Deploy A PHP web app on an EC2 Instance

**Step 1: Create an AWS Instance**

1. Go to the [AWS Console](https://aws.amazon.com/console/) and log in
2. In the search bar, type "EC2" and select the **EC2** service
3. Click on **Launch Instance** to start creating a server
4. Type any relevant name for the server
5. For the Amazon Machine Image, select **Amazon Linux 2** (Free Tier eligible) as it’s optimised for AWS and supports PHP, Apache, and MySQL installations
6. Choose the **t2.micro** instance type
7. Create a new key pair under the **key pair (login)** and give it a name you can remember. Key pair type **RSA**, private key file format **.pem** (a file should be downloaded automatically when you finish and click the create key pair button)
8. Under the **Network settings**, Create security group -> allow SSH traffic from anywhere -> allow HTTP traffic from the internet -> ensure storage is at least 8GiB gp3 -> and leave all other default configurations for now
9. Review your configuration and click **Launch Instance**

**Step 2: Connect to Instance**

1. Open your terminal or command prompt and cd into to the directory with your **.pem** file (most probs Downloads)
2. Run this command with the name of your pem file to allow you use it to connect **chmod 400 <your pem filename>.pem**
3. Go back to the AWS management console, click on Instances from the sidebar and click on the name of the instance you just created
4. At the top, you should see a **Connect to instance** button/option, which opens a page with details about the instance. Scroll down and choose the SSH connection option. You will see a command to connect to it: “ssh -i <what you named your pem file> ec2-user@....” Copy that entire command and paste it into the terminal, then hit enter
5. Respond “yes” to the prompt to continue connecting

**Step 3: Install PHP and Apache**

1. Run this command: **sudo yum update -y** to update server
2. **sudo yum install httpd -y** to install Apache
3. **sudo systemctl start httpd** to start Apache
4. **sudo systemctl enable httpd** to enable it to run on boot
5. **sudo yum install php -y** to install PHP
6. **sudo systemctl restart httpd** to apply PHP configuration

**Step 4: Test Apache and PHP**

1. Run **cd /var/www/html**
2. Run **sudo nano /var/www/html/info.php** to create a test file
3. Type **<?php phpinfo(); ?>** into the file, write out, then close the file
4. Go back to the AWS console page, open your instance and copy your instance’s public IP address. Enter **http://<ip\_adress>/info.php** and confirm that a page loads. If it loads something, then your set up is right
5. Follow a similar process to create relevant files and copy and paste their content from your local machine, and write out to save
6. After creating all necessary files, run **sudo chown -R apache:apache /var/www/html** in the terminal to ensure Apache has the necessary permissions to run your app
7. To access the deployed app, enter http://<ip\_adress>/ in your web browser and check that you’re able to see the content of your *index.php* page. If you don’t have an index page, enter http://<ip\_adress>/<name\_of\_your\_landing\_page> and check that you’re able to view that

**Step 4: Security**

1. You can set up HTTPS using a free SSL certificate from [Let’s Encrypt](https://letsencrypt.org/) with tools like **Certbot** to secure your site. That’s a slightly longer process and we can cover that next week if you want