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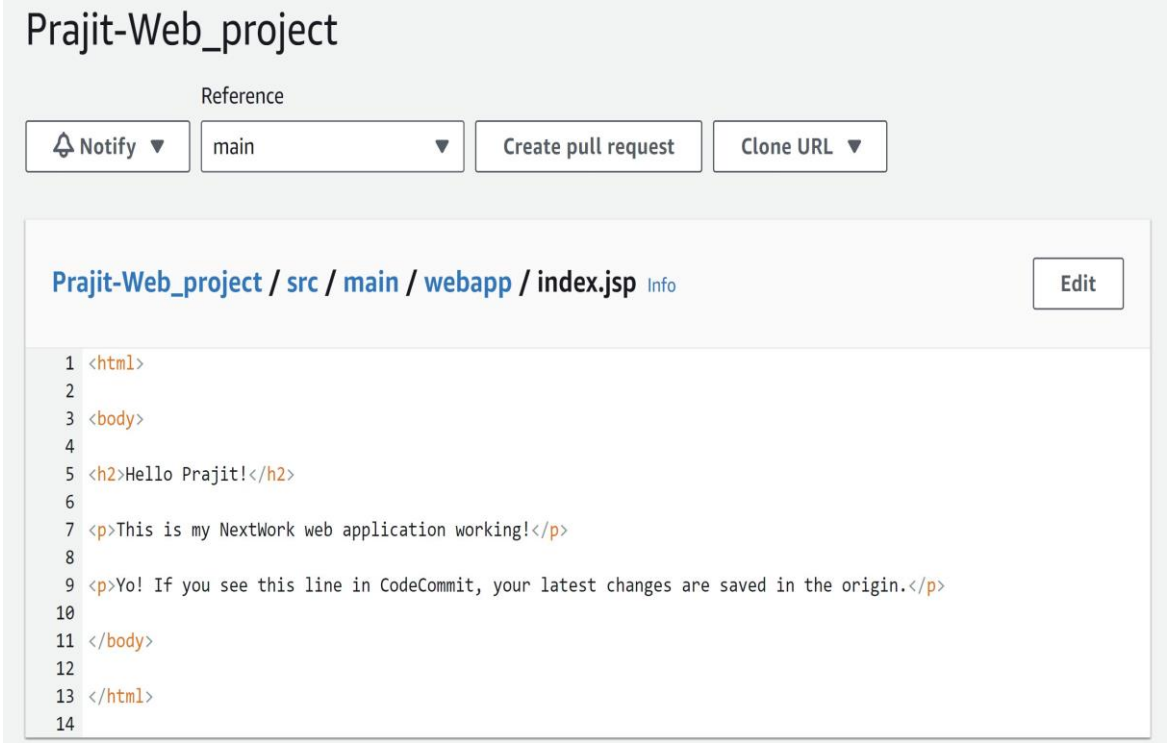
Set up a Git Repo with AWS CodeCommit

Prajit Venkatachalam
https://www.linkedin.com/in/prajit-venkatachalam-435b2a150/



V
Prajit Venkatachalam
NextWork Student

Introducing Today's Project!

What is AWS CodeCommit?

AWS CodeCommit is a service that allows hosting Git repositories securely in the cloud. Its main use is for developers to make changes to files, revert to old versions, and track changes, and pushing the files to main repository from local.

How I'm using CodeCommit in this project

In today's project, I used AWS CodeCommit to create a Git repository for making changes to the index.jsp file related to a web app. I also cloned it to my local machine as a local repository, made changes, and pushed them to the main using commands.

One thing I didn't expect...

I faced unexpected issues accessing Cloud9, prompting me to use Visual Studio Code as an alternative for my local Git repository. Secondly, although the changes were saved, they weren't reflected in the main repository, so I had to push again.

This project took me...

This project took me 2.5 hours to complete, including report writing, troubleshooting, and finding alternative solutions.

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NextWork Student

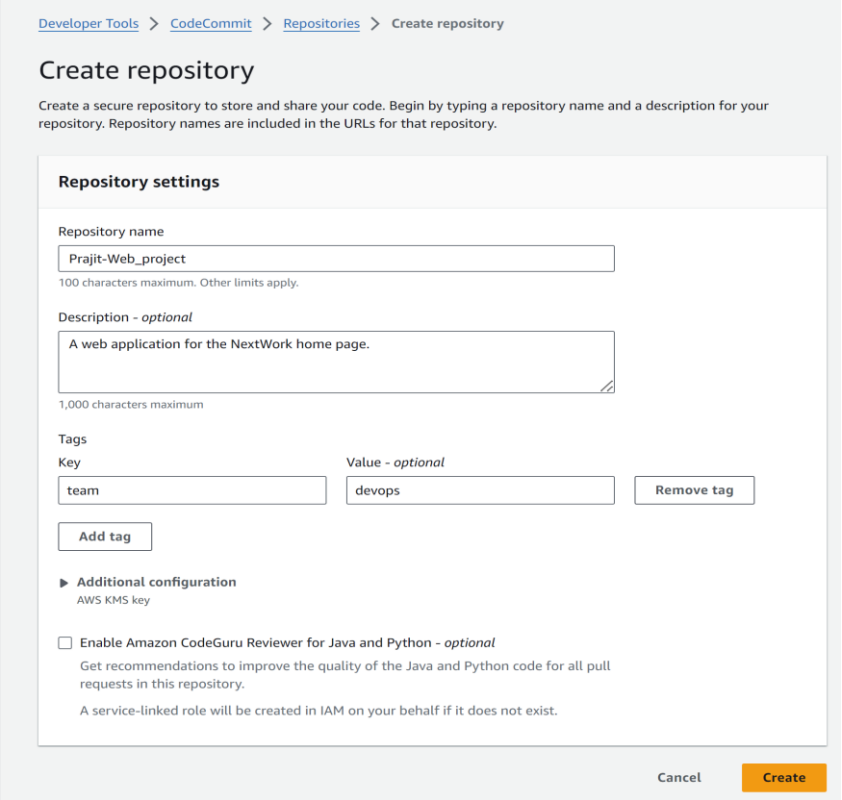
Create a Git repository

What is Git?

Git is a version control system that enables developers to monitor their code changes, manage project versions, and collaborate efficiently with others. It allows teams to work on the same codebase simultaneously, and track revisions.

What is a Git repository?

A Git repository is similar to a directory that holds all the files for an application or project in a single location. To create Git repository in the AWS cloud, I used CodeCommit.



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Steps to create repository in Visual Studi Code as local and push it to the main

1. I used Visual Studio Code as an alternative to Cloud9 because it wasn't available in my region. In Visual Studio Code, I had to download Git, as it does not come by default. I installed Git in Visual Studio Code using the command

   `**sudo yum install git**` and verified the version with the

   `**command `git –version`**.

2. Next, I created a Git identity using the following commands:

   git config –global user.name "Prajit"
   git config –global user.email "v.prajit98@gmail.com"

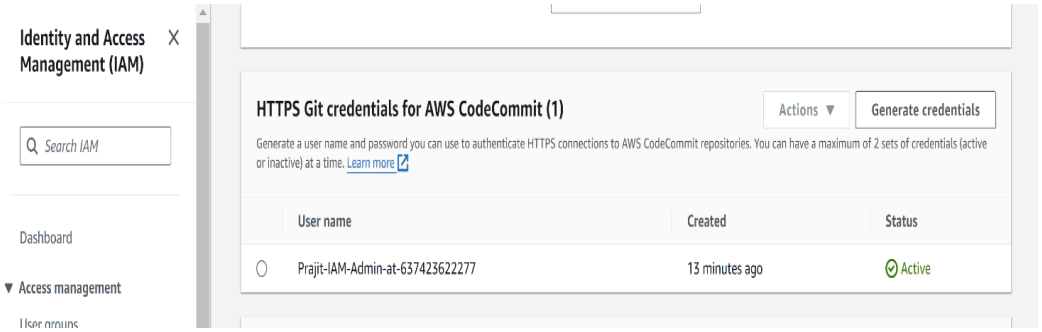
3. Then, I created a project directory in Visual Studio Code by cloning the CodeCommit repository (main). To clone the CodeCommit repository, I used the command:

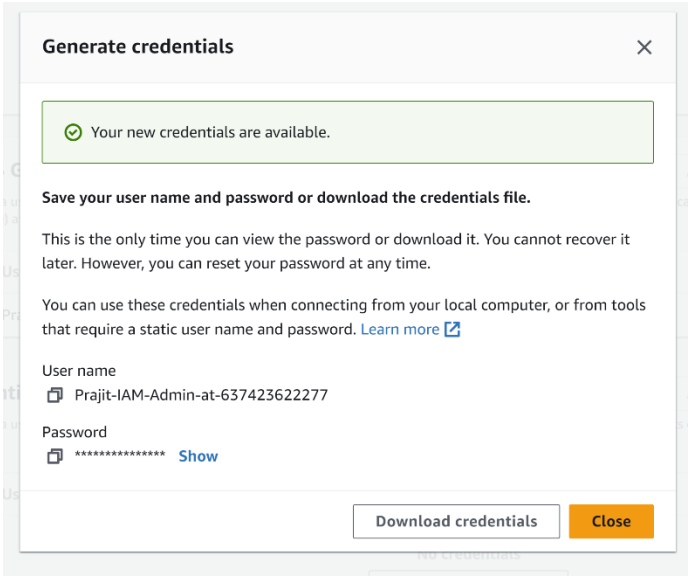
   `git clone https://git-codecommit.ap-southeast-2.amazonaws.com/v1/repos/nextwork-web-project`.

What is a Git identity?

A Git identity helps Git identify the person making changes to a repository. By configuring my username and email in Git, each commit I make will include this information, so others can track who made specific changes.

4. To clone the repository, I needed to create HTTPS Git credentials from AWS IAM since I use Git over HTTPS. This is required because, for a private repository, Git will prompt authentication, where a username and password need to be entered.





5. Next, I navigated to the project directory folder to initialize my local repository. To move to the directory, I used the command:

   `**cd ~/nextwork-web-project**`, and I initialized the local repository by running the command `**git init -b main**`.

6. Next, I set the remote origin to the main repository by copying the CodeCommit URL from the "Clone URL" option in the repositories section of the AWS Console. I used it in the command:

   `**git remote add origin https://git-codecommit.ap-southeast-2.amazonaws.com/v1/repos/nextwork-web-project**`.

What is a remote origin?

It serves as the main hub for my project's files, where everyone's work comes together, like a shared Google Drive folder. In this command, I'm instructing the terminal that the origin for my local repository is the CodeCommit repository. Since my origin is hosted online in the cloud, I use the command `git remote add origin` to set it.

What's the difference between my remote origin and my local repo that I just initialized?

The local repository I initialized in Visual Studio Code is like a downloaded folder–it's essentially a copy of the origin and resides in my EC2 instance. I can use my local repository to save and work on my project files privately, whereas in the main repository (origin), everyone's work comes together, and all collaborators can access the shared folder.

7. Next, I committed and pushed my code by running the following commands:
   git add .
   git commit -m "Initial commit. Updated index.jsp."
   git push -u origin main

When I use the command `git push -u origin main`, Git prompts me for authentication again, requiring me to enter the username and password that I obtained from my HTTPS Git credentials.

V
Prajit Venkatachalam
NextWork Student

My first commit

I initialized a Git repo by running the command - git init -b main

I used three commands to push local changes to CodeCommit

- git add . : This command adds all (represented by the .) my changed files to a staging area, which is a place where changes I've made in my working directory are prepared and organized before committing them to my project's history.

- The command `git commit -m "Initial commit. Updated index.jsp."` saves my changes in the local repository. The `-m` flag adds a message, making it easier for developers to track modifications, like updating the `index.jsp` file in this case.

- The command `git push -u origin main` pushes my changes to the CodeCommit repository. The `-u` flag sets the upstream branch, so future pushes only need `git push`. "origin" is my repository, and "main" is the branch for storing changes.

Git in action

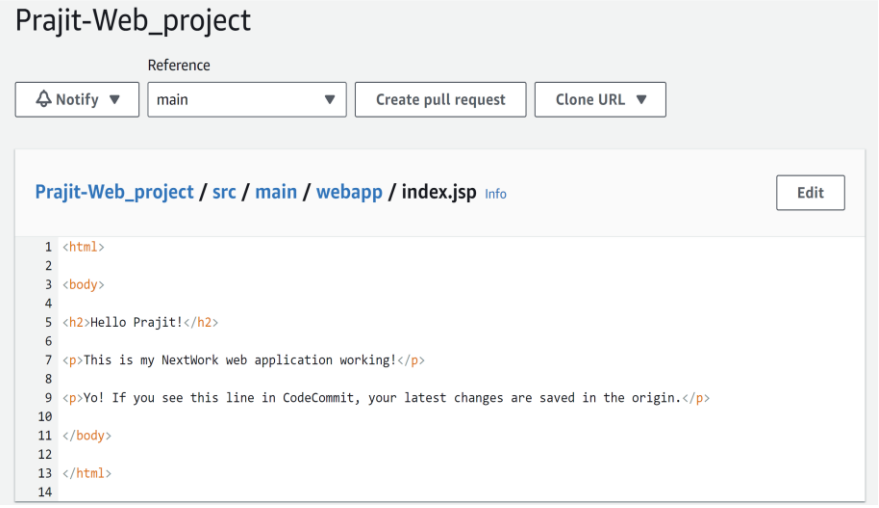
Making changes in Visual Studio Code

I wanted to see Git working in action, so I updated my index.jsp file by adding two new lines (including the space given the next line after the first line).

The importance of committing changes

I tried seeing these changes in my CodeCommit repository, but this didn't work because the `index.jsp` file that I updated and saved was only reflected in my local repository. In order to see changes in my main repository, I need to push the changes, which means that every time I make changes, I need to push the changes to reflect in the main repository in the cloud.

I finally saw the changes in my CodeCommit repository after running the same commands (git add . , git commit -m "Update index.jsp", and git push) in my Visual studio code's terminal.



After pushing it to the main from local

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