



Set Up a Web App in the Cloud

NE

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A screenshot of a Windows desktop environment. In the center, a code editor window titled "File: index.jsp" is open, displaying the following Java code:

```
<html>
<body>
<h2>Hello World!</h2>
<p>
Hello !
This is my NextWork web application working!
</p>
</body>
</html>
```

The code editor has a dark theme. To the left of the code editor is an "EXPLORER" sidebar showing a project structure:

- NEXTWORK WEB-PROJECT [SSH: EC2-3-10...]
- src / main
- resources
- webapp
- WEB-INF
- index.jsp
- pom.xml

Below the code editor, there is a terminal window with the text "Type here to search". The taskbar at the bottom shows various icons for common applications like File Explorer, Edge, and FileZilla.

Introducing Today's Project!

What is VSCode and why is it useful?

I used VSCode in today's project to connect to my EC2 instance via Remote-SSH, explore files using the file explorer, and edit the index.jsp file directly. This made it easier to navigate the project structure, write code, and manage my Java web app

How I'm using VSCode in this project

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One thing I didn't expect...

the difficulty level

This project took me...

2 hours

Launching an EC2 instance

I started this project by launching an EC2 instance because it provides scalable compute power to host and run my application. Setting up the instance ensures I have a secure, flexible environment to deploy, test, and manage my web app efficiently.

I also enabled SSH

SSH is a secure protocol for remotely accessing servers. I enabled SSH so that I could connect securely to my EC2 instance, manage it directly, and execute commands without compromising security.

Key pairs

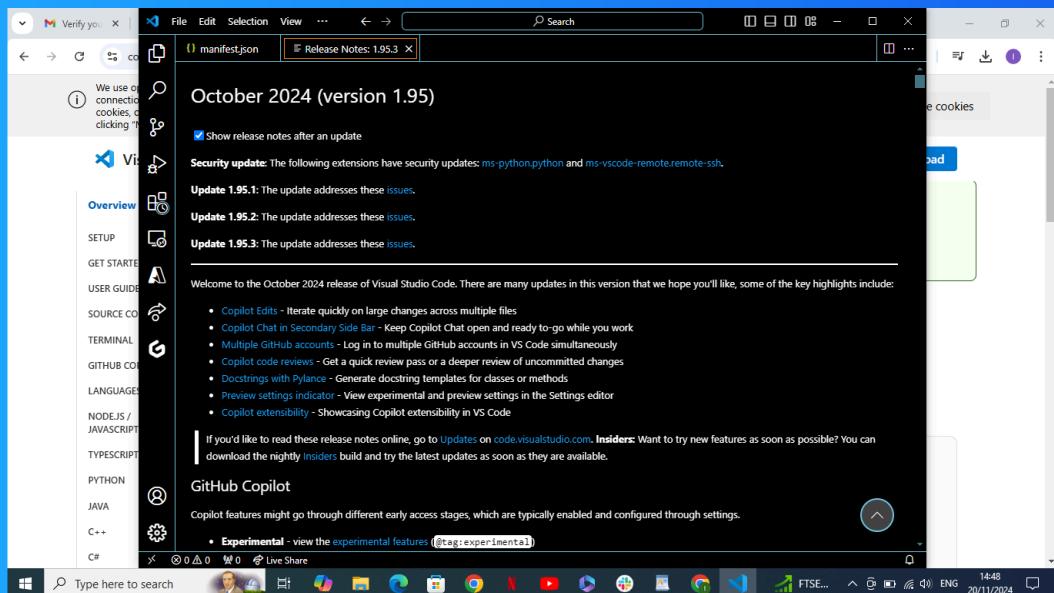
A key pair is a security feature in AWS used for authentication. It consists of a public key stored in AWS and a private key saved on your local device, enabling secure access to EC2 instances via SSH, ensuring only authorized users can log in.

Once I set up my key pair, AWS automatically downloaded the private key file (.pem) to my local computer. This file is essential for securely accessing the EC2 instance via SSH.

Set up VSCode

VSCode is a free, lightweight code editor by Microsoft, supporting multiple programming languages. It's highly customizable with extensions, has an integrated terminal, and allows you to manage files and connect to EC2 instances via SSH for seamless

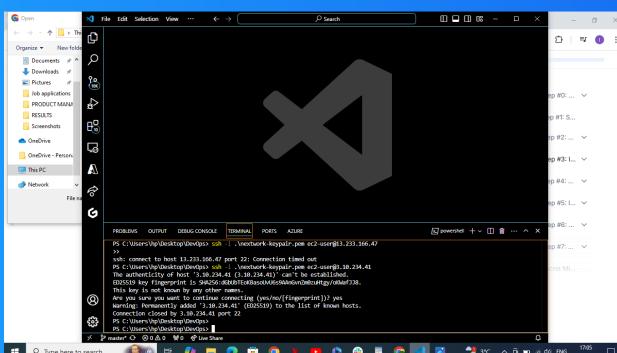
I installed VSCode to manage my development environment efficiently. It allows me to connect to my EC2 instance via SSH, edit and debug code directly, and use its integrated terminal to execute commands, ensuring a smooth and seamless development wor



My first terminal commands

A terminal is a command-line tool for interacting with systems. The first command I ran for this project is cd ~/Desktop/DevOps to navigate to the project folder and start working on the setup.

I also updated my private key's permissions by using the command chmod 400 nextwork-keypair.pem to ensure it was secure and only accessible to me. This step is crucial for establishing a secure SSH connection to my EC2 instance as required by AWS.

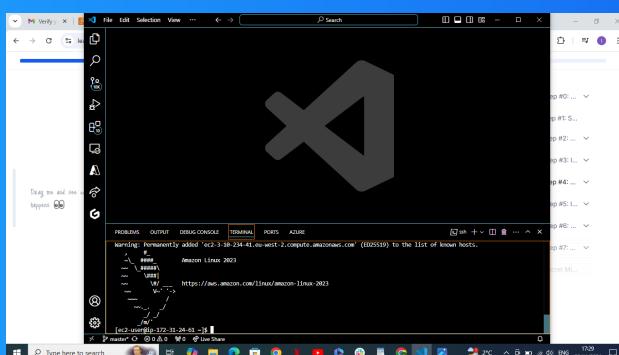


SSH connection to EC2 instance

To connect to my EC2 instance, I ran the command ssh -i "C:\Users\hp\Desktop\DevOps\nextwork-xxxx@ec2-3-10-234-41.eu-west-2.compute.amazonaws.com in the terminal. This allowed me to securely log in using my key pair and public IPv4 DNS

This command required an IPv4 address

A server's IPv4 DNS is the public address that maps to your EC2 instance, enabling devices on the internet to find and connect to it. It simplifies access by using a readable address instead of numerical IPs.



Maven & Java

Apache Maven is a build automation and dependency management tool for Java projects. It streamlines project builds, manages dependencies automatically, and provides templates (archetypes) to kickstart projects like web apps. It simplifies and speeds

Maven is required in this project because it automates the process of managing dependencies and setting up the project structure. It uses archetypes to generate the foundation for web apps, enabling developers to focus on coding instead of configuration

Java is a versatile, object-oriented programming language used to develop web, mobile, and desktop applications. It's platform-independent, meaning code runs anywhere with Java installed, and it's widely used in industries for its reliability, scalability

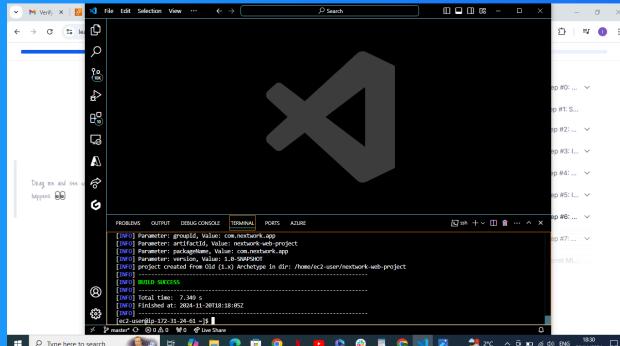
Java is required in this project because it's essential for building and running the web application. Its platform independence and strong community support make it ideal for creating scalable, reliable, and robust solutions like this one

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, which created a project structure and essential files

I installed Remote - SSH, which is a Visual Studio Code extension that enables secure connections to remote servers. I installed it to connect VSCode directly to my EC2 instance, allowing me to easily edit, navigate, and manage files for the Java web

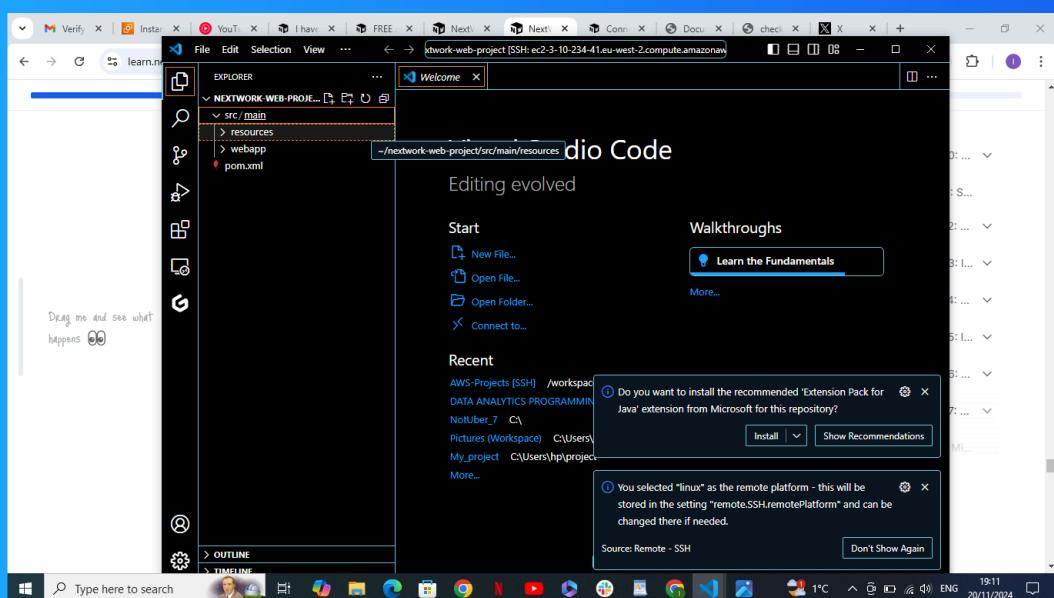
Configuration details required to set up a remote connection include the host's name (e.g., EC2 instance), its public IP or DNS, the username (e.g., ec2-user), and the path to the private key (.pem file) for secure authentication during SSH setup.



Create the Application

Using VSCode's file explorer, I could see the complete structure of my Java web app project, including all directories, files like index.jsp, pom.xml, and configuration files. It allowed easy navigation and editing of project components .

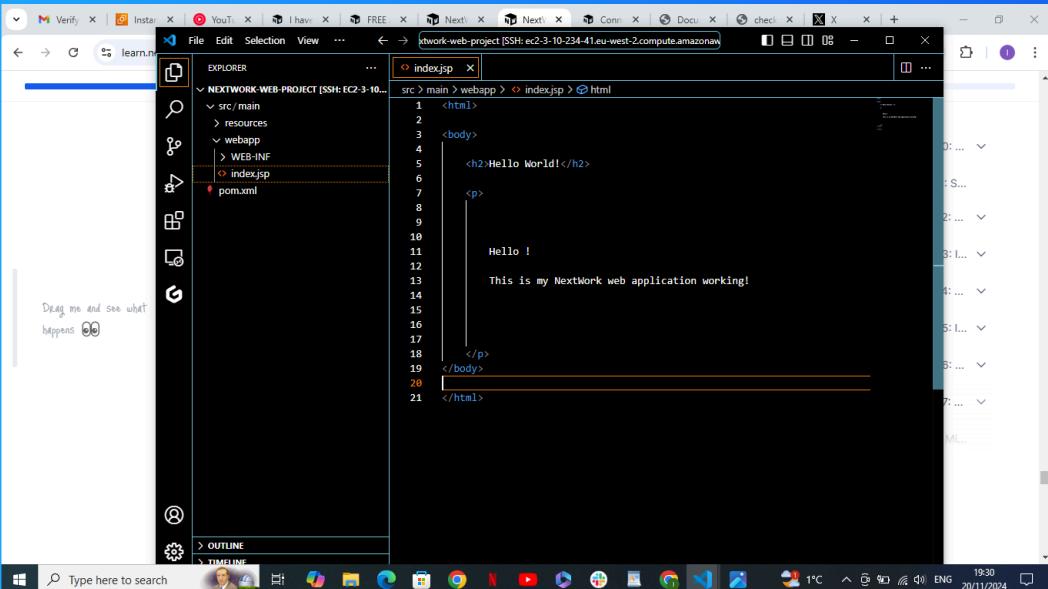
Two of the project folders created by Maven are src and webapp, which organize the Java web app's code and resources. The src folder holds Java source code, while webapp contains web resources like HTML, JSP files, and static content for the app.



Using Remote - SSH

index.jsp is the default landing page of a Java web application. It is a JSP (Java Server Pages) file that allows embedding Java code within HTML to create dynamic content. It serves as the entry point for users accessing the web app, displaying cust

I edited index.jsp by opening it in VSCode's file explorer, making changes to the HTML structure, and adding dynamic content using JSP tags. This allowed me to customize the web app's appearance and functionality to meet the project's requirements.



```
src > main > webapp > index.jsp > HTML
1 <html>
2
3 <body>
4
5 <h2>Hello World!</h2>
6
7 <p>
8
9
10 Hello !
11
12 This is my NextWork web application working!
13
14
15
16
17
18 </p>
19 </body>
20
21 </html>
```



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