



Set Up a Web App Using AWS and VSCode

DH

dhanushadithya70@gmail.com

```
<%@ page language="java" %>
<html>
<head>
<title>Hello World</title>
</head>
<body>
<h2>Hello [Dhanush]</h2>
<p>This is my NextWork web application working!</p>
</body>
</html>
```

Introducing Today's Project!

What is VSCode and why is it useful?

I used VSCode to connect to my EC2 instance, explore the file structure, and edit the Java web app's index.jsp file directly on the server.

How I'm using VSCode in this project

I used VSCode to connect to my EC2 instance, explore the file structure, and edit the Java web app's index.jsp file directly on the server.

One thing I didn't expect...

One thing I didn't expect in this project was how smoothly VSCode's Remote - SSH extension allowed me to edit files directly on the EC2 instance.

This project took me...

This project took me a 2 hours, including setting up the EC2 instance, configuring VSCode, and editing the web app files.

Launching an EC2 instance

I started this project by launching an EC2 instance because it provides a virtual server to host and run the web application, making it accessible on the internet.

I also enabled SSH

SSH is a secure network protocol used to remotely access and manage servers by encrypting the connection. I enabled SSH so that I can securely connect to my EC2, execute commands, and configure the web application without exposing sensitive data.

Key pairs

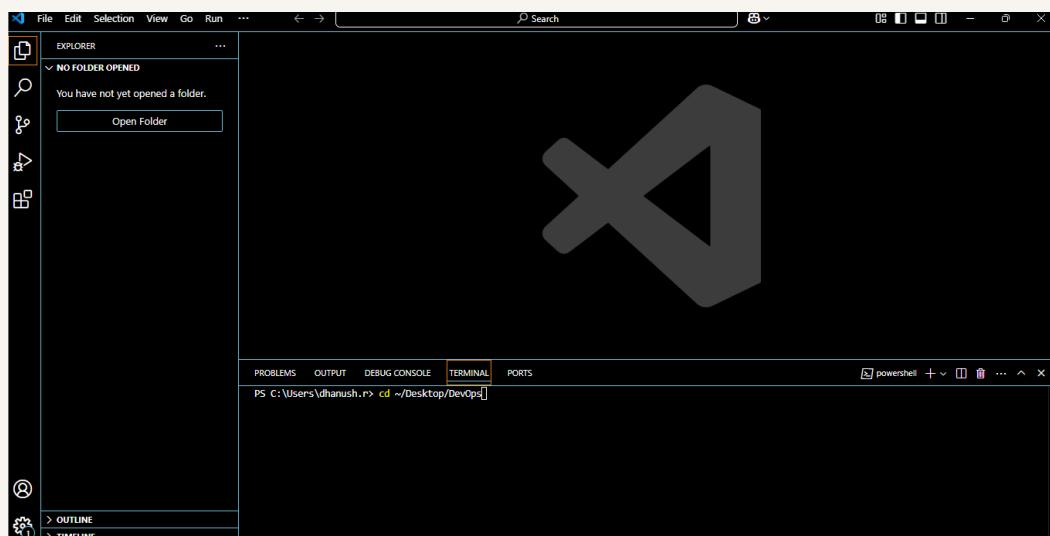
A key pair is a set of public and private keys used for secure access to an EC2 instance. The public key is stored on the instance, and the private key is used to connect securely.

Once I set up my key pair, AWS automatically downloaded the private key file (.pem) to my local computer for secure access to the EC2 instance.

Set up VSCode

VSCode is a lightweight, powerful code editor developed by Microsoft. It supports multiple programming languages, has built-in terminal access, and offers extensions for easier coding and remote server management.

I installed VSCode to edit and manage my web app's files, connect to my EC2 instance through the terminal, and easily deploy and update the application.





My first terminal commands

A terminal is a command-line interface used to interact with the operating system. The first command I ran for this project is `cd ~/Desktop/DevOps`, which navigates to the DevOps folder on my desktop, where I'll manage my project files.

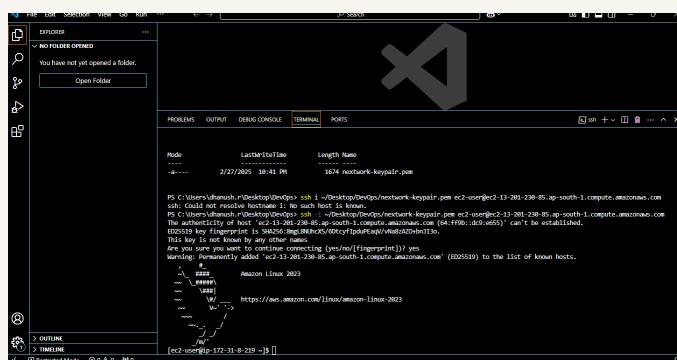
I also updated my private key's permissions by running chmod 400 nextwork-keypair.pem, which makes the file readable only by me, ensuring secure access to the EC2 instance.

SSH connection to EC2 instance

To connect to my EC2 instance, I ran the command `ssh -i ~/Desktop/DevOps/nextwork-keypair.pem ec2-user@ec2-13-201-230-85.ap-south1.compute.amazonaws.com`, which uses my private key to securely access the server through SSH.

This command required an IPv4 address

A server's IPV4 DNS is the domain name system address that maps the server's IP address to a human-readable domain name, allowing users to access the server using a URL instead of its numeric IP address.



The screenshot shows a terminal window in the Visual Studio Code interface. The title bar says "DESKTOP". The terminal tab is selected. The command entered is:

```
ssh -i ~/Desktop/DevOps/nextwork-keypair.pem ec2-user@ec2-13-201-230-85.ap-south1.compute.amazonaws.com
```

The output shows:

```
PS C:\Users\dhanush> ssh -i ~/Desktop/DevOps/nextwork-keypair.pem ec2-user@ec2-13-201-230-85.ap-south1.compute.amazonaws.com
PTY allocation request failed on channel 0
PS C:\Users\dhanush> ssh -i ~/Desktop/DevOps/nextwork-keypair.pem ec2-user@ec2-13-201-230-85.ap-south1.compute.amazonaws.com (64.FF98:dd9:a655)
The authenticity of host 'ec2-13-201-230-85.ap-south1.compute.amazonaws.com (64.FF98:dd9:a655)' can't be established.
This host could be malicious or an old version of OpenSSL is used.
Do you want to continue connecting? (yes/no) [yes]: yes
Warning: Permanently added 'ec2-13-201-230-85.ap-south1.compute.amazonaws.com' (ED25519) to the list of known hosts.
```

The terminal also displays the Amazon Linux 2023 logo and a link to the Amazon Linux website.

Maven & Java

Apache Maven is a build automation tool used for managing project dependencies, compiling code, and packaging applications, mainly for Java projects.

Maven is required in this project because it manages dependencies, compiles the code, and builds the web app, making the deployment process easier and more organized.

Java is a programming language and computing platform used to build and run applications on various devices, including servers, desktops, and mobile devices.

Java is required in this project because the web app is built using Java, and it needs a Java runtime environment to compile and run on the EC2 instance.

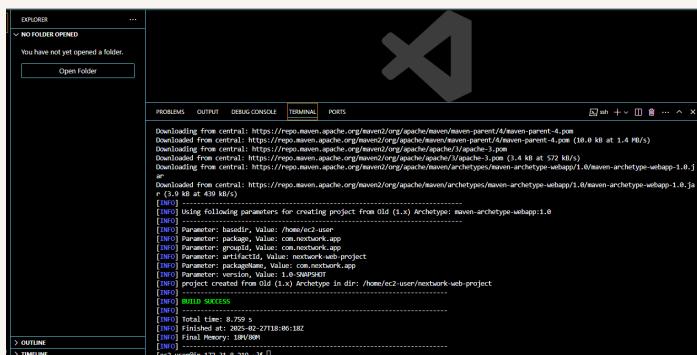


Create the Application

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 structure&files.

I installed Remote - SSH, which is a VSCode extension that lets you securely connect to remote servers. I installed it to access and edit my EC2 instance's files directly in VSCode, making development more convenient.

Configuration details required to set up a remote connection include the EC2 instance's hostname (IP address or DNS), the user name (ec2-user), and the path to the private key file used for secure SSH access.



Create the Application

Using VSCode's file explorer, I could see the directory structure and files of my EC2 instance, including the Java web app's source code, configuration files, and other project resources.

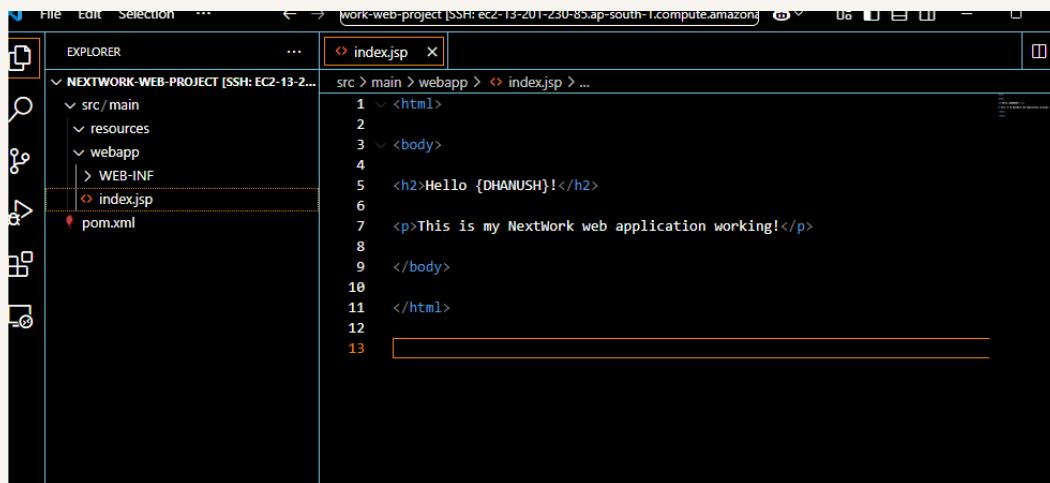
Two of the project folders created by Maven are src and webapp, which contain the source code and web application files. The src folder holds the Java source code, while the webapp folder stores web resources like HTML, CSS, and JSP files used for th



Using Remote - SSH

index.jsp is a JavaServer Page that serves as the default homepage for the web app. It contains HTML and embedded Java code, allowing dynamic content to be displayed when users visit the site.

I edited index.jsp by opening it in VSCode and modifying the HTML content to customize the web app's homepage.



A screenshot of the Visual Studio Code (VSCode) interface. The title bar shows the path: 'work-web-project [SSH: ec2-13-201-230-85.ap-south-1.compute.amazonaws]'. The left sidebar has icons for file explorer, search, and other tools. The main area is titled 'EXPLORER' and shows a tree view of a project named 'NEXTWORK-WEB-PROJECT [SSH: EC2-13-2...]' containing 'src/main', 'resources', 'webapp' (with 'WEB-INF' and 'index.jsp'), and 'pom.xml'. The 'index.jsp' file is selected and shown in the center editor pane. The code in the editor is:

```
1 <html>
2   <body>
3     <h2>Hello {DHANUSH}!</h2>
4     <p>This is my NextWork web application working!</p>
5   </body>
6 </html>
```



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