as per the information received.

Every router in the web application has two modes –

- MVC mode
- Match-only mode

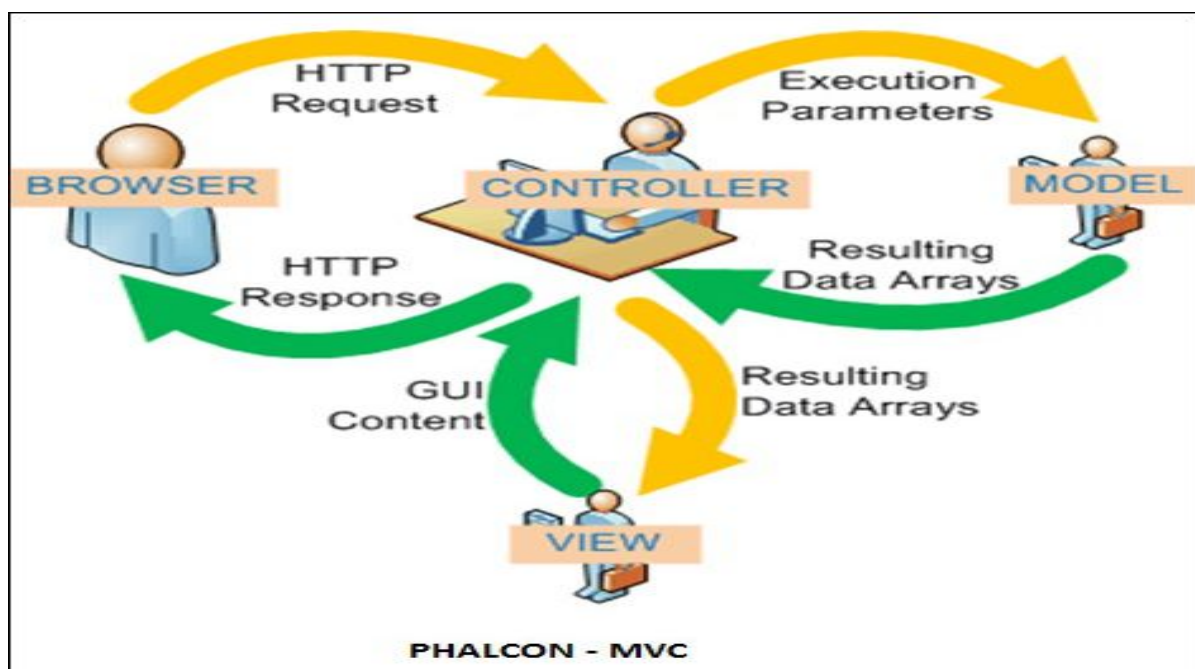
The first mode is ideal for working with MVC applications. Following is the syntax to define a route in Phalcon.



Model View Controller (MVC) :

is a software design and structural pattern for developing web based applications. This software architectural separates the representation of information from the user's interaction with it.

The MVC model defines the web applications with three logic layers:



Models:

Model in MVC architecture includes the logic of application. Model is the core interaction with the database. It should be able to manage updating, deleting, inserting, and fetching of records as per the user's request.

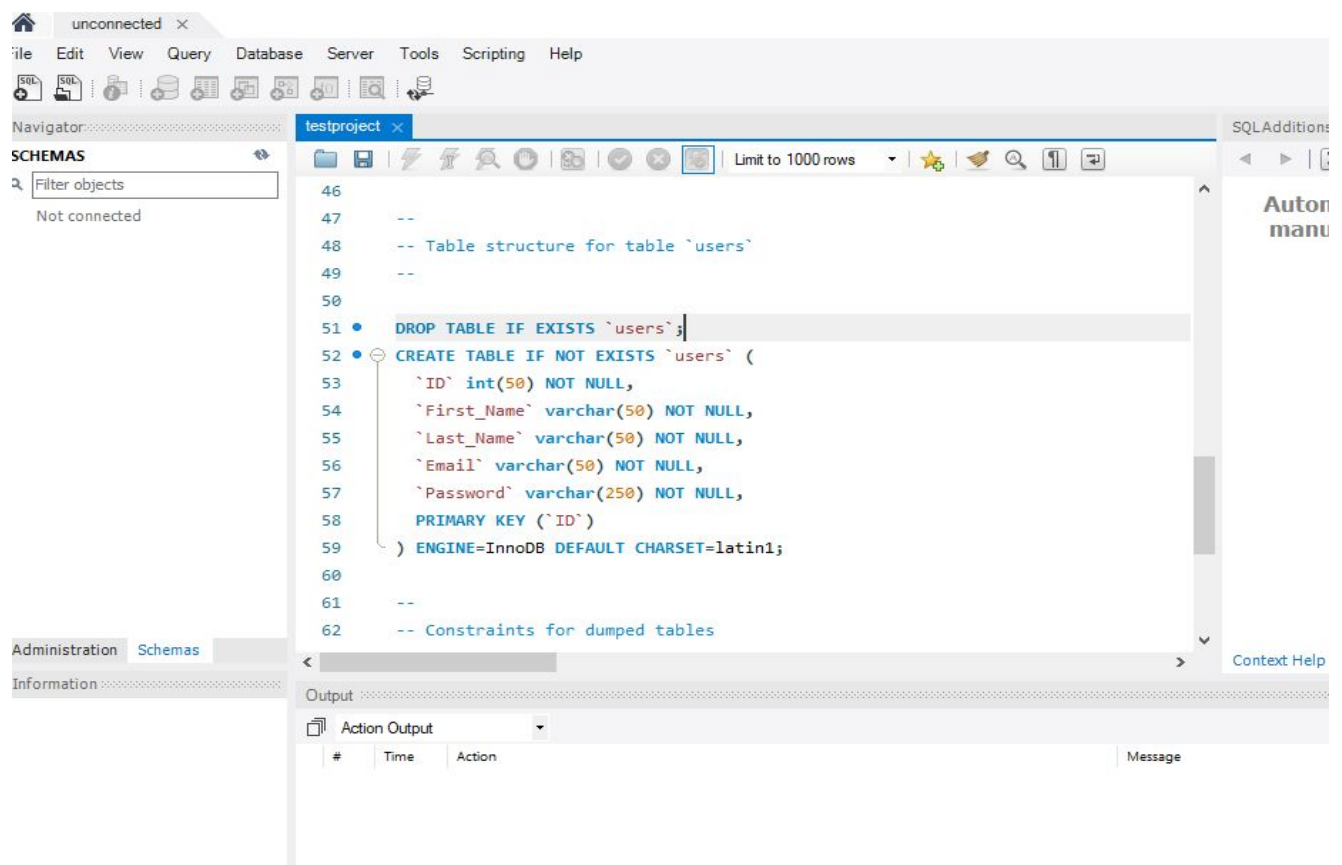
For understanding the model interaction in Phalcon PHP framework, following steps should be followed.

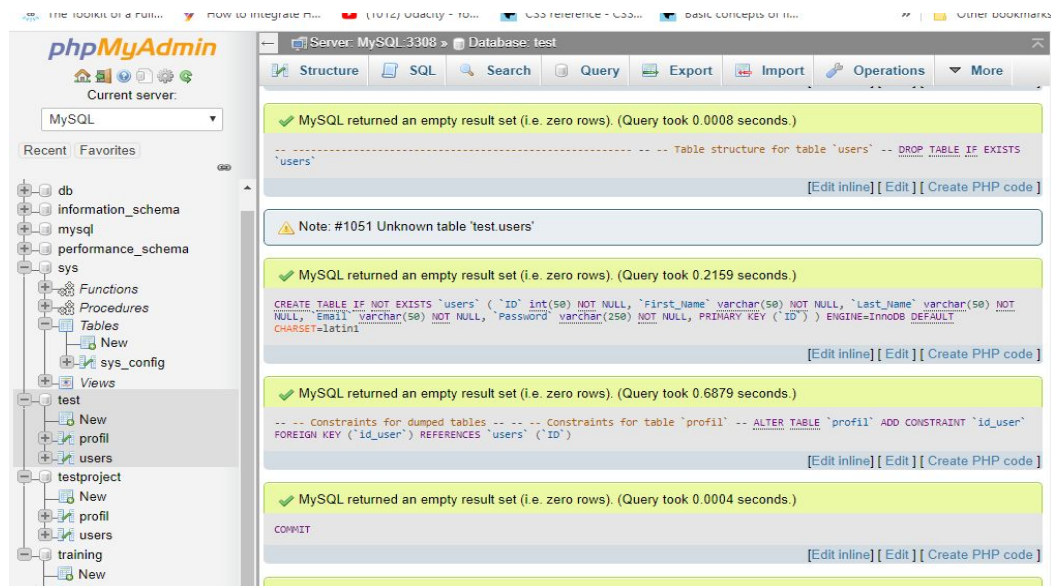
Example:

Create Users Model ;

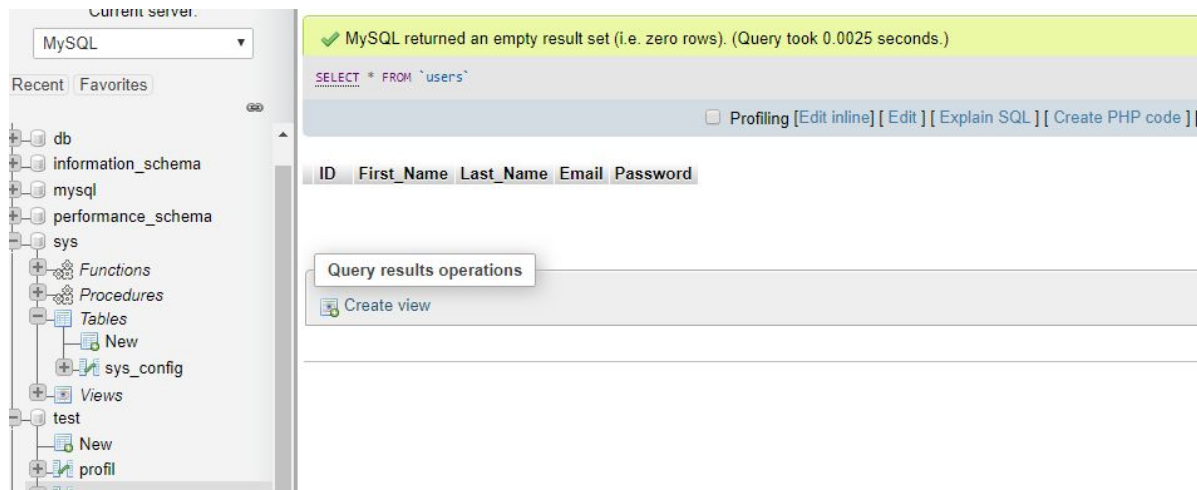
step 1:Creation of database “testproject”.

step 2:In the phpmyadmin section, click the Databases tab, mention the database name and further click the **Import** to import “testproject.sql”, that contains **Users** table button as shown in the following screenshot.

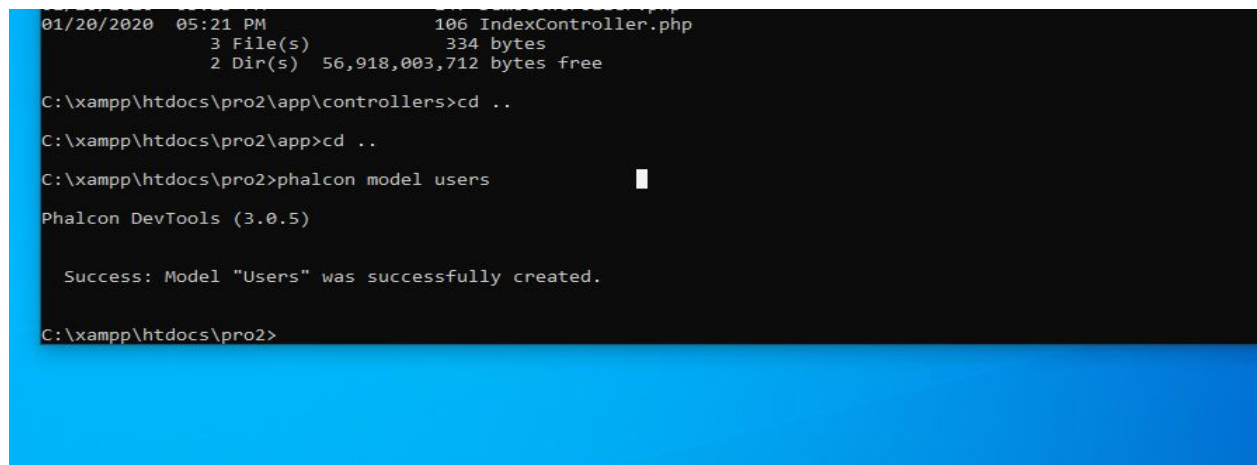




Result:



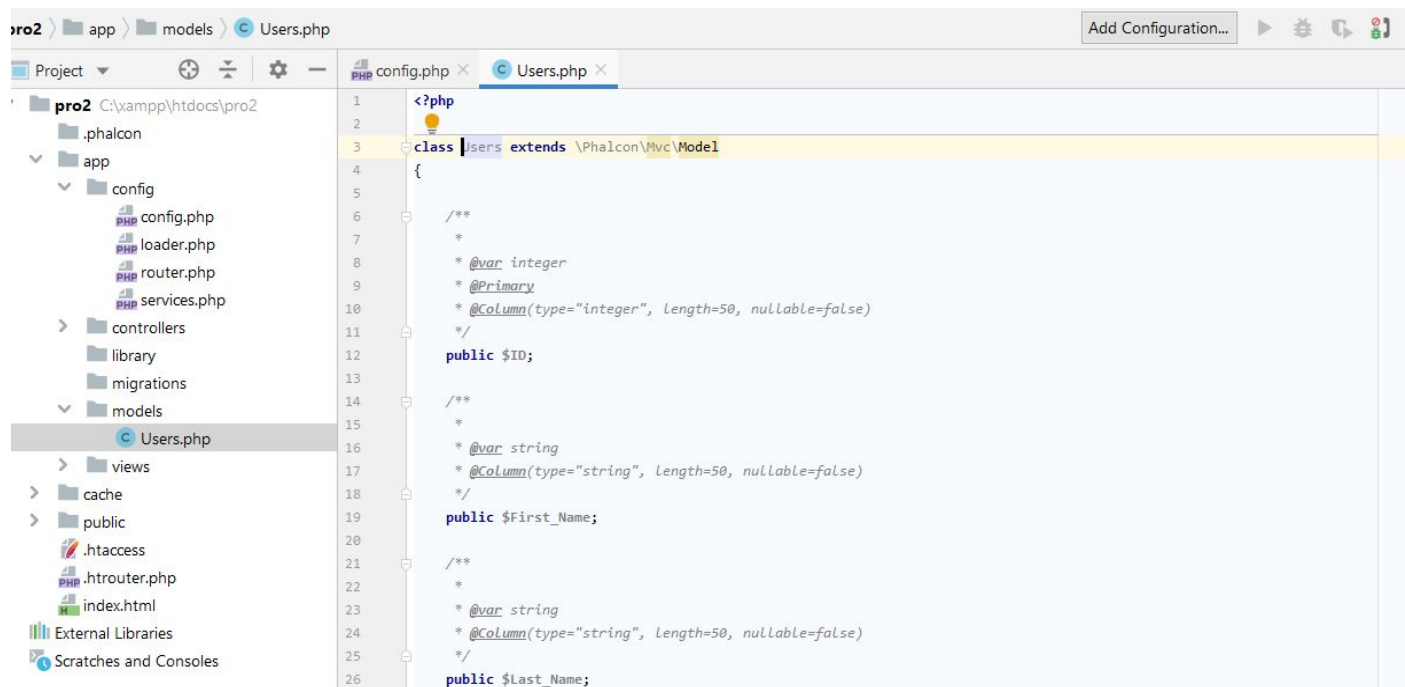
step 3:-Use the following command to create any model in Phalcon framework.



Models folder:

Models include all the logic required to interact with the database. It is actually used for data representation.

step 4: Model created successfully is present in the models folder. Use the following path to view where the model is created.



Controller:

A controller acts as the intermediary between the user and the system (model and view). It accepts the request from the user, through the view sends it to the model. The model manipulates it and sends the response to the controller, which is displayed as the output to the end user through view.

The controller receives such user output and translates it into the appropriate messages. These messages are used by view to display as appropriate responses.

For example, if we register through a sign-up form which includes details of the user such as username, email address and password, and click the Submit button, the data inserted or posted by the user is sent through the controller with the help of associated action or function.

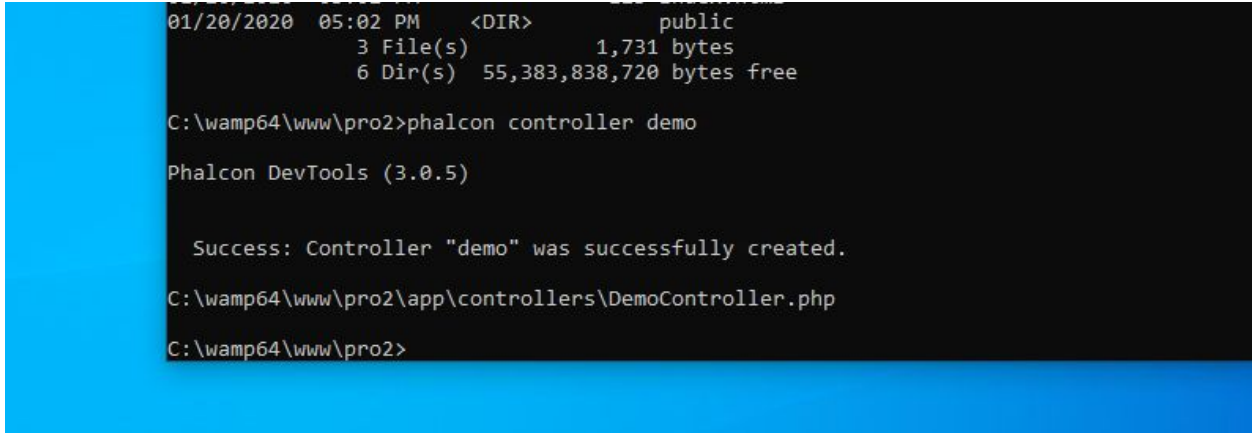
Features of a Controller:

A controller accepts inputs from the view and interacts with the associated model.

1. It helps in updating the model's state by sending commands to the model. It can also send commands to the associated view, which helps in changing the presentation of the view as per the model's state.
2. A controller acts as an intermediary between the model and the view.

Step to Create a Controller in Phalcon:

Step 1 : Use the following command to create an associated controller.



```
01/20/2020 05:02 PM <DIR> public
3 File(s) 1,731 bytes
6 Dir(s) 55,383,838,720 bytes free

C:\wamp64\www\pro2>phalcon controller demo

Phalcon DevTools (3.0.5)

Success: Controller "demo" was successfully created.

C:\wamp64\www\pro2\app\controllers\DemoController.php
C:\wamp64\www\pro2>
```

Note – The class names of the controllers must have the suffix “controller”. This implies a good naming convention which is followed in Phalcon.

By default, when the application is created in Phalcon PHP framework, it includes a controller named “IndexController”. This controller is invoked by default to trigger the actions.

This controller is extended by controller-base unlike other controllers which extends \Phalcon\Mvc\Controller.

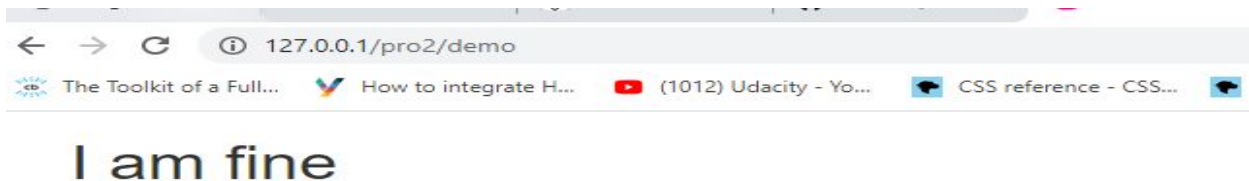
Controllers folder:

All the controllers are included in this folder. They are used for processing requests and generating response.



```
1 <?php
2
3 class DemoController extends \Phalcon\Mvc\Controller
4 {
5
6     public function indexAction()
7     {
8         echo '<h1>I am fine</h1>';
9     }
10
11 }
12
13
```

Response :



View:

A view is a visual representation of its model. View interacts with the model or its parts and gets the data necessary for the presentation from the model. This is achieved by sending requests and receiving appropriate responses. View includes all the data that end user sees.

Views are information being presented to the end user. A view can be considered as a web page with the appropriate response to be displayed. The response is received through the controller which interacts with the model.

Specifically in Phalcon, the view consists of Volt code, PHP and HTML. A set of special delimiters is available to enter in Volt mode:

{% ... %} is used to execute statements such as for-loops or assign values.

{{ ... }} prints the result of an expression to the template.

Views in Phalcon are basically classified into two types :

1. volt
2. phtml

Difference between .volt and .phtml Files:

.volt	.phtml
.volt extension is used when the template engine set up in the application is written in C.	.phtml is used when the template engine is PHP itself
It can be used as a stand-alone component	It cannot be used as a stand-alone component
Volt views are compiled to PHP code	phtml files itself includes PHP code so there is no need of compilation in Phalcon framework

Example:

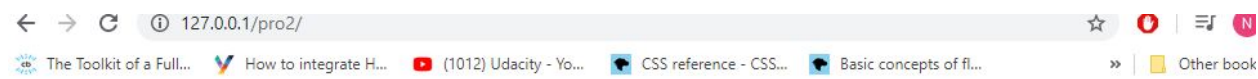
The screenshot shows a code editor with a file explorer on the left and a code editor on the right. The file explorer shows a project structure with folders like controllers, library, migrations, models, views, and index. The index folder contains index.volt, layouts, and index.volt. The code editor shows the content of index.volt, which is a Volt template. The template includes a PHP block to set fruits, an HTML header, a loop to render fruits, and another PHP block to set robots, followed by a loop to render robots. The output of the template is shown on the right, displaying the rendered HTML with the fruits and robots listed.

```

1 <p>you're now trying with Phalcon. Great things are about to happen!</p>
2
3 <p>This page is located at <code>views/index/index.volt</code></p>
4
5 {% set fruits = ['Apple', 'Banana', 'Orange'] %}
6
7 <h1>Fruits</h1>
8
9 <ul>
10     {% for fruit in fruits %}
11     <li>{{ fruit|e }}</li>
12     {% endfor %}
13 </ul>
14
15 {% set robots = ['Voltron', 'Astro Boy', 'Terminator', 'C3PO'] %}
16
17 <ul>
18     {% for robot in robots %}
19     <li>{{ robot }}</li>
20     {% endfor %}
21 </ul>
22
23
24
25
26
27

```

Result:



Congratulations!

You're now flying with Phalcon. Great things are about to happen!

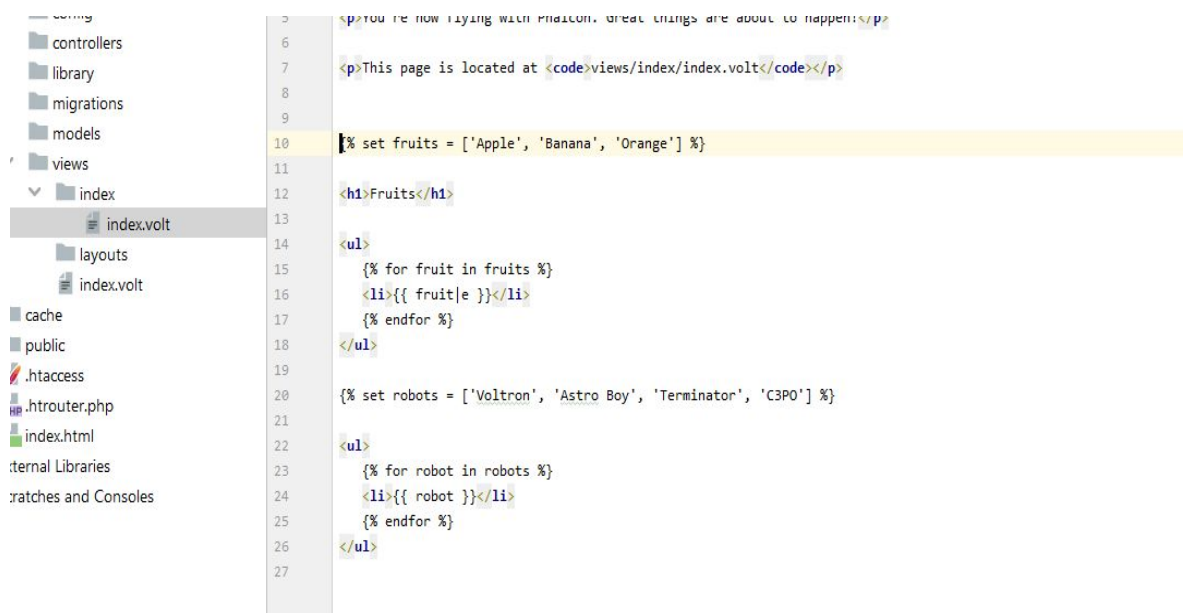
This page is located at `views/index/index.volt`

Fruits

- Apple
- Banana
- Orange
- Voltron
- Astro Boy
- Terminator
- C3PO

Views folder:

It constitutes all the views related to the web application. These views are displayed to the end users with the help of controllers.



Migrations folder:

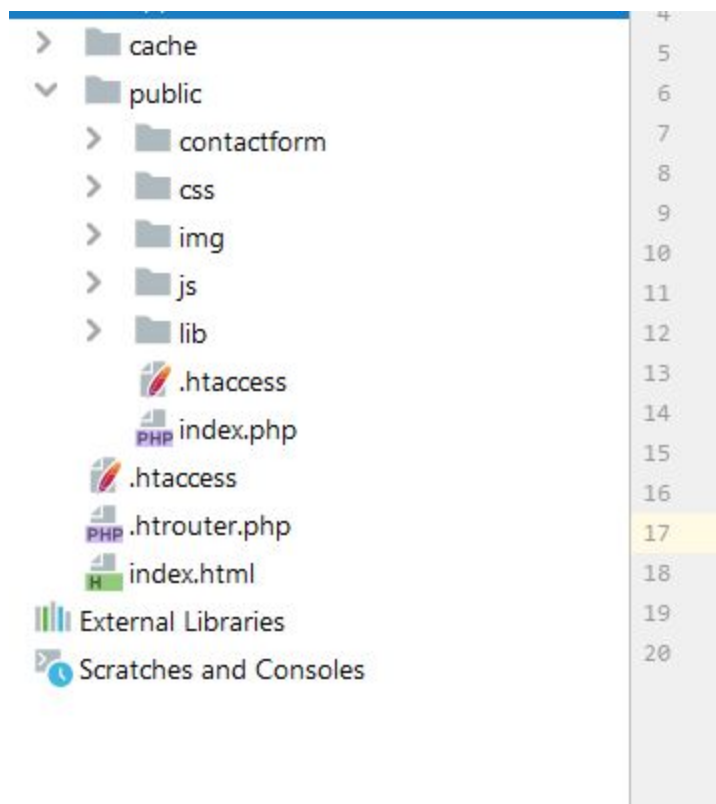
This sub-folder consists of all the files associated with data migration, which can also be used in any other framework.

Cache folder:

This directory includes data related to caching, which helps in improving the performance.

Public folder:

It includes all the folders for asset management purpose which comprises of CSS, JavaScript, files to be uploaded, and some meta data.

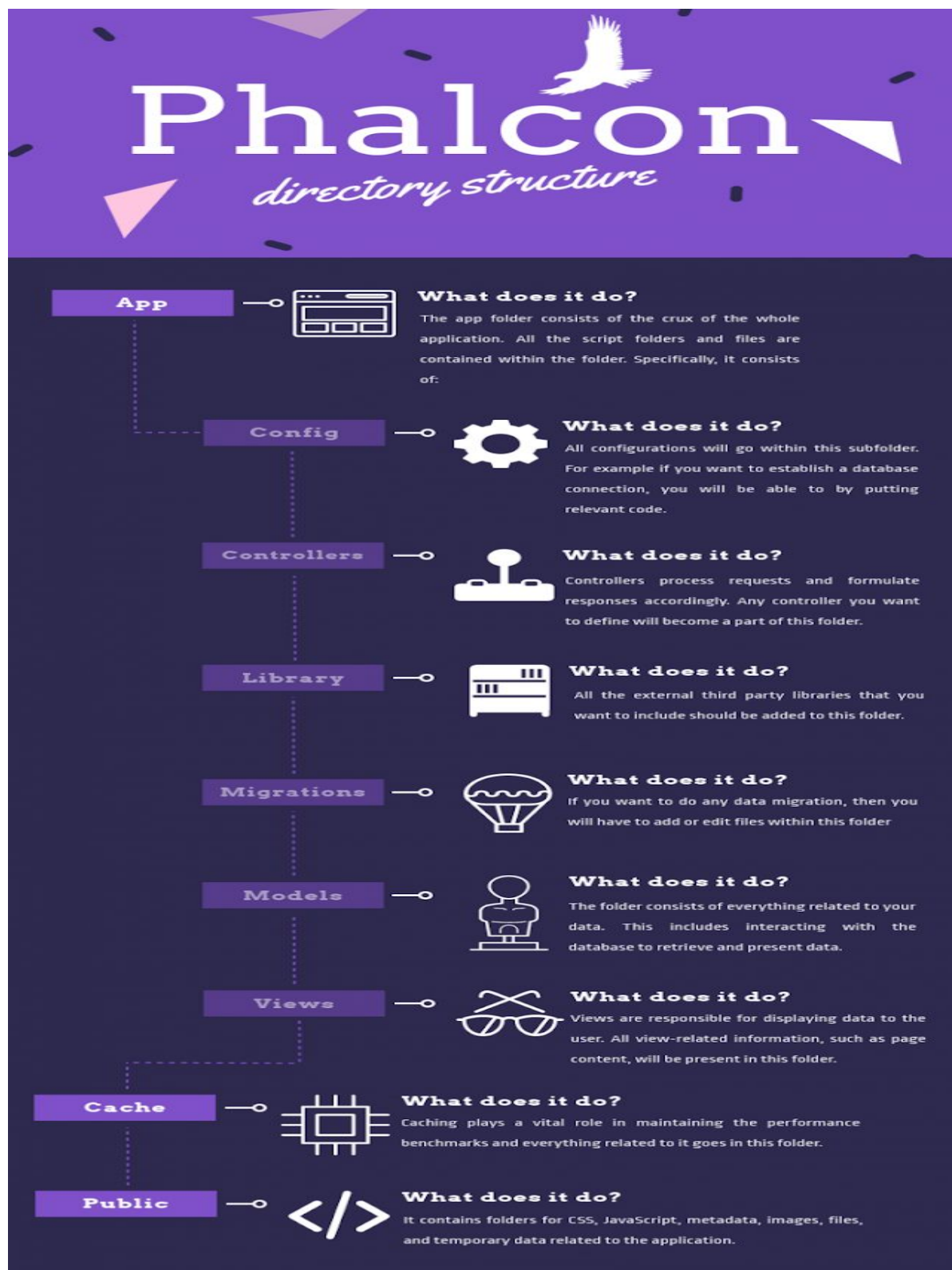


.htaccess File

Web servers running on Apache Web Server software use .htaccess as a configuration file. When it is placed in a directory, all the necessary configuration is loaded as soon as the server is started.

For example, it is possible to configure a website so that it will be available only to specific IP addresses with .htaccess file.

Phalcon Structure:



Application Design Document :

Models :

-User

This model consists of user login and registration. It maintains the user's information and also user's files. It consists of two tables, one to include user's personal information and other to maintain user's profile (Our recruiters sees that). The input to database for personal information is given by the user in registration page.

-Profile

This model consists of user build his own profile.

Specification of Functions 's App :

In this part ,we will to identify the services that must be provided by our application, we will detail the specific needs which consist of functional needs and non-functional needs:

1- Functional needs :

- The graduated people must have an account (Login).
- The graduated people must have a username and password to Connect (Signup).
- The application must allow recruiters to see directly user 's profile , without going through Signup 's operation.
- Each candidate is defined by his own information.

1- Non-Functional needs :

In order to guarantee satisfaction of the users, some constraints must be taken into our application:

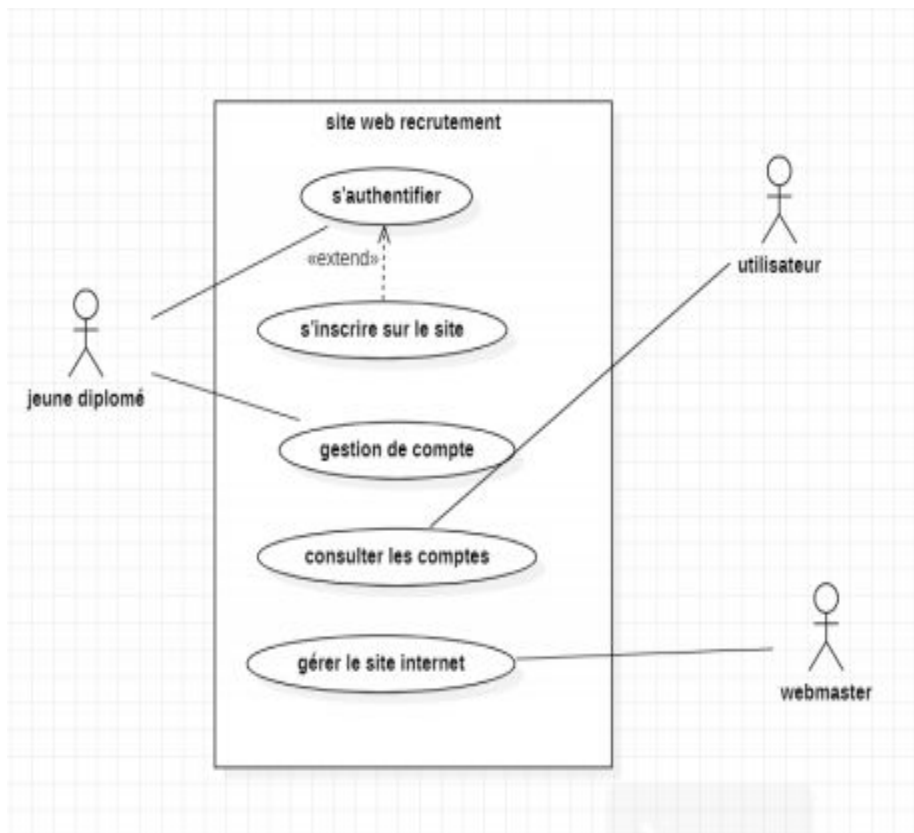
- **user-friendly:** The application must provide a simple view for the user in order to facilitate the operation of the application services.
- **Speed :** The application must ensure the speed of response and the reliability of the result obtained
- **Security:** The application must ensure the confidentiality of the data of users.

Use case diagrams:

A use case diagram at its simplest is a representation of a user's interaction with the system that shows the relationship between the user and the different use cases in which the user is involved.

Use case 1 : recruiting website

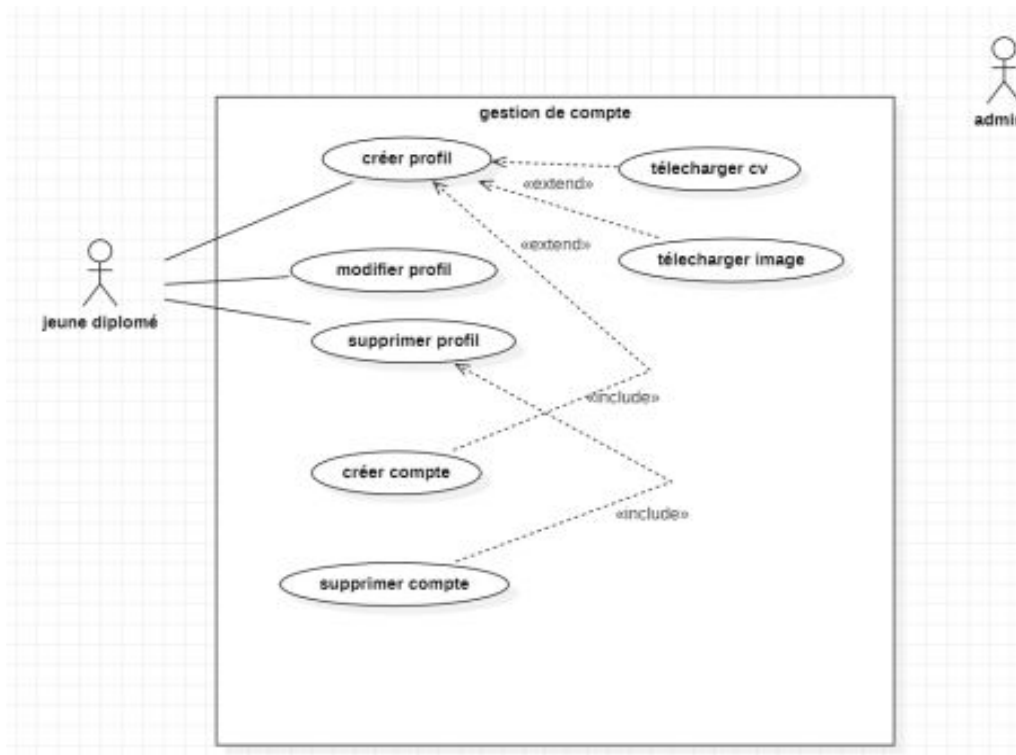
The figure shows the diagram relating to the use case: **recruiting website**.
By choosing to register, the candidate fills out a form.



Use case 2 : account management

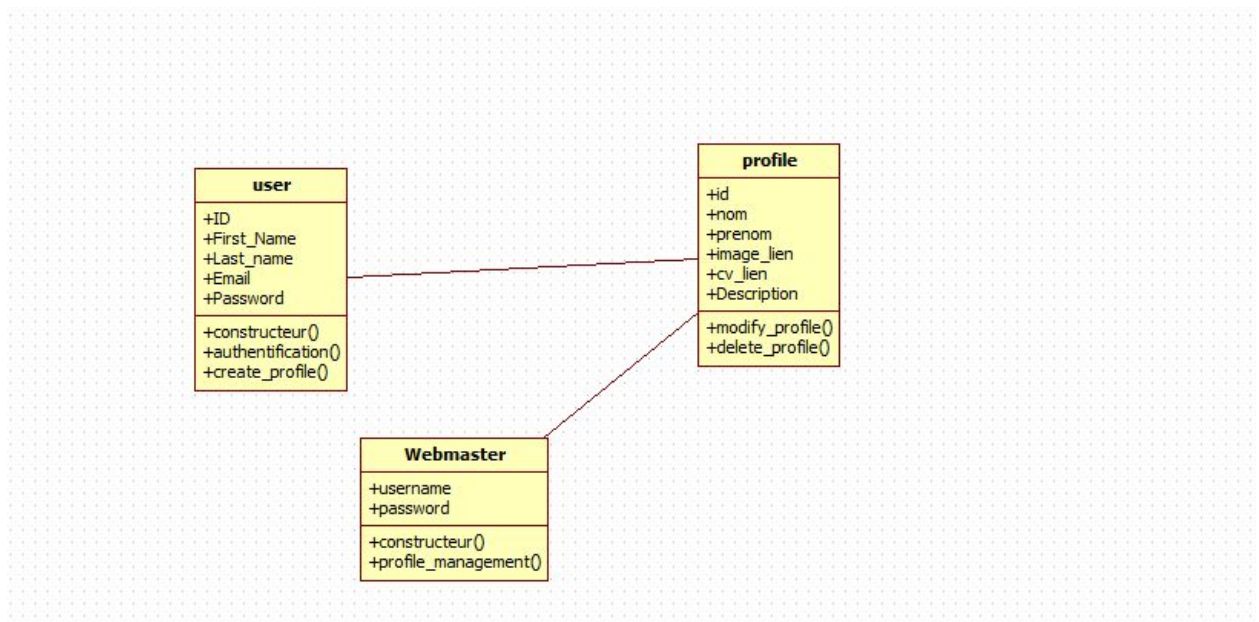
The young graduate uploads his CV and his picture when creating a profile on the website. he can modify their informations , as he can delete his profile when he don't need it yet.

Suppression of the profile implies the deletion of the account.



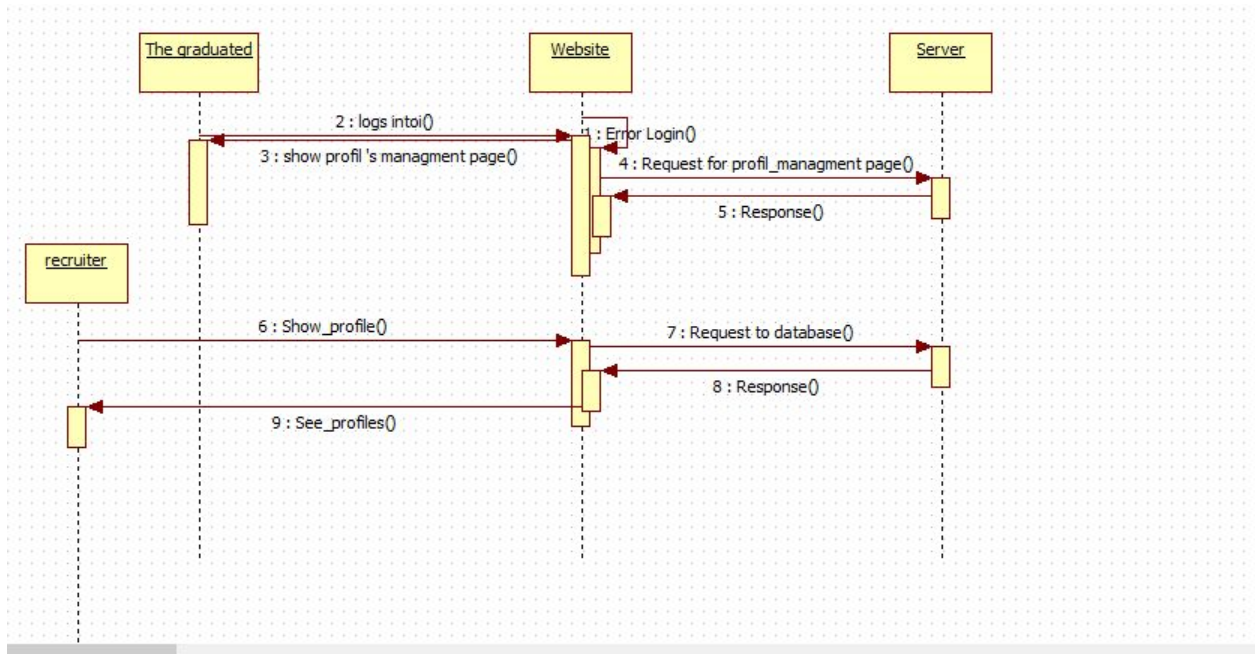
Class diagram:

In software engineering, a class diagram in the Unified Modeling Language is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations, and the relationships among objects.



Sequence diagram:

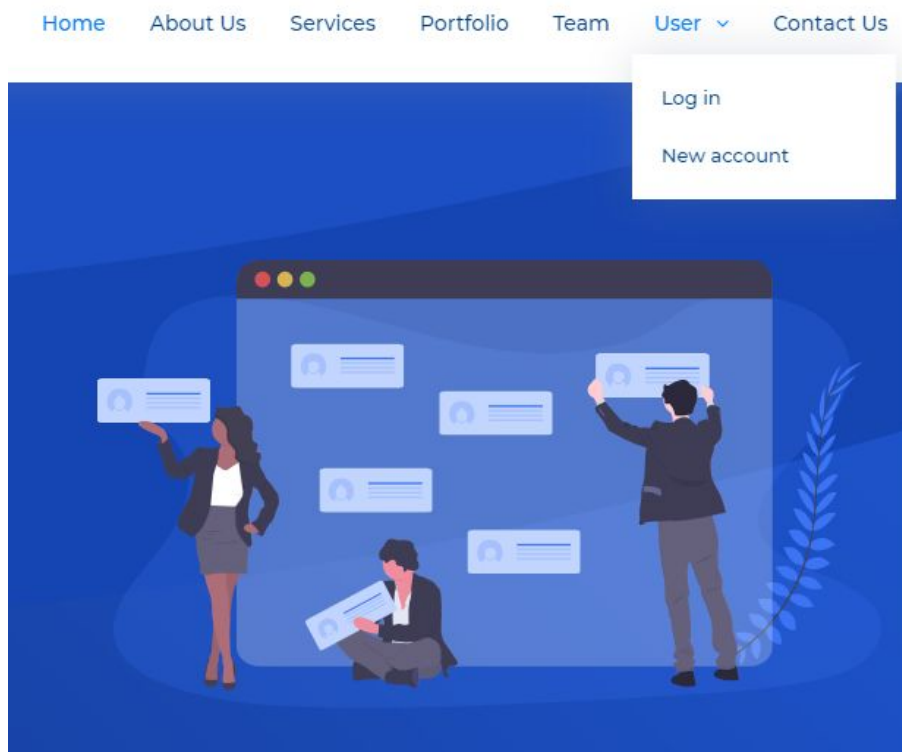
A sequence diagram shows object interactions arranged in time sequence. It depicts the objects and classes involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario.



Testing Our Application:

Home page Module:







- User clicks in **New account** button , to create his own profile:



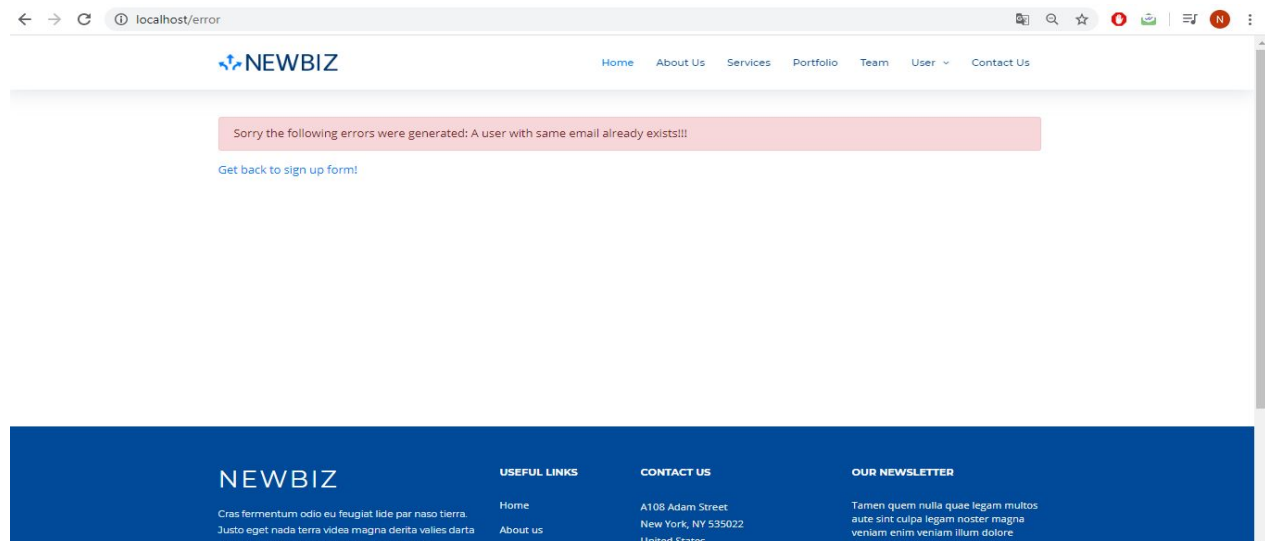
Sign Up Module:

A screenshot of the 'Sign Up' form on the NEWBIZ website. The form is located on a white background with a blue header and footer. The header contains the NEWBIZ logo and navigation links. The form fields are: First Name (with 'Amine' entered), Last Name (with 'Amejjoud' entered), Email address (with 'amine.amejjoud@gmail.com' entered), and Password (with masked characters). A 'Submit' button is located below the password field. A small note below the email field states: 'We'll never share your email with anyone else.' The footer contains the text 'NEWBIZ', 'USEFUL LINKS', 'CONTACT US', and 'OUR NEWSLETTER'.

- the graduated young 's informations are saved in database.

+ Options											
<div><div></div><div></div><div></div></div>			ID	First_Name	Last_Name	Email	Password				
<input type="checkbox"/>		Editor		Copier		Supprimer	1	Naoufal	Jayed	naoufal.jayed1@gmail.com	f7c3bc1d808e04732adf679965ccc34ca7ae3441
<input type="checkbox"/>		Editor		Copier		Supprimer	2	Amine	Amejoud	amine.amejjoud@gmail.com	7c4a8d09ca3762af61e59520943dc26494f8941b

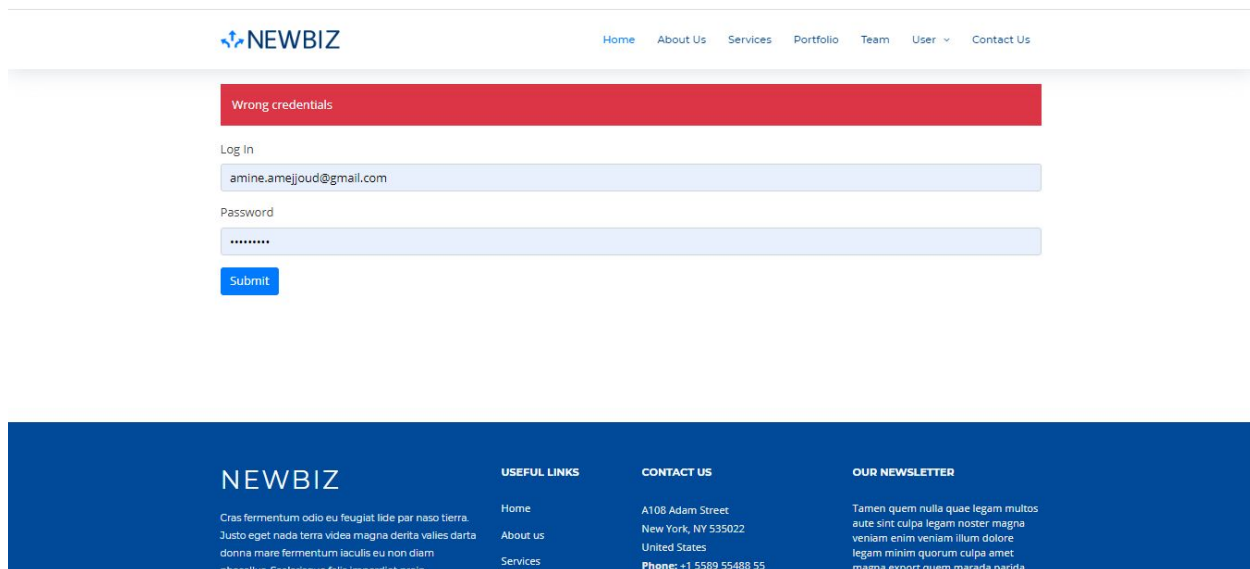
- register 's error show in 2 case :
 - informations already exists in database
 - email not exists



login 's Module:

The screenshot shows the login module on the NEWBIZ website. The header includes the 'NEWBIZ' logo and navigation links: Home, About Us, Services, Portfolio, Team, User, and Contact Us. The main content area features a 'Log In' section with two input fields: one for the email address (containing 'amine.amejjoud@gmail.com') and one for the password (displayed as '*****'). Below the password field is a blue 'Submit' button.

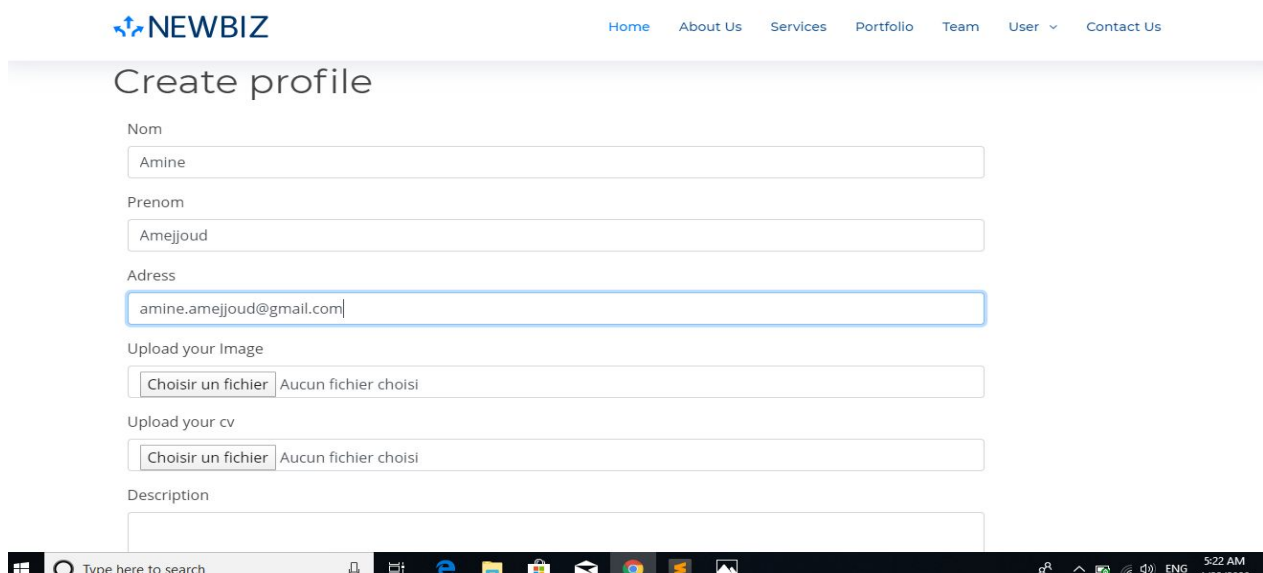
- login 's error :



The screenshot shows the NEWBIZ website's login interface. At the top, there is a navigation bar with links: Home, About Us, Services, Portfolio, Team, User (with a dropdown arrow), and Contact Us. Below the navigation bar, a red error message box displays "Wrong credentials". Underneath the error message, there is a "Log in" section with two input fields: one for the email address (containing "amine.amejjoud@gmail.com") and one for the password (containing "*****"). A blue "Submit" button is located below the password field. At the bottom of the page, there is a dark blue footer containing four columns of text: "NEWBIZ" with a placeholder paragraph, "USEFUL LINKS" with links to Home, About us, and Services, "CONTACT US" with address and phone information, and "OUR NEWSLETTER" with a placeholder paragraph.

Profile 's Module:

Create profile:



The screenshot shows the NEWBIZ website's "Create profile" form. The navigation bar at the top is identical to the previous screenshot. The form title "Create profile" is prominently displayed. Below the title, there are several input fields: "Nom" (containing "Amine"), "Prenom" (containing "Amejjoud"), and "Adress" (containing "amine.amejjoud@gmail.com"). There are two "Upload your Image" and "Upload your cv" sections, each with a "Choisir un fichier" button and the text "Aucun fichier choisi". At the bottom, there is a "Description" field. The Windows taskbar is visible at the bottom of the screen, showing the search bar and various application icons.

Users enter the following information:

- Full Name , address
- face picture , resume
- description of their experiences

Update profile:

Update profile

Nom

Prenom

Adress

Upload your Image


 Cv image.jpeg

Upload your cv


 Cv Naoufal JAYED.pdf

Description

Read profile:


[Home](#)
[About Us](#)
[Services](#)
[Portfolio](#)
[Team](#)
[User](#)
[Contact Us](#)

Change Your Information





Image	Nom	Prenom	Adress	Description
	Jayed	Naoufal	naoufal.jayed1@gmail.com	This is a description!

CV:



profile 's database:

+ Options

	id	nom	prenom	address	image_lien	cv_lien	description	id_user
  Éditer  Copier  Supprimer	41	Jayed	Naoufal	naoufal.jayed1@gmail.com	[BLOB - 41,9 kio]	[BLOB - 293,9 kio]	This is a description!	1

Logout Module:

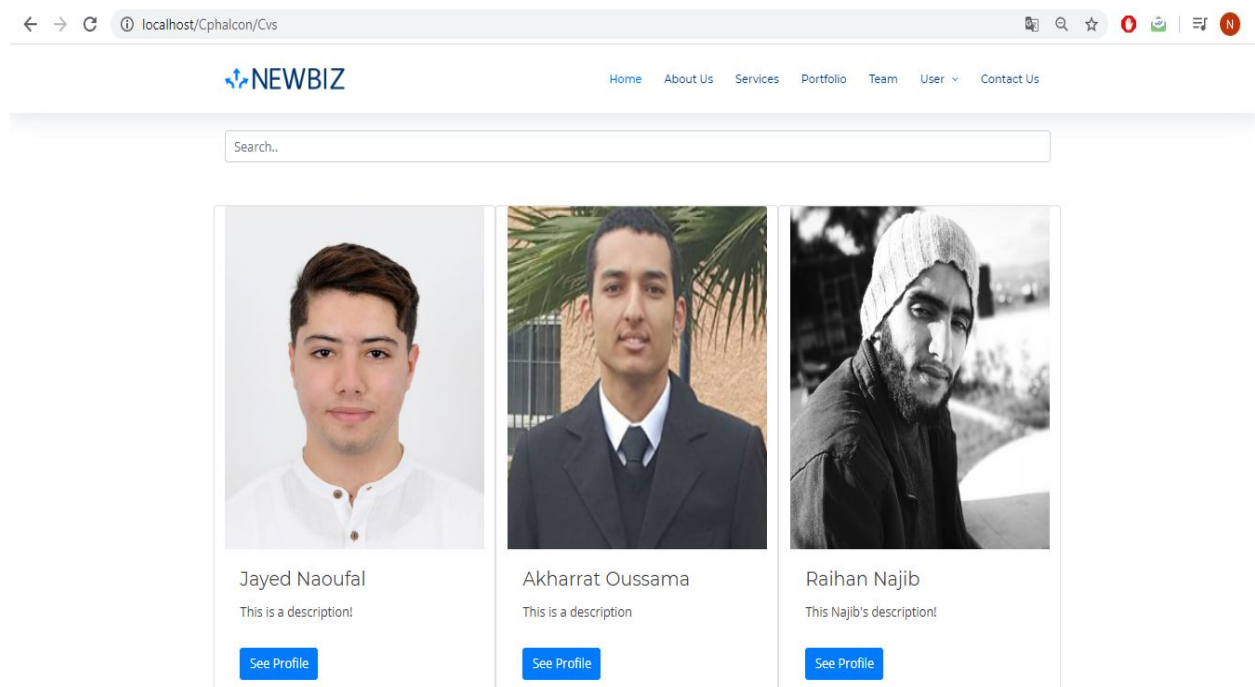
Home About Us Services Portfolio Team User Contact Us	
<div> Profile Logout </div>	
Adress	Description
naoufal.jayed1@gmail.com	This is a description!



Note:

Session 's user will destroy , when the user logout.

Recruiter page 's Module



Conclusion:

The purpose and objective of our Application is achieved. By providing extremely rich graphical user interface, web page designing is easy and in an aesthetic form. Flexibility in designing makes users satisfied, even a novice user can dream and accomplish their wish of get a work.

References :

- <https://docs.phalcon.io/4.0/en/introduction>
- <https://www.hostinger.com/tutorials/phalcon-tutorial>
- <https://www.javatpoint.com/phalcon-tutorial>
- <https://github.com/phalcon>
- [https://en.wikipedia.org/wiki/Phalcon_\(framework\)](https://en.wikipedia.org/wiki/Phalcon_(framework))