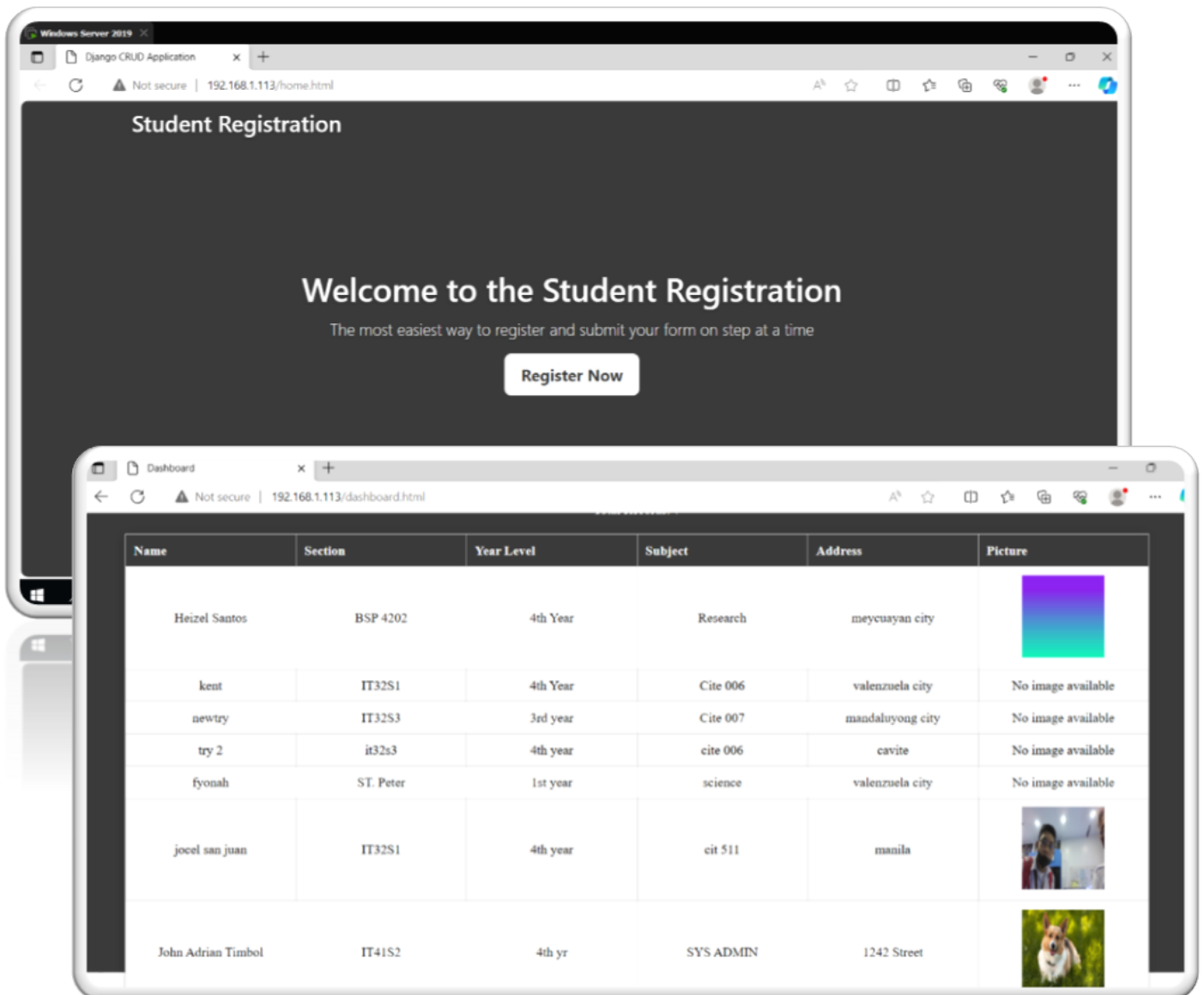


# CUTOVER PLAN – Deployment of Simple Student Registration Web Application using DJANGO



## DOCUMENT INFORMATION

<b>Author/s</b>	Alfonso, Joenelle Stephen L. Mondragon, Kent Yrvin L. Timbol, John Adrian J. Villanueva Jr., Ronel F. Zonio, Enrico Luis C.
<b>Date</b>	December 10, 2023
<b>Video Demo Link</b>	<a href="#">Video Demo - Web deployment</a>
<b>Version</b>	<b>2.0</b>

## APPROVAL

Professor: Mr. Joselito San Juan

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### A. DOCUMENT CONTROL

#### a. Change Record

Date	Author	Version	Remarks
<b>December 5, 2023</b>	Alfonso, Joenelle Stephen L. Mondragon, Kent Yrvin L. Timbol, John Adrian J. Villanueva Jr., Ronel F. Zonio, Enrico Luis C.	1.0	Project Initialization
<b>December 10, 2023</b>	Alfonso, Joenelle Stephen L. Mondragon, Kent Yrvin L. Timbol, John Adrian J. Villanueva Jr., Ronel F. Zonio, Enrico Luis C.	2.0	Project Finalization

### B. INTRODUCTION

#### a. Overview and Purpose

This cutover plan serves as the documentation outlining the strategic approach and procedural steps for the successful deployment of the **"Student Registration"** project onto a Windows server environment. This document is part of the final project

assessment, highlighting the proficient execution and management of a real-world deployment scenario.

b. Scope

This plan outlines pre-cutover preparations, the deployment process, post-migration evaluations, potential contingency measures, and specific roles and responsibilities, demonstrating adeptness in handling a deployment initiative as a part of a final project.

### **C. CUTOVER STRATEGY**

a. Cutover Team

**i. Villanueva Jr., Ronel F.**

1. Role: Quality Assurance and Testing
2. Responsibilities: Rigorous testing and validation post- deployment to ensure system functionality.

**ii. Timbol, John Adrian J.**

1. Role: Deployment Specialist
2. Responsibilities: Oversight and execution of the deployment process onto the Windows server.

**iii. Alfonso, Joenelle Stephen L. & Zonio, Enrico Luis C.**

1. Role: Deployment Coordinator
2. Responsibilities: Compiling comprehensive documentation of the deployment process.

**iv. Mondragon, Kent Yrvin L.**

1. Role: Deployment Manager

2. Responsibilities: Manages the deployment plan, coordinates tasks among team members, and ensures adherence to timelines and standards.

b. Organization

- i. Leadership: Mondragon, Kent Yrvin L.

1. Leadership Role: Project Lead for Deployment

- ii. Communication Channels

1. Email: For formal documentation sharing.

2. Slack or Microsoft Teams: Real-time discussions, updates, and quick queries.

3. Scheduled Meetings: Regular or ad-hoc meetings for status updates and issue resolutions.

c. Roles and Responsibilities

- i. Developers: Responsible for packaging the application for deployment and ensuring its functionality.

- ii. System Administrators: Tasked with server preparation, configurations, and system readiness.

- iii. Testers: Responsible for validation, testing, and ensuring the application's functional integrity post-deployment.

d. Cutover Approach

- i. Plan Overview: Deliberate step-by-step deployment approach ensuring methodical execution.

- ii. Key Milestones: Identification of critical milestones for tracking progress and performance evaluation.

e. Pre-Cutover Migration

i. Pre-Requisites

1. Installation of Prerequisite programs such as python, django and wfastcgi in the virtual server environment.

a. Screenshot 1:



b. Screenshot 2:

```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.17763.3650]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>pip install django
Requirement already satisfied: django in c:\python312\lib\site-packages (4.1.7)
Requirement already satisfied: asgiref<4,>=3.5.2 in c:\python312\lib\site-packages (from django) (3.5.2)
Requirement already satisfied: sqlparse>=0.2.2 in c:\python312\lib\site-packages (from django) (0.4.2)
Requirement already satisfied: tzdata in c:\python312\lib\site-packages (from django) (2023.3)

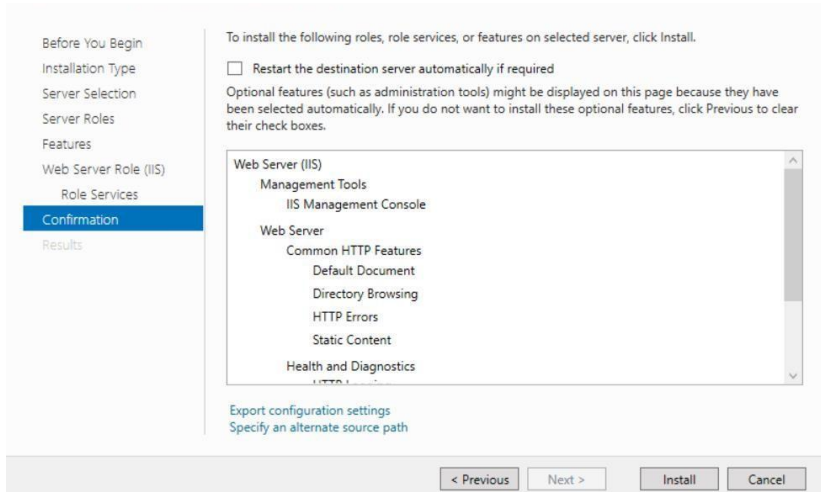
[notice] A new release of pip is available: 23.2.1 -> 23.3.1
[notice] To update, run: python.exe -m pip install --upgrade pip

C:\Users\Administrator>pip install wfastcgi
Requirement already satisfied: wfastcgi in c:\python312\lib\site-packages (3.0.0)

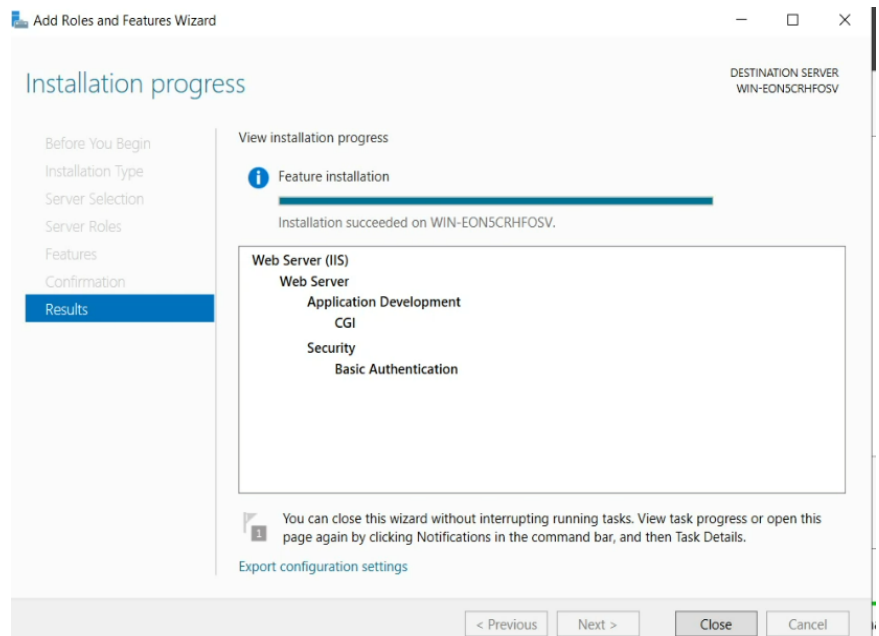
[notice] A new release of pip is available: 23.2.1 -> 23.3.1
[notice] To update, run: python.exe -m pip install --upgrade pip
```

2. Verified availability of a Windows Server with necessary configurations and compatibility checks with the application.

a. Screenshot 1:

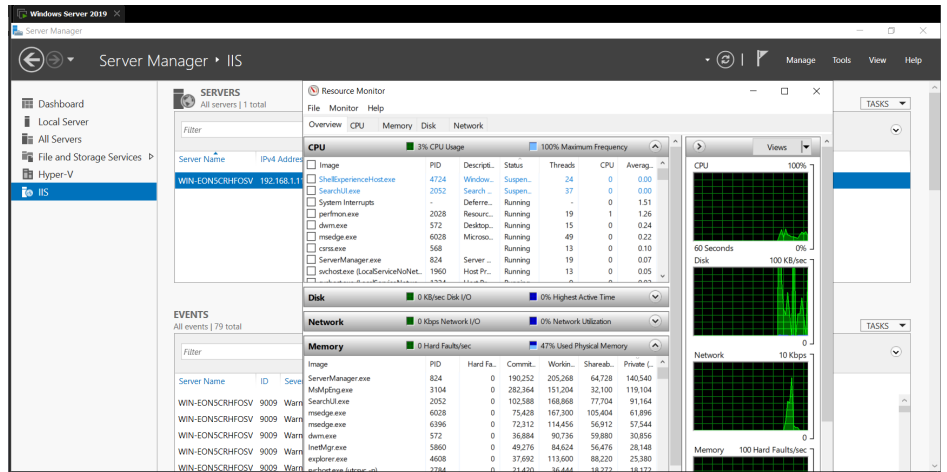


b. Screenshot 2:



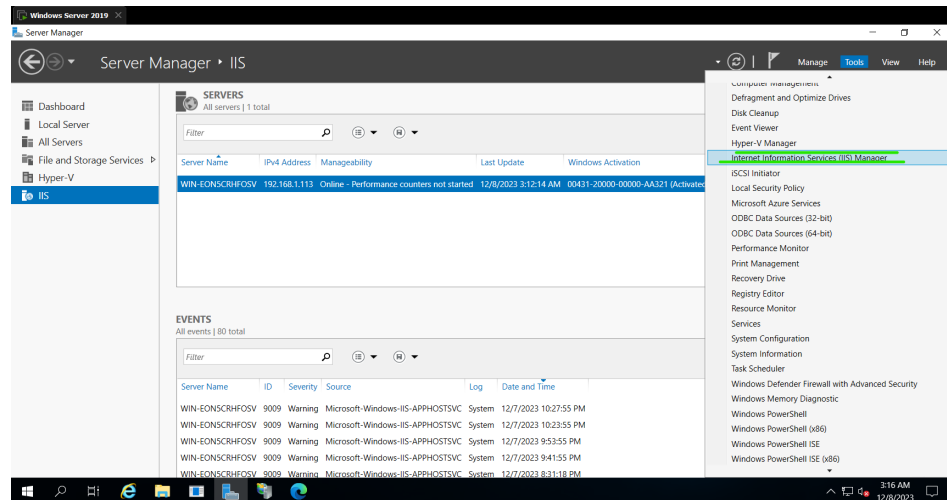
A screenshot that showcases the Windows Server's configuration settings, with a focus on highlighting compatibility checks aligning with the application's requirements. Emphasize the pertinent settings or configurations that affirm their compatibility with the application.

c. Screenshot 3:



A screenshot illustrating the hardware resource allocation, including CPU, RAM, and storage, on the Windows Server. Emphasize the sufficiency of these allocations in accordance with the application's specifications.

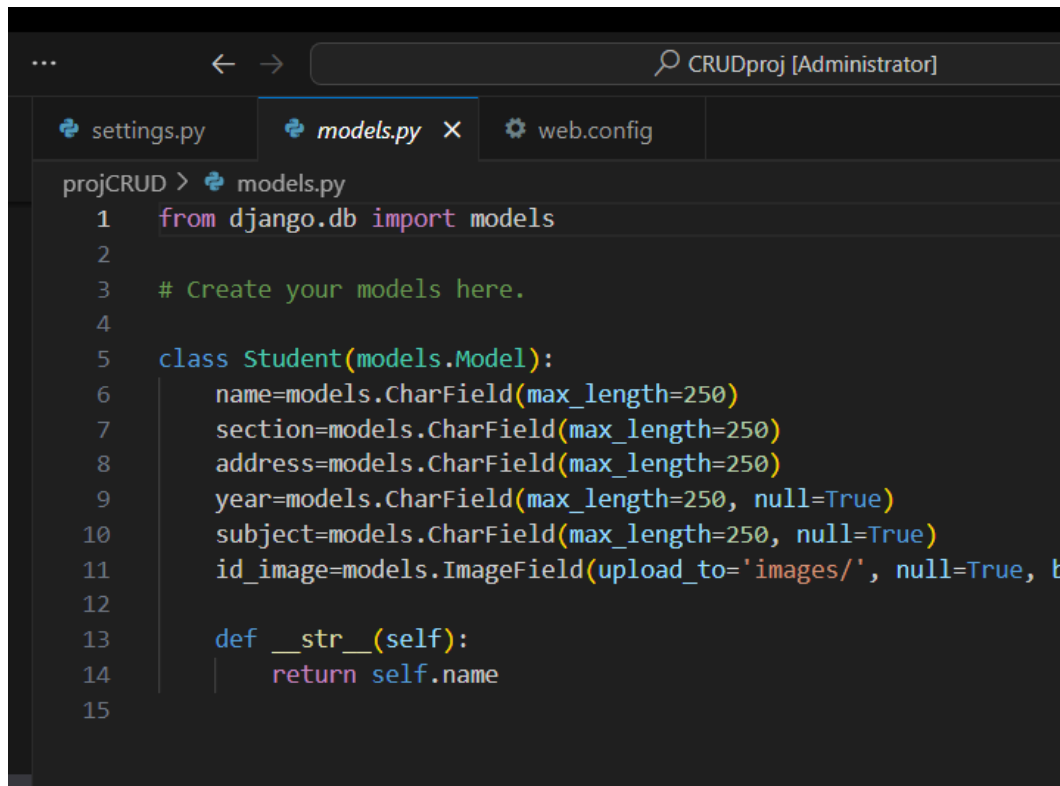
d. Screenshot 4:



A screenshot that validates the network configuration settings and showcases the IIS configuration to guarantee stable connectivity for deployment.

3. Assured integrity and compatibility of the updated database schema and data.

a. Screenshot 1:



```
projCRUD > models.py
1  from django.db import models
2
3  # Create your models here.
4
5  class Student(models.Model):
6      name=models.CharField(max_length=250)
7      section=models.CharField(max_length=250)
8      address=models.CharField(max_length=250)
9      year=models.CharField(max_length=250, null=True)
10     subject=models.CharField(max_length=250, null=True)
11     id_image=models.ImageField(upload_to='images/', null=True, blank=True)
12
13     def __str__(self):
14         return self.name
15
```

## ii. Backup

1. Comprehensive backup of the existing system and databases to mitigate potential data loss or system downtime risks.

## iii. Server Preparation

1. Systematically install essential server components, including Internet Information Services (IIS), .NET Framework, and other required elements.
2. Thoroughly configure firewall settings and establish security permissions with meticulous attention to detail, ensuring a



robust and secure server environment.

f. Migration Proper

i. Database

1. Methodical backup and restoration of the existing database.
2. Deployment of updated database schema and migration of associated data.

ii. Student Registration Website

1. Methodical transfer of application files to the designated server location.
2. Configuration of Internet Information Services (IIS) for hosting the "Student Registration" application.

iii. Mini-System Configuration

- 1. Precise configuration of application settings encompassing path configurations, permissions, and environment variables.

g. Post-migration

- i. Validation and comprehensive testing to ensure seamless functionality and identify any potential anomalies.
- ii. Rigorous regression testing to verify system stability and performance.

h. Revert Procedures

- i. Detailed contingency plan outlining steps to reverse changes in the event of deployment failure or critical issues.

Revert Procedures

Situation	Steps to Revert Changes
Deployment Failure	1. Stop deployment immediately.
	2. Notify stakeholders about the failure.
	3. Go back to the last stable version/configuration.
	4. Investigate the cause of failure before trying deployment again.
Critical Issues Identified	1. Isolate the affected area to prevent further issues.
	2. Alert relevant teams about the critical issues.
	3. Identify the problematic changes and revert them.
Recovery and Validation	1. Confirm successful rollback or changes to fix issues.
	2. Test thoroughly to ensure the system is stable.
	3. Communicate updates to stakeholders about the resolution.

i. Issues, Cause, and Proposed Solution

- i. Issues Encountered: Documented records of encountered issues during deployment.
- ii. Causes: Elucidation of root causes underlying the identified issues.
- iii. Proposed Solutions: Well-defined solutions and strategies proposed to rectify encountered issues.

j. Assumptions

- i. Stable and uninterrupted network connectivity throughout the deployment phase.
- ii. Adequate provisioning of system resources on the designated Windows server.

k. Completion Criteria

- i. Successful and error-free access to the "Student Registration" application.
- ii. Absence of critical errors or anomalies post-deployment.

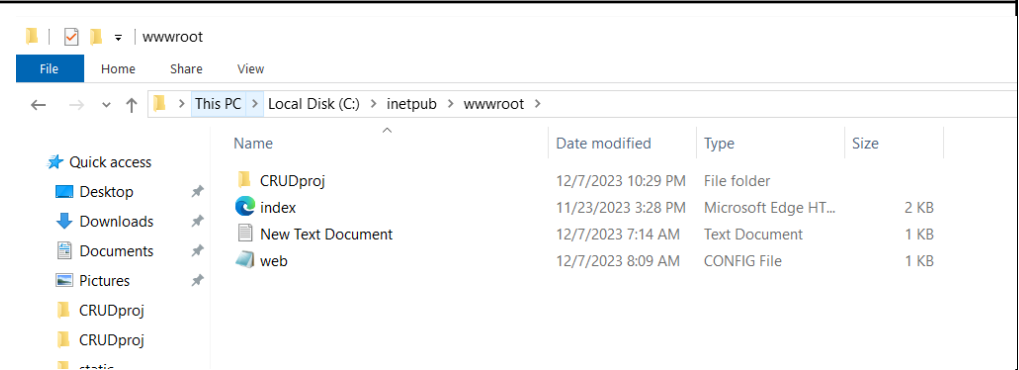
l. Cutover Date

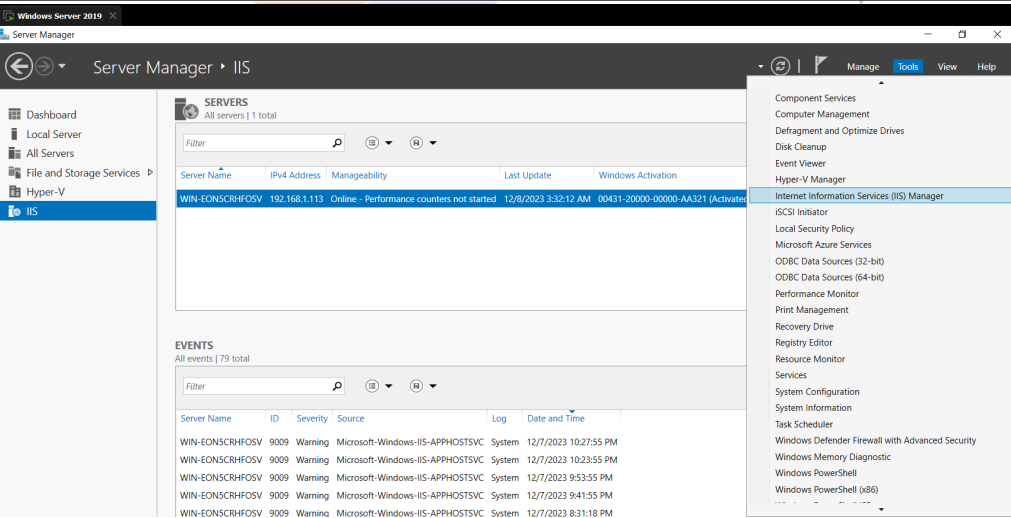
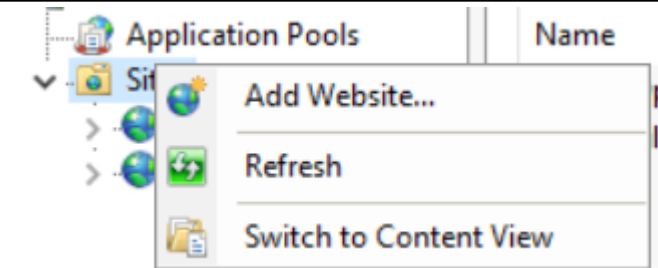
- i. Sunday, December 10, 2023

## D. APPENDICES

### a. Project Deployment Steps

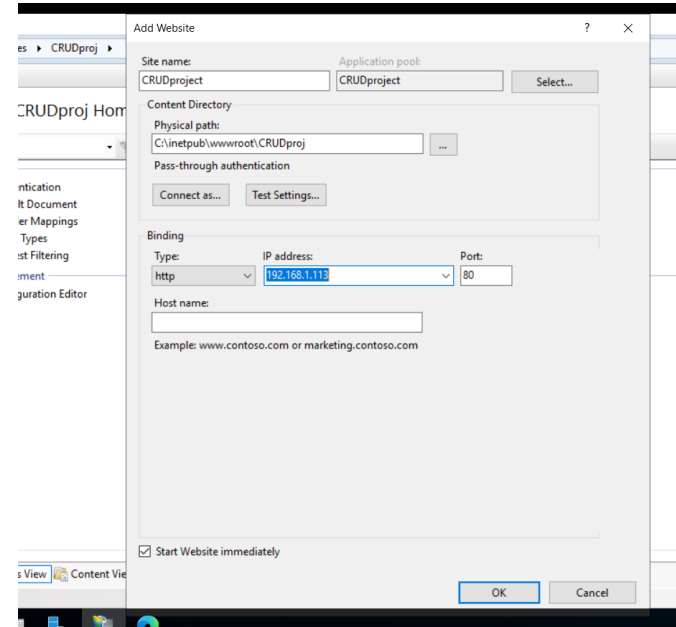
The project deployment process begins with specifying the project requirements, followed by thorough testing of the website in the target environment, specifically in the inetpub/wwwroot folder. Subsequently, the deployment on IIS involves launching the server, specifying the website's name, and assigning the port number (typically 80). To facilitate proper functioning, the next step includes configuring FASTCGI settings within the IIS dashboard. Furthermore, Handler mapping is set up to configure Python executable and wfastcgi to be deployed alongside the web application. To ensure the successful deployment of the website, it is crucial to open a web browser and enter the website's URL along with the assigned port number, verifying its proper functionality.

Step No.	Description	Screenshot
Step 1 -	Prepare your project for deployment to the IIS website's physical path, typically located in the inetpub -> wwwroot directory	

<div>Step 2</div>	<div>Launch IIS</div>	<div><p>The screenshot shows the Windows Server 2019 Server Manager interface. The left-hand navigation pane has 'IIS' selected under 'File and Storage Services'. The main area displays the 'SERVERS' section with a table of servers. Below this, the 'EVENTS' section shows a list of events. A context menu is open over the 'IIS' icon, listing various management tools, with 'Internet Information Services (IIS) Manager' highlighted.</p><table><tr><th>Server Name</th><th>IPv4 Address</th><th>Manageability</th><th>Last Update</th><th>Windows Activation</th></tr><tr><td>WIN-EON5CRHFOSV</td><td>192.168.1.113</td><td>Online - Performance counters not started</td><td>12/8/2023 3:32:12 AM</td><td>00431-20000-00000-AA321 (Activated)</td></tr></table></div>	Server Name	IPv4 Address	Manageability	Last Update	Windows Activation	WIN-EON5CRHFOSV	192.168.1.113	Online - Performance counters not started	12/8/2023 3:32:12 AM	00431-20000-00000-AA321 (Activated)
Server Name	IPv4 Address	Manageability	Last Update	Windows Activation								
WIN-EON5CRHFOSV	192.168.1.113	Online - Performance counters not started	12/8/2023 3:32:12 AM	00431-20000-00000-AA321 (Activated)								
<div>Step 3</div>	<div>Go to site and then click Add Website</div>	<div><p>The screenshot shows the IIS 'Application Pools' page. A context menu is open over the 'Sites' icon, showing options: 'Add Website...', 'Refresh', and 'Switch to Content View'.</p></div>										

## Step 4

Enter your site name, and port

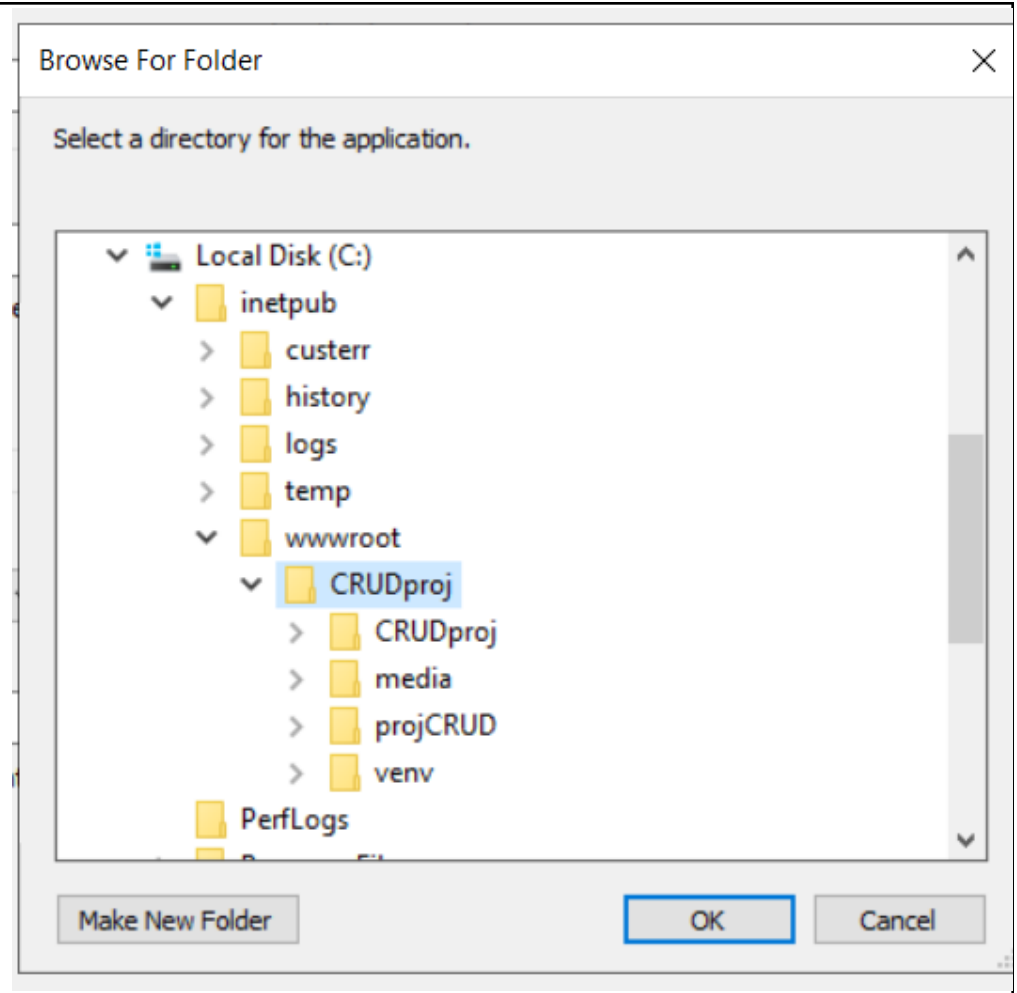


The screenshot shows the 'Add Website' dialog box in IIS Manager. The dialog is titled 'Add Website' and has a question mark icon and a close button. It contains the following fields and options:

- Site name:** A text box containing 'CRUDproject'. To its right is an 'Application pool' dropdown menu set to 'CRUDproject' with a 'Select...' button.
- Content Directory:**
  - Physical path:** A text box containing 'C:\inetpub\wwwroot\CRUDproj' with a browse button (...).
  - Pass-through authentication:** A checkbox that is currently unchecked.
  - Buttons: 'Connect as...' and 'Test Settings...'.
- Binding:**
  - Type:** A dropdown menu set to 'http'.
  - IP address:** A text box containing '192.168.1.118'.
  - Port:** A text box containing '80'.
  - Host name:** A text box.
  - Example:** 'www.contoso.com or marketing.contoso.com'.
- Start Website immediately:** A checkbox that is checked.
- Buttons:** 'OK' and 'Cancel' at the bottom right.

**Step 5**

Navigate to the physical path and select your project file for deployment.



**Step 6**

Configure IP address and port and  
Click OK if done

Binding

Type: http IP address: 192.168.1.113 Port: 80

Host name:

Example: www.contoso.com or marketing.contoso.com

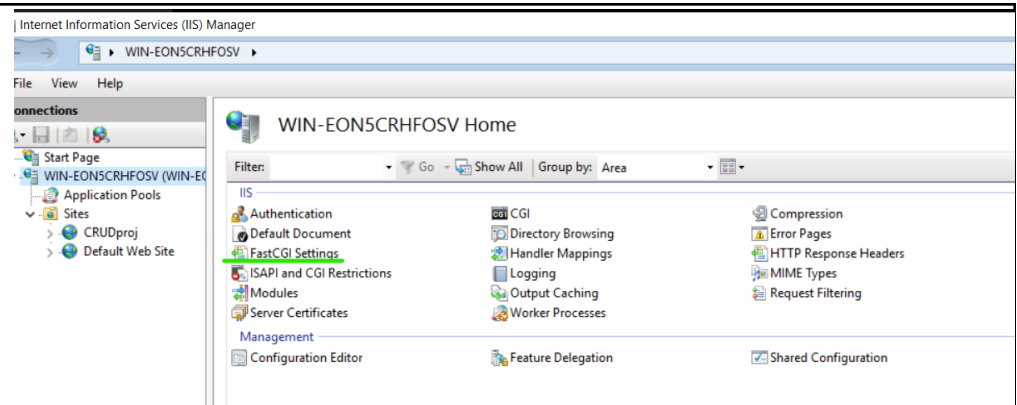
☒ Start Website immediately

OK Cancel



## Step 7

Go to IIS server dashboard and select and Configure FASTCGI settings



## Step 8

Navigate through the right pane and in the action tab click “Add application”. Then add the python execute and wfastcgi.py and the fields as shown on the screenshot. (Disclaimer: This will depend on where you installed your python.exe)

**Actions**

[Add Application...](#)

[Help](#)

Edit FastCGI Application

**Full Path:**

C:\Python312\python.exe

**Arguments:**

C:\Python312\Lib\site-packages\wfastcgi.py

**FastCGI Properties:**

- General**
  - Environment Variables (Collection)
  - Instance MaxRequests 200
  - Max Instances 0
  - Monitor changes to file
  - Standard error mode ReturnStdErrIn500
- Process Model**
  - Activity Timeout 70**
  - Advanced Settings
    - Idle Timeout 300
    - Queue Length 1000
    - Rapid Fails PerMinute 10
    - Request Timeout 00

**Activity Timeout**  
Specifies the time, in seconds, that a FastCGI process for this application is allowed to run without communicating with IIS.

OK Cancel

## Step 9

Once FastCGI is configured, Go to your newly created website. And navigate Handler Mappings. Inside the Handler Mapping go to the right side of UI and select “Add module Mapping”


The screenshot displays the IIS Manager console. In the left-hand tree view, the hierarchy is: Sites > CRUDproj > Handler Mappings. The 'Handler Mappings' folder is selected and highlighted with a green line. The main pane shows the 'CRUDproj Home' configuration page. Under the 'IIS' section, 'Handler Mappings' is selected. The right-hand pane lists various features: Authentication, Default Document, Handler Mappings, MIME Types, Request Filtering, and Management (Configuration Editor). On the far right, a list of features is visible: CGI, Directory Browsing, HTTP Response Headers, Modules, SSL Settings, Compression, Error Pages, Logging, and Output Caching.

Below this, the 'Handler Mappings' configuration window is open. It contains a table with the following data:

Name	Path	State	Path Type	Handler	Entry Type
<b>Disabled</b>					
CGI-exe	*.exe	Disabled	File	CgiModule	Inherited
<b>Enabled</b>					
CRUDproj	*	Enabled	Unspecified	FastCgiModule	Local
OPTIONSVerbHandler	*	Enabled	Unspecified	ProtocolSupportModule	Inherited
TRACEVerbHandler	*	Enabled	Unspecified	ProtocolSupportModule	Inherited
StaticFile	*	Enabled	File or Folder	StaticFileModule,DefaultDocu...	Inherited

On the right side of the 'Handler Mappings' window, there is an 'Actions' pane with the following options: Add Managed Handler..., Add Script Map..., Add Wildcard Script Map..., Add Module Mapping..., Edit Feature Permissions..., Revert To Parent, View Ordered List..., and Help.

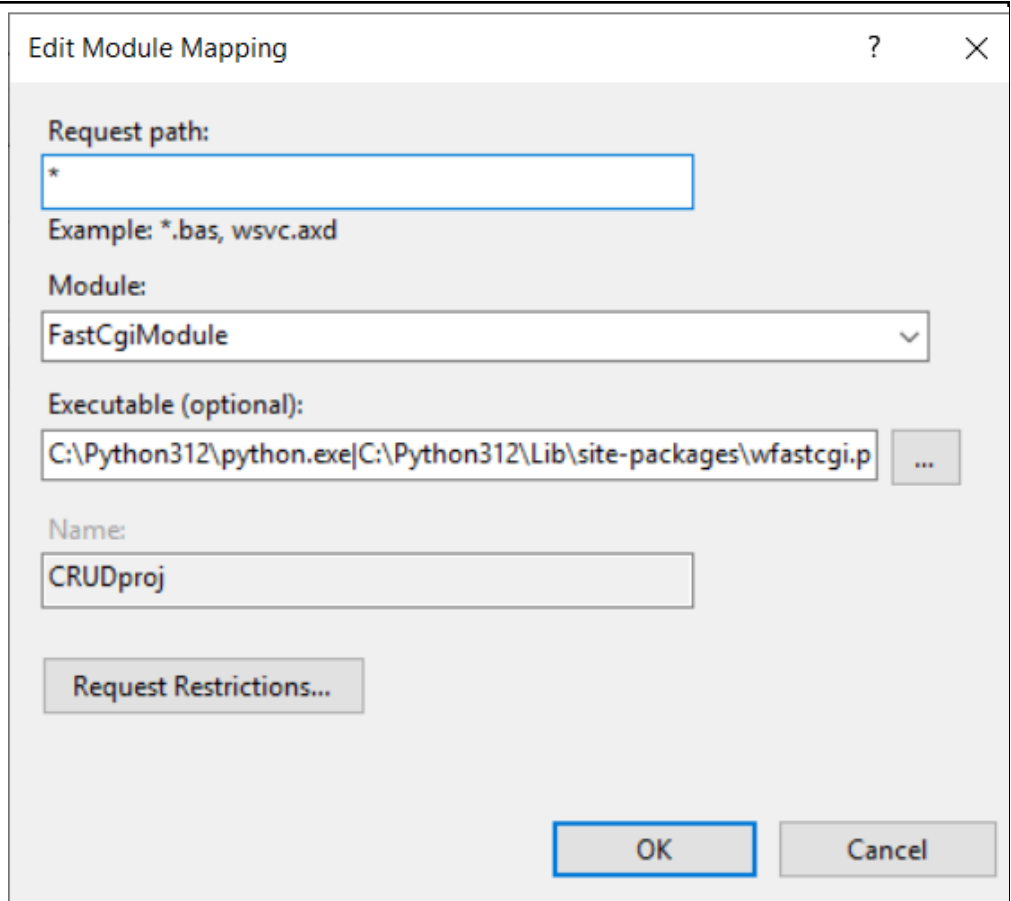
At the bottom of the IIS Manager window, the status bar shows: nHost.config, <location path="/CRUDproj">

		<div><div>Actions</div><div><div>Add Managed Handler...</div><div>Add Script Map...</div><div>Add Wildcard Script Map...</div><div>Add Module Mapping...</div><div>Edit Feature Permissions...</div><div>Revert To Parent</div><div>View Ordered List...</div></div><div><div> Help</div></div></div>	
--	--	--	--

**Step 10**

Add the following configuration once Module mapping is opened. (This will vary upon the user's web application configuration).

Once done filling up the fields click "Request Restrictions" and on tick invoke handler only. Then simply press ok after.



The screenshot shows the 'Edit Module Mapping' dialog box with the following configuration:

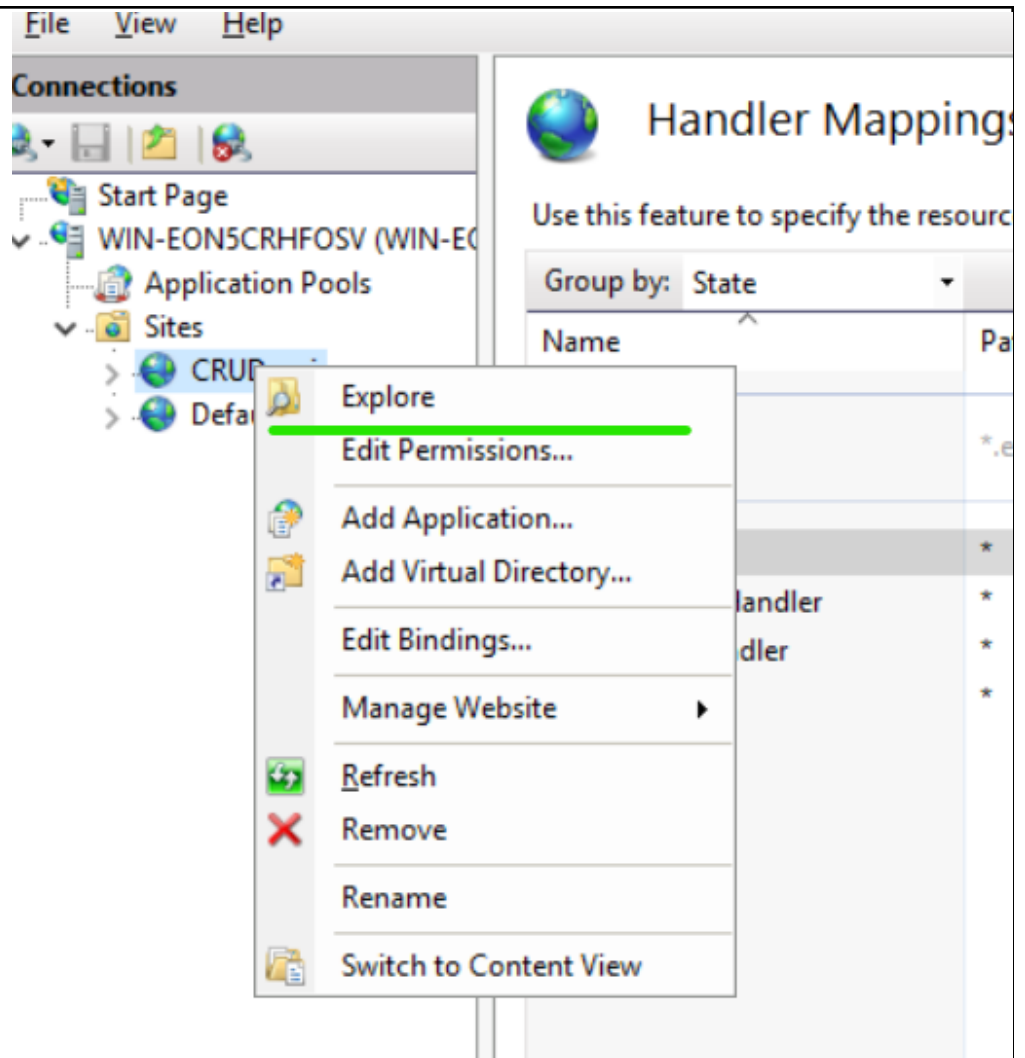
- Request path:** \*
- Example:** \*.bas, wsvc.axd
- Module:** FastCgiModule
- Executable (optional):** C:\Python312\python.exe|C:\Python312\Lib\site-packages\wfastcgi.p
- Name:** CRUDproj
- Buttons:** Request Restrictions..., OK, Cancel

		<div><div>Request Restrictions<span>?</span><span>×</span></div><div><div>MappingVerbsAccess</div><div><div><input type="checkbox"/> Invoke handler only if request is mapped to:<ul style="list-style-type: none"><li><input checked="" type="radio"/> File</li><li><input type="radio"/> Folder</li><li><input type="radio"/> File or folder</li></ul></div><div><div>OK</div><div>Cancel</div></div></div></div></div>
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**Step 11**

Once done close the windows and navigate to your sites and right click on website and select “Explore”

It will then open your web project root folder. A new file will show up named web.config. Open the file and Add in the following commands based on the provided screenshot. Once done save the new config and exit the folder.



CRUDproj

FileHomeShareView

> This PC > Local Disk (C:) > inetpub > wwwroot > CRUDproj

Quick access

Desktop

Downloads

Documents

Pictures

CRUDproj

CRUDproj

static

wwwroot

This PC

Name	Date modified	Type	Size
CRUDproj	12/7/2023 8:06 AM	File folder	
media	12/7/2023 3:09 AM	File folder	
projCRUD	12/7/2023 3:09 AM	File folder	
venv	12/7/2023 10:37 A...	File folder	
db.sqlite3	12/8/2023 3:55 AM	SQLITE3 File	132 KB
manage	12/7/2023 3:07 AM	Python Source File	1 KB
requirements	12/7/2023 9:46 AM	Text Document	1 KB
web	12/7/2023 8:16 PM	CONFIG File	1 KB

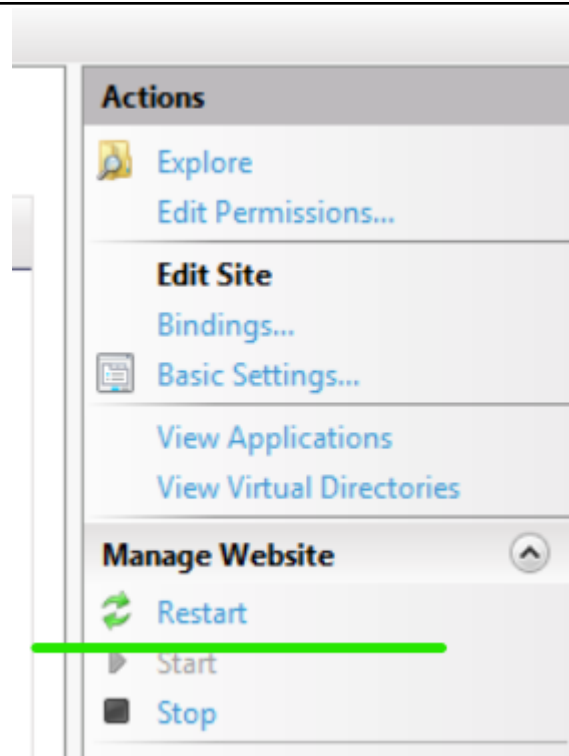
```
<?xml version="1.0" encoding="UTF-8"?>
<configuration>
  <appSettings>
    <!-- Required settings -->
    <add key="WSGI_HANDLER" value="django.core.wsgi.get_wsgi_application()" />
    <!-- Your django path -->
    <add key="PYTHONPATH" value="C:\inetpub\wwwroot\CRUDproj" />
    <!-- Your django name.settings -->
    <add key="DJANGO_SETTINGS_MODULE" value="CRUDproj.settings" />
  </appSettings>
  <system.webServer>
    <handlers>
      <add name="CRUDproj" path="" verb="" modules="FastCgiModule" scriptProcessor="C:\Python312\python.exe|C:\Python312\python.exe" />
    </handlers>
  </system.webServer>
</configuration>
```











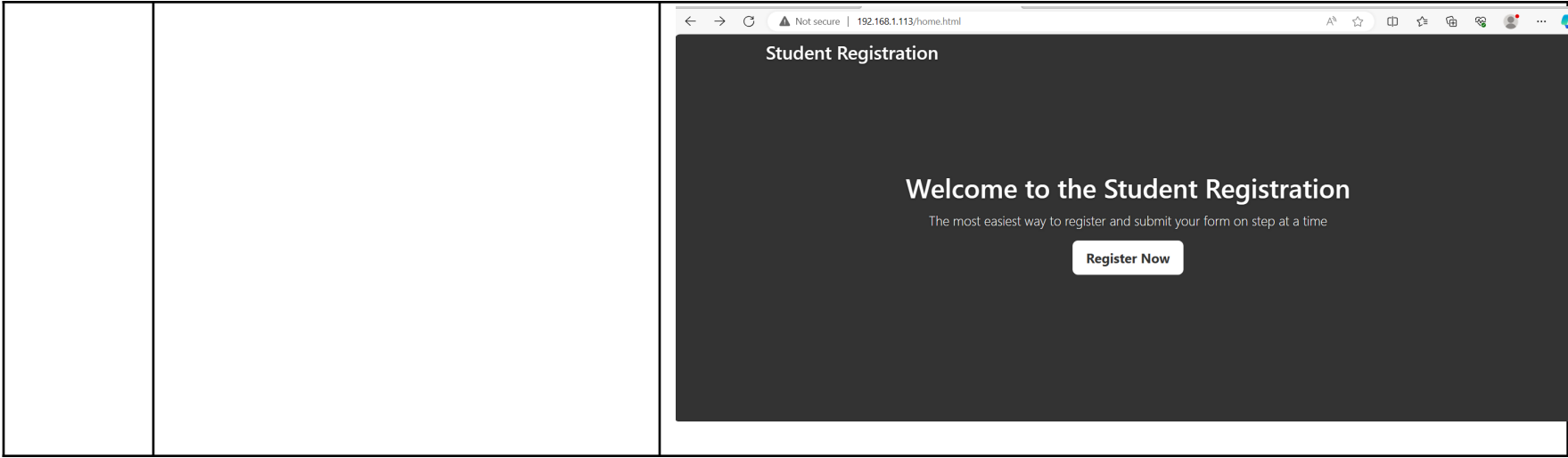
**Step 12**

After all of the configurations are done. Go back to IIS and click restart to apply all of the configurations. Now simply go to the website tab. and click the browser (Host Ip and Port).

Now a browser will open. Showing the deployed web applications homepage



		<div><div>Actions</div><div><div> Explore</div><div>Edit Permissions...</div></div><div><div>Edit Site</div><div><div>Bindings...</div><div><div> Basic Settings...</div></div></div></div><div><div>View Applications</div><div>View Virtual Directories</div></div><div><div>Manage Website </div><div><div> Restart</div><div> Start</div><div> Stop</div></div><div><div>Browse Website</div><div><div> Browse 192.168.1.113:80 (http)</div><div>Advanced Settings...</div></div><div><div>Configure</div><div><div>Limits...</div><div>HSTS...</div></div></div><div><div> Help</div></div></div></div></div>
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### Step 13

To check the database. Go to your url and type <http://192.168.1.113/admin/>

Login the admin's credentials and access the database.

Here it shows the utilized database in the web application. (particular Students db)

The Third screenshot showcases the data inside the students db. and it shows that it reflects the student table shown in the web application (4th screenshot).

Proving that database is functional and connected to the web application while it is deployed

The top screenshot shows the Django administration login page. It has a dark blue header with the text "Django administration". Below the header, there are two input fields: "Username:" and "Password:". A blue "Log in" button is positioned below the password field.

The bottom screenshot shows the Django administration dashboard. It has a dark blue header with the text "Django administration" and a welcome message: "WELCOME, TIMBOL. VIEW SITE / CHANGE PASSWORD / LOG OUT". Below the header, there is a section titled "Site administration" with two sub-sections: "AUTHENTICATION AND AUTHORIZATION" and "PROJCRUD". The "AUTHENTICATION AND AUTHORIZATION" section has links for "Groups" and "Users", each with a green plus icon and a yellow pencil icon. The "PROJCRUD" section has a link for "Students" with a green plus icon and a yellow pencil icon. To the right of the "Site administration" section, there is a "Recent actions" section with a list of actions: "SysAdmin TEST", "John Adrian Timbol", and "John Adrian Timbol", each with a red X icon and the word "Student" below it.

Home > Projcrud > Students

Start typing to filter...

AUTHENTICATION AND AUTHORIZATION

Groups

+ Add

Users

+ Add

PROJCRUD

Students

+ Add

Select student to change

Action:  Go 0 of 7 selected

☐ STUDENT

☐ John Adrian Timbol

☐ joceI san juan

☐ fyonah

☐ try 2

☐ newtry




☐ kent

☐ Heizel Santos

7 students

← ↻ ⚠ Not secure | 192.168.1.113/dashboard.html 🔍 ☆ 📄 ⚙ 🔄 🌐 👤 ⋮

Total Records: 7

Name	Section	Year Level	Subject	Address	Picture
Heizel Santos	BSP 4202	4th Year	Research	meycuayan city	
kent	IT32S1	4th Year	Cite 006	valenzuela city	No image available
newtry	IT32S3	3rd year	Cite 007	mandaluyong city	No image available
try 2	it32s3	4th year	cite 006	cavite	No image available
fyonah	ST. Peter	1st year	science	valenzuela city	No image available
joceI san juan	IT32S1	4th year	cit 511	manila	
John Adrian Timbol	IT41S2	4th yr	SYS ADMIN	1242 Street	

## **b. Server Migration Plan**

### **i. Pre-Cutover Steps:**

1. Verification of server readiness: Initiating the migration process, confirming that the server is configured and operational.
2. Full backup of existing system: Before starting the migration, confirm that the team has a rollback strategy in case something goes wrong.

### **ii. Migration Steps:**

1. Database backup, deployment, and verification: Make necessary database backup, deploy it to the server, and make sure it's operating as intended.
2. Application file transfer and IIS configuration: Transfer the application files to the server and configure IIS to ensure the application is running as smoothly.

### **iii. Post-Migration Steps:**

1. Comprehensive validation and functional testing: Confirm that everything is operating as it intended by thoroughly testing the application on the server.

2. Monitoring system performance and stability: Monitor the migrated system's stability and performance and prepare strategies to handle any errors that may come up.

## References

How To Create Python Django Website In Windows Server IIS and Wfastcgi  
Retrieved December 7, 2023, from Youtube Website:  
<https://www.youtube.com/watch?v=Z367lcPIPak>

Deploy Django Application on Windows IIS Server Retrieved December 7,  
2023, from [Deploy Django Application on Windows IIS Server | by Sagar Gadewar | nonstopio](#)