Build a Web
App and IDE in AWS

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 provides a browser-based editor, terminal, and debugging tools, enabling seamless collaboration. It integrates with AWS services, making it useful for cloud development without local setup.

How I'm using Cloud9 in this project

I used AWS Cloud9 to develop and test the web app directly in the cloud, leveraging its collaboration features and AWS integrations. Since Cloud9 isn't free for AWS Free Tier accounts, I used an SSH connection in VS Code to connect to the EC2 instance instead.

One thing I didn't expect...

One thing I didn't expect in this project was that AWS Cloud9 wasn't available, so I had to set up an EC2 instance and perform the development steps there instead, which added extra configuration time.

This project took me...

it took me around an hour to complete

Set up an IAM User

An IAM user in AWS is an identity with unique credentials and permissions to access AWS resources securely. It helps manage access for individuals or applications, ensuring controlled usage based on assigned policies, enhancing security and resource management.

The importance of IAM users

IAM users are crucial for secure AWS access, allowing precise permission control. They ensure only authorized users or applications perform specific actions, enhancing security, minimizing risks, and enabling better resource management through role-based access.

I created an IAM user with the "AmazonS3FullAccess" permission policy. This policy granted the user full control over S3, allowing them to create, delete, and manage S3 buckets and objects, essential for managing website hosting.
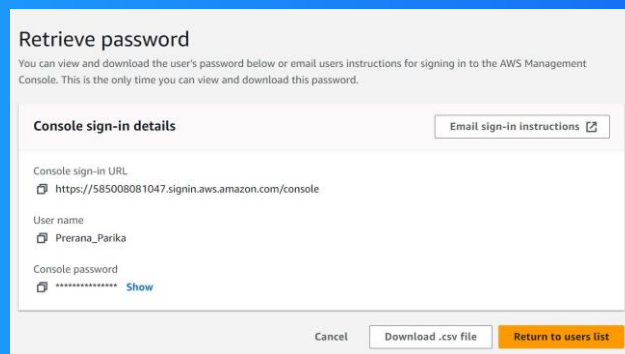
Environments & IDEs

What is an environment?

An environment is where a system or app runs, including hardware, software, and configurations. It affects performance and behaviour. In SDLC, environments include development, testing, staging, and production, each serving a specific purpose in deployment.

What is an IDE?

An IDE (Integrated Development Environment) is software that provides a code editor, compiler, debugger, and tools in one platform. It streamlines coding, testing, and debugging, improving developer productivity and efficiency in software development.in one platform.

Launch a Cloud9 IDE

The benefit of using Cloud9

Using Cloud9 has the benefit of providing a cloud-based development environment, accessible from any device with an internet connection. It offers real-time collaboration, eliminates setup time, and integrates seamlessly with AWS services.
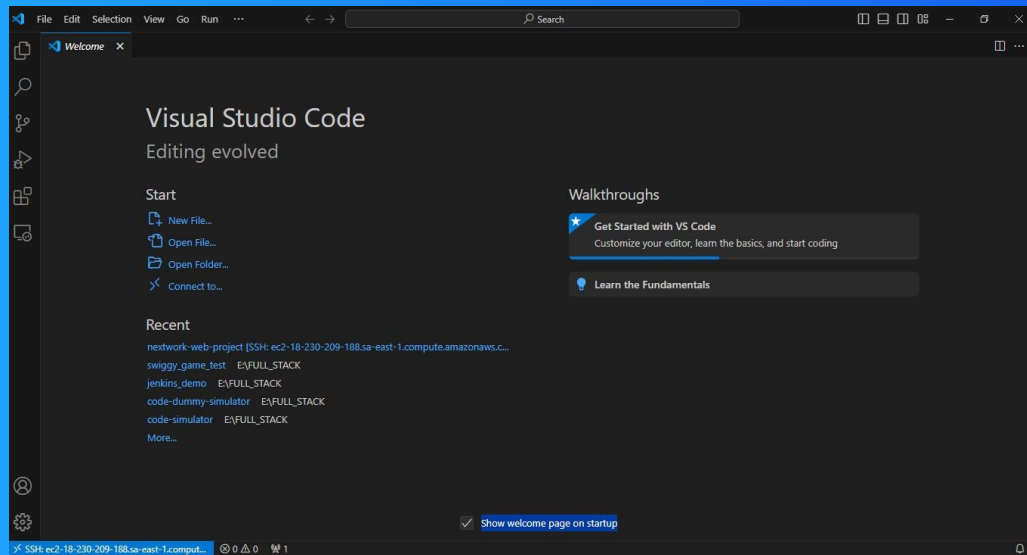
Maven & Java

Maven is a project management and build automation tool primarily for Java projects. It simplifies dependency management, automates builds, and provides a structured way to manage project lifecycles and configurations.

Maven is required in this project because it manages dependencies, automates the build process, and ensures consistent project structure, making it easier to compile, test, and deploy code efficiently across different environments.

Java is a versatile, object-oriented programming language used for building platform-independent applications. Known for its "write once, run anywhere" capability, it's widely used in web, mobile, and enterprise-level development.

Java is required in this project because of its platform independence, robust performance, and extensive libraries, making it ideal for building scalable, secure applications that can run across various environments with minimal modification.


```
[ec2-user@ip-172-31-33-126 ~]$ java -version
openjdk version "22.0.2" 2024-07-16
OpenJDK Runtime Environment Corretto-22.0.2.9.1 (build 22.0.2+9-FR)
OpenJDK 64-Bit Server VM Corretto-22.0.2.9.1 (build 22.0.2+9-FR, mixed mode, sharing)
[ec2-user@ip-172-31-33-126 ~]$ mvn -version
Apache Maven 3.2.5 (12a6b3acb947671f09b81f49094c53f426d8cea1; 2014-12-14T17:29:23+00:00)
Maven home: /usr/share/apache-maven
Java version: 22.0.2, vendor: Amazon.com Inc.
Java home: /usr/lib/jvm/java-22-amazon-corretto.x86_64
Default locale: en, platform encoding: UTF-8
OS name: "linux", version: "6.1.109-118.189.amzn2023.x86_64", arch: "amd64", family: "unix"
[ec2-user@ip-172-31-33-126 ~]$
```

Create the Application

To create a simple Java web app, I ran the command:

mvn archetype:generate \

 -DgroupId=com.nextwork.app \

 -DartifactId=nextworkweb-project \

-DarchetypeArtifactId=maven-archetype-webapp \

DinteractiveMode=false

This initializes a basic

Once the web app was created, my IDE's file explorer was populated with a src folder, containing main/webapp for web resources, along with the pom.xml file for managing dependencies and project configuration.

To customize this web app's display, I updated the index.jsp file by modifying a <p> tag to change the welcome message, ensuring it reflected the app's purpose and provided

a user-friendly introduction. This all are the steps I tried as a part of 1st step of making an ci /cd pipeline