YII 1 for PHP Development

JUNNEL T. TORATE
Software Developer

Objectives

- Basic understanding of the structure, concepts, and help to promote rapid application development (RAD), which saves time, helps build more stable applications, and reduces the amount of repetitive coding for developers.
- Take away performing tedious coding tasks using pre-built modules and spend time on developing the actual application rather than re-building the foundation.
- Awareness of using modern PHP frameworks to improve knowledge and skills to easily adapt other frameworks more flexible.

Course Outline

- Introduction to PHP: The PHP Environment, Software and Frameworks
- PHP Programming with YII 1
- Web UI using Bootstrap
- Database Connection
- Generating Code with Gii
- Git: Clone, Add, Commit and Push
- Exercise: Develop Web Application

Introduction

PHP (Hypertext Preprocessor)

- Server-side scripting language
- Used to manage dynamic content, databases, session tracking, even build entire e-commerce sites
- Performs system functions like create, open, read and write files
- Handle pages to view, add, edit and delete data from the database

```
<html>
    <head>
        <title>Hello World</title>
    </head>
    <body>

        <?php echo "Hello, World!"; ?>

    </body>
</html>
```

Result:

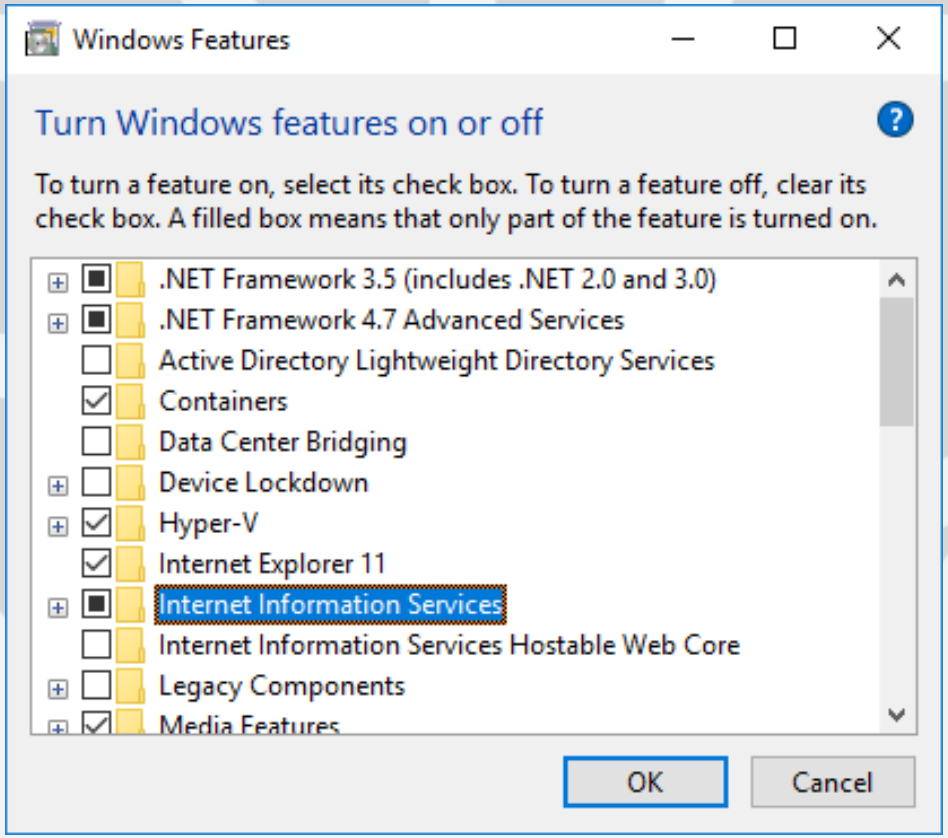
Hello, World!

Web Server

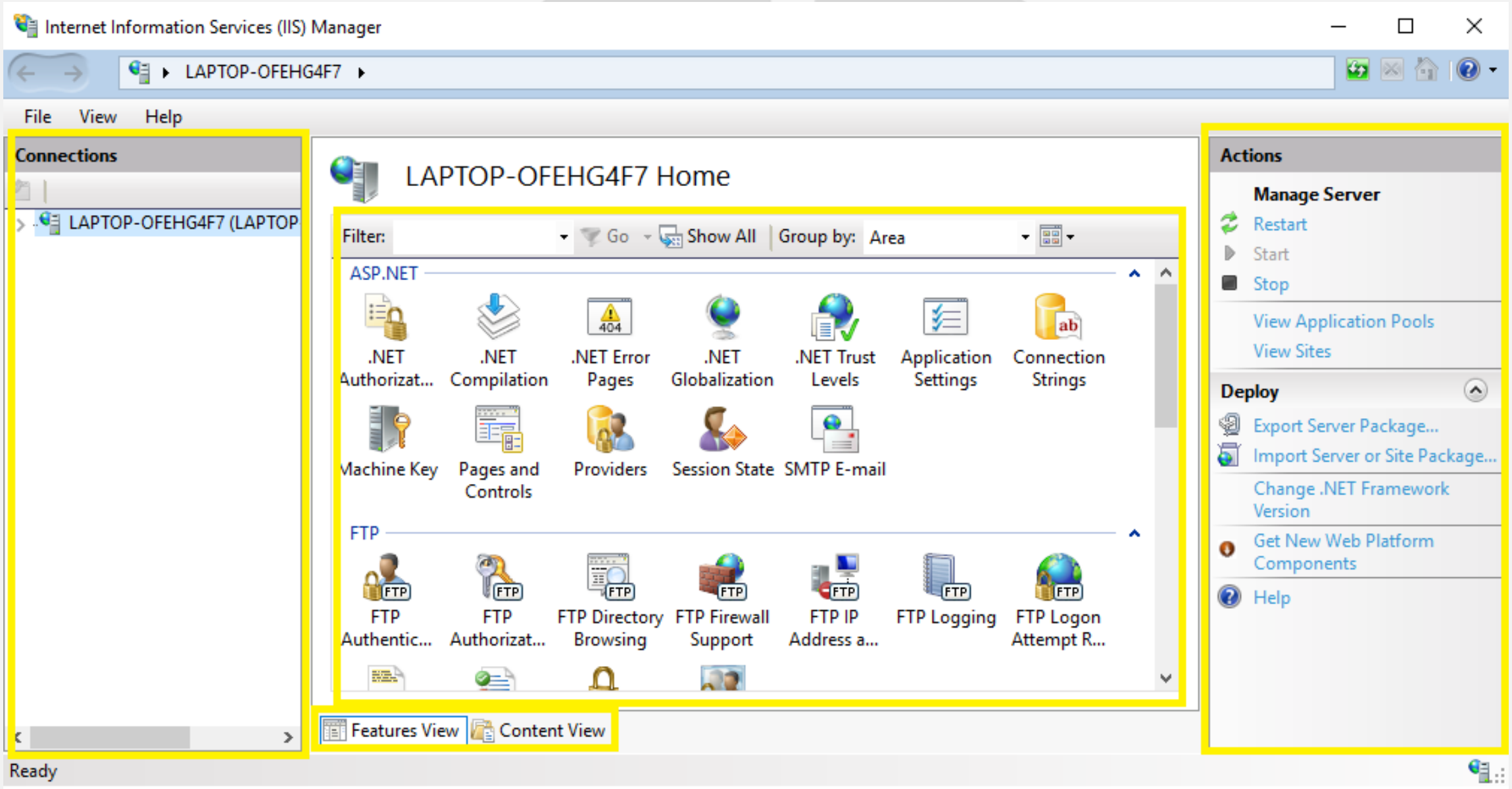
- The basic objective of the web server is to store, process and deliver web pages to the users.
- Intercommunication is done through **Hypertext Transfer Protocol** (HTTP)

Microsoft IIS

- **Internet Information Services**
- IIS is a web server software package designed for Windows.
- It is used for hosting websites and other content on the Web.

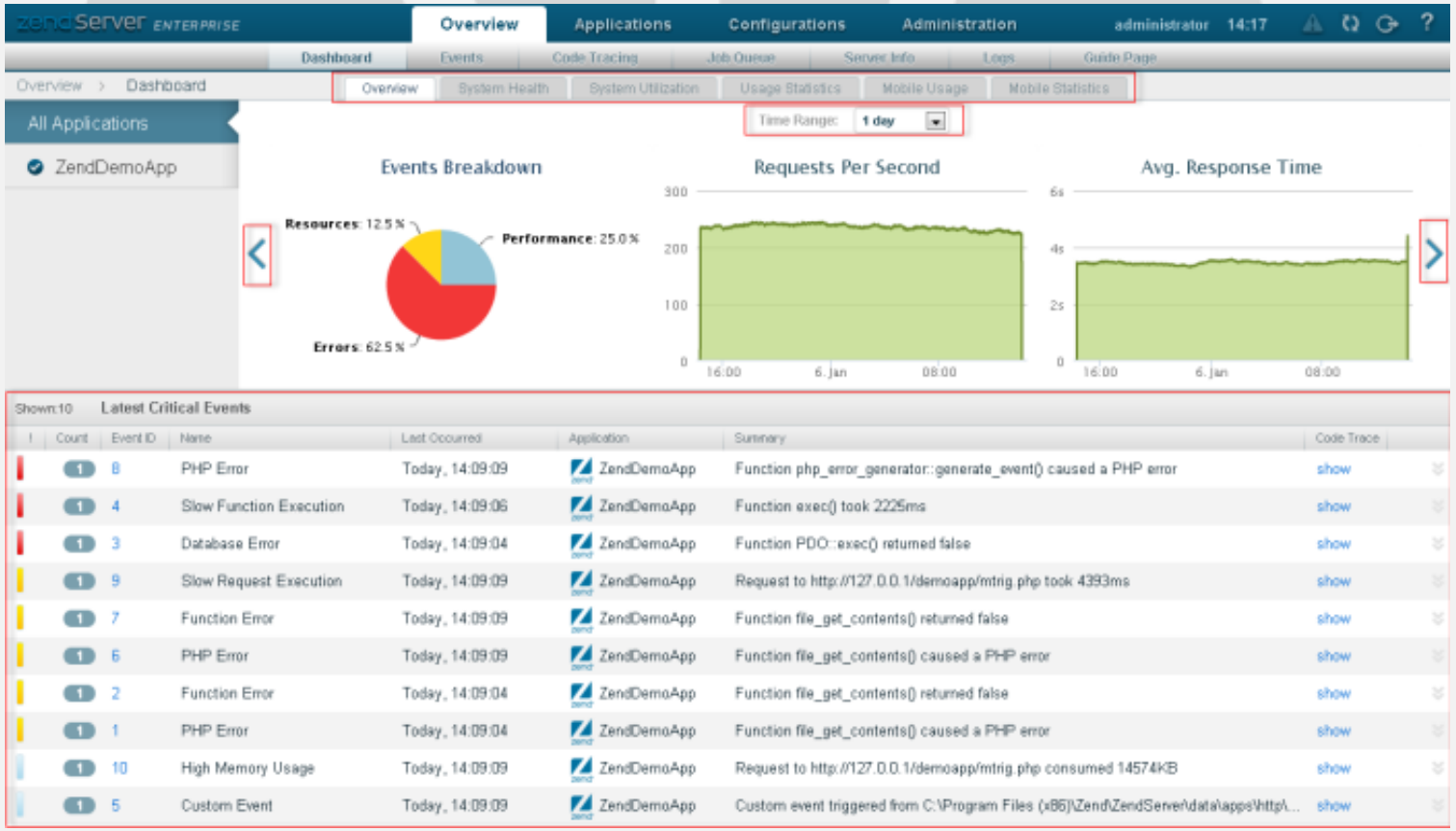


IIS Web Server: Internet Information Services



Zend Server

- **Zend Server** is a complete and certified PHP distribution stack fully maintained and supported by Zend Technologies.
- It is includes over 80 PHP extensions and supports Apache, NGINX and IIS Web servers.



Code Editors and IDE

Code Editor

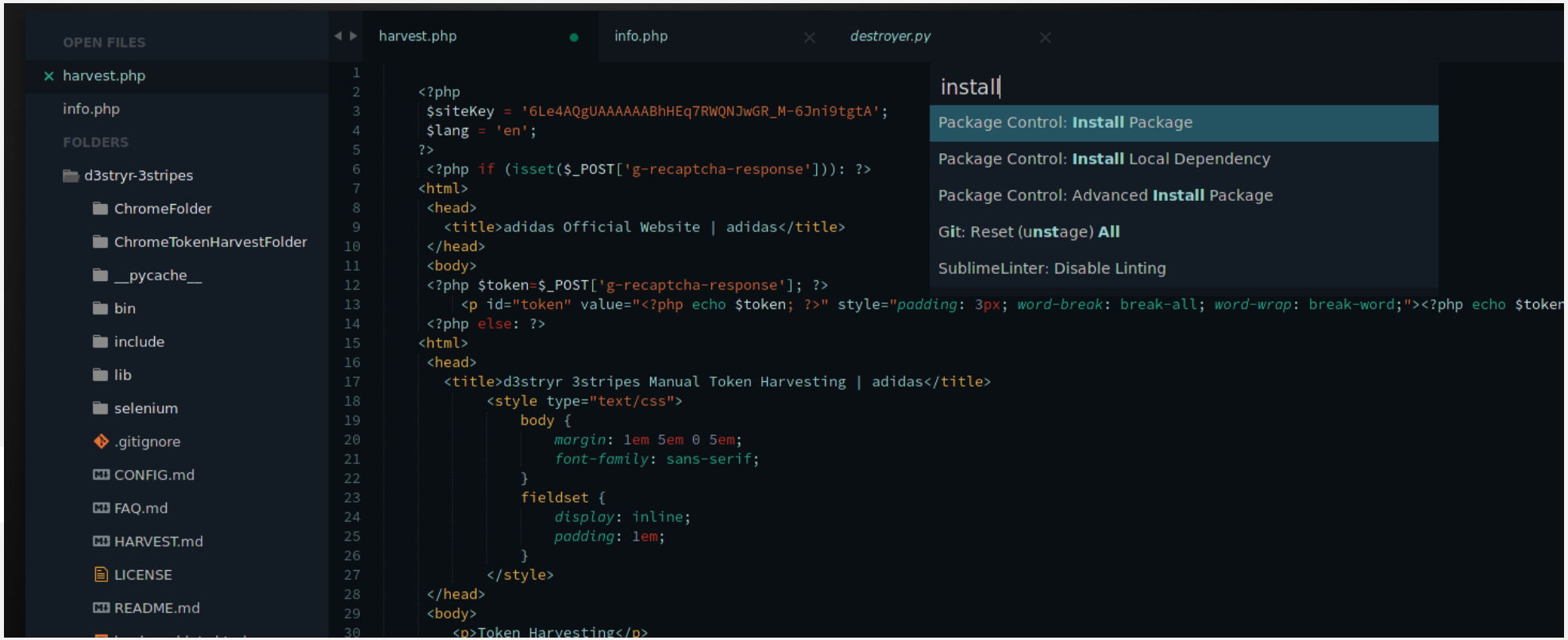
- Small piece of software like a text editor.
- It highlights special keywords, give suggestions, automatic indentation features and other has a integrated terminal.

IDE (Integrated Development Environment)

- Has more sophisticated complex functionalities to make the developer life more easy.
- It supports debugging, build automation tools, Git plug-ins, code generators, managing project history and etc.

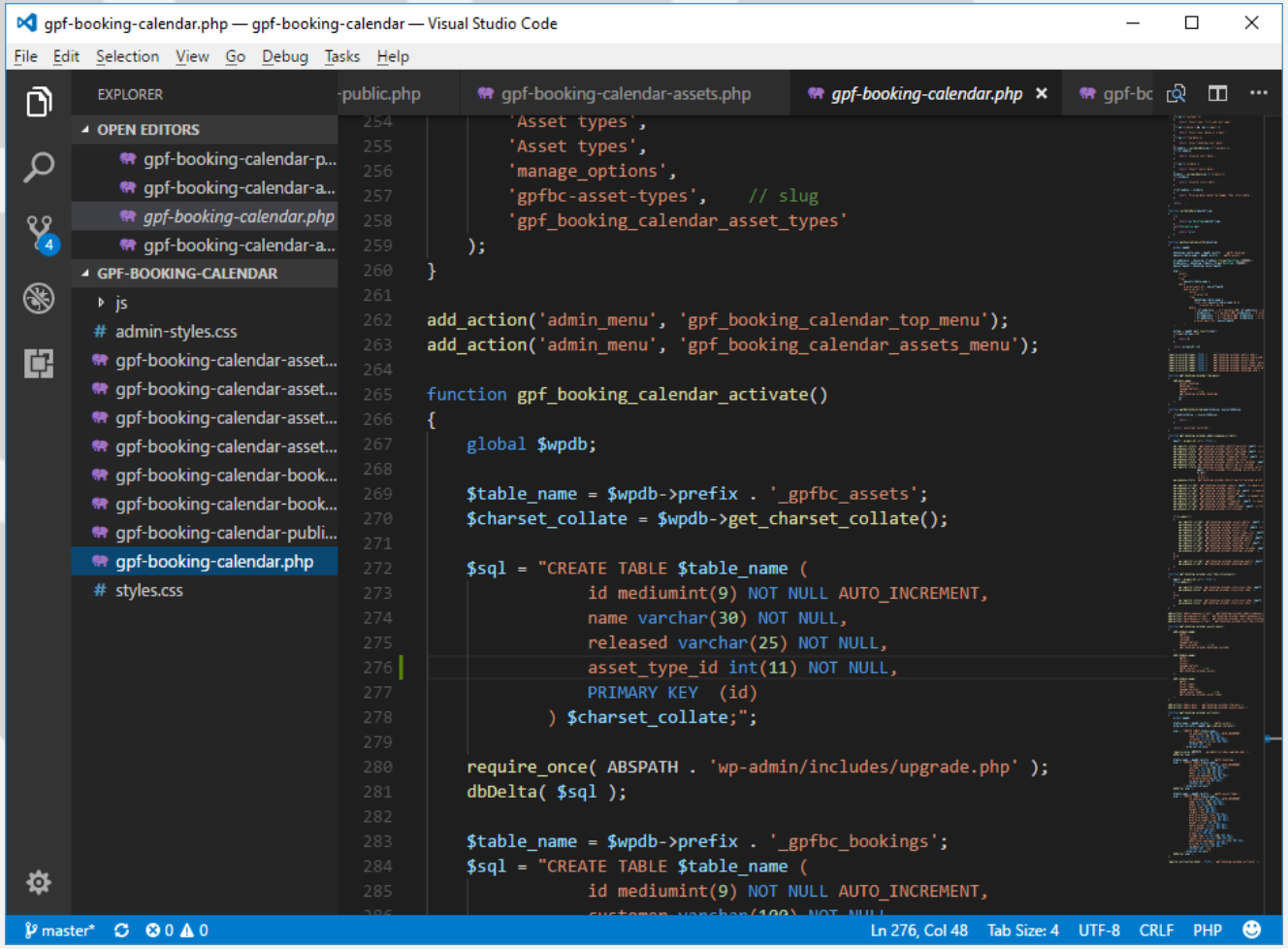
Sublime Text

- **Sublime Text** is a fast and lightweight cross-platform code editor packed with features and plug-ins.
- With its **“Goto Anything”** keyboard shortcut, you can easily jump to any symbol or line of code within your program.



Visual Studio Code

- **Visual Studio Code** is a cross-platform (Linux, Mac OS, Windows) editor that can be extended with plug-ins.
  - IntelliSense
  - Debugging
  - Built-in Git



PHP Frameworks

Advantages

- Speed up custom web application development
- Simplify web application maintenance
- Work with databases more efficiently
- Automate common web development tasks
- Protect websites from targeted security attacks
- Perform unit testing efficiently
- No need to increase web development cost

PHP Frameworks

Disadvantages

- Programmers need to learn PHP frameworks instead of PHP Basics
- Quality of PHP frameworks differs
- Lack of option to modify core behavior
- Affect speed and performance of websites

YII Framework

- **Yii** is an open source, object-oriented, component-based MVC PHP web application framework.
- Pronounced as **“Yee”** and in Chinese it means **“simple and evolutionary”** and it can be an acronym for **“Yes It Is!”**.
- Light-weight and equipped with caching mechanisms, suited for high-traffic applications, such as portals, forums, content management systems (CMS), e-commerce systems, etc.

Yii 1.1 Installation

- Download Yii Framework from this link.
- Unpack the Yii release file to a Web-accessible directory.

Requirements:

After installing Yii, to verify that your server satisfies Yii's requirements, you can do so by accessing the **requirement checker** script via the following URL in a Web browser: http://hostname/path/to/yii/requirements/index.php

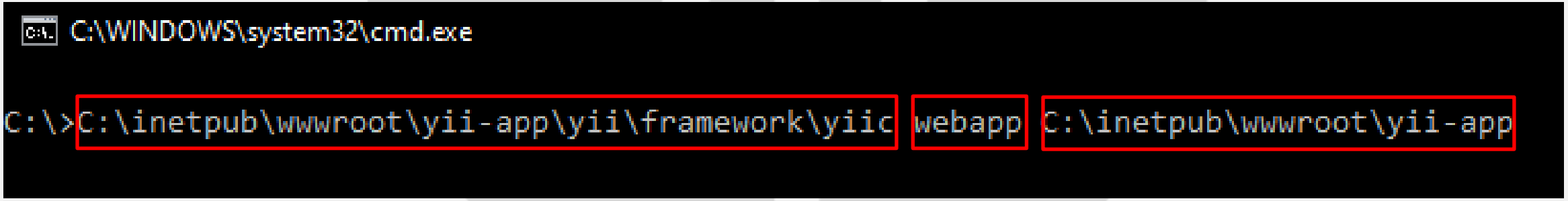
e.g. http://localhost/yii-app/yii/requirements/index.php

Creating Your First Yii Application

- Using **yiic** (command line tool) to create a new Yii application
- Assume that **YiiRoot** is the directory where Yii is installed, and **WebRoot** is the document root of our Web server

Run yiic on the command line as follows:

% YiiRoot/framework/yiic webapp WebRoot/yii-app



Creating Your First Yii Application

- This will create a skeleton Yii application under the directory WebRoot/yii-app

```
Your application has been created successfully under C:\inetpub\wwwroot\yii-app.
```

By accessing the following URL in a Web browser:

http://localhost/yii-app/index.php

The application has four default pages: the homepage, the about page, the contact page and the login page.

The contact page displays a contact form that users can fill in to submit their inquiries to the webmaster, and the login page allows users to be authenticated before accessing privileged contents.

Database Connection

- WebRoot/yii-app/protected/config/database.php

```php
// This is the database connection configuration.
return array(
    'connectionString' => 'sqlite:'.dirname(__FILE__).'/../data/testdrive.db',
    // uncomment the following lines to use a MySQL database
    /*
    'connectionString' => 'mysql:host=localhost;dbname=testdrive',
    'emulatePrepare' => true,
    'username' => 'root',
    'password' => '',
    'charset' => 'utf8',
    */
);
```

- The above code is the default database connection
- Instructs Yii that the application should connect to the SQLite database: WebRoot/yii-app/protected/data/testdrive.db

Connecting to MySQL Database

- In MySQL GUI, create a database named: **testdrive**
- Select that database and execute the SQL file found in this directory:

  WebRoot/yii-app/protected/data/schema.mysql.sql

  The SQL schema contains only a single table named **tbl_user** with the initial data to be inserted.

```
CREATE TABLE tbl_user (
    id INTEGER NOT NULL PRIMARY KEY AUTO_INCREMENT,
    username VARCHAR(128) NOT NULL,
    password VARCHAR(128) NOT NULL,
    email VARCHAR(128) NOT NULL
);

INSERT INTO tbl_user (username, password, email) VALUES ('test1', 'pass1', 'test1@example.com');
INSERT INTO tbl_user (username, password, email) VALUES ('test2', 'pass2', 'test2@example.com');
INSERT INTO tbl_user (username, password, email) VALUES ('test3', 'pass3', 'test3@example.com');
......
```

Connecting to MySQL Database

- Edit the file: WebRoot/yii-app/protected/config/database.php
- In editor, comment the following line of code:

```
return array(
    'connectionString' => 'sqlite:'.dirname(__FILE__).'/../data/testdrive.db',
    ......
);
```

- Uncomment the following lines of code to connect in MySQL Database:

```
return array(
    ......
    'connectionString' => 'mysql:host=localhost;dbname=testdrive',
    'emulatePrepare' => true,
    'username' => 'root',
    'password' => '',
    'charset' => 'utf8',
    ......
);
```

Gii

- A powerful Web-based code generator

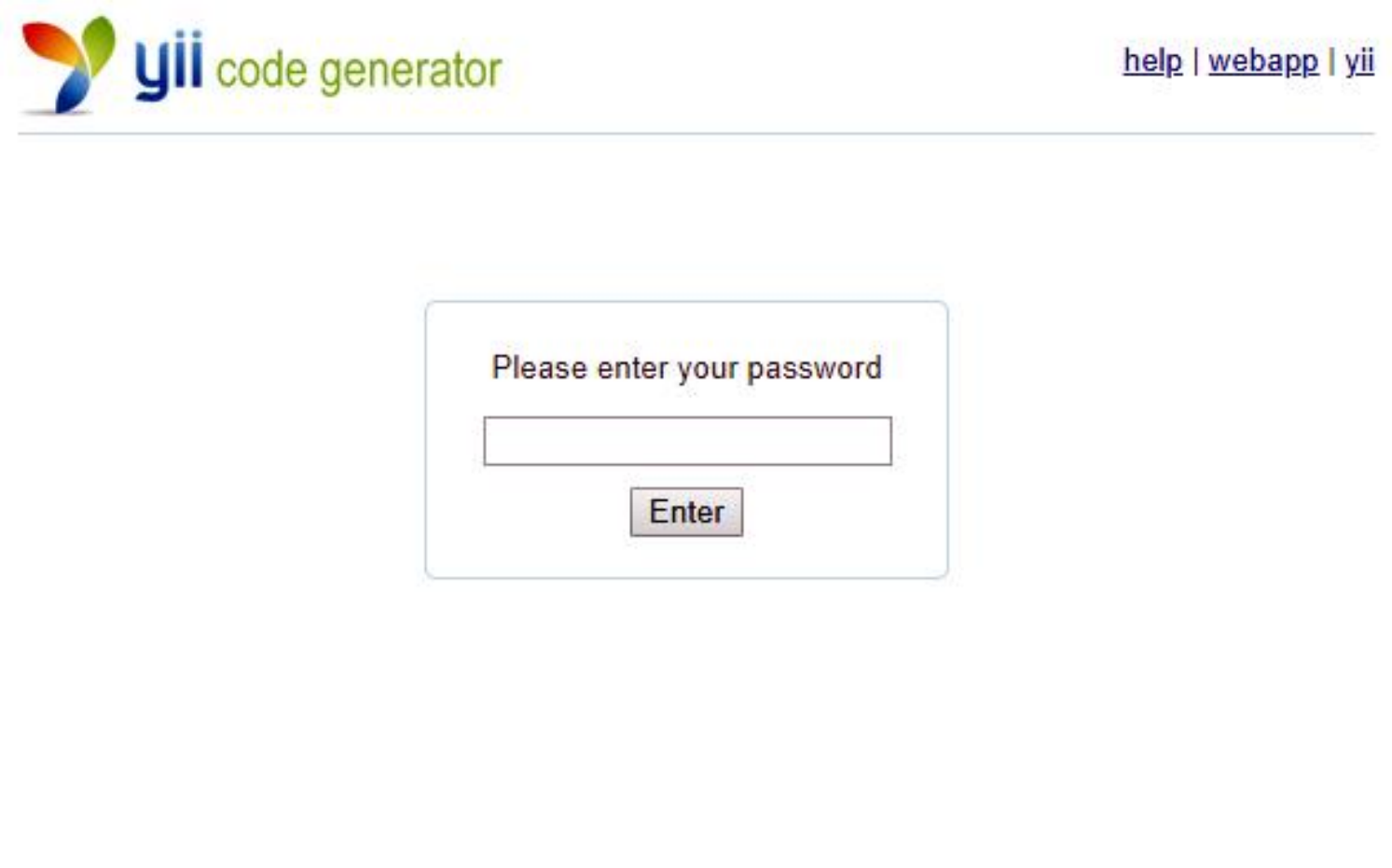
Configuring Gii:

- Edit the file: WebRoot/yii-app/protected/config/main.php
- Uncomment the Gii module and update the password

```
......
'import'=>array(
    'application.models.*',
    'application.components.*',
),
'modules'=>array(
    // uncomment the following to enable the Gii tool
    'gii'=>array(
        'class'=>'system.gii.GiiModule',
        'password'=>'Enter Your Password Here',
        // If removed, Gii defaults to localhost only. Edit carefully to taste.
        'ipFilters'=>array('127.0.0.1','::1'),
    ),
),
......
```

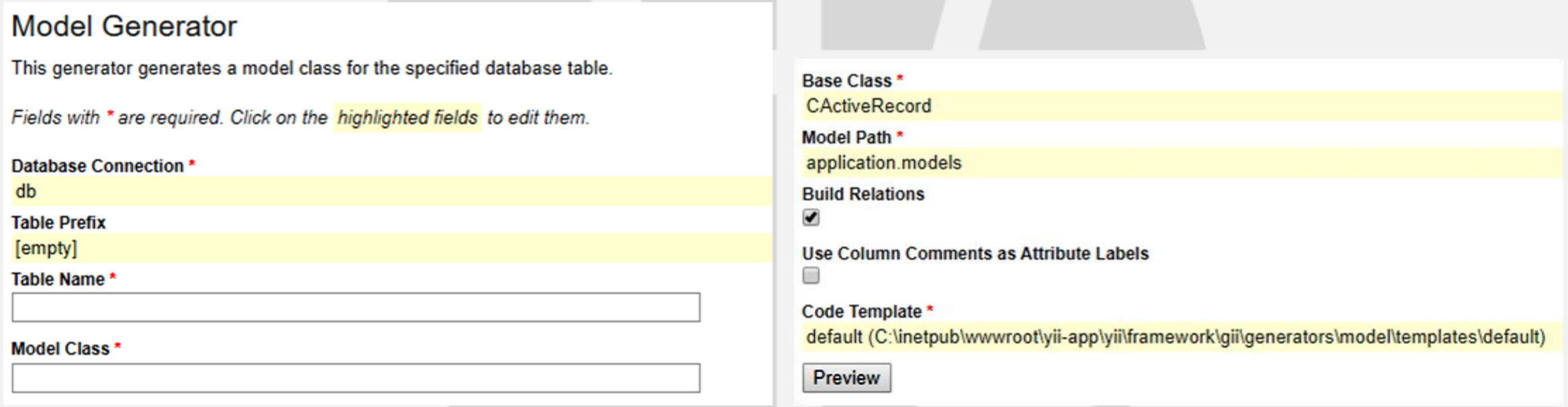
Gii Page

- Visit the URL http://localhost/yii-app/index.php?r=gii
- Login page will be prompted for a password



Generating the User Model

- After login, click on the link **Model Generator**.
- This will bring us to the following model generation page.



Generating the User Model

Enter the following values to generate model file:

- Table Name: tbl_user
- Model Class: User
- Press the Preview button

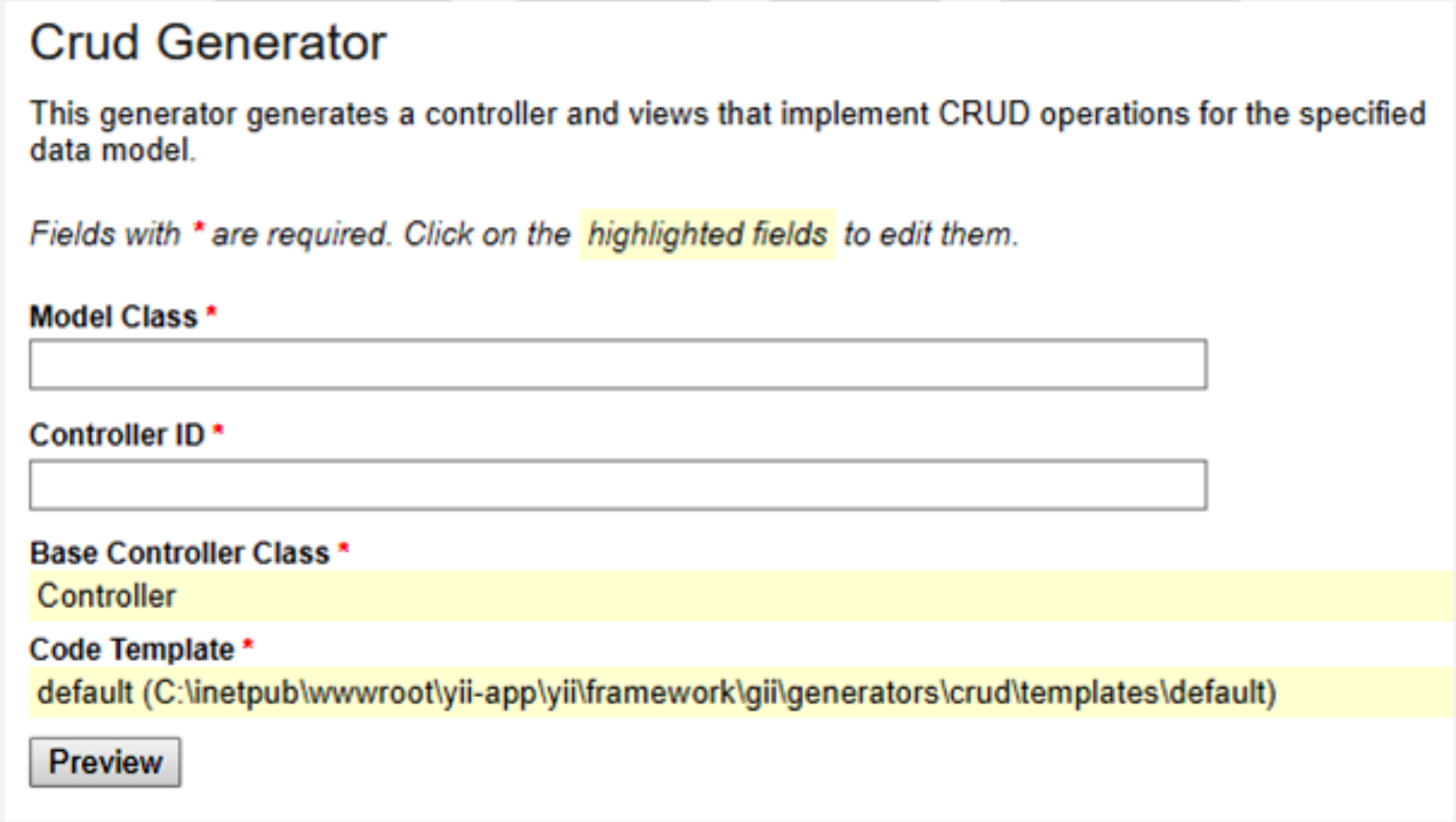
  This will show us the new code file to be generated
- Press the Generate button

  A new file named User.php will be generated under protected/models

  This User model class allows us to talk to the underlying database tbl_user table in an object-oriented fashion.

Generating User CRUD Code

- In Gii page, click on the link **Crud Generator**.
- Generate the code that implements the CRUD operations



Generating User CRUD Code

Enter the following values to generate CRUD files:

- Model Class: User
- Controller ID: user (in lower case)
- Press the Preview button

  This will show us the new code files to be generated
- Press the Generate button

  A new file named UserController.php will be generated under protected/controllers

  And, view files under protected/views/user used for the front-end

Accessing User CRUD Pages

- Visit the URL http://localhost/yii-app/index.php?r=user
- This will display a list of user entries in the tbl_user table.

Pages Access Rules

- Allow all users **(*)** - List User, View User
- Allow authenticated user **(@)** - Create User, Update User
- Allow admin user **(admin)** - Manage User, Delete User

Controller Access Control Rules

- WebRoot/yii-app/protected/controllers/UserController.php

```php
/**
 * Specifies the access control rules.
 * This method is used by the 'accessControl' filter.
 * @return array access control rules
 */
public function accessRules()
{
    return array(
        array('allow',  // allow all users to perform 'index' and 'view' actions
            'actions'=>array('index','view'),
            'users'=>array('*'),
        ),
        array('allow', // allow authenticated user to perform 'create' and 'update' actions
            'actions'=>array('create','update'),
            'users'=>array('@'),
        ),
        array('allow', // allow admin user to perform 'admin' and 'delete' actions
            'actions'=>array('admin','delete'),
            'users'=>array('admin'),
        ),
        array('deny',  // deny all users
            'users'=>array('*'),
        ),
    );
}
```

Bootstrap

Bootstrap is the most popular **CSS Framework** for developing responsive and mobile-first websites.

Advantages

- Ensure cross-browser compatibility
- Allow website to adapt in various screen sizes – mobile and desktop
- Add consistency to design and code between projects and between developers

Disadvantage

- Lot of requirements to style overrides or rewriting the files tends for customization of design used in Bootstrap.

Install Bootstrap Extension in YII

- Download bootstrap extension from this link.
- Unpack the file archive to WebRoot/yii-app/protected/extensions.

Configuring Extension:

- Edit the file: WebRoot/yii-app/protected/config/main.php

  In editor, add the following line of code before starting of array:

  Yii::setPathOfAlias('bootstrap', dirname(__FILE__).'/../extensions/bootstrap');

```
......
Yii::setPathOfAlias('bootstrap', dirname(__FILE__).'/../extensions/bootstrap');

return array(
......
```

Install Bootstrap Extension in YII

- Edit the file: WebRoot/yii-app/protected/config/main.php

  In editor, add the following line of code:

```
return array(
    'basePath' => dirname(__FILE__).DIRECTORY_SEPARATOR.'..',
    'name' => 'My Web Application',
    'theme' => 'bootstrap',
    // preloading 'log' component
    'preload' => array('log'),
```

  In editor, add the following line of codes inside Gii module:

```
.....
'modules' => array(
    // uncomment the following to enable the Gii tool
    'gii' => array(
        'class' => 'system.gii.GiiModule',
        'password' => 'pass',
        // If removed, Gii defaults to localhost only. Edit carefully to taste.
        'ipFilters' => array('127.0.0.1','::1'),
        'generatorPaths' => array(
            'bootstrap.gii',
        ),
    ),
),
.....
```

Install Bootstrap Extension in YII

- Edit the file: WebRoot/yii-app/protected/config/main.php

  In editor, add the following line of codes inside the components:

```
// application components
'components'=>array(
    ......
    'bootstrap'=>array(
        'class'=>'bootstrap.components.Bootstrap',
    ),
    ......
),
```

Install Bootstrap Extension in YII

- Edit the file: WebRoot/yii-app/protected/extensions/boostrap/components/Bootstrap.php

  In editor, add the following line of codes inside the class:

```
.....
public function init() {
    $this->registerAllCss();
    $this->registerJs();
    parent::init();
}
.....
```

Install Bootstrap Extension in YII

- Edit the file: WebRoot/yii-app/protected/views/layout/main.php

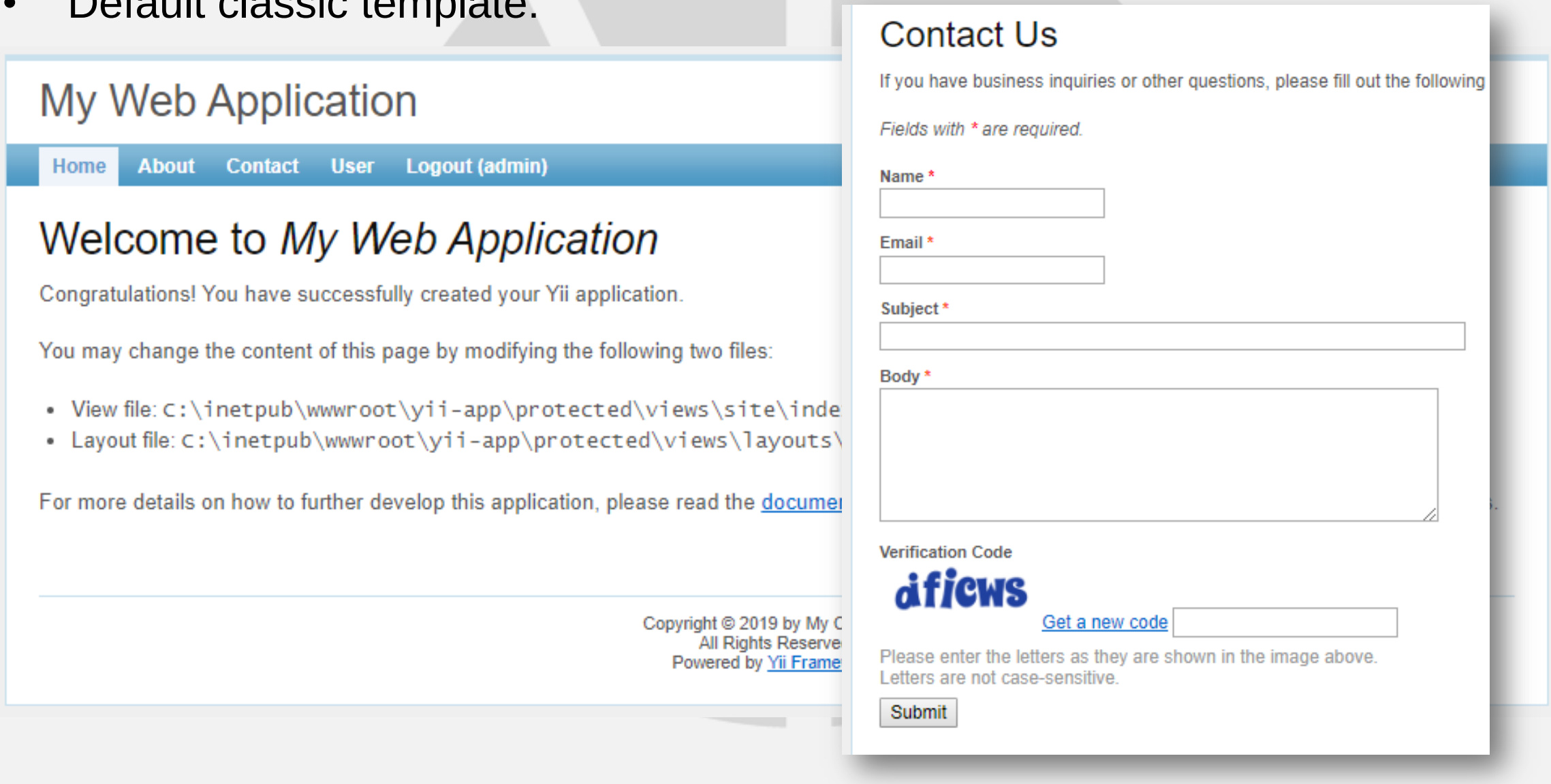
  In editor, add the following line of code before the <html> tag:

```
<?php echo Yii::app()->bootstrap->init();?>

<?php /* @var $this Controller */ ?>
<!DOCTYPE html>
<html>
<head>
    <meta http-equiv="Content-Type" content="text/html; charset=utf-8">
    <meta name="language" content="en">
```

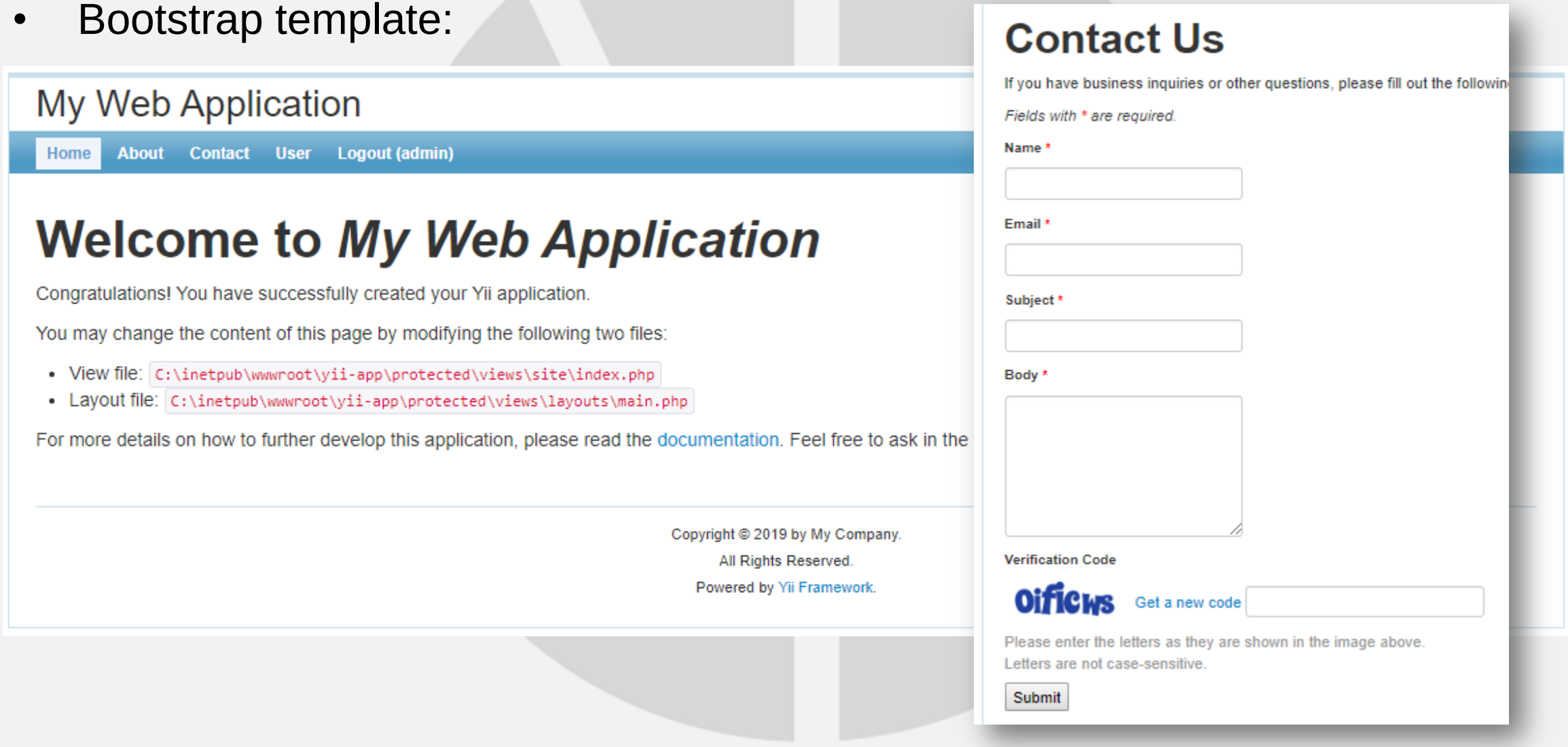
Install Bootstrap Extension in YII

- Default classic template:



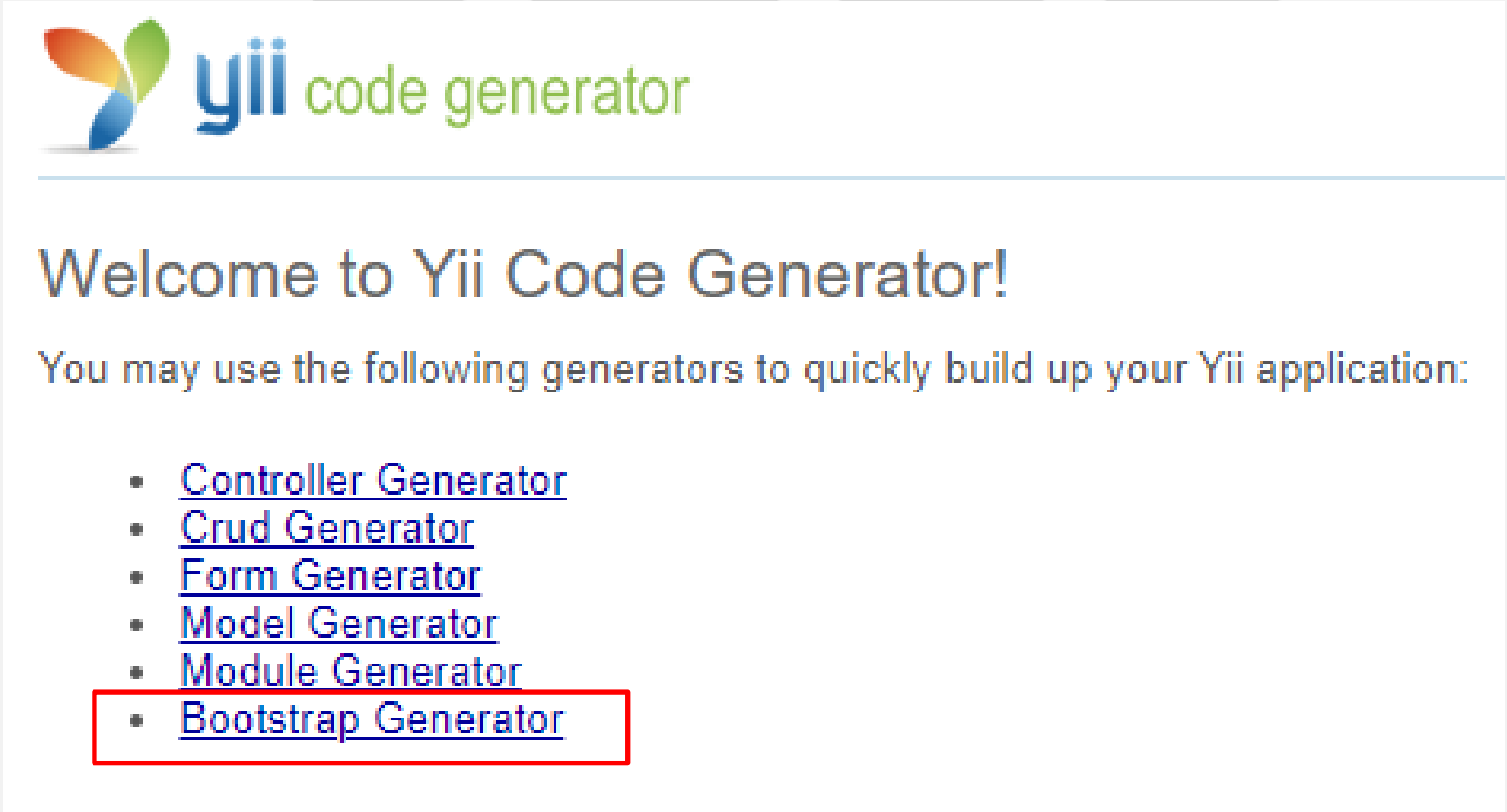
Install Bootstrap Extension in YII

- Bootstrap template:



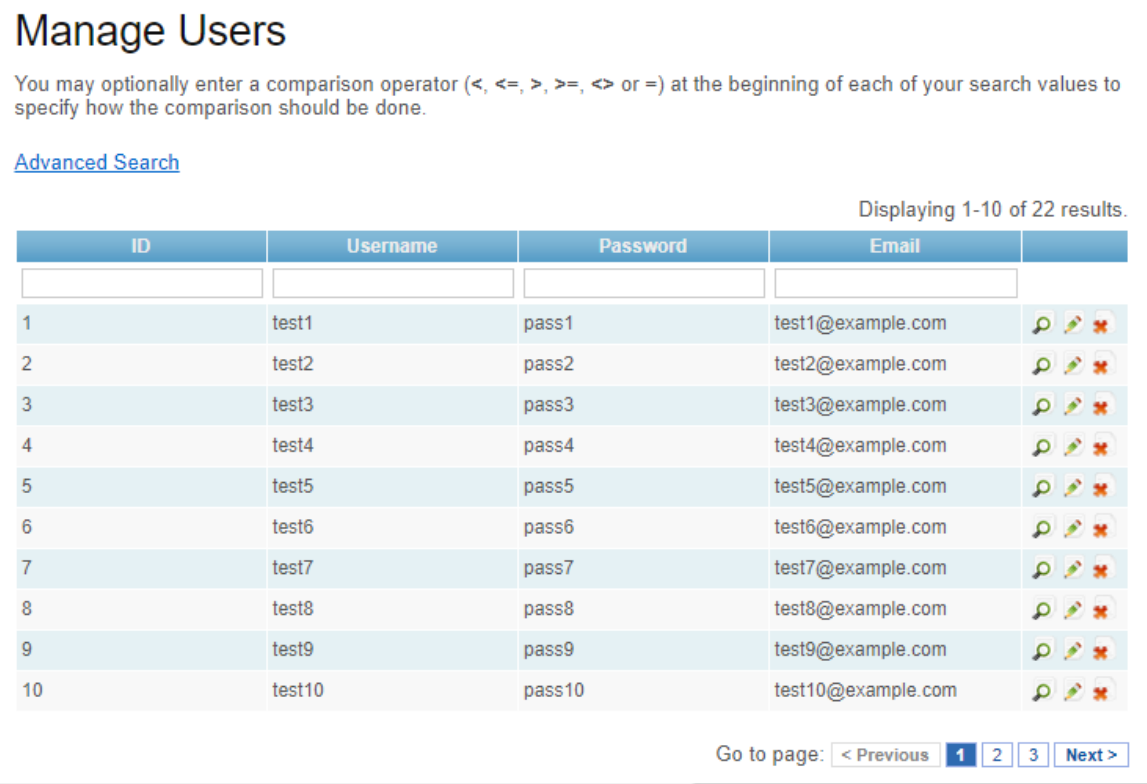
Bootstrap Generator

- Bootstrap Generator creates CRUD using bootstrap widgets



GridView Widget

Default



Manage Users

You may optionally enter a comparison operator (<, <=, >, >=, <> or =) at the beginning of each of your search values to specify how the comparison should be done.

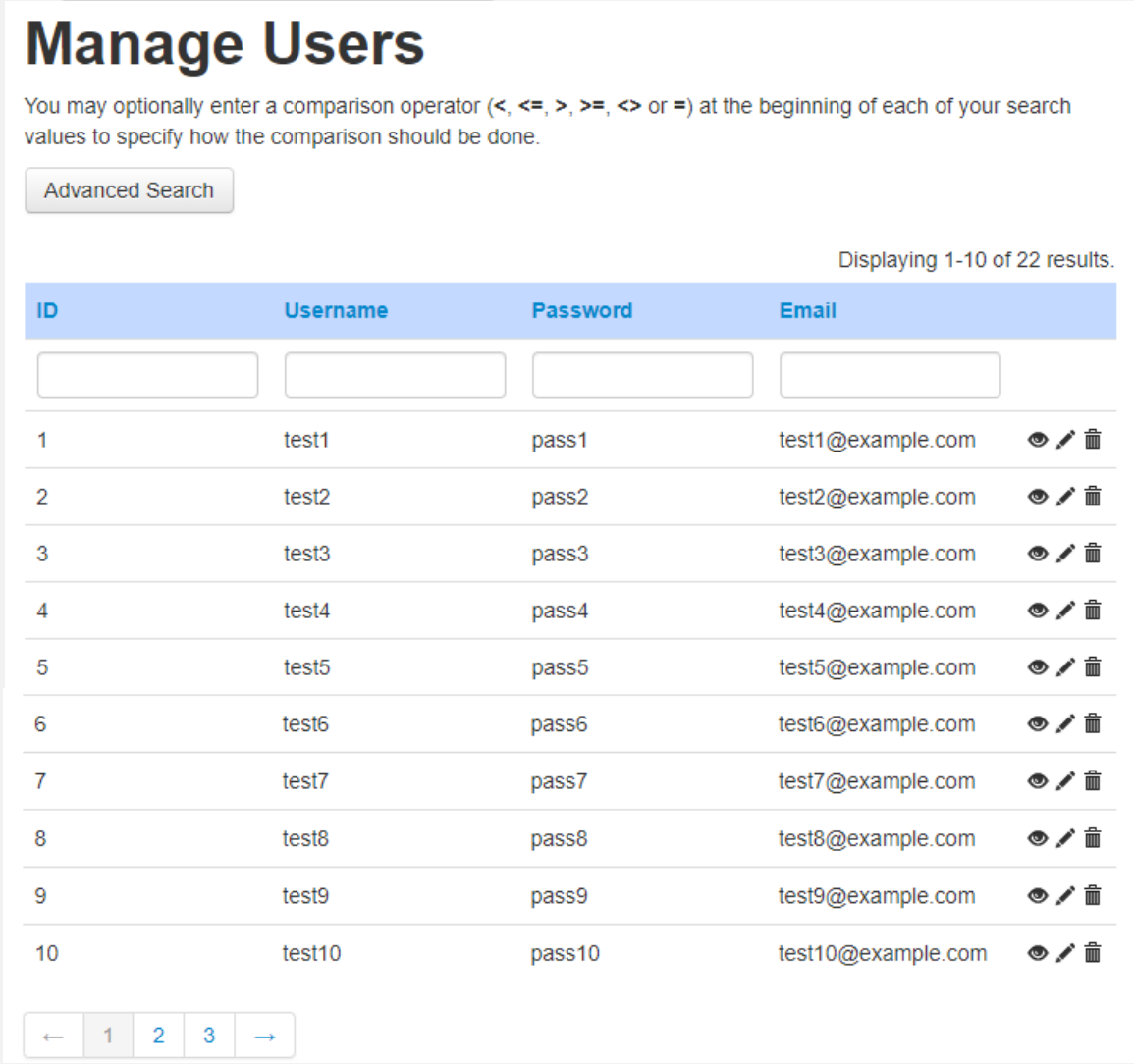
Advanced Search

Displaying 1-10 of 22 results.

ID	Username	Password	Email	
1	test1	pass1	test1@example.com	
2	test2	pass2	test2@example.com	
3	test3	pass3	test3@example.com	
4	test4	pass4	test4@example.com	
5	test5	pass5	test5@example.com	
6	test6	pass6	test6@example.com	
7	test7	pass7	test7@example.com	
8	test8	pass8	test8@example.com	
9	test9	pass9	test9@example.com	
10	test10	pass10	test10@example.com	

Go to page: < Previous 1 2 3 Next >

Bootstrap



Manage Users

You may optionally enter a comparison operator (<, <=, >, >=, <> or =) at the beginning of each of your search values to specify how the comparison should be done.

Advanced Search

Displaying 1-10 of 22 results.

ID	Username	Password	Email	
1	test1	pass1	test1@example.com	
2	test2	pass2	test2@example.com	
3	test3	pass3	test3@example.com	
4	test4	pass4	test4@example.com	
5	test5	pass5	test5@example.com	
6	test6	pass6	test6@example.com	
7	test7	pass7	test7@example.com	
8	test8	pass8	test8@example.com	
9	test9	pass9	test9@example.com	
10	test10	pass10	test10@example.com	

← 1 2 3 →

Widget

- Difference between default widget and bootstrap widget

Default Widget

```php
<?php $this->widget('zii.widgets.grid.CGridView', array(
    'id' => 'user-grid',
    'dataProvider' => $model->search(),
    'filter' => $model,
    'columns' => array(
        'id',
        'username',
        'password',
        'email',
        array(
            'class' => 'CButtonColumn',
        ),
    ),
)); ?>
```

Bootstrap Widget

```php
<?php $this->widget('bootstrap.widgets.TbGridView', array(
    'id' => 'user-grid',
    'dataProvider' => $model->search(),
    'filter' => $model,
    'columns' => array(
        'id',
        'username',
        'password',
        'email',
        array(
            'class' => 'bootstrap.widgets.TbButtonColumn',
        ),
    ),
)); ?>
```

Connect it to GitHub

- **GitHub** is a Git repository hosting service.
- **Git** is a command line tool while **GitHub** provides a Web-based graphical interface.

Start a new git repository:

- Go to github.com.
- Log in to your account.
- Click the new repository button in the top-right. You'll have an option there to initialize the repository with a README file.
- Click the "Create repository" button.

Git Push

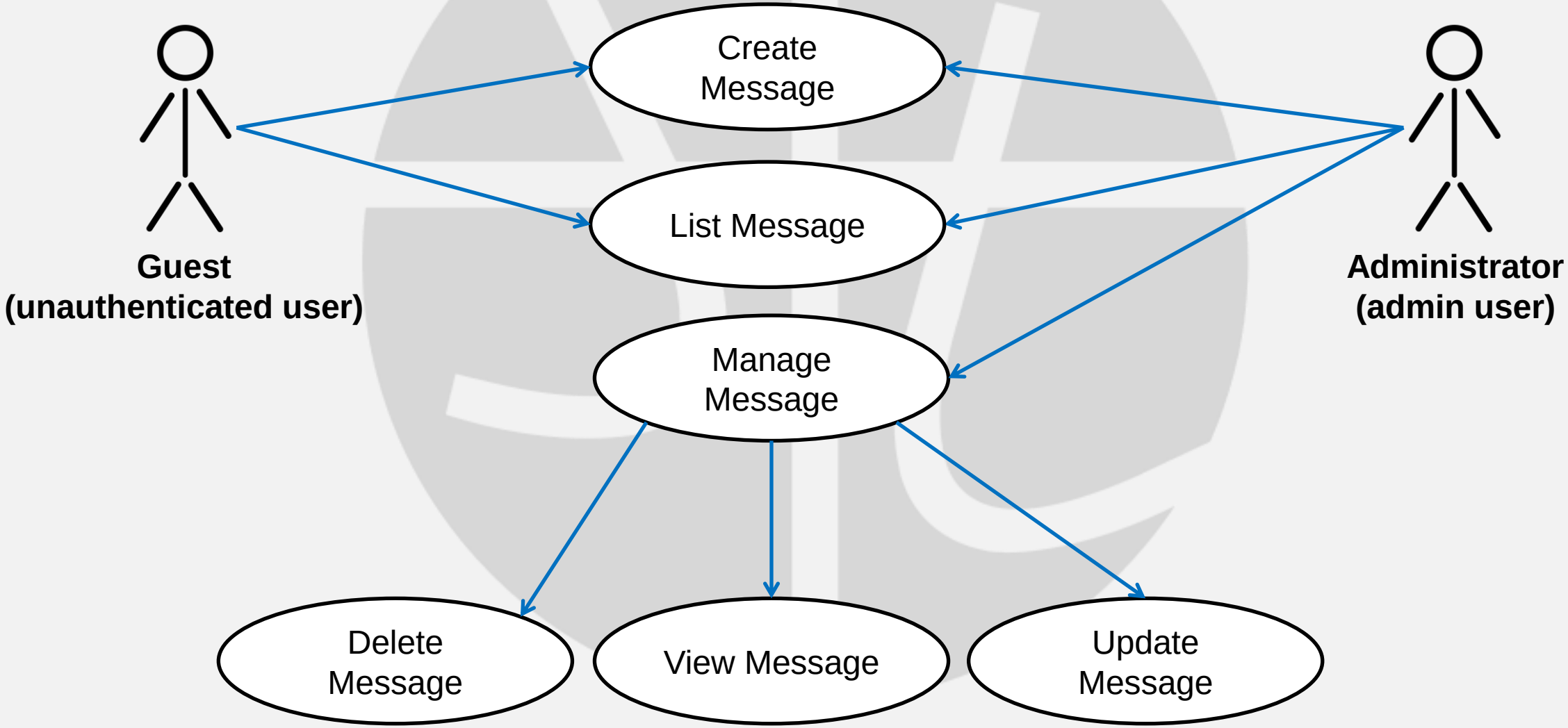
- Open a Git Bash or a Command-Line in this directory WebRoot/yii-app
- Follow this set of instructions to “Push an existing repository” to GitHub

```
git init
git remote add origin https://github.com/<username>/yii-app.git
git add .
git commit -m "first commit"
git push -u origin master
```

- Visit the URL https://github.com/<username>/yii-app to view the code repository

Exercise

- Create **“Message”** System



Exercise

Guest

- Can **create** a message
- Can **view** list of message

Administrator

- Can **create** a message
- Can **view** list of message
- Can **manage** list of message
- Can **update** message
- Can **delete** message

Microsoft
IIS

Sublime Text

yiiframework

Visual Studio Code

zend server

Bootstrap

git

References

https://www.tutorialspoint.com/php/php_introduction.htm
https://economictimes.indiatimes.com/definition/web-server
https://dzone.com/articles/the-5-most-popular-code-editors-for-2018
https://stackoverflow.com/questions/30527522/what-are-the-differences-between-visual-studio-code-and-visual-studio
https://code.visualstudio.com/
https://medium.com/@mindfiresolutions.usa/advantages-and-disadvantages-of-php-frameworks-c046d50754e5
https://en.wikipedia.org/wiki/Yii
https://www.yiiframework.com/doc/guide/1.1/en/quickstart.what-is-yii
https://github.com/yiisoft/yii/releases/download/1.1.21/yii-1.1.21.733ac5.tar.gz
https://gunnarpeipman.com/vs-code-php-development/
https://techterms.com/definition/iis
https://en.wikipedia.org/wiki/Zend_Server
https://raygun.com/blog/top-php-frameworks/
https://www.quora.com/What-is-the-use-of-code-editor
https://www.w3schools.com/whatis/whatis_bootstrap.asp
https://webbymonks.com/blog/what-are-the-pros-cons-of-foundation-and-bootstrap/

References

https://www.taniarascia.com/what-is-bootstrap-and-how-do-i-use-it/
https://techcrunch.com/2012/07/14/what-exactly-is-github-anyway/
https://kbroman.org/github_tutorial/pages/init.html