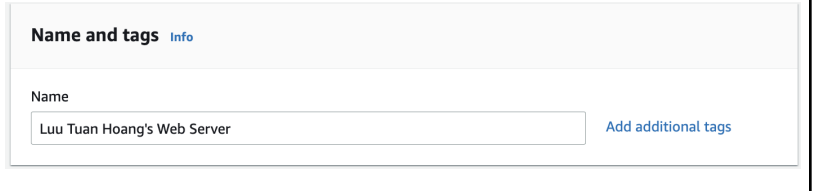
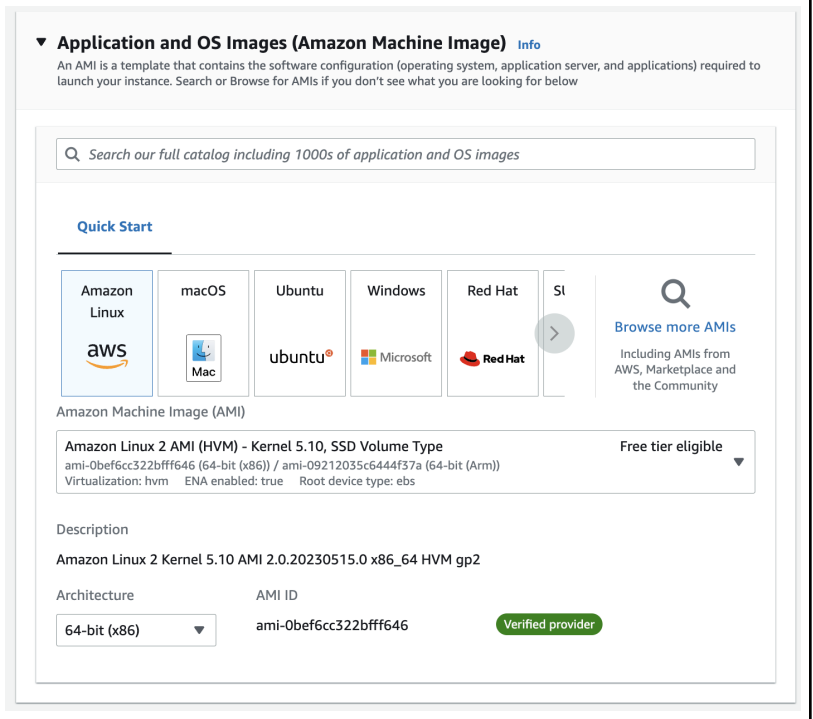
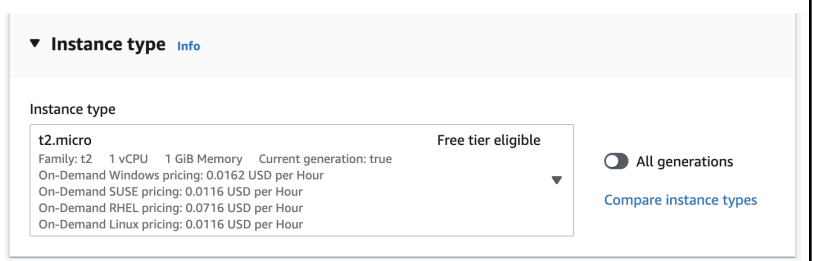


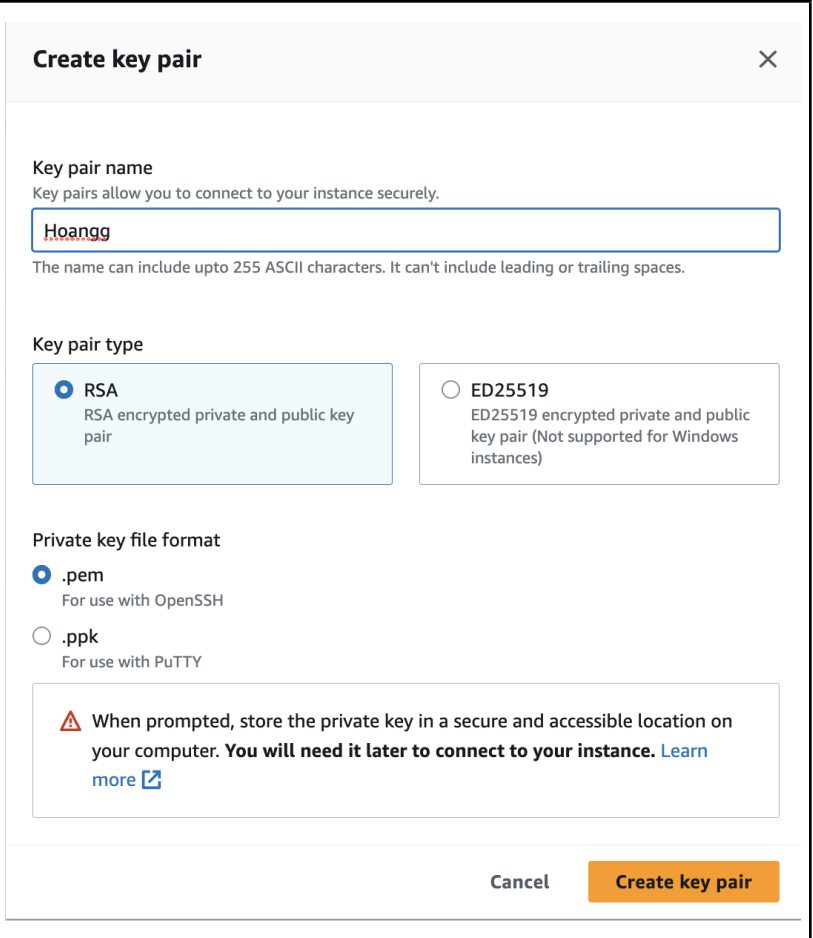
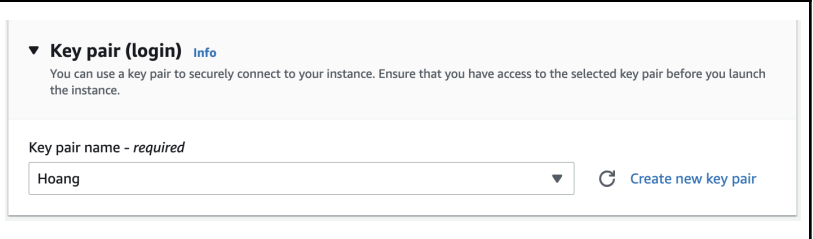
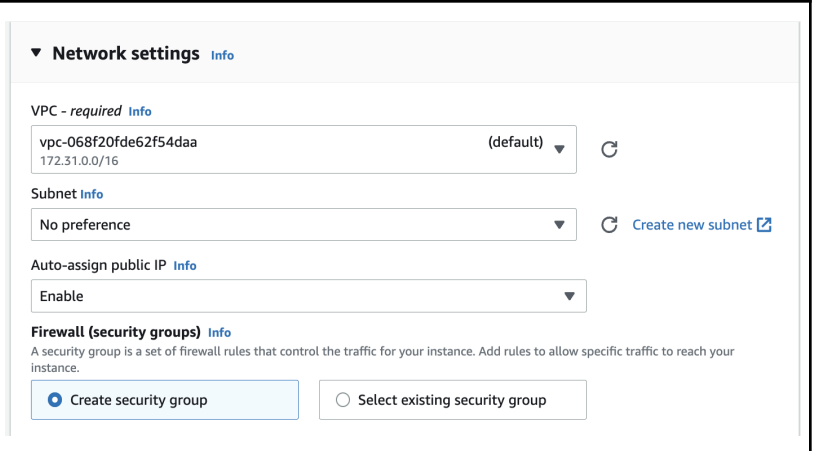


Assignment 1a: Creating and deploying a Web Page

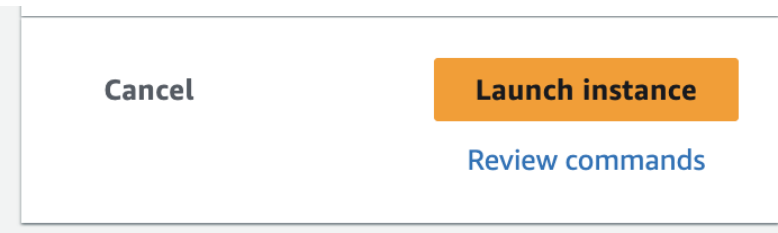
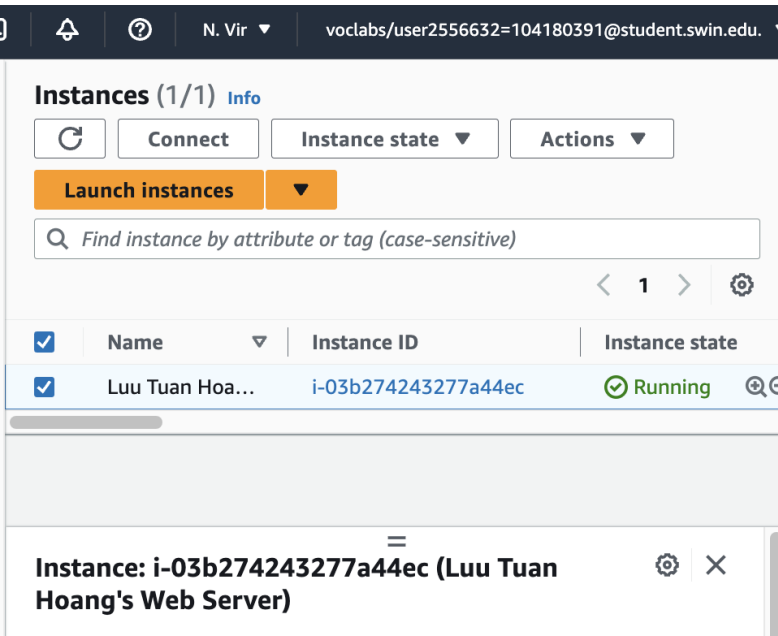
June 4, 2023

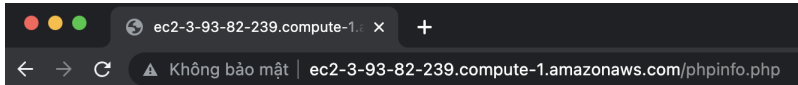
Luu Tuan Hoang
Student ID: 104180391

TASK 1: LAUNCH LINUX EC2 INSTANCE		
Step	Description	Screenshot
1	Begin creating a new EC2 instance. Create a tag with the name to categorize the AWS instance. The name of the instance is “Luu Tuan Hoang’s Web Server”.	
2	<p>Select the Amazon Linux 2 AMI (HVM), SSD Volume Type from the provided options of Quick Start Amazon Machine Images (AMIs).</p> <p>The Amazon Linux 2 AMI is specifically designed and optimized for running on Amazon Web Services (AWS) infrastructure.</p>	
3	Choose the default instance type, which is t2.micro, which comes with 1 virtual CPU and 1 GiB of memory.	

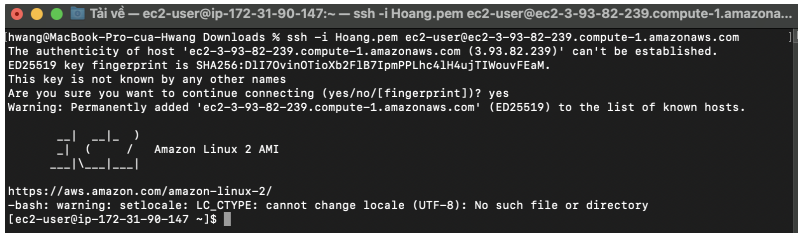
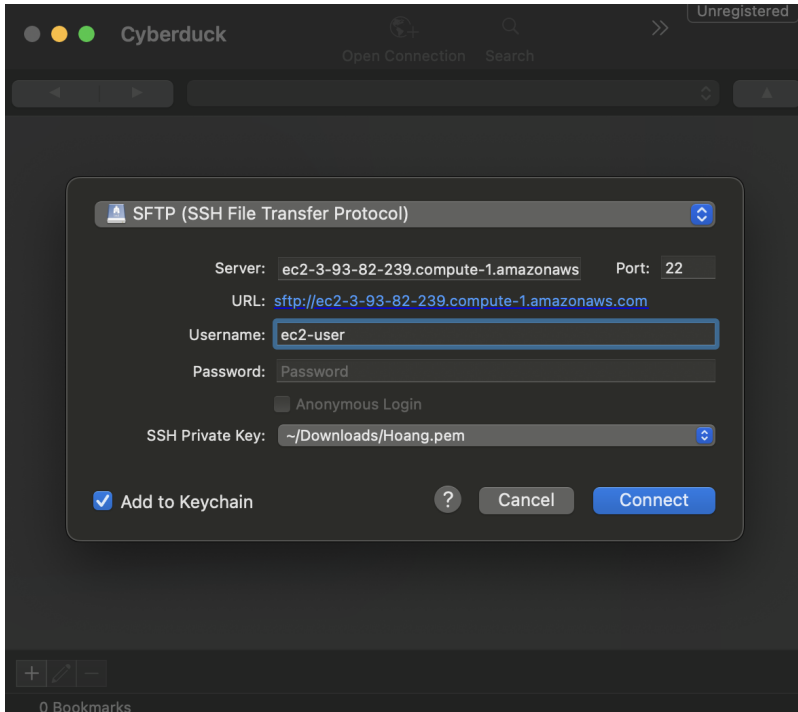
4	<p>Generate a key pair using the RSA key pair type and save the private key in the .pem file format.</p> <p>It is important to protect the .pem file and ensure that only authorized individuals have access to it. Any compromise of the private key can potentially lead to unauthorized access to your server and compromise the security of your system.</p>	
5	<p>Choose the key pair which was created in the previous step.</p>	
6	<p>VPC Choice: Select a VPC configuration that includes two default subnets accessible to the public.</p>	

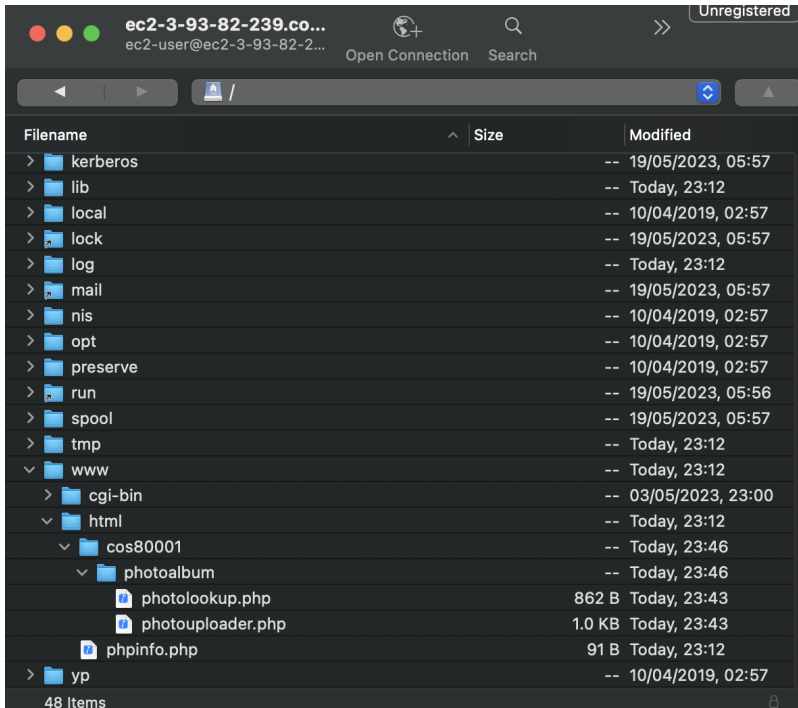
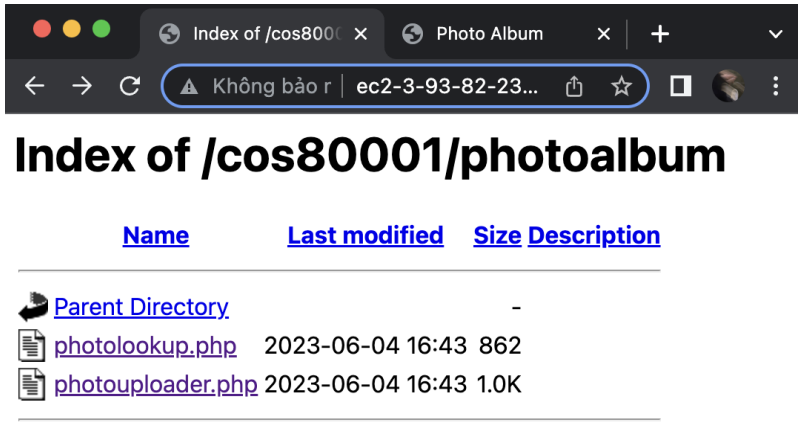
7	Security Group: <ul style="list-style-type: none"> Name: WebServer-SG Description: Default 	<div> <div>Security group name - <i>required</i></div> <div>WebServer-SG</div> <div> <small>This security group will be added to all network interfaces. The name can't be edited after the security group is created. Max length is 255 characters. Valid characters: a-z, A-Z, 0-9, spaces, and _-:/()#,@!+=&;:~*`</small> </div> </div> <div> <div>Description - <i>required</i> Info</div> <div>launch-wizard-1 created 2023-06-04T15:59:37.237Z</div> </div>
8	Inbound security group rules: Only allow essential traffic types (SSH, HTTP, HTTPS) from any source to access the instance.	<div> <div>Inbound security groups rules</div> <div> <div>▼ Security group rule 1 (TCP, 22, 0.0.0.0/0)</div> <div>Remove</div> <div> <div>Type Info</div> <div>ssh</div> <div>Protocol Info</div> <div>TCP</div> <div>Port range Info</div> <div>22</div> <div>Source type Info</div> <div>Anywhere</div> <div>Source Info</div> <div> <div>Q Add CIDR, prefix list or security</div> <div>0.0.0.0/0 X</div> </div> <div>Description - <i>optional</i> Info</div> <div>e.g. SSH for admin desktop</div> </div> </div> <div> <div>▼ Security group rule 2 (TCP, 80, 0.0.0.0/0)</div> <div>Remove</div> <div> <div>Type Info</div> <div>HTTP</div> <div>Protocol Info</div> <div>TCP</div> <div>Port range Info</div> <div>80</div> <div>Source type Info</div> <div>Custom</div> <div>Source Info</div> <div> <div>Q Add CIDR, prefix list or security</div> <div>0.0.0.0/0 X</div> </div> <div>Description - <i>optional</i> Info</div> <div>e.g. SSH for admin desktop</div> </div> </div> <div> <div>▼ Security group rule 3 (TCP, 443, 0.0.0.0/0)</div> <div>Remove</div> <div> <div>Type Info</div> <div>HTTPS</div> <div>Protocol Info</div> <div>TCP</div> <div>Port range Info</div> <div>443</div> <div>Source type Info</div> <div>Custom</div> <div>Source Info</div> <div> <div>Q Add CIDR, prefix list or security</div> <div>0.0.0.0/0 X</div> </div> <div>Description - <i>optional</i> Info</div> <div>e.g. SSH for admin desktop</div> </div> </div> </div>
9	Use the default configuration with an 8 GiB root volume provisioned through Elastic Block Store (EBS).	<div> <div>▼ Configure storage Info</div> <div>Advanced</div> <div> <div>1x 8 GiB gp3 ▼ Root volume (Not encrypted)</div> <div>Add new volume</div> <div>0 x File systems Edit</div> </div> </div>

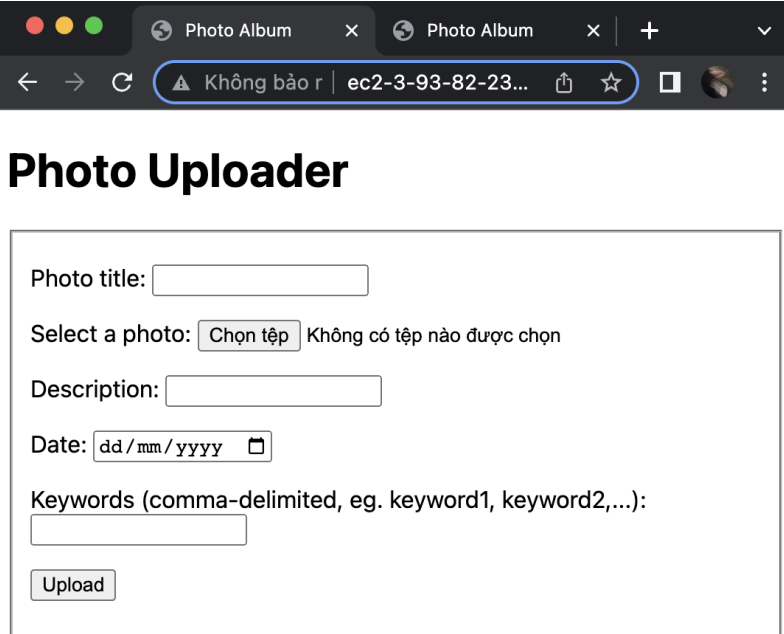
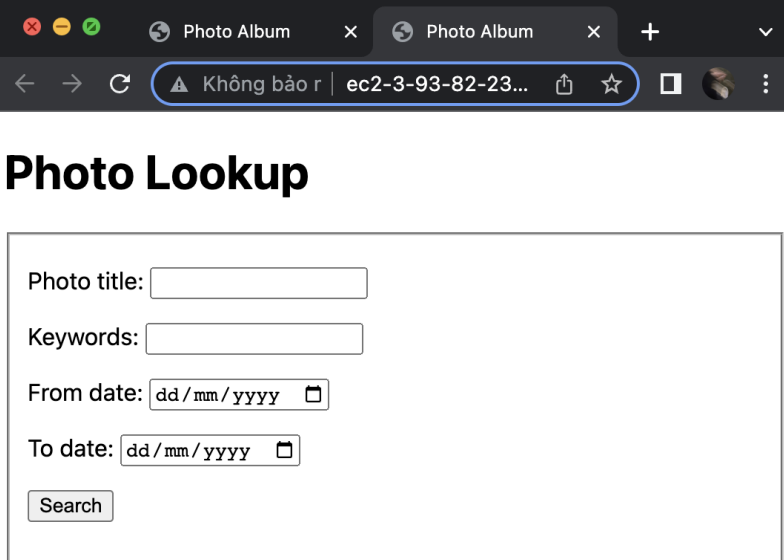
10	During the EC2 instance launch, execute the commands present in the "EC2 setup script.txt" file as user data. This script will automate the setup and configuration of the Apache server, PHP, and MySQL.	<p>User data - optional Info</p> <p>Enter user data in the field.</p> <pre>#!/bin/bash yum update -y amazon-linux-extras install -y lamp-mariadb10.2-php7.2 php7.2 service httpd start yum install -y httpd mariadb-server php-mbstring php-xml systemctl start httpd systemctl enable httpd usermod -a -G apache ec2-user chown -R ec2-user:apache /var/www chmod 2775 /var/www find /var/www -type d -exec sudo chmod 2775 {} \; find /var/www -type f -exec sudo chmod 0664 {} \; echo "<?php echo '<h2>Welcome to COS80001. Installed PHP version: ' . phpversion() . '</h2>'; ?>" > /var/www/html/phpinfo.php</pre>
11	Choose Launch instance.	 <p>The screenshot shows a modal dialog with three buttons: 'Cancel' (grey), 'Launch instance' (orange), and 'Review commands' (blue link).</p>
12	Instance successfully created.	 <p>The screenshot shows the AWS Management Console 'Instances' page. It displays a table with one instance: 'Luu Tuan Hoa...' with ID 'i-03b274243277a44ec' in a 'Running' state. Below the table, a summary card for the instance is visible, titled 'Instance: i-03b274243277a44ec (Luu Tuan Hoang's Web Server)'.</p>

13	<p>Connect to the link:</p> <p>ec2-3-93-82-239.compute-1.amazonaws.com</p> <p>The successful loading of a welcome page indicates that the EC2 instance, PHP, and Apache server have been installed and configured correctly.</p>	 <p>Welcome to COS80001. Installed PHP version: 7.2.34</p>
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TASK 2: REMOTELY ACCESS TO LINUX EC2 INSTANCE AND DEPLOYING A WEB PAGE

Step	Description	Screenshot
1	<p>Access EC2 instance by Terminal with the key pair created before.</p>	 <pre> Tài vè — ec2-user@ip-172-31-90-147:~ — ssh -i Hoang.pem ec2-user@ec2-3-93-82-239.compute-1.amazona... hwang@MacBook-Pro-cua-Huang Downloads % ssh -i Hoang.pem ec2-user@ec2-3-93-82-239.compute-1.amazonaws.com The authenticity of host 'ec2-3-93-82-239.compute-1.amazonaws.com (3.93.82.239)' can't be established. ED25519 key fingerprint is SHA256:DLI70vin0TioXb2F1B71pmPPLhc4IH4ujTlWouVFeaM. This key is not known by any other names Are you sure you want to continue connecting (yes/no/[fingerprint])? yes Warning: Permanently added 'ec2-3-93-82-239.compute-1.amazonaws.com' (ED25519) to the list of known hosts. -- _-- _) -- (- / ---\--- --- Amazon Linux 2 AMI https://aws.amazon.com/amazon-linux-2/ -bash: warning: setlocale: LC_CTYPE: cannot change locale (UTF-8): No such file or directory [ec2-user@ip-172-31-90-147 ~]\$ </pre>
2	<p>To begin, open Cyberduck and locate the 'Open Connection' button. In the login dialog box that appears:</p> <ol style="list-style-type: none"> 1. Choose SFTP (SSH File Transfer Protocol) as the protocol. 2. Enter your EC2 instance's public DNS as the server. 3. Use "ec2-user" as the username. 4. Click the dropdown next to 'SSH Private Key:' and select 'Choose...' 5. Navigate to and select your private key file (.pem). 6. Click 'Choose'. 7. Finally, click 'Connect' to establish the connection. You can now initiate file transfers with your Linux EC2 instance. 	 <p>The screenshot shows the Cyberduck application window with the 'Open Connection' dialog box open. The dialog is configured for SFTP (SSH File Transfer Protocol) with the following details:</p> <ul style="list-style-type: none"> Protocol: SFTP (SSH File Transfer Protocol) Server: ec2-3-93-82-239.compute-1.amazonaws.com Port: 22 URL: sftp://ec2-3-93-82-239.compute-1.amazonaws.com Username: ec2-user Password: (masked) SSH Private Key: ~/Downloads/Hoang.pem Options: <input checked="" type="checkbox"/> Add to Keychain, <input type="button" value="Cancel"/>, <input type="button" value="Connect"/>

3	<p>The "cos80001" folder needs to be placed within the Apache document root directory (/var/www/html) for the Apache HTTP server to serve its contents.</p> <p>Begin transferring PHP files that are necessary for the web page.</p>	
4	<p>Now the web page is successfully deployed.</p> <p>ec2-3-93-82-239.compute-1.amazonaws.com/cos80001/photoalbum/</p>	

5	<p>Photo Uploader - photouploader.php</p> <p>ec2-3-93-82-239.compute-1.amazonaws.com/cos80001/photoalbum/photouploader.php</p>	 <p>Photo Lookup</p>
6	<p>Photo Lookup - photolookup.php</p> <p>ec2-3-93-82-239.compute-1.amazonaws.com/cos80001/photoalbum/photolookup.php</p>	 <p>Photo Uploader</p>