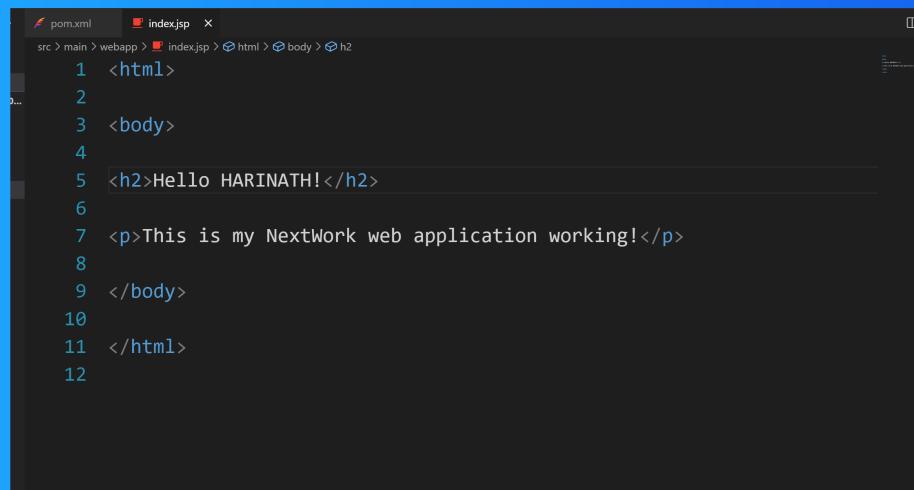




Set Up a Web App in the Cloud



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```
pom.xml index.jsp
src > main > webapp > index.jsp > html > body > h2
1 <html>
2
3 <body>
4
5 <h2>Hello HARINATH!</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?

VSCode is a key part in Today's project as we use it connect with our EC2 instance, run the commands for installing tools like Maven/Java and set up a java web app.

How I'm using VSCode in this project

VSCode is a key part in Today's project as we use it connect with our EC2 instance, run the commands for installing tools like Maven/Java and set up a java web app.

One thing I didn't expect...

one thing didn't in this was the ability to use VSCode like a local IDE for a remote server. Downloading Remote-SSH is a game changer.

This project took me...

This project took me 3 hours including the documentation.

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 a location to setting up web app for the rest of this project.

I also enabled SSH

SSH i.e. Secure Shell 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, it verifies you have the correct private key that matches the public key on the server.

Key pairs

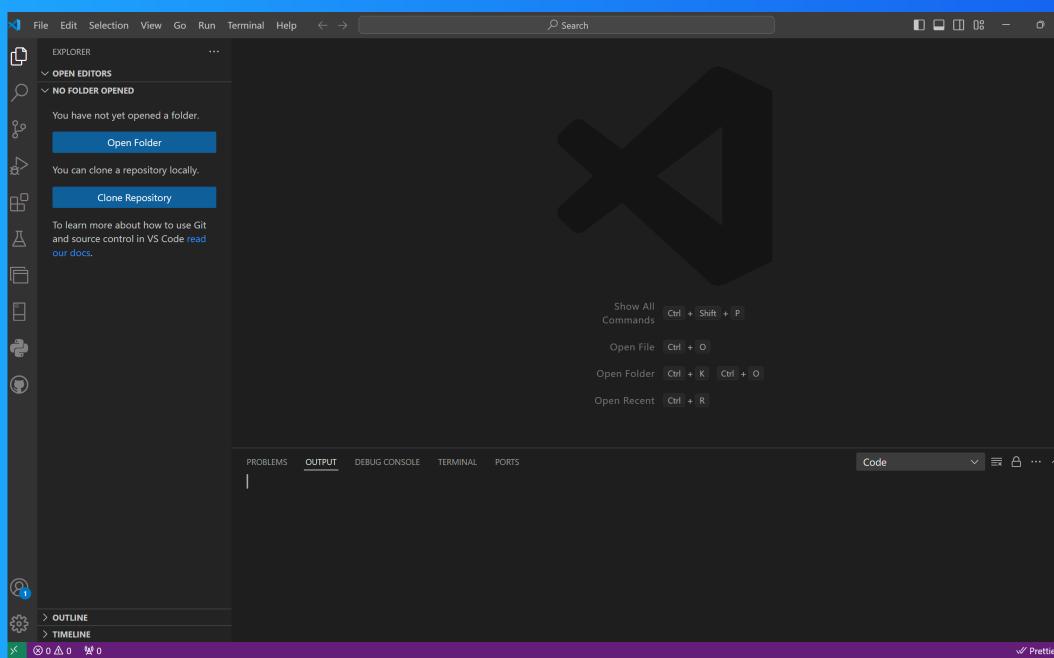
A key pair in EC2 is like the keys to your virtual computer. Just like you need a key to unlock and start your car, a key pair lets you securely access your EC2 instance.

Once I set up my key pair, AWS automatically downloaded a file called Nextwork-keypair.pem. This file is my private key i.e. my half of the key pair that I will need to use to access my EC2 instance later in this project.

Set up VSCode

Visual Studio Code (VSCode) is one of the most popular tools for creating and managing coding projects. You'll often hear people call VSCode an IDE (Integrated Development Environment), which means software that help you write and edit code.

I installed VSCode to Connect to our EC2 instance and then create and edit web app files on the EC2 instance.



My first terminal commands

The first command I ran for this project is "cd C:\Users\malla\Desktop\DevOps" which changes our directory from the home into the DevOps folder housing our private key.

I also updated my private key's permissions by icacls (which stands for Integrity Control Access Control Lists) is a tool for Windows that lets you decide who can open or change the files on your system.

```
Successfully processed 0 files; Failed processing 1 files
PS C:\Users\malla\Desktop\DevOps> icacls "nextwork-keypair.pem" /grant:r "asuszenbook14x\malla:(F)"
>
processed file: nextwork-keypair.pem
Successfully processed 1 files; Failed processing 0 files
PS C:\Users\malla\Desktop\DevOps> icacls "nextwork-keypair.pem"
>
nextwork-keypair.pem ASUSZENBOOK14X\malla:(F)

Successfully processed 1 files; Failed processing 0 files
PS C:\Users\malla\Desktop\DevOps> █
```

SSH connection to EC2 instance

To connect to my EC2 instance, I ran the command "ssh -i [PATH TO YOUR .PEM FILE] ec2-user@[YOUR PUBLIC IPV4 DNS] ". This command setup an SSH connection that uses the .pem file(our private key) and the public address of our EC2 instance.

This command required an IPv4 address

A server's IPV4 DNS is the public address. Computers/servers connected to the internet can use public IPV4 DNS to find and locate another server.

```
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-3-111-35-212.ap-south-1.compute.amazonaws.com' (ED25519) to the list of known hosts.

,      #
~\_\ #####
~~ \####\` Amazon Linux 2023
~~ \|##|
~~ #/ ____ https://aws.amazon.com/linux/amazon-linux-2023
~~ \|~' ->
~~ /`_
~~*_-`_/
~~ /`_/
~~ /m/`_
[ec2-user@ip-172-31-8-111 ~]$
```

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 it's extremely helpful for bringing in packages into our application(i.e. external software/tools) and for packaging up our own web app once we have developed it.

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 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 command " mvn archetype:generate " which is a maven command that sets up a basic web app (using maven's archetype template).

I installed Remote - SSH extension to connect VScode directly to our EC2 instance. Doing this means we can later use VScode as an IDE for the java web app files in our EC2 instance. This makes editing our web app much simpler/efficient.

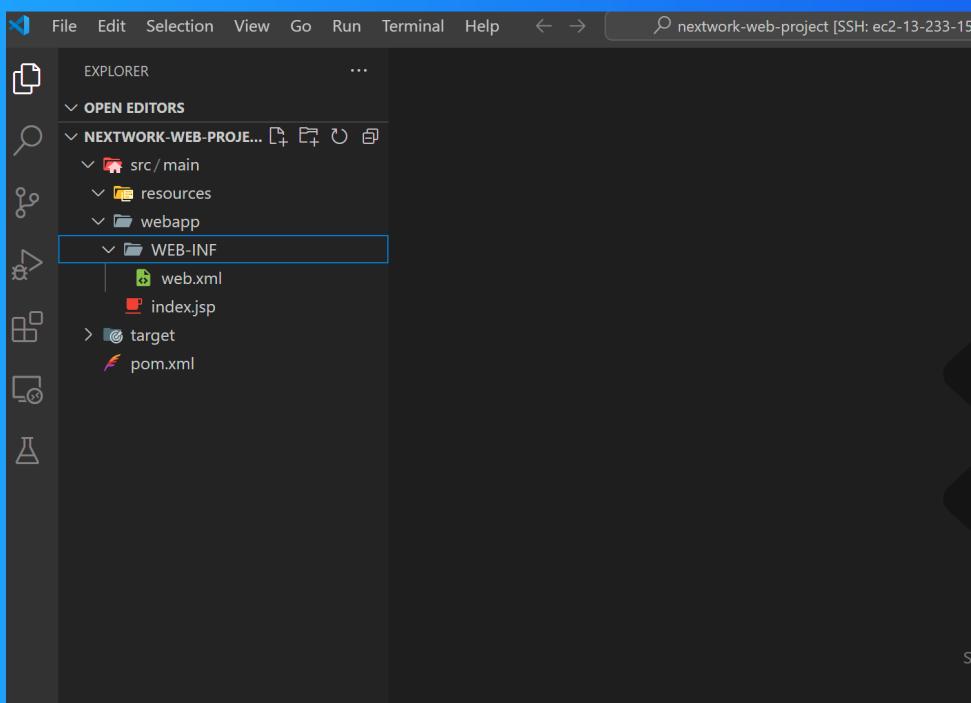
Configuration details required to set up a remote connection include the SSH's Host's name(i.e. the IPV4 DNS of our EC2 instance), the location of our private key in our local computer, and the SSH Host's user we are connecting to.

```
(mvn archetype:generate) [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: 8.318 s  
[INFO] Finished at: 2024-12-03T10:53:01Z  
[INFO] Final Memory: 19M/88M  
[INFO] -----  
[ec2-user@ip-172-31-8-111 ~]$ █
```

Create the Application

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

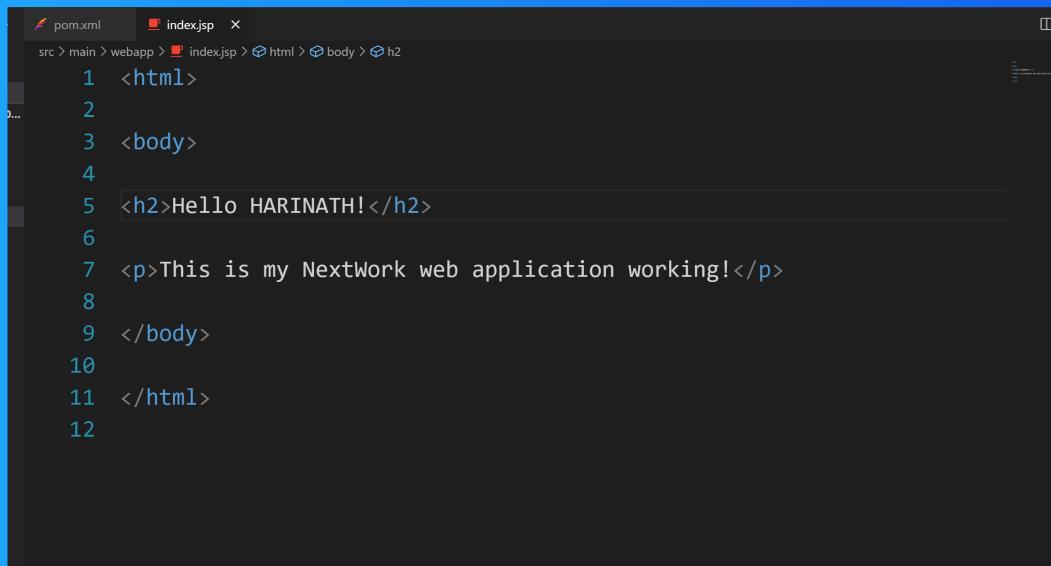
Two of the project folders created by Maven are src and webapp. src contains all of the webapp's source code(i.e. the code that defines the web app's look and feel), whereas webapp is a subfolder of src that focuses on what the user would see.



Using Remote - SSH

index.jsp is a file within the webapp folder, and it defines the look of a java web app.

I edited index.jsp by using VScode! Even though index.jsp is stored remotely in my EC2 instance, because I have setup a Remote-SSH connection between VScode and the instance.



A screenshot of the Visual Studio Code (VSCode) interface. The title bar shows 'pom.xml' and 'index.jsp'. The 'index.jsp' tab is active, displaying the following code:

```
1 <html>
2
3 <body>
4
5 <h2>Hello HARINATH!</h2>
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