



Set Up a Web App in the Cloud



Emmanuel Enalpe III

```
↳ index.jsp  X
src > main > webapp > ↳ index.jsp > ...
1   <html>
2
3   <body>
4
5   <h2>Hello <YOUR Emmanuel>!</h2>
6
7   <p>This is my NextWork web application working!</p>
8
9   </body>
10
11  </html>
```



Emmanuel Enalpe III

NextWork Student

NextWork.org

Introducing Today's Project!

What is VSCode and why is it useful?

In today's project, I used VSCode to connect to my EC2 instance, allowing me to explore and edit my Java web app's files directly. The IDE's features, like code highlighting and version control integration.

How I'm using VSCode in this project

In today's project, I used VSCode to connect to my EC2 instance, allowing me to explore and edit my Java web app's files directly. The IDE's features, like code highlighting and version control integration.

One thing I didn't expect...

One thing I didn't expect in this project was how seamlessly VSCode integrates with the EC2 instance. The ability to edit files directly in the cloud environment made development much more efficient and streamlined than I initially anticipated.

This project took me...

This project took me approximately an hour to complete. This included setting up the EC2 instance, installing necessary tools, establishing the connection with VSCode, and configuring the environment for my Java web app development.



Launching an EC2 instance

I started this project by launching an EC2 instance because it provides a scalable, cloud-based server where I can develop, test, and run the web app. This allows for easy access, management, and the ability to adjust resources as needed.

I also enabled SSH

SSH is a secure protocol used to remotely access and manage servers over an encrypted connection. I enabled SSH so that I can securely connect to and control my EC2 instance from my local machine.



Emmanuel Enalpe III

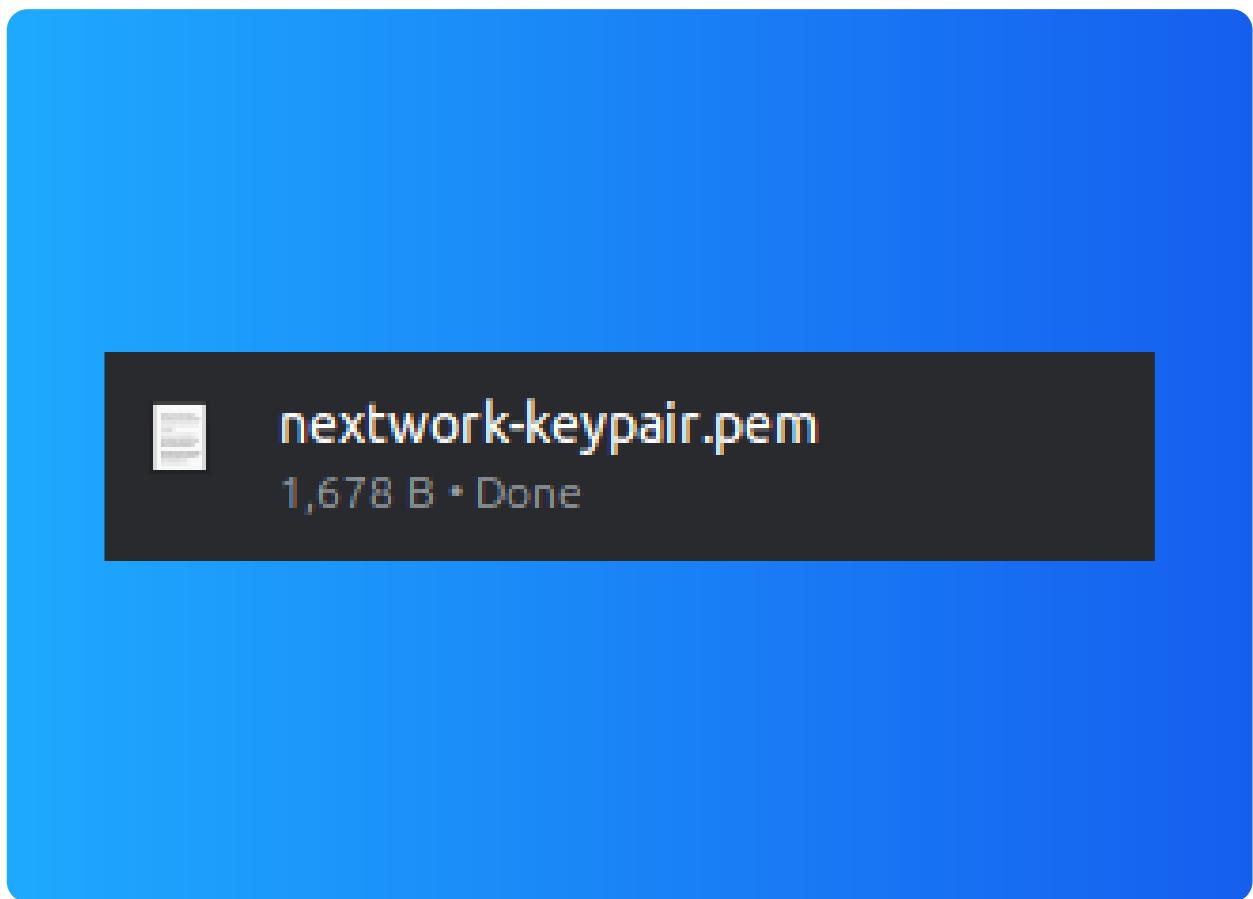
NextWork Student

NextWork.org

Setting up a key pair

A key pair is a set of cryptographic keys used for secure SSH access to an EC2 instance. It consists of a public key, stored on the instance, and a private key, held by the user to authenticate connections.

Once I set up my key pair, AWS automatically downloaded the file and ask where will it be store to my local machine.

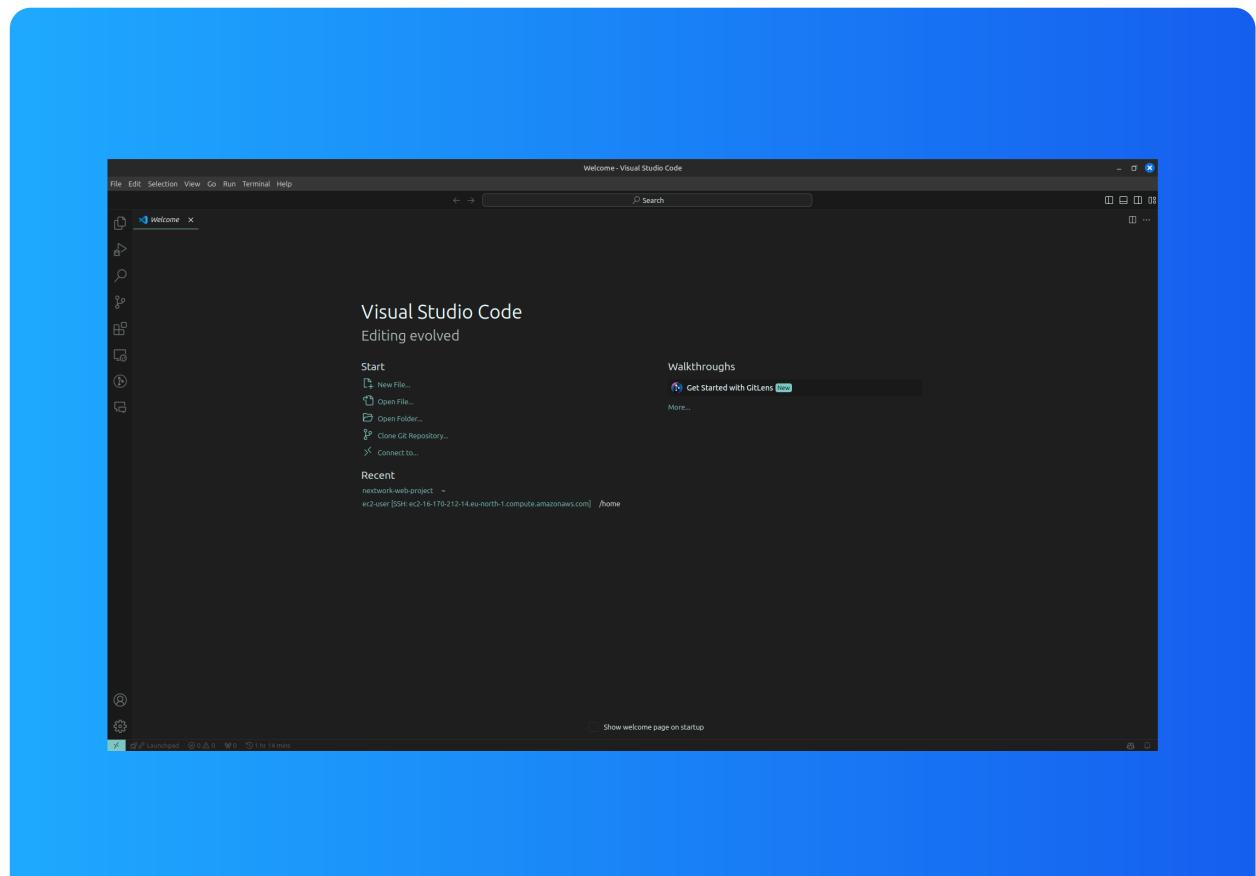




Set up VSCode

VSCode is a lightweight, open-source code editor developed by Microsoft. It offers a range of features like debugging, version control, and extensions, making it ideal for coding, editing, and managing projects in various programming languages.

I installed VSCode to write, edit, and manage the code for my web app efficiently. Its features, like debugging and version control integration, help streamline the development process and improve productivity while working on the EC2 instance.





Emmanuel Enalpe III

NextWork Student

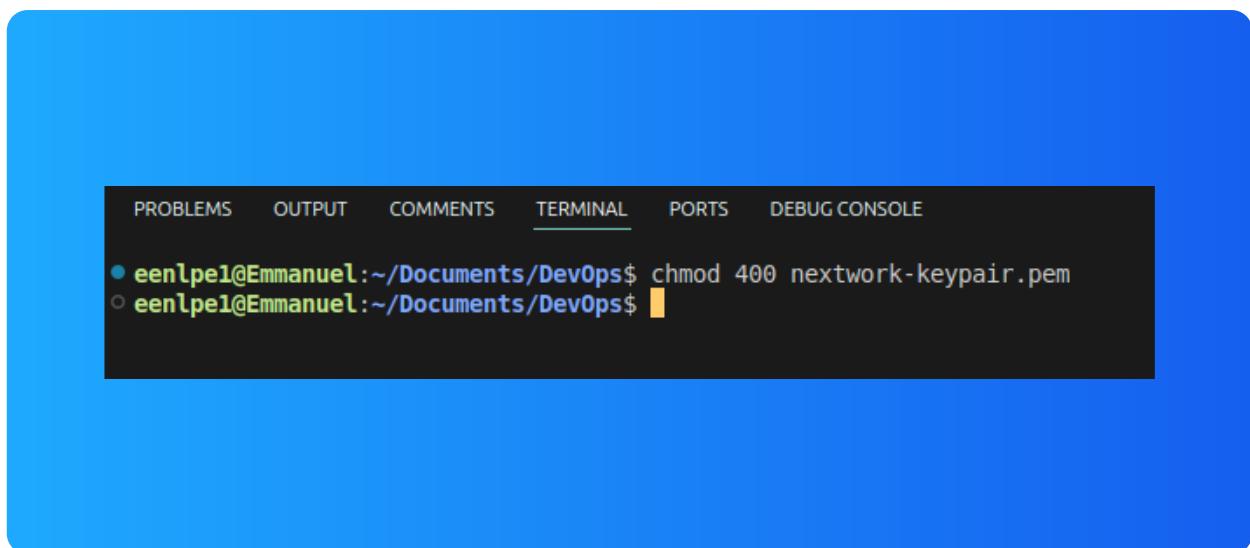
NextWork.org

My first terminal commands

A terminal is a command-line interface that allows users to interact with the operating system by entering text-based commands. It enables tasks like running scripts, managing files, and configuring system settings efficiently.

The first command I ran for this project is `cd ~/Desktop/DevOps`. This command navigates to the DevOps directory on my Desktop, where I store all my development files and projects for easy access and organization.

I also updated my private key's permissions by running the command `chmod 400 nextwork-keypair.pem`. This ensures that only I can read the key file, which is crucial for maintaining security when accessing my EC2 instance via SSH.



```
PROBLEMS OUTPUT COMMENTS TERMINAL PORTS DEBUG CONSOLE

• eenlpe1@Emmanuel:~/Documents/DevOps$ cd ~/Documents/DevOps
○ eenlpe1@Emmanuel:~/Documents/DevOps$ chmod 400 nextwork-keypair.pem
```



SSH connection to EC2 instance

To connect to my EC2 instance, I ran the command `ssh -i nextwork-keypair.pem ec2-user@<your-ec2-ipv4-address>`. This command uses my private key to securely authenticate and establish an SSH connection to the instance for remote access.

This command required an IPv4 address

A server's IPv4 DNS is a unique address that allows users to access the server over the internet. It translates human-readable domain names into IP addresses, enabling seamless communication between clients and the server.

```
● eenlpe1@Emmanuel:~/Documents/DevOps$ chmod 400 nextwork-keypair.pem
○ eenlpe1@Emmanuel:~/Documents/DevOps$ ssh -i ~/Documents/DevOps/nextwork-keypair.pem ec2-user@ec2-13-212-44-255.ap-southeast-1.compute.amazonaws.com
The authenticity of host 'ec2-13-212-44-255.ap-southeast-1.compute.amazonaws.com (13.212.44.255)' can't be established.
ED25519 key fingerprint is SHA256:qRZ5kc/KX1+4VC1aJhIXzlrOu1HYj+UWCH7w8Posm6A.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-13-212-44-255.ap-southeast-1.compute.amazonaws.com' (ED25519) to the list of known hosts.
# 
~\### Amazon Linux 2023
~\###]
~\#/
~\ V-'/-->
~\ /'/
~\ /'/
[ec2-user@ip-172-31-41-168 ~]$ █
```



Maven & Java

Apache Maven is a build automation tool used primarily for Java projects. It simplifies the process of managing project dependencies, building applications, and deploying artifacts, allowing developers to focus on coding rather than configuration.

Maven is required in this project because it simplifies the build process, manages project dependencies, and automates tasks like compilation and packaging. This helps streamline development and ensures consistent builds for our Java web app.

Java is a high-level, object-oriented programming language widely used for building cross-platform applications. Known for its portability, security, and scalability.

Java is required in this project because it provides a robust, platform-independent programming environment ideal for web application development.



Emmanuel Enalpe III

NextWork Student

NextWork.org

Create the Application

I generated a Java web app using the command `mvn archetype:generate \ -DgroupId=com.nextwork.app \ -DartifactId=nextwork-web-project \ -DarchetypeArtifactId=maven-archetype-webapp \ -DinteractiveMode=false`. This creates the project structure.

```
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 10.831 s
[INFO] Finished at: 2024-10-10T06:48:55Z
[INFO] Final Memory: 17M/98M
```



Connecting VSCode with EC2

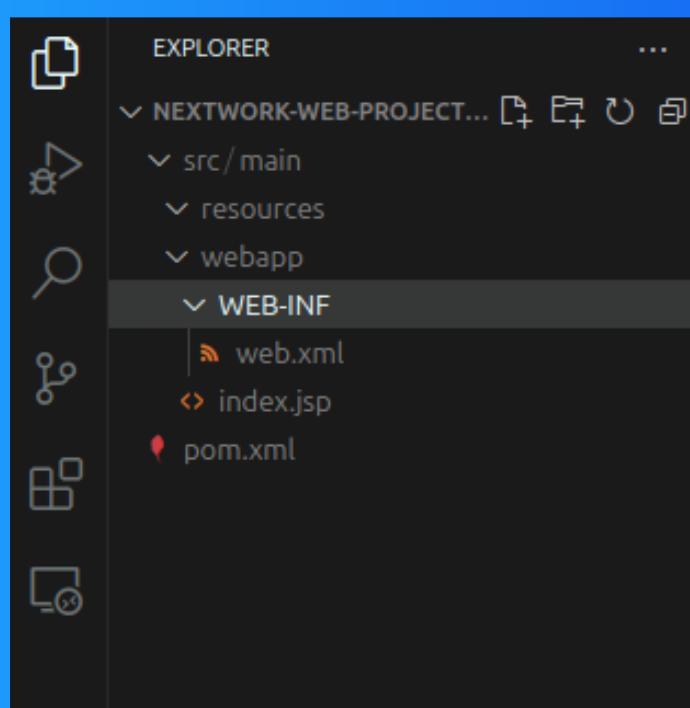
I installed the Remote - SSH extension to enable seamless remote access to my EC2 instance directly from VSCode. This allows me to edit files, run commands, and manage my Java web app efficiently without leaving the IDE.

Configuration details required to set up a remote connection include the server's IP address, the hostname for authentication, and the path to the private key file for secure access to the EC2 instance.

Create the Application

Using VSCode's file explorer, I could see the directory structure of my Java web app on the EC2 instance. This includes all project files, folders, and resources, allowing for easy navigation and management of the project's components.

Two of the project folders created by Maven are `src` and `webapp`, which organize the project's source code and web application files. The `src` folder contains Java source files, while the `webapp` folder holds HTML, CSS, and other web resources.





Create the Application

index.jsp is a JavaServer Pages (JSP) file that serves as the default landing page for a web application. It typically contains HTML and Java code, allowing dynamic content generation, and is often the first file accessed by users in a web app.

I edited `index.jsp` by opening the file in VSCode after connecting to the EC2 instance. I made the necessary changes to the code, such as updating the content and layout, then saved the file to apply the modifications to the web app.

```
↳ index.jsp  X
src > main > webapp > ↳ index.jsp > ...
1   <html>
2
3   <body>
4
5   <h2>Hello <YOUR Emmanue[l]>!</h2>
6
7   <p>This is my NextWork web application working!</p>
8
9   </body>
10
11  </html>
```



NextWork.org

Everyone should be in a job they love.

Check out nextwork.org for
more projects

