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Set Up a Web App Using AWS and VS Code



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```
← →          ↗ ec2-user [SSH: my-ec2]
index.jsp ×
nextwork-web-project > src > main > webapp > index.jsp > html
1  <html>
2
3  <body>
4
5  <h2>Hello enter your name!</h2>
6
7  <p>This is my NextWork web application working!</p>
8
9  </body>
10
11 </html>
```



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Introducing Today's Project!

In this 7 days challenge, I will be setting up the foundation of a CI/CD pipeline by creating a web app from scratch, I will need to launch an EC2 instance and connect to the instance over using VS code to generate a web app inside.

Key tools and concepts

Services I used were vs code and amazon ec2. Key concepts I learnt include ssh connections, using an IDE launching an instance, editing an index.jsp file, and using key pairs.

Project reflection

One thing I didn't expect in this project was the secret mission where using the local terminal to try edit a file after using an ide.

This project took me approximately 2:30 hr including demo and trouble shooting time. It was most rewarding to see a successful ssh connection to an ec2 instance.



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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 soon



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Launching an EC2 instance

I started this project by launching an EC2 instance because they are like virtual computers that live in the cloud, I want my web app to live in the cloud, reason why I'm launching an EC2 instance to develop the web app code

I also enabled SSH

SSH is the protocol that authorises users to access remote servers, it is also a type of traffic that lets me transfer data back and forth with my EC2 instances. I enabled SSH so that I can securely connect to my EC2 instance securely from my IP address

Key pairs

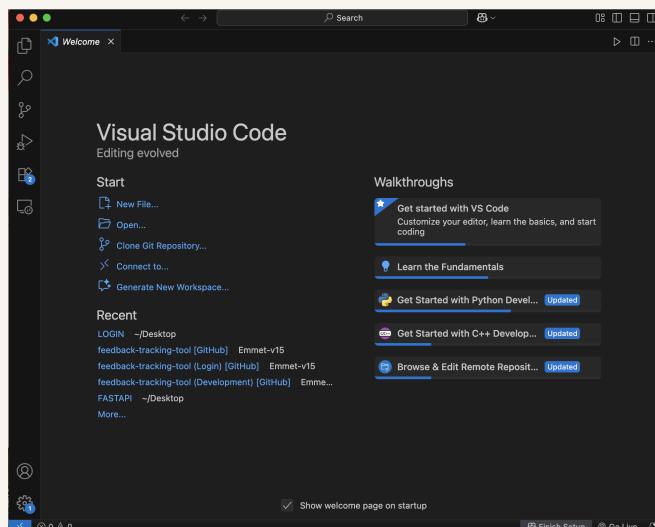
A key pair is a mechanism for us to get access or connect to EC2 instances we launch at AWS, I've created a key pair for the EC2 instance I'm launching. Key pairs work by having two halves, a public key that AWS key and a private key we download.

Once I set up my key pair, AWS automatically downloaded the private key file called Nextwork, for safe keeping I moved that private key file in a folder in my desktop named DevOps

Set up VS Code

VS Code is free, lightweight code editor developed by Microsoft, with key features which include; Code editing, Extensions, Integrated terminal, Debugging and Remote Development

I installed VS Code to connect to the remote ec2 instance, to act as my code editor as well



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My first terminal commands

A terminal is a place to send command to my computer. The difference between a terminal and Click drag interface, is that i send text commands in the terminal. The first command neguvates the terminal to thr DevOps folder. cd /Desktop/DevOps

I also updated my private key's permissions by running the command chmod, this command gives the priviledge me access to connect to the EC2 insance.

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS

○ ogechiigwegbe@Ogechis-MacBook-Pro ~ %
● ogechiigwegbe@Ogechis-MacBook-Pro ~ % cd /Desktop/DeveOps
cd: no such file or directory: /Desktop/DeveOps
○ ogechiigwegbe@Ogechis-MacBook-Pro ~ %
● ogechiigwegbe@Ogechis-MacBook-Pro ~ % cd ~/Desktop/DevOps
● ogechiigwegbe@Ogechis-MacBook-Pro DevOps % ls
Esther-Dev-IAM-Admin_credentials (1).csv      Esther-Dev-IAM-Admin_credentials.csv
● ogechiigwegbe@Ogechis-MacBook-Pro DevOps % chmod 400 nextwork-keypair.pem
nextwork-keypair.pem
```

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SSH connection to EC2 instance

To connect to my EC2 instance, I ran the command ssh -i path to private key ec2 user@ipv4 address of ec2 instance. This commands sets up an SSH connection directly between my local computer and instance.

This command required an IPv4 address

A server's IPV4 DNS is a public address that identifies where the sever lives in the cloud. In this case its a useful information to give to my local computer, telling it where to find the EC2 instance i launched.

The screenshot shows a terminal window with a dark background. On the left, there are several icons: a question mark, a gear with a '1' inside, and other standard terminal navigation symbols. The main area of the terminal displays a command-line interface. At the top, there is some decorative ASCII art consisting of various symbols like '#', '=', and '/'. To the right of the art, the text "Amazon Linux 2023" is displayed. Below that, a blue rectangular button contains the text "Follow link (cmd + click)" and a URL: "https://aws.amazon.com/linux/amazon-linux-2023". The bottom part of the terminal shows a command prompt: "[ec2-user@ip-172-31-34-160 ~]\$".



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Maven & Java

Apache Maven is a tool that helps in creating, organisg Java projects, it has alot of use cases like being a package manager, dowloading piece of code, it is also a tool that uses Archetype for spinning up projects like web apps.

Maven is required in this project because i want to use its ability to spin up web apps, using archetypoe. I'm about to set uio my Java web app using this tool

Java is a programming language I'm using to develop the web app, it can be used to to develop all different kinds of app on the web. its a porpular and versatile choice.

Java is required in this project because it lays the foundation of thge writing the web app code. Its like neeeding to know a language to speak it. Maven also needs java to work.

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Create the Application

I generated a Java web app using the command mvn archetype:generate. This command tells maven to generate a web using an existing template it has and also call the generated web app projectnextwork-web-project.

I installed Remote SSH which is an extension within VS code, it lets us connect vs code directory to a remote server like an ec2 instance

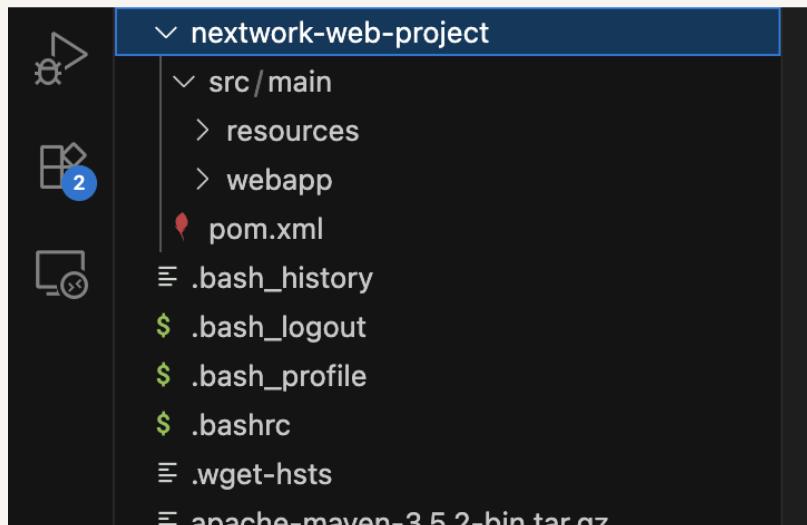
Configuration details required to set up a remote connection include the host ie the ec2 instance address, identity file ie the location of my private key and the user using to login to the instance

```
[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 8.106 s
[INFO] Finished at: 2025-09-27T11:06:03Z
[INFO] Final Memory: 19M/84M
[INFO]
[ec2-user@ip-172-31-34-160 ~]$
```

Create the Application

Using VS Code's file explorer, I could see folders and sub folders that define my web app, these folders organise different part of the web app. Folder can be expanded by clicking on the angle brackets.

Two of the project folders created by Maven are src and webapp, SRC is the parent folder that contains all the source code for the web app.



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Using Remote - SSH

The index.jsp is the file in our web app that defines both html content, ie the static element that goes into our web app page, as well as any code that generic dynamic context (content that is always changing)

I edited index.jsp by updating the html code, to also say Hello Esther!, also added some paragraph, i.e some text that says my web app.

```
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↳ index.jsp ✘
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