

Set Up a Web App Using AWS and VS Code



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The screenshot shows a dark-themed instance of VS Code. In the center-right is the code editor window displaying the file `index.jsp`. The content of the file is:

```
<html>
<body>
<h2>I am changing it....</h2>
</body>
</html>
```

To the left of the editor is the Explorer sidebar, which lists the project structure:

- OPEN EDITORS: `index.jsp`
- NEXTWORK-WEB-PROJE... (expanded)
 - src/main
 - resources
 - webapp
 - WEB-INF
 - `index.jsp`
 - `pom.xml`



Introducing Today's Project!

In today's project, we are going to start our 7 day devops journey. In these we are build full-fleeged web app. This is the first day so we are going to set foundation and to be more clear we are gooing to create ec2 instance and connect it to vscode.

Key tools and concepts

Services I used were vscode and ec2 instance Key concepts I learnt include creating ec2 instance and connecting it with the help of IDE(vscode).

Project reflection

I didn't expect that with th help of vscode we can keep track of web app.

This project took me approximately 2.5 hours The most challenging part was connecting it with vscode It was most rewarding to see the we app file structure on vscode.

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 tomorrow!

Launching an EC2 instance

started this project by launching an EC2 instance because it is like a virtual computer and we want our web app to be completely on cloud so we will need virtual computer.

I also enabled SSH

SSH is secured shell I enabled SSH so that it can give access to authorized users to access remote server and other than that it will create a channel of connection between us and server so we can transfer data between each other.

Key pairs

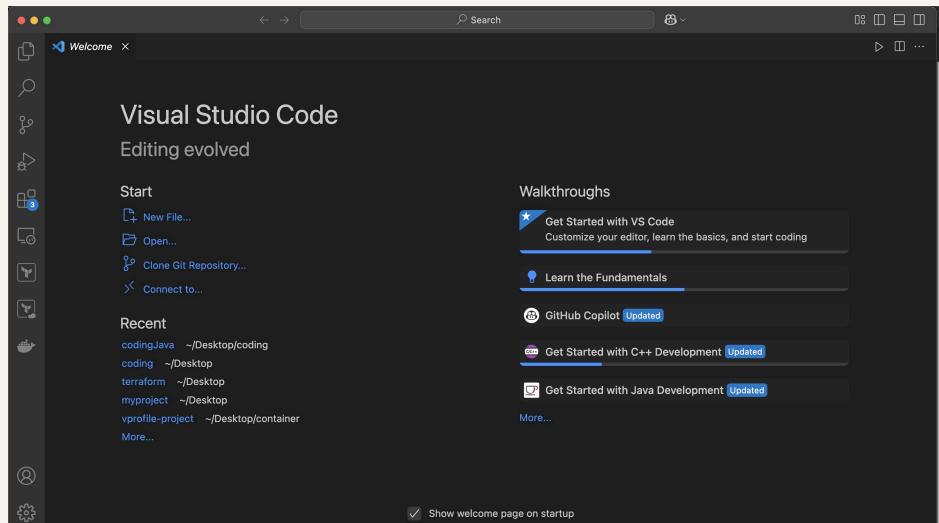
A key pair is pair of keys which are being used so there is a security layer to use the ec2 instance. It consists of private and public key. private key is downloaded in our pc and public key is kept by aws and when we try to login it will check both.

Once I set up my key pair, AWS automatically downloaded file in .pem extension. It consist of the private part of the key.

Set up VS Code

VS Code is Integrated development environment. It is being used so write code as it has various inbuilt extensions to enhance our experience.

I installed VS Code to use my ec2 instance through terminal in vscode. terminal in vscode act as a bridge to connect to our ec2 instance.





My first terminal commands

A terminal is the tool to connect to our computer directly with the use of text instead of drag and click. The first command I ran for this project is cd ~/Desktop/DevOps as my key-pair is in devops folder.

I also updated my private key's permissions by giving command chmod 400 dray-nextwork-key.pem. It gives permission to read to us as it is a private file it has no permission to read.

```
Gaurav's-MacBook-Pro:~ gauravbalpande$ cd devops
Gaurav's-MacBook-Pro:devops gauravbalpande$ ls
dray-nextwork-key.pem
Gaurav's-MacBook-Pro:devops gauravbalpande$ chmod 400 dray-nextwork-key.pem
Gaurav's-MacBook-Pro:devops gauravbalpande$
```



SSH connection to EC2 instance

To connect to my EC2 instance, I ran the command `ssh -i dray-nextwork-key.pem ec2-user@ec2-13-203-155-49.ap-south-1.compute.amazonaws.com`.

This command required an IPv4 address

A server's IPV4 DNS is the address of our ec2 instance within the cloud. It help our local computer to track the location of ec2 instance.

```
Gaurav's-Laptop:desktop gauravbalpande$ cd devops
Gaurav's-Laptop:devops gauravbalpande$ ls
dray-nextwork-key.pem
Gaurav's-Laptop:devops gauravbalpande$ chmod 400 dray-nextwork-key.pem
Gaurav's-Laptop:devops gauravbalpande$ ssh -i dray-nextwork-key.pem ec2-user@ec2-13-203-155-49.ap-south-1.compute.amazonaws.com
The authenticity of host 'ec2-13-203-155-49.ap-south-1.compute.amazonaws.com (13.203.155.49)' can't be established.
ED25519 key fingerprint is SHA256:C2lC415S0f9E5+zdaxkisb0TgpeqmkC1/c5z5QBDc0.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-13-203-155-49.ap-south-1.compute.amazonaws.com' (ED25519) to the list of known hosts.
#
~\`###          Amazon Linux 2023
~~\`####
~~\`###          https://aws.amazon.com/linux/amazon-linux-2023
~~\`###_
~~\`##_/
~~\`##_/
~~\`##_/
[ec2-user@ip-172-31-8-34 ~]$
```



Maven & Java

Apache Maven is a tool that helps developers build and organize Java software projects. It's also a package manager, which means it automatically download any external pieces of code your project depends on to work.

Maven is required in this project because as a package manager and manage other java based things.

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 create web app and for that we need java as a language.

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

I installed Remote - SSH, which is extension in vscode I installed it to connect ec2 instance directly with vscode.

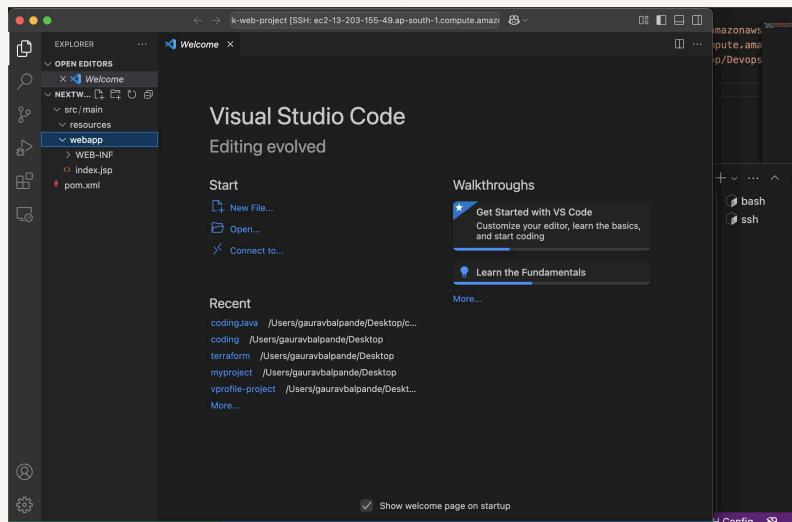
Configuration details required to set up a remote connection include hostname, key path and public ipv4 DNS.

```
[INFO] Using following parameters for creating project from Old (1.x) Archetype: maven-archetype-webapp:1.0
[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: 9.333 s
[INFO] Finished at: 2025-04-12T11:00:18Z
[INFO] Final Memory: 16M/92M
[INFO]
[ec2-user@ip-172-31-8-34 ~]$
```

Create the Application

Using VS Code's file explorer, I could see the web app file structure.

Two of the project folders created by Maven are src and webapp, which contain all the information about the web app we created using maven.





Using Remote - SSH

index.jsp is just like html but it is dynamic which can be used for social media site as it keep changing.

I edited index.jsp by changing Hello World! to I am changing....

```
<html>
<body>
<h2>I am changing it....</h2>
</body>
</html>
```



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