

Set Up a Web App Using AWS and VS Code

LW

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```
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2
3   <body>
4
5   <h2>Hello {YOUR NAME}!</h2>
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7   <p>This is my NextWork web application working!</p>
8
9   </body>
10
11  </html>
12
13  |
```

Introducing Today's Project!

In the 7 Day DevOps Challenge, we are building from scratch a CI/CD pipeline that automates the build and deployment of a web app.

Key tools and concepts

Services I used were VS Code and amazon EC2 src and webapp as well as installing java. Key concepts I learnt include how to create code using VS Code and incorporate it with Java, launching an instance and using key pairs.

Project reflection

One thing I didnt expect was using Linux in the VS Code instead of Windows. As i realised that AWS is associated with Linux and that's why it ran after clicking the Linux option.

The most challenging part was installing VS Code and Maven and Java, they where different for every O.S and need some research to complete. It was most rewarding to see the VS Code run under my created Web App.

This project is part one of a series of DevOps projects where I'm building a CI/CD pipeline! I'll be working on the next project day after tomorrow.

Launching an EC2 instance

I start by launching an EC2 instance because EC2 allows you to rent and use virtual computers in the cloud. They're like your personal computers, but they exist on the internet instead of being physically.

I also enabled SSH

SSH is a protocol used to make sure only authorized users can access a remote server. When you connect to your EC2 instance later in this project, SSH verifies you have the correct private key that matches the public key on the server.

Key pairs

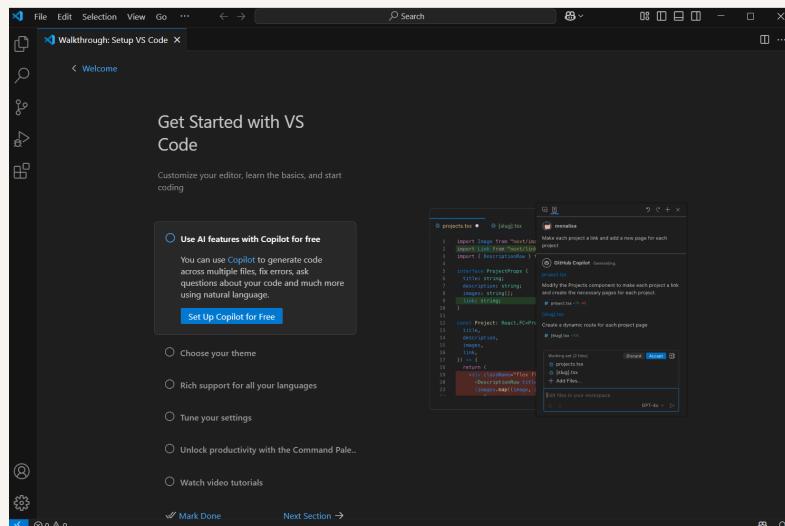
A key pair in a EC2 is like the keys to your virtual computer. Just like you need a key to start your car, a key pair lets you securely access your EC2 instance

Once I set up my key pair, AWS automatically downloaded nextwork-keypair.pem

Set up VS Code

VS Code is a platform that supports multiple programming languages with features like debugging, syntax highlighting and extensions for customization. This platform is top tier when it comes to efficient coding.

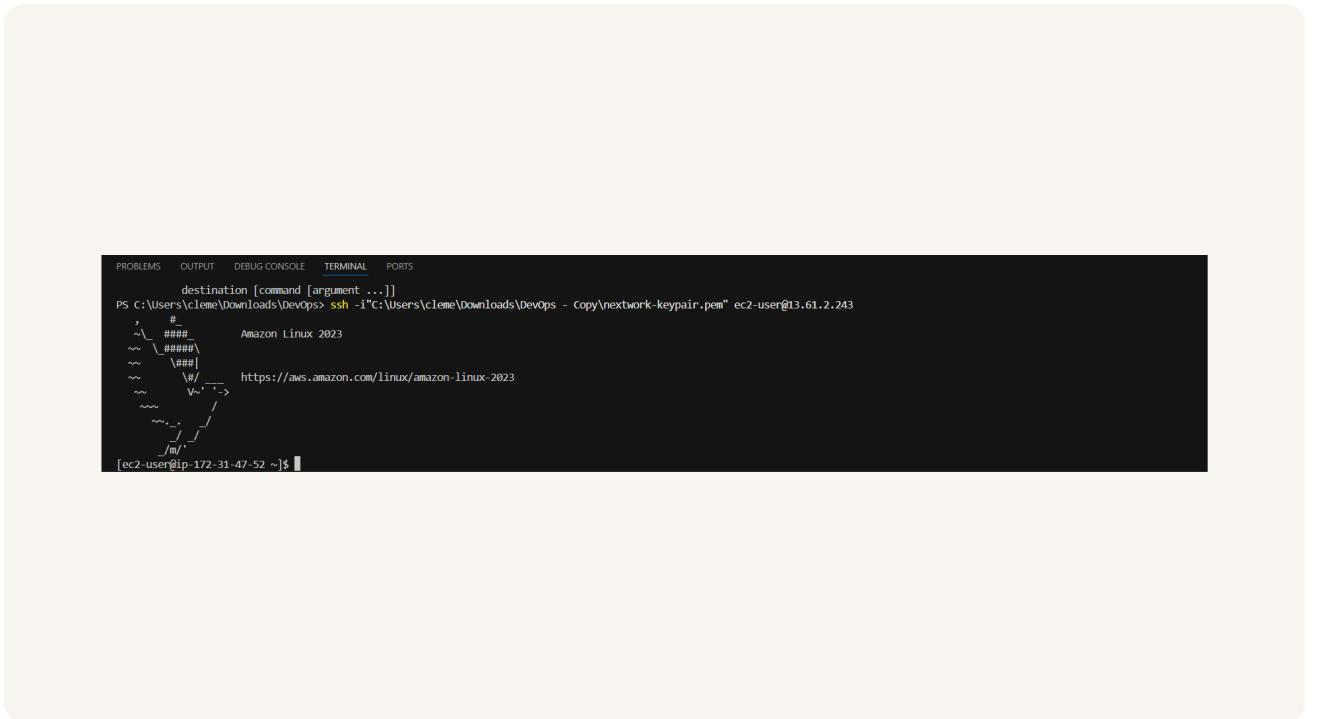
I installed VS Code to connect to my EC2 instant and run my web app from its platform. Using Java language and Maven and Amzon Corretto 8.



My first terminal commands

The first command I ran for this project is cd %Cleme%\Desktop\DevOps to go to my private key file.

I also updated my private key's permissions by running the command ssh i-h path to private key and it was EC2 user @ IPV4 address of the EC2 instance this command sets up the SSH connection directly between our local computer and our instance.



```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
destination [command [argument ...]]
PS C:\Users\Cleme\Downloads\DevOps> ssh -i "C:\Users\Cleme\Downloads\DevOps - Copy\nextwork-keypair.pem" ec2-user@13.61.2.243
#_
~\###_ Amazon Linux 2023
~~ \###_
~~ \#_
~~ \#/ https://aws.amazon.com/linux/amazon-linux-2023
~~ \v- .->
~~ /_
~~ /_
~~ /_
[ec2-user@ip-172-31-47-52 ~]$
```

SSH connection to EC2 instance

To connect to the EC2 instance we ran the command ssh -i (path to private key) and it was EC2 user@IPv4 address of EC2 instance this command sets up a ssh connection directly between our local computer and the instance.

This command required an IPv4 address

A server IPv4 DNS is like its public Address that identifies where there server lives in the cloud. In our case the EC2 instances IPv4 DNS is useful information to give to our local computer.

```
'~\_\_ #####_      Amazon Linux 2023
~~ \_\#\#\#\_\_
~~ \#\#\#
~~ \|#/ ___  https://aws.amazon.com/linux/amazon-linux-2023
~~ \~' '->
~~~ /
~~~ .-
~~~ /_/
~~~ /m'
Last login: Wed Apr  2 11:14:45 2025 from 197.82.160.124
[ec2-user@ip-172-31-47-52 ~]$
```

Maven & Java

Apache Maven is a tool that helps us with organising java projects like the web app it has a lot of used cases like being a Apache manager downloading a set of code.

Maven is required in this project because we want to use its ability to spin web apps within archetypes. We're about to set up java web app using the web app archetype.

Java is a programming language that we are using to develop our web app. You can use java to create different applications for mobile apps, large enterprise systems.

Java is required in this project because It lays the foundation of the writing of our web code. Maven needs it to create our web app within our terminals in order to work.

Create the Application

I generated Java web app using the command mvn archetype:generate \ to create the web app.

I installed Remote - SSH, which is an extension within VS Code. This extension allows us to connect VS Code directly to a remote server, like an EC2 instance.

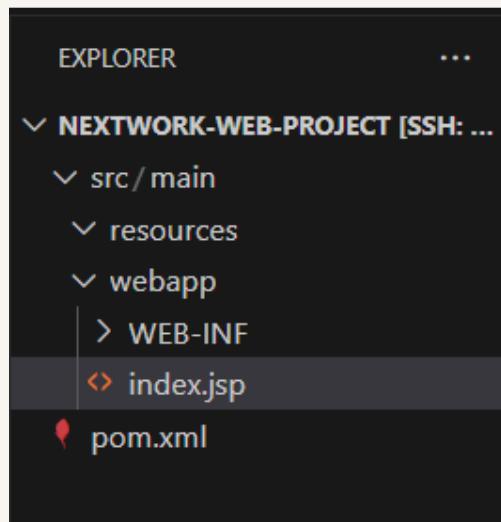
Configuration details required to set up a remote connection, include the host name I.E. the EC2 instance Address the identity file I.E. the location of our private key and the user which is the user we logging in to for our instance.

```
[INFO] project created from Old (1.x) Archetype in dir: /home/ec2-user/nextwork-web-project
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 9.149 s
[INFO] Finished at: 2025-04-03T08:50:46Z
[INFO] Final Memory: 19M/84M
[INFO] -----
```

Create the Application

Using VS Code's file explorer, I could see the my nextwork-web-project and a bunch of folders. These folders organise different parts of the web app for example the resources sub folder stores connection. These folders can be expended and viewed.

Two of the project folders created by Maven are src and webapp, which organise different parts of the web app.



Using Remote - SSH

Index.jsp is the file name for my web app folder, that defines both HTML content I.E. the static elements that go into our web app page, as well as any code for generating dynamic content I.E content that is always changing.

I edited index.jsp by updating the HTML code to say Hello Lwazi. We also edited a paragraph saying "This is my NextWork web application working".

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