



NextWork.org

Set Up a Web App in the Cloud



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The screenshot shows an IDE window titled 'nextwork-web-project [SSH: 3.109.158.189]'. The Explorer panel on the left shows the project structure: 'src' > 'main' > 'webapp' > 'html' > 'body'. The main editor displays the content of 'index.jsp', which contains the following HTML code:

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

The status bar at the bottom indicates 'SSH: 3.109.158.189', 'Ln 8, Col 1', 'Spaces: 4', 'UTF-8', 'LF', 'HTML', and 'Java Ready'.



Introducing Today's Project!

What is VSCode and why is it useful?

I used VSCode by doing remote SSH into EC2 Instance and then modifying the webapp index.jsp file directly via IDE.

How I'm using VSCode in this project

I used VSCode by doing remote SSH into EC2 Instance and then modifying the webapp index.jsp file directly via IDE.

One thing I didn't expect...

N/A

This project took me...

Around 2 hours.



Launching an EC2 instance

Since we want our web app to be entirely created and run on the cloud, we'll use a virtual server (EC2 instance) to house our development work.

I also enabled SSH

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

Key pairs

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

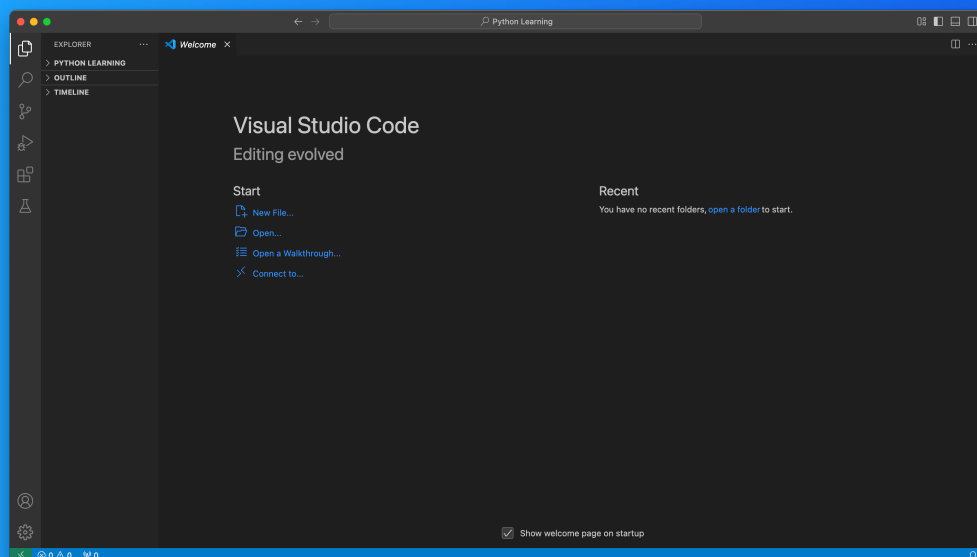
Once I set up my key pair, AWS automatically downloaded "devops-keypair.pem" file.



Set up VSCode

VSCode is one of the most popular tools for creating and managing coding projects.

I installed VSCode to connect with my instance, so i can create and edit my web app's code.





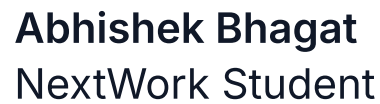
My first terminal commands

A terminal is where you send instructions to your computer using text instead of clicks. The first command I ran for this project is `cd ~/Desktop/DevOps`.

I also updated my private key's permissions by `chmod 400 nextwork-keypair.pem` `chmod` command stands for "change mode", and it changes the permissions of your `.pem` file. Using `400` makes it readable only by you (owner) and restricts access for others.

```
Toggle Terminal
Find in Files
Start Debugging

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
abhishekbhagat@Abhisheks-MacBook-Pro ~ % ls
Desktop Documents Downloads Games Library Movies Music Pictures Public
abhishekbhagat@Abhisheks-MacBook-Pro ~ % cd Desktop
abhishekbhagat@Abhisheks-MacBook-Pro Desktop % ls
AWS Projects Screenshot 2024-12-13 at 11:57:43 AM.png Screenshot 2024-12-13 at 12:03:29 PM.png Study
abhishekbhagat@Abhisheks-MacBook-Pro Desktop % cd DevOps
abhishekbhagat@Abhisheks-MacBook-Pro DevOps % ls
devops-keypair.pem
abhishekbhagat@Abhisheks-MacBook-Pro DevOps % chmod 400 devops-keypair.pem
abhishekbhagat@Abhisheks-MacBook-Pro DevOps %
```



This command required an IPv4 address

[illegible]



Maven & Java

Apache Maven is a powerful tool that automates the building of software.

Maven is required in this project because it helps in turning your code into a final product (like web apps) that is ready for virtual machines (like EC2 instances) to host.

Java is a popular programming language used to build different types of applications, from mobile apps to large enterprise systems.

Java is required in this project because we are going to host Java web app.



Create the Application

I generated a Java web app using the following command: `mvn archetype:generate \ -DgroupId=com.nextwork.app \ -DartifactId=nextwork-web-project \ -DarchetypeArtifactId=maven-archetype-webapp \ -DinteractiveMode=false`

I installed Remote - SSH, which is an extension in VSCode. I installed it to connect directly via SSH to another computer securely on the internet.

Configuration details required to set up a remote connection include Host, HostName, IdentityFile, User.

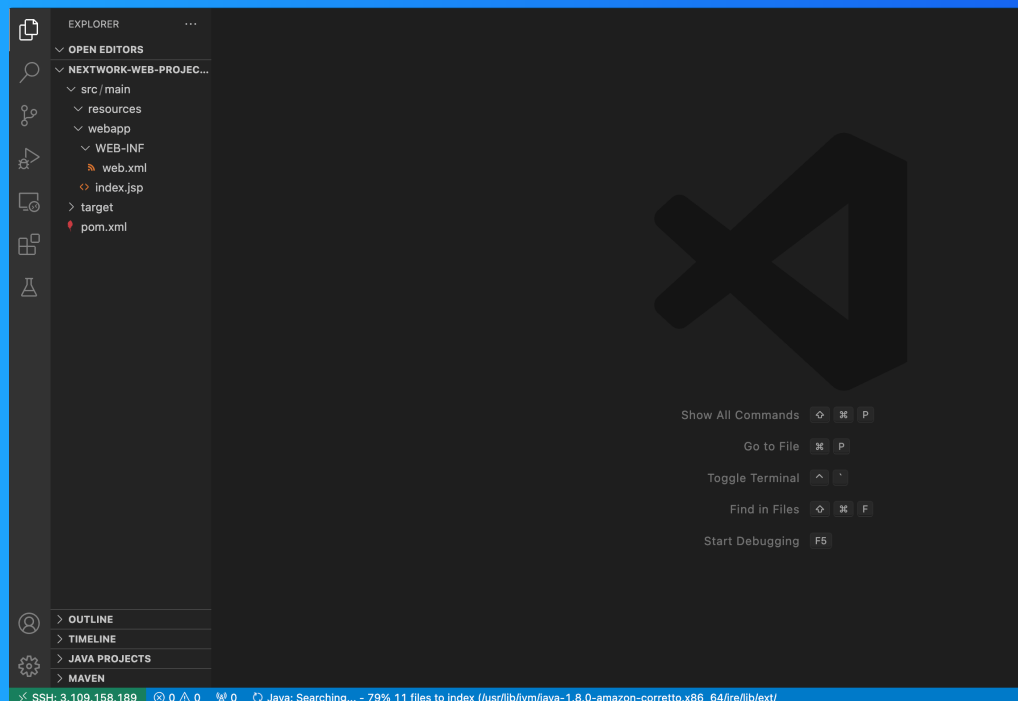
```
0 at 494 KB/s)
[INFO]
[INFO] Using following parameters for creating project from Old (1.x) Archetype: maven-archetype-webapp:1.0
[INFO]
[INFO] Parameter: basedir, Value: /home/ec2-user
[INFO] Parameter: package, Value: com.nextwork.app
[INFO] Parameter: groupId, Value: com.nextwork.app
[INFO] Parameter: artifactId, Value: nextwork-web-project
[INFO] Parameter: packageName, Value: com.nextwork.app
[INFO] Parameter: version, Value: 1.0-SNAPSHOT
[INFO] project created from Old (1.x) Archetype in dir: /home/ec2-user/nextwork-web-project
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 8.667 s
[INFO] Finished at: 2024-12-13T07:12:00Z
[INFO] Final Memory: 17M/99M
[INFO]
[ec2-user@ip-172-31-0-14 ~]$
```




Create the Application

Using VSCode's file explorer, I could see the project's Source File, Resources, WebApp and pom.xml which is Maven Project Object Model file. It stores information and configuration details that Maven will use to build the project.

Two of the project folders created by Maven are src and webapp: src holds all the source code files. src is further byfurcated into webapp which has web app's files.





Using Remote - SSH

index.jsp is a file used in Java web apps.

I edited index.jsp by changing the placeholder code with another code.

The screenshot shows an IDE window titled 'nextwork-web-project [SSH: 3.109.158.189]'. The Explorer panel on the left shows the project structure with 'index.jsp' selected under 'WEB-INF'. The main editor area displays the following code:

```
1 <html>
2
3 <body>
4
5 <h2>Hello <YOUR_NAME>!</h2>
6
7
8 <p>This is my NextWork web application working!</p>
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