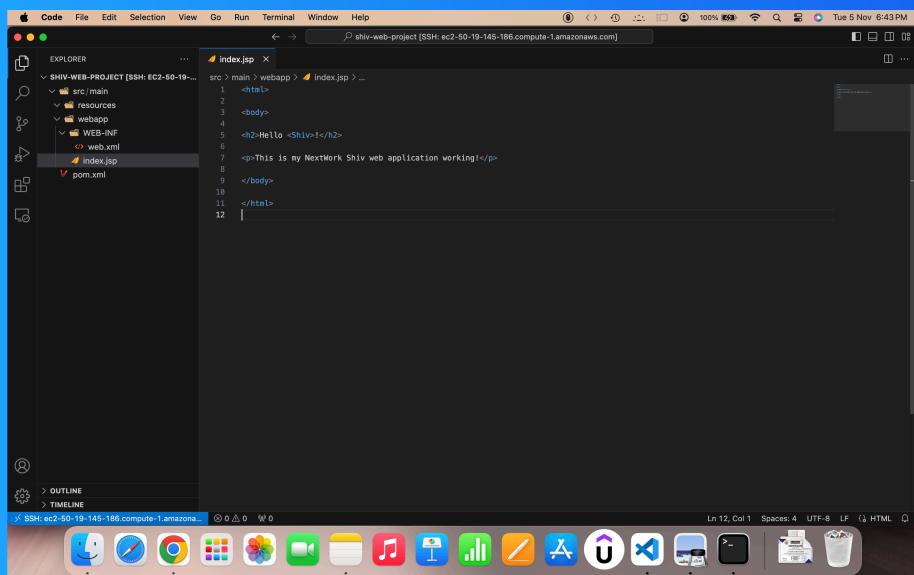




# Set Up a Web App in the Cloud



Shivam Kakade



```
<html>
<body>
<h2>Hello <Shiv>!</h2>
<p>This is my NextWork Shiv web application working!</p>
</body>
</html>
```



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# Introducing Today's Project!

## What is VSCode and why is it useful?

I used the Vscode in todays project to remotely connect to EC2 instance interacting with it , used remote ssh extension of vscode to explore and edit our web app

## How I'm using VSCode in this project

I used the Vscode in todays project to remotely connect to EC2 instance interacting with it , used remote ssh extension of vscode to explore and edit our web app

## One thing I didn't expect...

i didn't expected that the project will this easy to do

## This project took me...

20 minutes



# Launching an EC2 instance

I started this project by launching an EC2 instance because We are going to need a virtual server to build the project and interact with the project.

## I also enabled SSH

SSH (Secure Shell) is a secure protocol used to remotely access and manage servers, allowing users to log in, execute commands, and transfer files safely over an unsecured network. I enabled SSH so that i can manage virtual machine that is EC2

## Key pairs

A key pair in EC2 consists of a public key and a private key used for secure SSH access. The public key is stored on the instance, while the private key is kept by the user. It enables secure connections without using passwords, enhancing security.

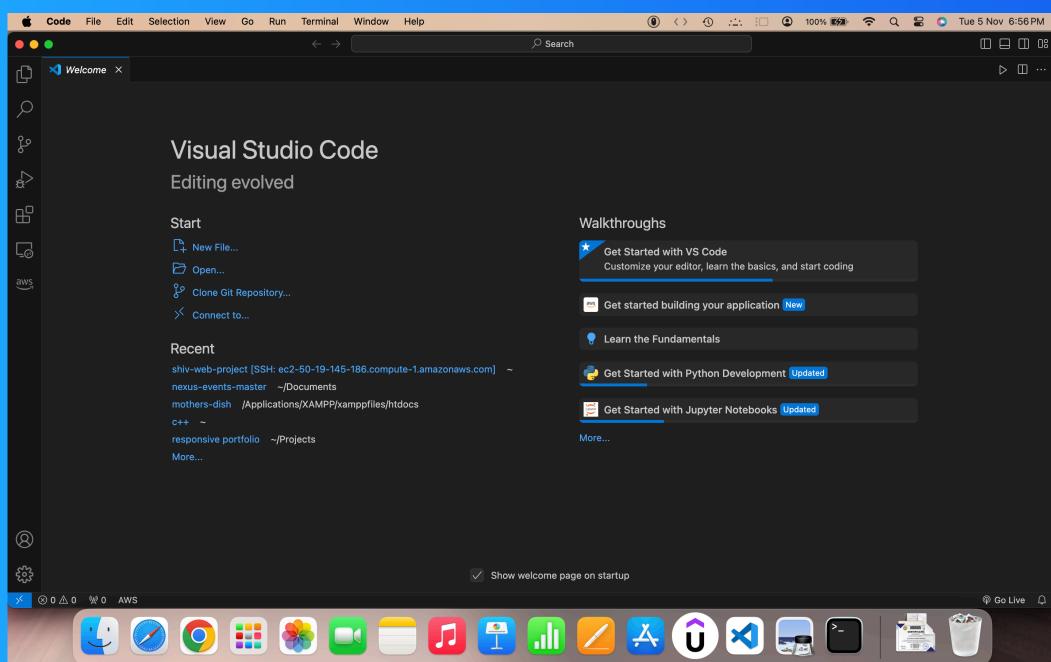
Once I set up my key pair, AWS automatically downloaded Key pair for EC2 instance so i can ssh into it.



# Set up VSCode

Visual Studio Code (VSCode) is a free, open-source code editor by Microsoft. It supports multiple programming languages and features like IntelliSense, debugging, version control, an integrated terminal, and extensive extensions, enhancing developer.

I will use VSCode to write and edit code, debug applications, manage Git version control, run terminal commands, and customize my environment with extensions. It also supports collaboration and remote connections for efficient development.





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# My first terminal commands

A terminal is a command-line interface (CLI) used to interact with a computer's operating system by typing text commands. It allows users to execute commands, run scripts, manage files, and perform various administrative tasks without a graphical interface.

I also updated my private key's permissions by using the chmod command in Linux. Linux is used to change file or directory permissions. It allows you to control who can read, write, or execute files by assigning permissions to the file owner, group & other.

The screenshot shows a Mac OS X desktop environment. A terminal window is open in the foreground, displaying the following command and its output:

```
ssh-add -D
Warning: Permanently added 'ec2-54-227-11-38.us-west-2.compute.amazonaws.com' (RSA) to the list of known hosts.
/usr/local/bin/ssh-add: 1: /usr/local/bin/ssh-add: ssh-add: not found
Run 'ssh-add --help' for full release and verbose update info
Amazon Linux 2023
```

The terminal window has a dark background and light-colored text. The OS X dock is visible at the bottom, featuring icons for various applications like Finder, Mail, Safari, and others. The top of the screen shows the system menu bar with options like Code, File, Edit, Selection, View, Go, Run, Terminal, Window, Help, and a search bar.



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# SSH connection to EC2 instance

To connect to my EC2 instance, I ran the command, First i changed the permissions of pem so we can access it and then through aws connect we SSH into our EC2

## This command required an IPv4 address

A server's IPv4 DNS is the Domain Name System address associated with the server's IPv4 IP address. It translates domain names (like example.com) to the server's numerical IP address, allowing users to connect to the server by name instead of IP.

```
VS Code 1.32.1 • Help • About • Settings • Open • Run • Terminal • Window • Help
File Edit Selection View Go Run Terminal Window Help
Search
Code Welcome x
Start Walkthroughs
New File... Get Started with VS Code
Open... Customize your editor, learn the basics, and start coding
Close the Explorer...
Close the Side Bar...
Connect...
Get started building your application
Learn the Fundamentals
Demand
Terminal Ports Serial Monitor
[ec2-user@ip-172-31-18-139 ~] % cd documents/Design
[ec2-user@ip-172-31-18-139 Design] % ls
[ec2-user@ip-172-31-18-139 Design] % ssh -i /Users/.../Downloads/....pem ec2-user@172.31.18.139
Warning: Permanently added 'ip-172-31-18-139' (RSA) to the list of known hosts.
[ec2-user@ip-172-31-18-139 ~] % ls
[ec2-user@ip-172-31-18-139 ~] % Run "/usr/bin/amazon-connect-release-update" for full release and version update info
Amazon Connect 202
[ec2-user@ip-172-31-18-139 ~] % http://aws.amazon.com/linux/amazon-linux-2/
[ec2-user@ip-172-31-18-139 ~] %
```



# Maven & Java

Maven is a Java-based build automation tool that manages project dependencies, builds, and deployments. It uses a pom.xml file to define project configurations and automates tasks like compiling code, packaging, and testing, streamlining project.

We are using Maven in this project because we want to build the Java web application

Java is a versatile, object-oriented programming language used to build applications across platforms. Known for its "write once, run anywhere" capability, Java runs on the JVM, making it popular for web, mobile, and enterprise software development.

Maven is dependent on Java. and we are building a java web application for that purpose we are going to need the Java

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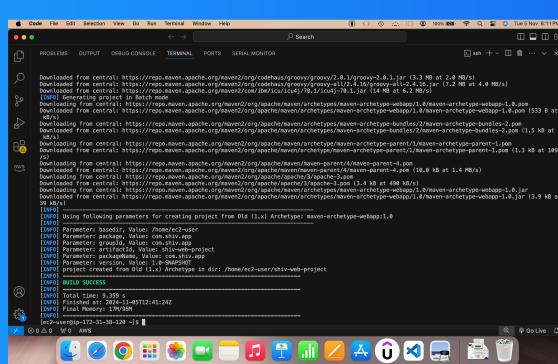
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# Create the Application

I created my web application using Maven by running the command: mvn archetype:generate -DgroupId=com.nextwork.app -DartifactId=nextwork-web-project -DarchetypeArtifactId=maven-archetype-webapp -DinteractiveMode=false, generating a structured web app

I installed Remote - SSH, which is a VS Code Extension. I installed it to connect it to our EC2 instance and explore and edit our web app easily

In VSCode, the Remote SSH configuration file, typically located in `~/.ssh/config`, specifies SSH connection settings. It includes Host (alias), Hostname (IP or domain), User (SSH username), IdentityFile (path to the key), and an optional Port.

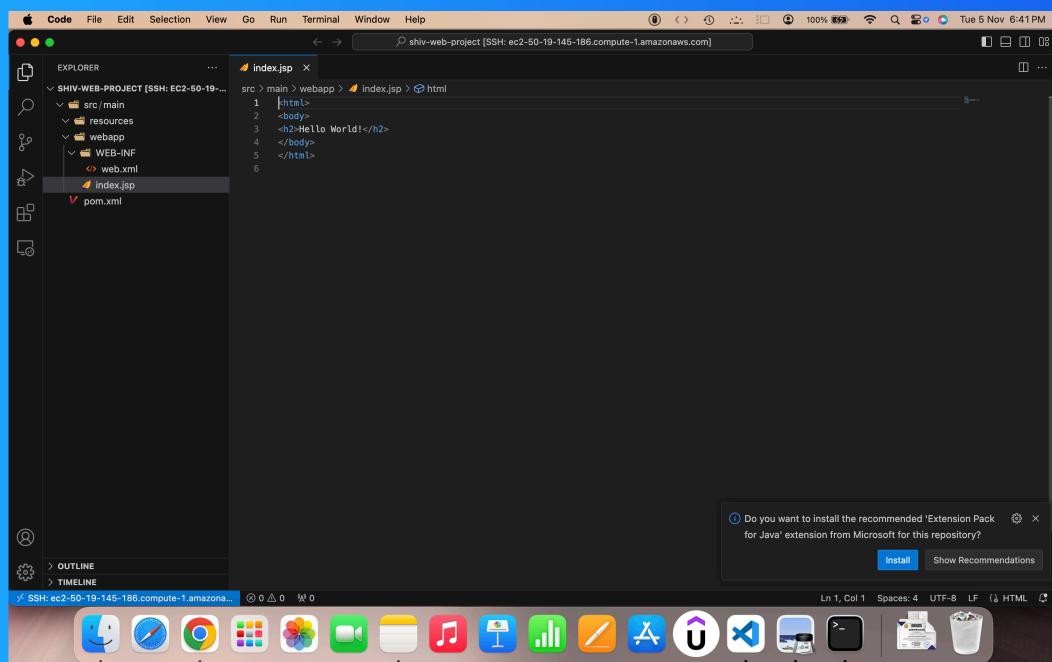




# Create the Application

With VSCode's File Explorer, you can view your project's folder structure, open files, and perform operations like create, delete files. It shows modified files for source control, allows file searching, and offers previews for various file types.

In a Maven web application, the src folder contains source code and resources, typically with main for production code and test for tests. The webapp folder holds web resources like HTML, CSS, JavaScript, and configuration files for deployment.





# Using Remote - SSH

index.jsp is a JavaServer Pages file used as the default landing page in web applications. It combines HTML with Java code for dynamic content generation, serving as the initial view when users access the application and interacting with the backend

To edit index.jsp using VSCode's Remote SSH extension, I opened VSCode, connected to my EC2 instance via SSH, navigated to the project directory, found index.jsp, opened it, made changes, and saved the file directly on the remote server.

```
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