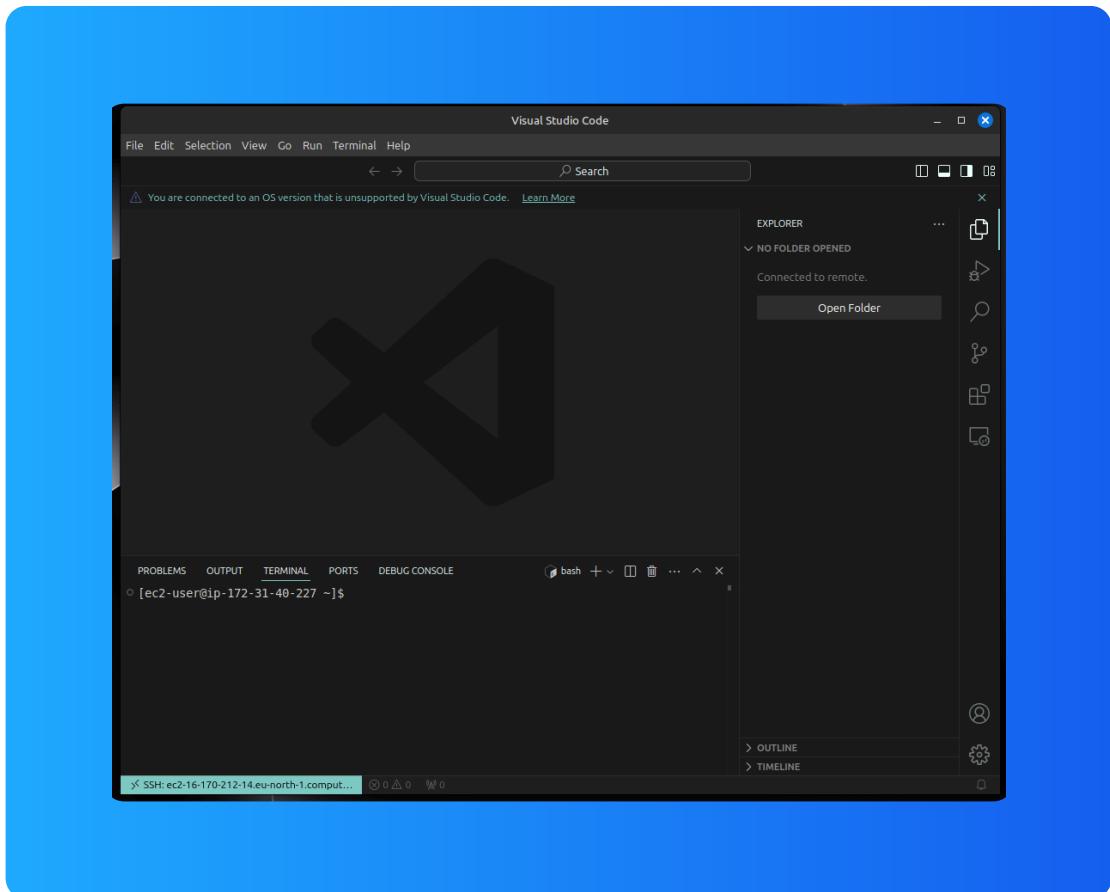




# Build a Web App and IDE in AWS



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# Introducing Today's Project!

## What is AWS Cloud9 and why is it useful?

AWS Cloud9 is a cloud-based IDE that supports multiple programming languages. It's useful because it provides a fully configured environment for coding, debugging, and running applications directly in the browser.

## How I'm using Cloud9 in this project

I used AWS Cloud9 to quickly set up a development environment for today's project. It allowed me to write, run, and test my code directly in the cloud without needing to configure a local IDE.

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

One thing I didn't expect in this project was how seamlessly AWS Cloud9 handled the integration with other AWS services, making deployment and testing in a cloud environment much faster and smoother than anticipated.

## This project took me...

For this project, it took me more than an hour since the cloud9 is not working on my account, and I had to use the alternative way on how to setup an IDE in the cloud.



# Set up an IAM User

An IAM user is an entity in AWS created for individuals or services needing access to AWS resources. It has credentials and permissions specified by an AWS administrator to securely control access and perform actions within the AWS environment.

## The importance of IAM users

It's important to use IAM users because they provide a secure way to control access to AWS resources, allowing specific permissions for individuals or services.

I created an IAM user with the AdministratorAccess policy, which provides full access to all AWS services and resources. This policy allows the user to perform any action on any resource, ensuring complete control over the AWS environment.

The screenshot shows the 'Retrieve password' page for an IAM user. The user name is Emmanuel-IAM-Admin. The console sign-in URL is https://nextwork-alias-emmanuel.signin.aws.amazon.com/console. The password is masked as \*\*\*\*\*. There are 'Email sign-in instructions' and 'Show' buttons. At the bottom are 'Cancel', 'Download .csv file', and 'Return to users list' buttons.



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# Environments & IDEs

## What is an environment?

An environment is a setting where software is built, tested, and run, typically categorized into development, testing, staging, and production.

## What is an IDE?

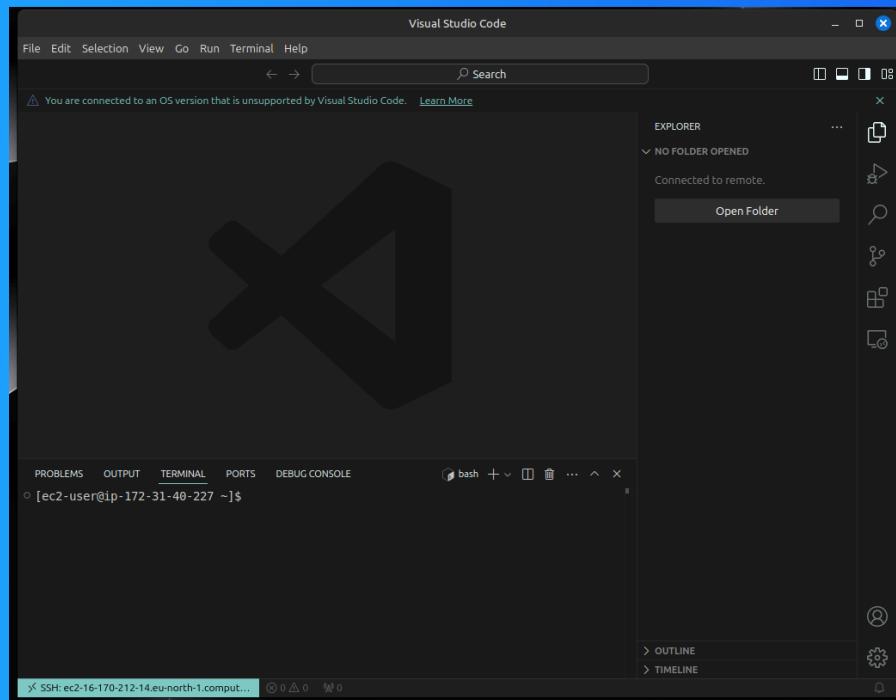
An IDE is an Integrated Development Environment, a software suite that provides developers with tools to write, test, and debug code.



# Launch a Cloud9 IDE

## The benefit of using Cloud9

Using Cloud9 has the benefit of providing a cloud-based environment, enabling you to write, run, and debug code directly in your browser without setup.





# Maven & Java

Maven is a build automation tool primarily used for Java projects. It simplifies project management by handling dependencies, building, and packaging applications through a standardized project structure.

Maven is required in this project because it simplifies project management by handling dependencies, automating builds, and providing a standardized structure.

Java is a high-level, object-oriented programming language designed for portability and performance.

Java is required in this project because it offers platform independence, robust performance, and a rich ecosystem of libraries and frameworks.

```
eenlpe1@Emmanuel:~/Downloads$ java -version
openjdk version "1.8.0_422"
OpenJDK Runtime Environment Corretto-8.422.05.1 (build 1.8.0_422-b05)
OpenJDK 64-Bit Server VM Corretto-8.422.05.1 (build 25.422-b05, mixed mode)
eenlpe1@Emmanuel:~/Downloads$ mvn -version
Apache Maven 3.8.7
Maven home: /usr/share/maven
Java version: 1.8.0_422, vendor: Amazon.com Inc., runtime: /usr/lib/jvm/java-1.8.0-amazon-corretto/jre
Default locale: en_PH, platform encoding: UTF-8
OS name: "linux", version: "6.8.0-45-generic", arch: "amd64", family: "unix"
```



# Create the Application

To create a simple Java web app, I ran the command: mvn archetype:generate \\ -DgroupId=com.nextwork.app \\ -DartifactId=nextwork-web-project \\ -DarchetypeArtifactId=maven-archetype-webapp \\ -DinteractiveMode=false

Once the web app was created, my IDE's file explorer was populated with the typical Maven project structure: `src/main/webapp`, `pom.xml`, alongside configuration and resource files for the web app.

To customise this web app's display, I opened the index.jsp file and updated the h2 tag with my name.

The screenshot shows the Visual Studio Code interface with the following details:

- File Bar:** Edit, Selection, View, Go, Run, Terminal, Help
- Code Editor:** The file "index.html" is open, displaying the following code:

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="UTF-8">
    <title>Hello App</title>
  </head>
  <body>
    <h1>Hello App</h1>
    <p>This is my first web application using Node.js!</p>
  </body>
</html>
```
- Status Bar:** index.html (root) - node-web-project - Visual Studio Code
- Explorer Sidebar:** Shows the project structure:
  - node-web-project
  - src
  - dist
  - node\_modules
  - package.json
  - README.md



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