



Set Up a Web App in the Cloud



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The screenshot shows a code editor interface with a dark theme. On the left is the Explorer sidebar, which lists the project structure:

- NEXTWORK-WEB-PROJ...
 - src/main
 - resources
 - webapp
 - WEB-INF
 - web.xml
 - index.jsp
 - pom.xml

The right pane displays the content of the selected file, index.jsp:

```
1 <html>
2
3 <body>
4
5 <h2>Hello {Alexander Ten!</h2>
6
7 <p>This is my NextWork web application working!</p>
8
9 </body>
10
11 </html>
12 |
```

Introducing Today's Project!

What is VSCode and why is it useful?

I used it specifically to install Apache Maven, Amazon Coretto and utilize SSH Remote to create the web app and connect to it.

How I'm using VSCode in this project

I used it specifically to install Apache Maven, Amazon Coretto and utilize SSH Remote to create the web app and connect to it.

One thing I didn't expect...

I did not expect to see how amazing AWS can be when it comes to creating projects with VSCode.

This project took me...

It did not expect to see how sensitive connecting to my host can be if credentials are not put in place correctly.

Launching an EC2 instance

I started this project by launching an EC2 instance because it will be used to house my web app's files. Without launching an EC2 instance first, I would not have location for setting up my web app.

I also enabled SSH

SSH (Secure Shell) is a protocol used to securely access and manage a remote computer over an unsecured network. It encrypts the connection between the client (your local machine) and the server, ensuring confidentiality and integrity of the transmit

Key pairs

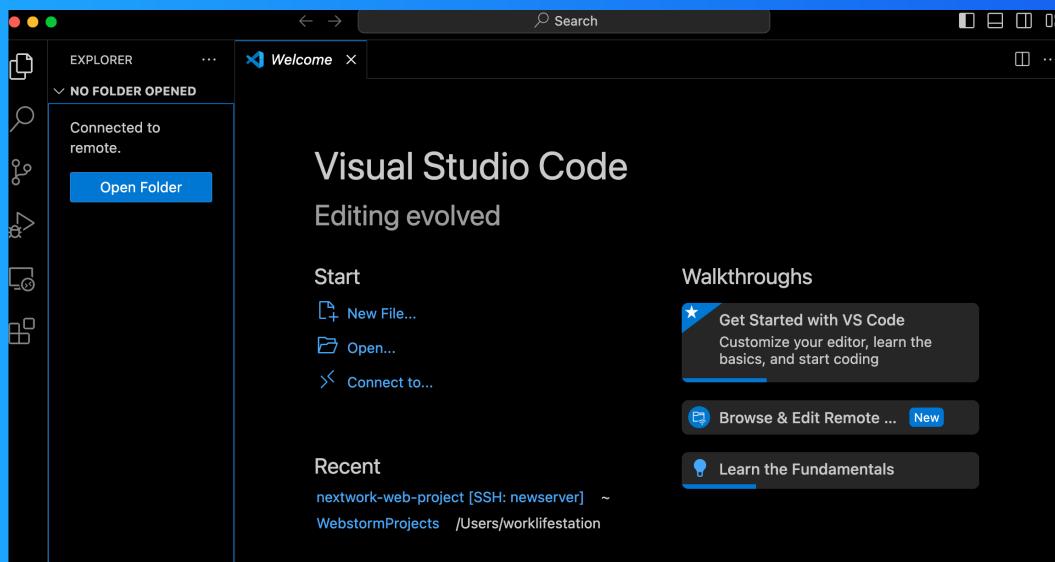
A key pair is a set of two cryptographic keys used in public-key encryption: a private key and a public key. These keys are mathematically linked and are used to secure access to systems like your AWS EC2 instances via Secure Shell (SSH).

Once I set up my key pair, AWS automatically downloaded a pem file which allows access to my ec2 instance.

Set up VSCode

Visual Studio Code (VSCode) is a free, open-source, and highly customizable code editor developed by Microsoft. It is widely used by developers for writing and editing code in various programming languages.

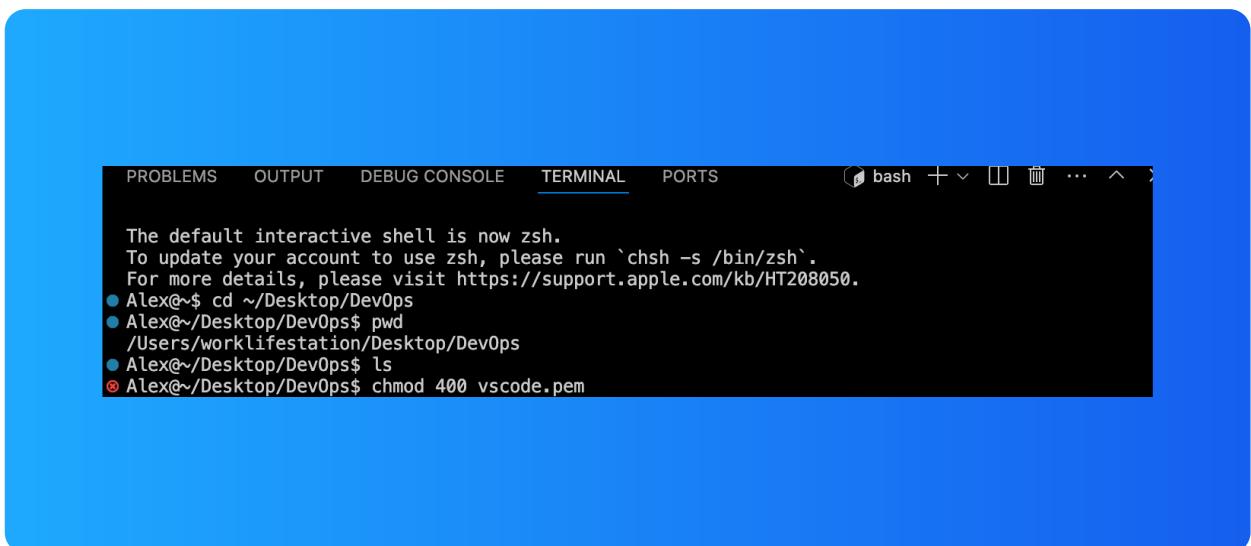
VSCode is a versatile code editor that can be used for a wide variety of development tasks. In our case we will use it to develop a cloud environment.



My first terminal commands

The first command I ran for this project is ~/Desktop/DevOps/ which changes home directory to the devops folder housing our private key.

I also updated my private key's permissions by running the chmod 400 command. This command to specify that we will have permission to that file while also blocking other user groups.



A screenshot of a terminal window with a blue header bar. The header bar contains tabs for PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL (which is underlined), and PORTS. To the right of the tabs are icons for bash, a plus sign, a dropdown arrow, a search icon, three dots, a double arrow, and a right-pointing arrow. The main terminal area has a black background and white text. It displays the following content:

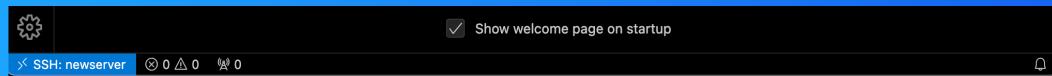
```
The default interactive shell is now zsh.  
To update your account to use zsh, please run `chsh -s /bin/zsh`.  
For more details, please visit https://support.apple.com/kb/HT208050.  
● Alex@~: cd ~/Desktop/DevOps  
● Alex@~/Desktop/DevOps$ pwd  
/Users/worklifestation/Desktop/DevOps  
● Alex@~/Desktop/DevOps$ ls  
● Alex@~/Desktop/DevOps$ chmod 400 vscode.pem
```

SSH connection to EC2 instance

To connect to my EC2 instance, I ran the command `ssh -i ~/.ssh/vscode.pem ec2-user@54.211.147.231` which allowed a connection to my EC2 instance using SSH via VSCode. I used the SSH remote extension to make sure that connection was successful.

This command required an IPv4 address

A server's IPv4 DNS is its public address. Computer/servers connected to the internet can use public IPv4 DNS to find and locate another's server.



Maven & Java

Apache Maven is a tool/package manager for the building process of software. Maven is extremely helpful for bringing in packages into our application.

Maven is required in this project because its extremely helpful for bringing in packages into our application.

Java is a programming language used to develop all kinds of applications. We downloaded Amazon Coretto 8 which gives us a specific version of Java that's managed by Amazon/AWS.

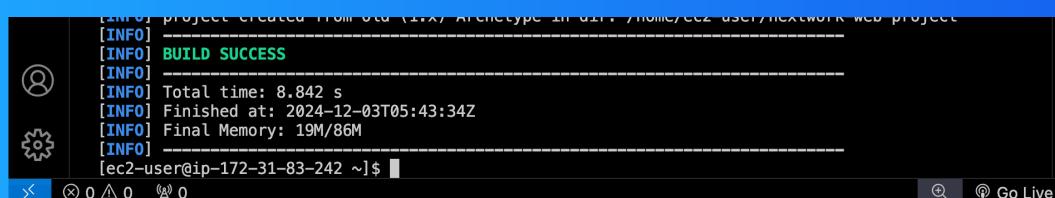
Java is required in this project because we want to build a Java web app and we will need to install it first in order to run any Java commands.

Create the Application

I generated a Java web app using the Maven commands that sets up a basic web app.

I installed Remote - SSH extension to connect VSCode directly to our EC2 instance. Doing this means that we can later use VSCode an IDE for the Java web files in our EC2 instance.

Configuration details required to set up a remote connection. This file included the host/host name/Identity file/ user.



```
[INFO] project created from old (v1x) Archetype in dir: /home/ec2-user/nextwork-web-project
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 8.842 s
[INFO] Finished at: 2024-12-03T05:43:34Z
[INFO] Final Memory: 19M/86M
[INFO]
[ec2-user@ip-172-31-83-242 ~]$
```

Create the Application

Using VSCode's file explorer, we could see at a glance a file tree of all the subfolders and files that make up the nextwork-web-project folder for our java web app.

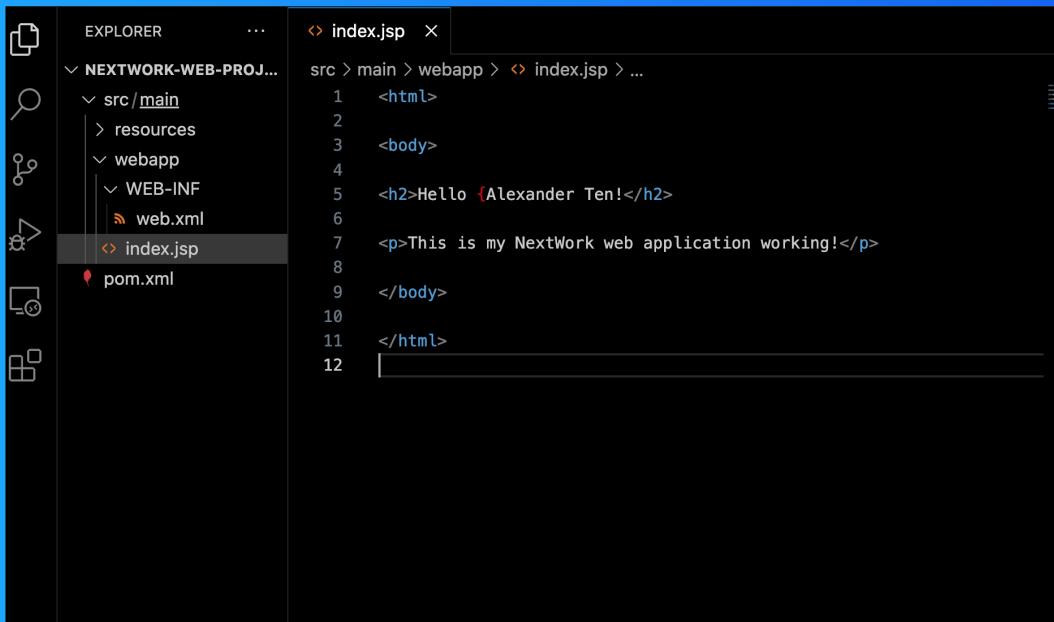
Two of the project folders created by Maven are src and webapp, src contains all of the web app source code, the code that defines the web app's look and feel. Whereas webapp is a subfolder or src that focuses on what the users will see..



Using Remote - SSH

Index.jsp is a filw withing the web app folder, and it defines the index of a java web app.

I edited the index.jsp by using VsCode.



The screenshot shows the Visual Studio Code interface. On the left is the Explorer sidebar, which displays a project structure for 'NEXTWORK-WEB-PROJ...'. The 'index.jsp' file is selected in the list. The main area is the Editor, showing the content of 'index.jsp':

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



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