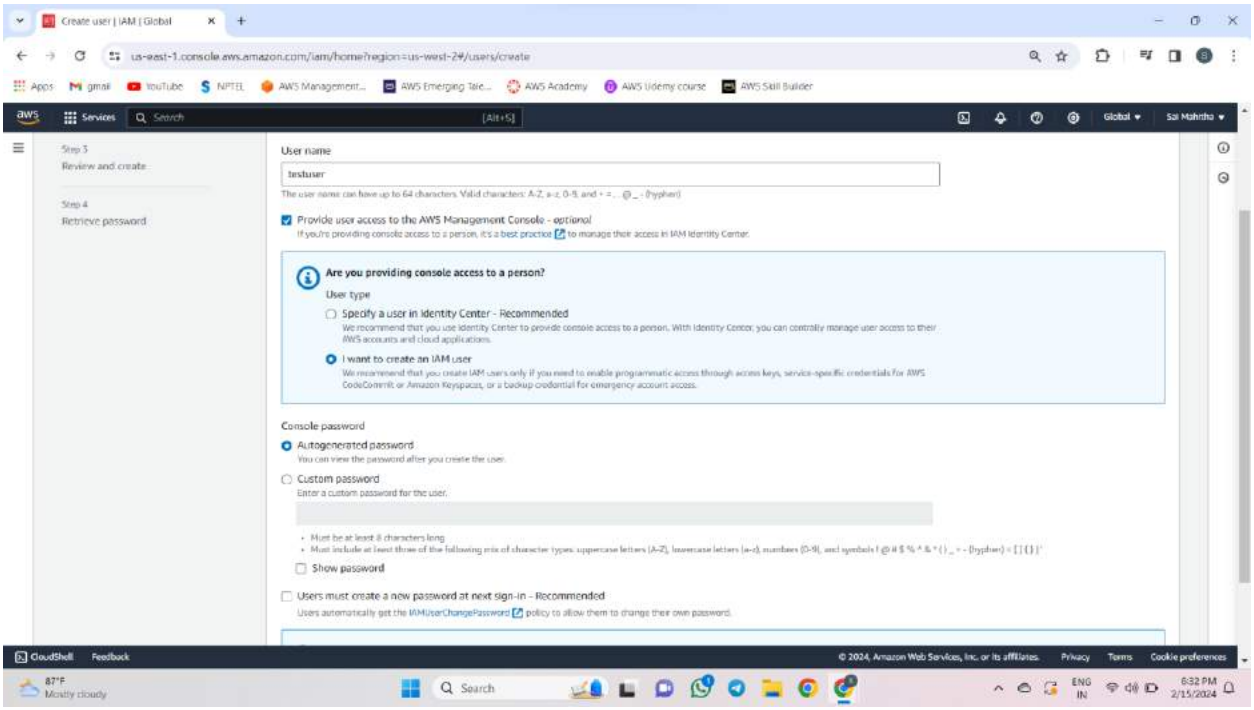
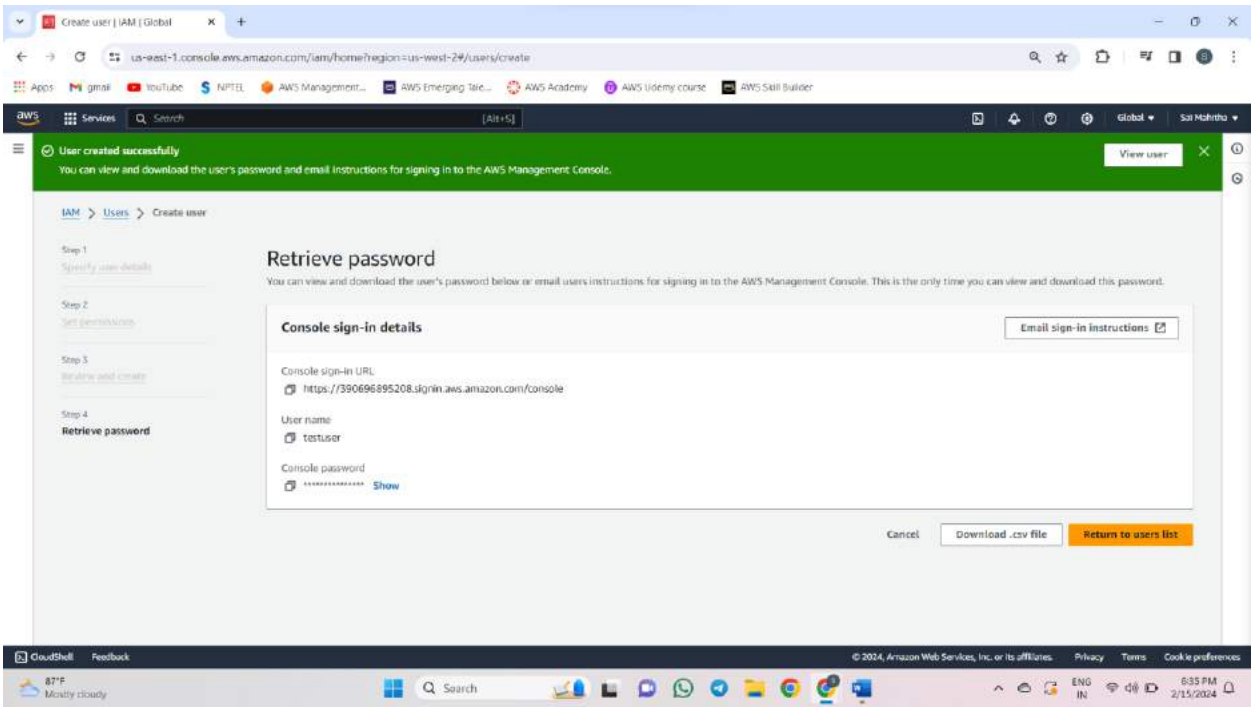
BUILDING END-TO-END SERVERLESS WEB APPLICATION

N Sai Mahitha

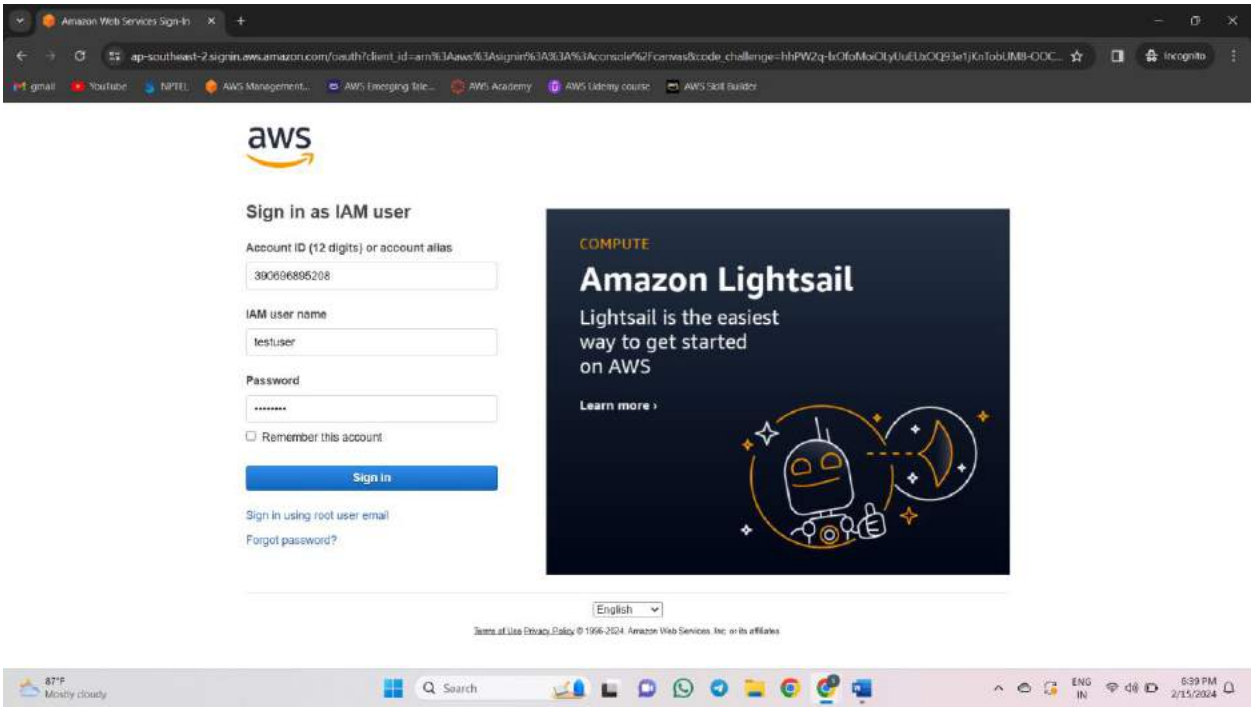
210031843

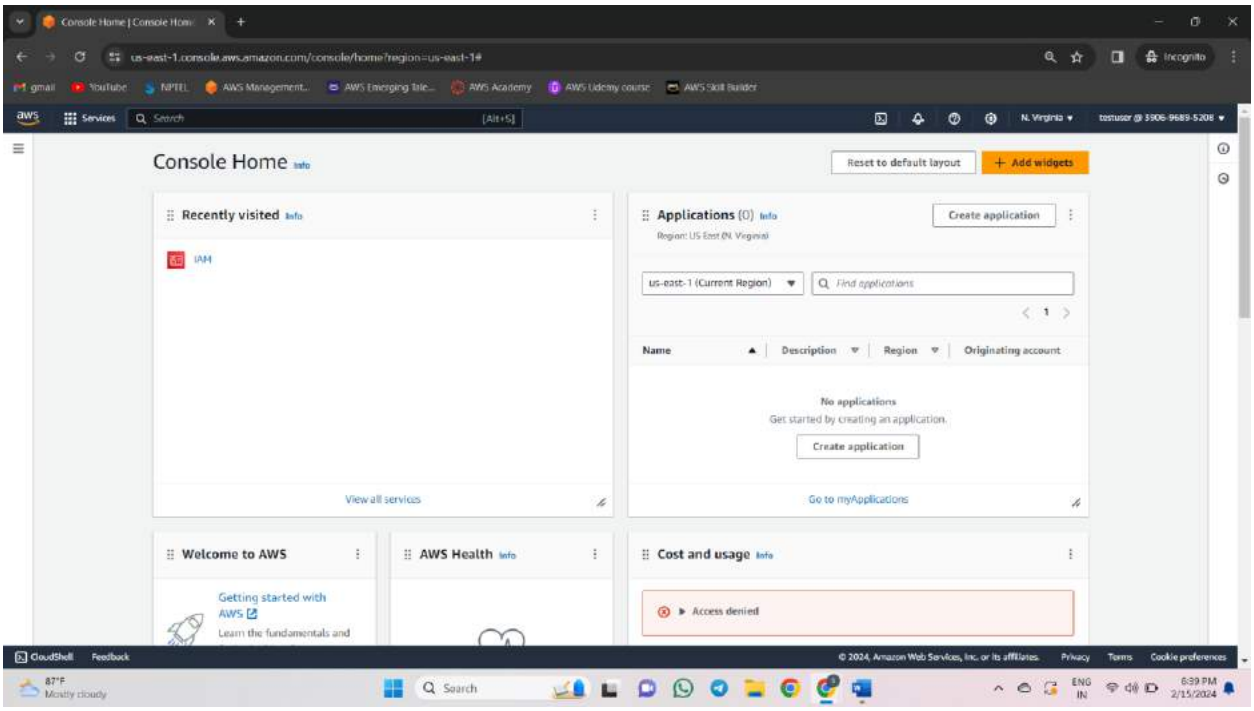
1. Create IAM User named “testuser” and open in incognito tab with given console



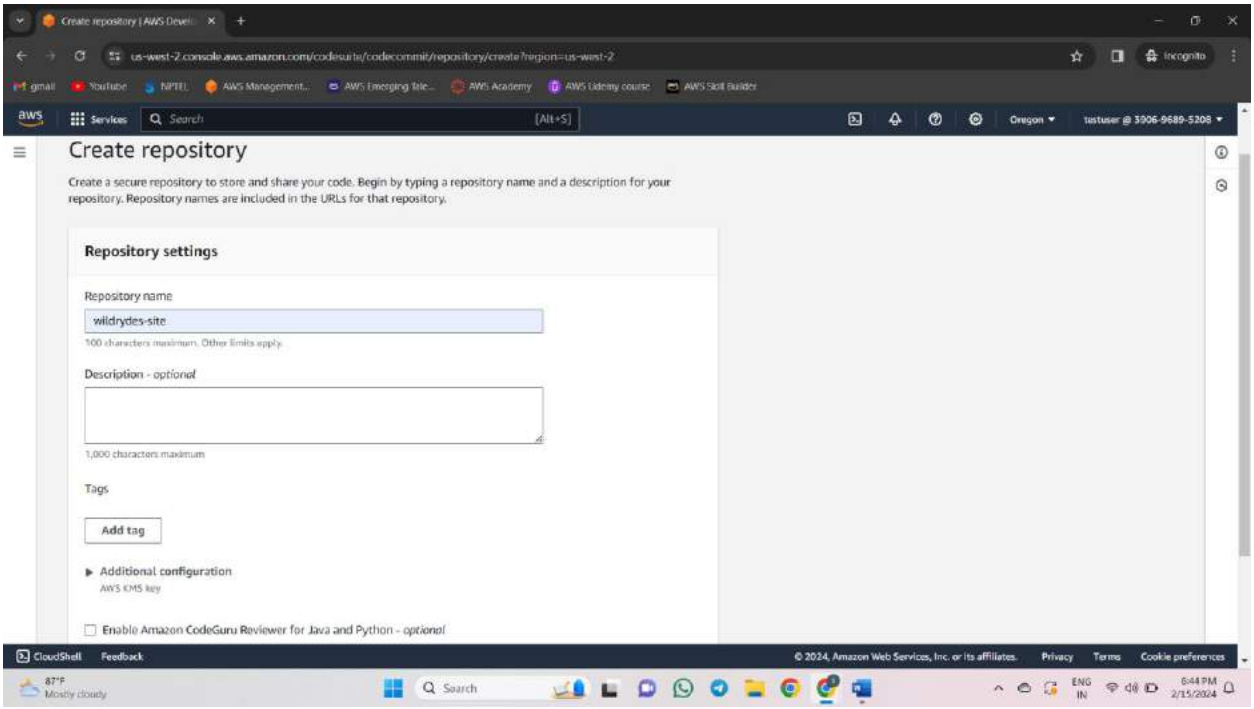


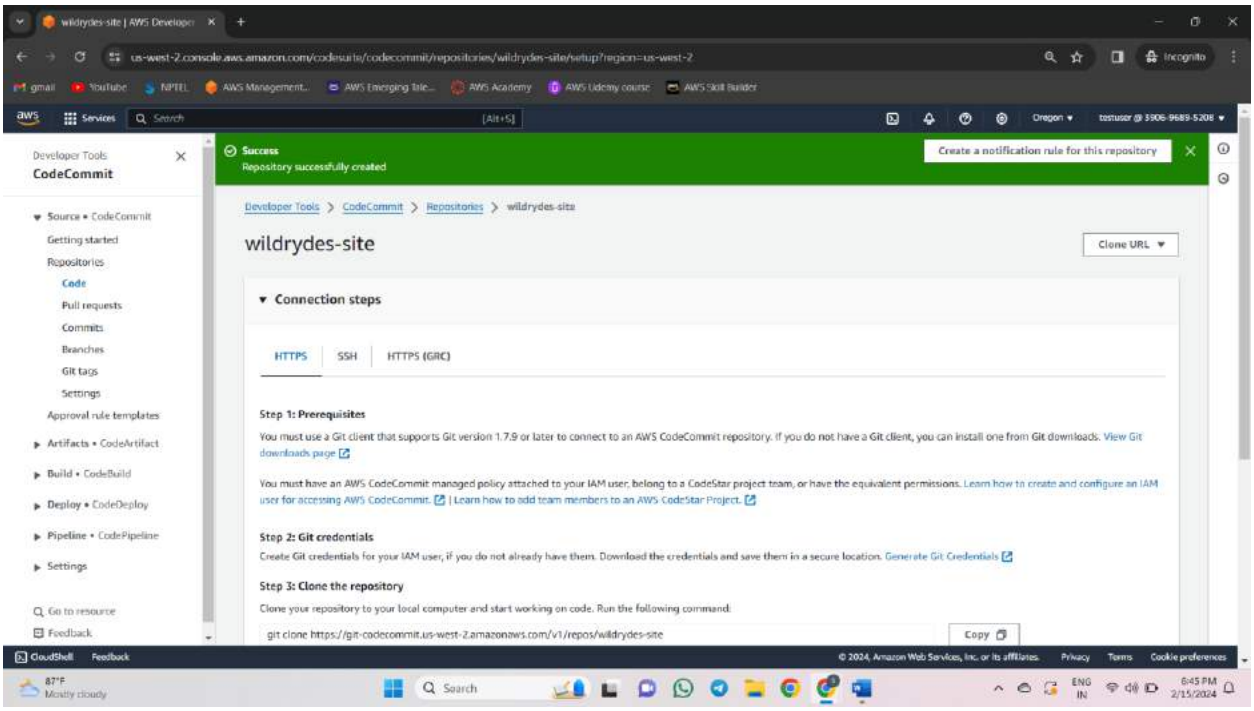
2. Open AWS IAM user account using the credentials



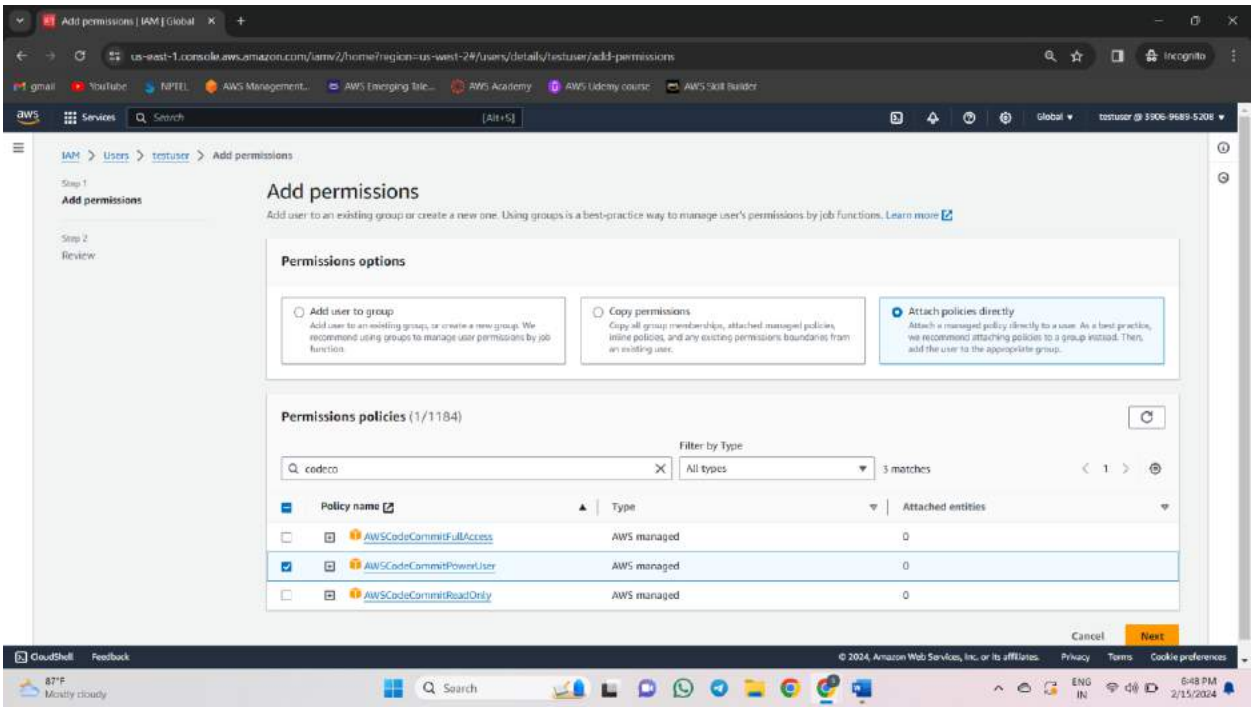


3. Create a repository in CodeCommit named “wildrydes-site”

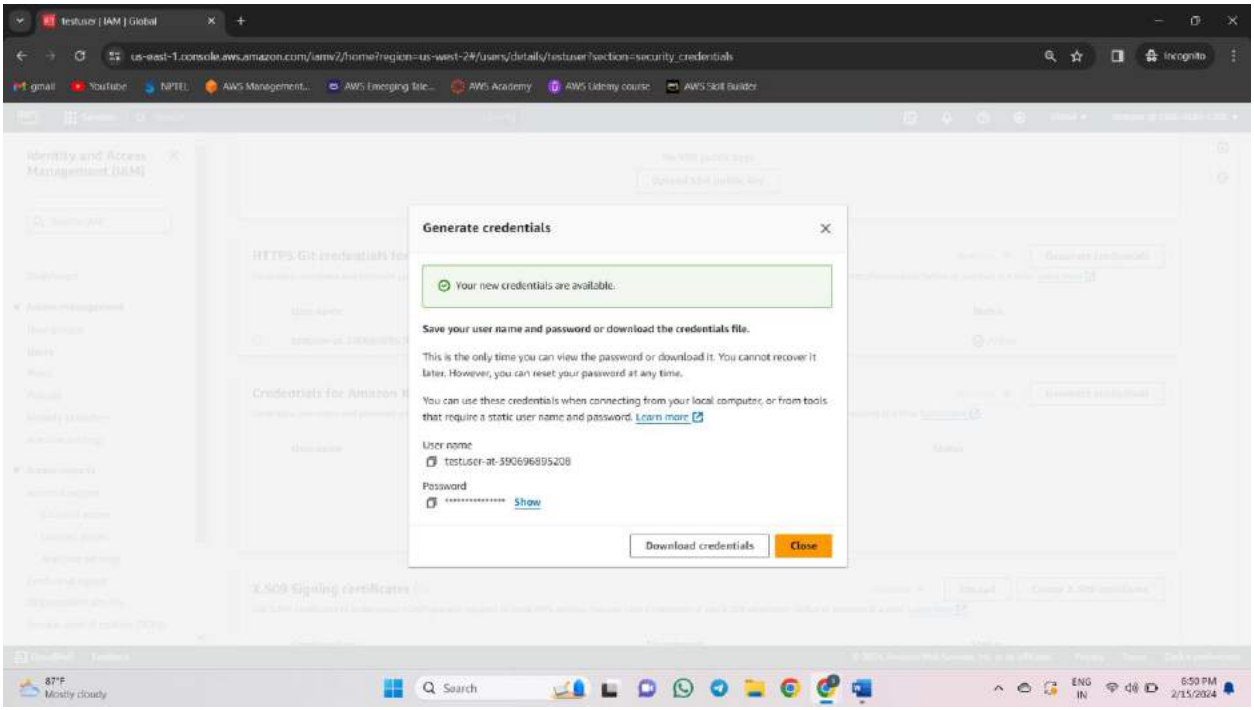




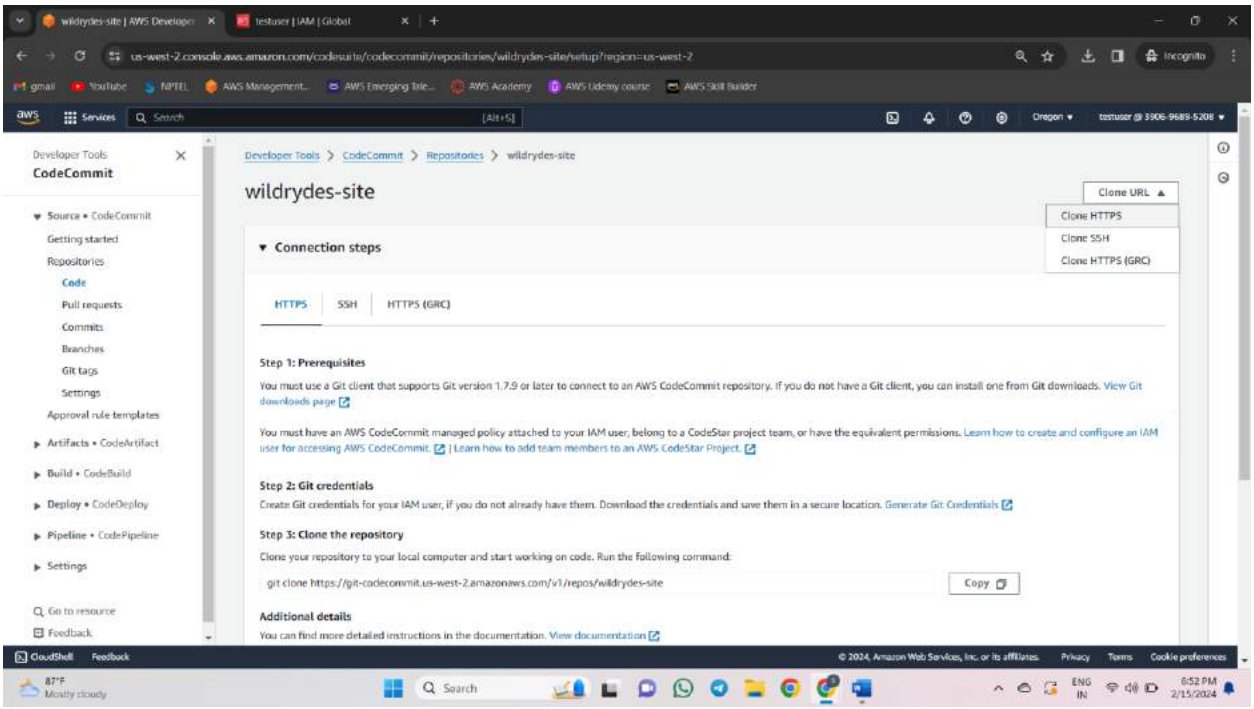
4. Add a policy to your IAM user “testuser”



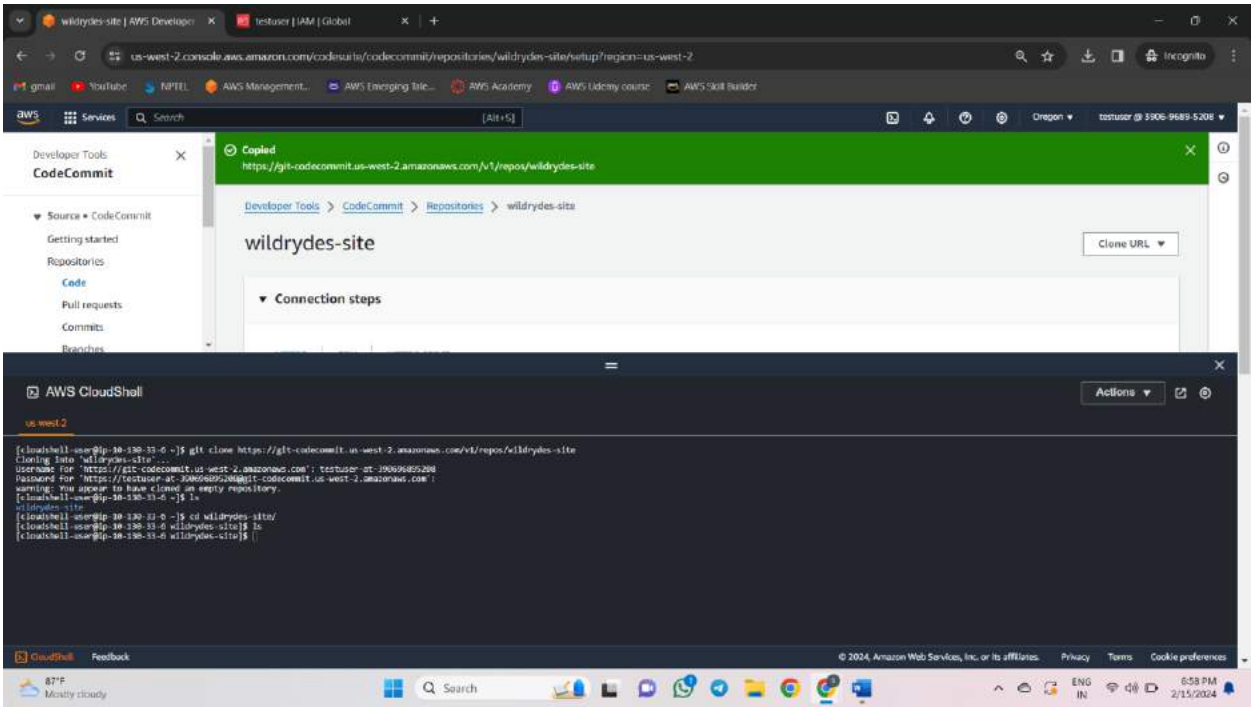
5. Go to security credentials and generate credentials



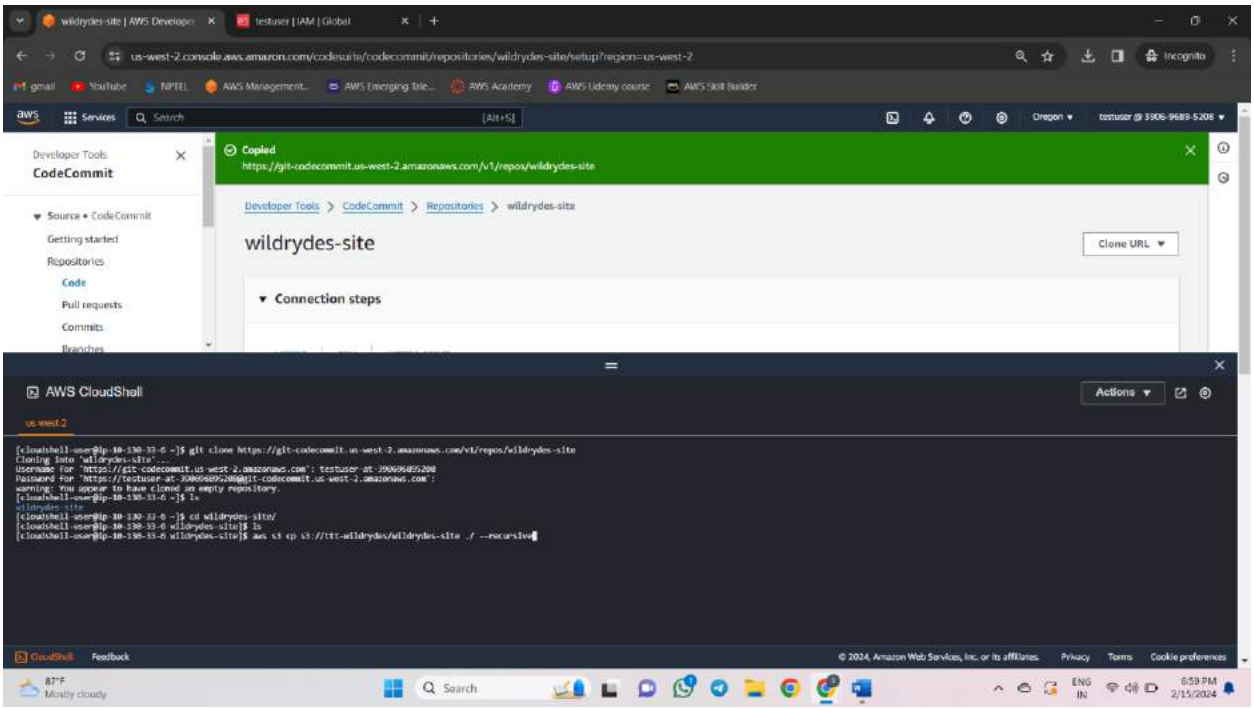
6. Clone the url in CodeCommit

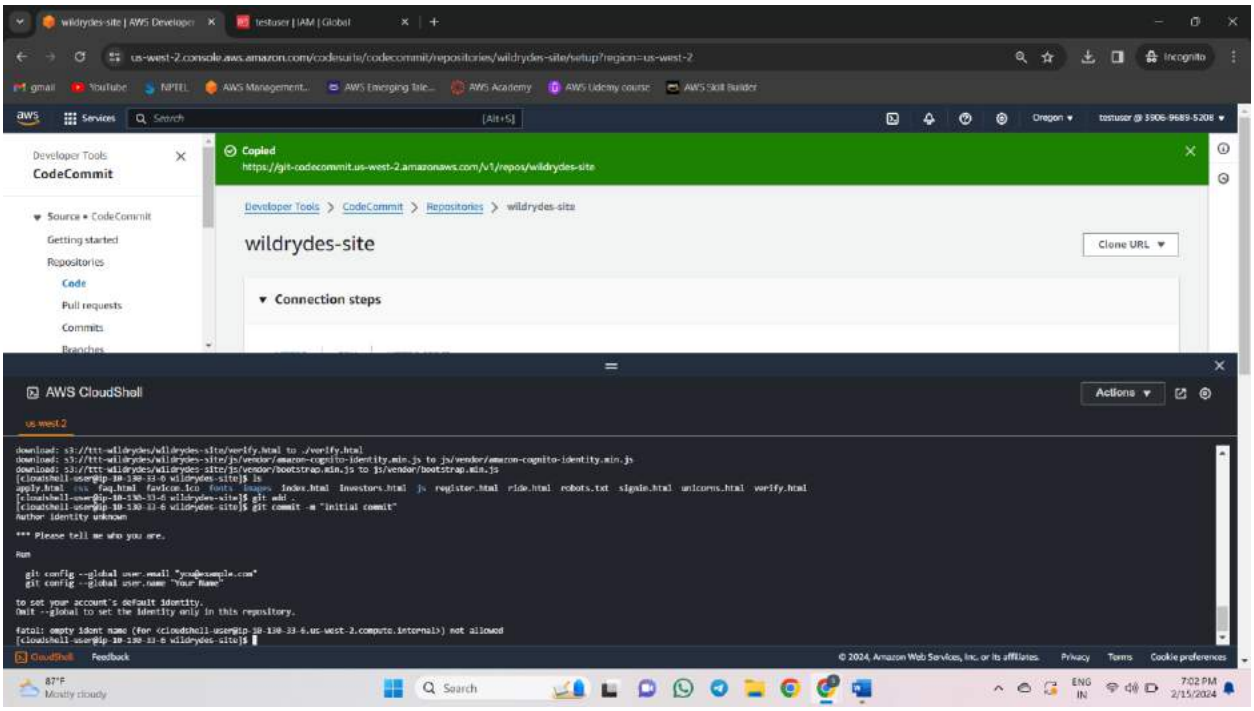


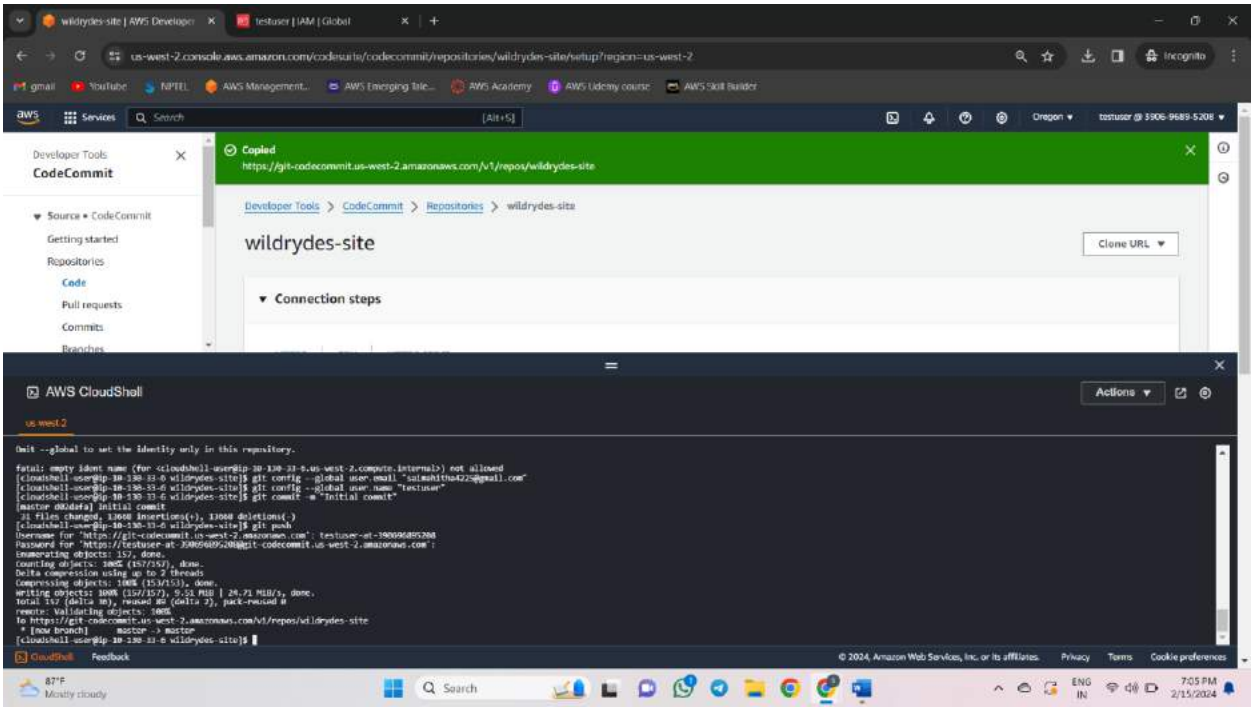
7. Open cloud shell and clone an empty repository



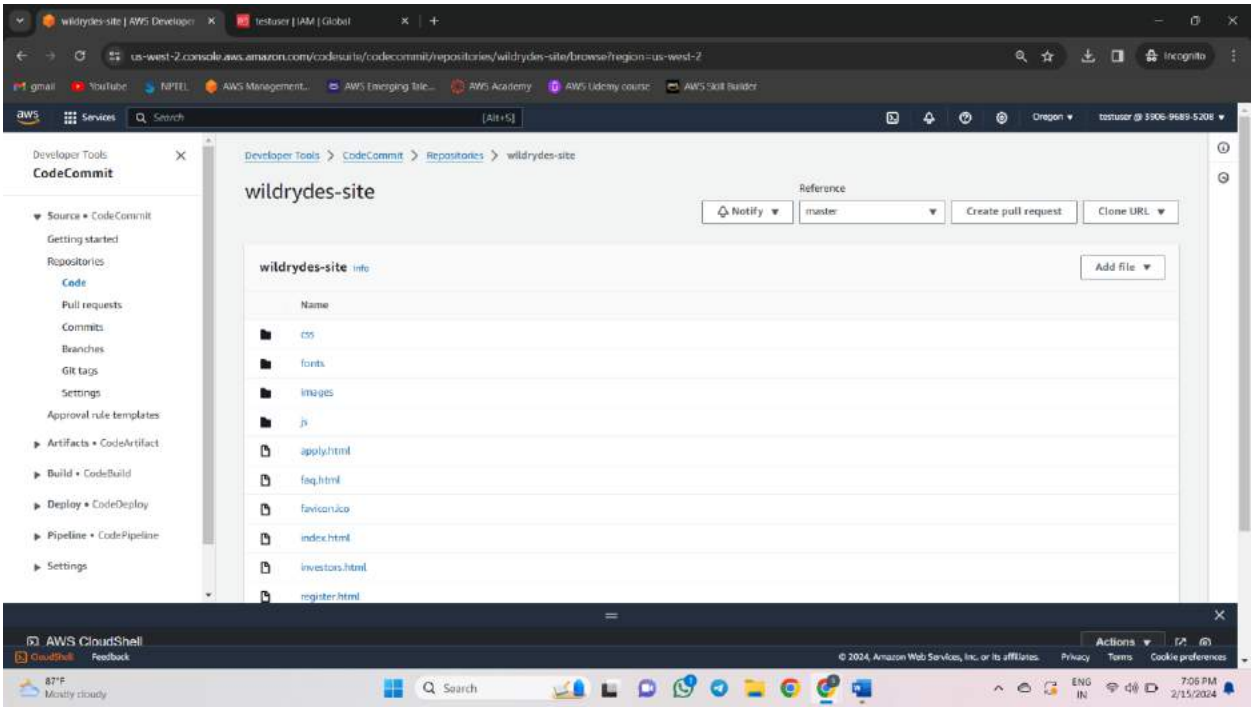
8. Copy project code from s3 bucket



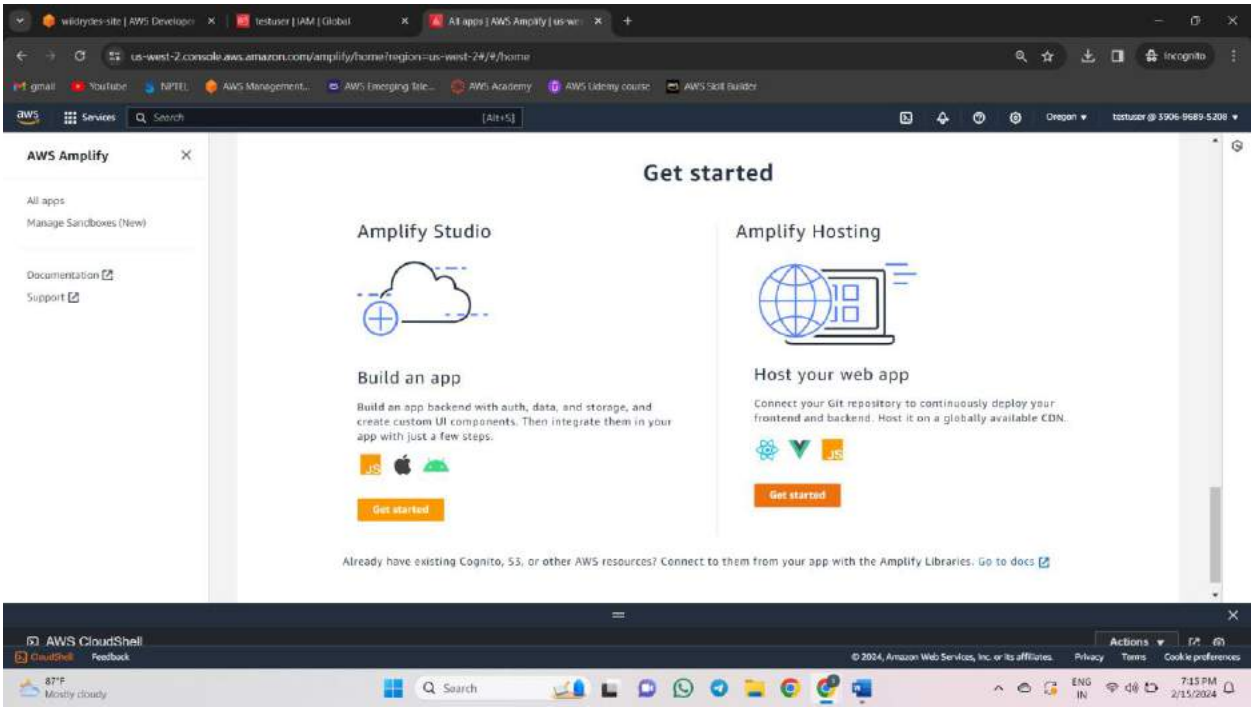

wildrydes-site | AWS Developer
testuser | IAM | Global
us-west-2.console.aws.amazon.com/codesuite/codecommit/repositories/wildrydes-site/setup?region=us-west-2
Developer Tools
CodeCommit
Source • CodeCommit
Getting started
Repositories
Code
Pull requests
Commits
Branches
Copied
https://git-codecommit.us-west-2.amazonaws.com/v1/repos/wildrydes-site
Developer Tools > CodeCommit > Repositories > wildrydes-site
wildrydes-site
Clone URL
Connection steps
AWS CloudShell
Actions
us-west-2
download: s3://ttt-wildrydes/wildrydes-site/verify.html to ./verify.html
download: s3://ttt-wildrydes/wildrydes-site/js/vendor/amazon-cognito-identity.min.js to js/vendor/amazon-cognito-identity.min.js
download: s3://ttt-wildrydes/wildrydes-site/js/vendor/bootstrap.min.js to js/vendor/bootstrap.min.js
(cloudshell-user@ip-10-130-33-6 wildrydes-site)$ ls
apply.html css faq.html favicon.ico fonts images index.html investors.html js register.html ride.html robots.txt signin.html unicorns.html verify.html
(cloudshell-user@ip-10-130-33-6 wildrydes-site)$ git add .
(cloudshell-user@ip-10-130-33-6 wildrydes-site)$ git commit -m "initial commit"
Author identity unknown
*** Please tell me who you are.
Run
git config --global user.email "you@example.com"
git config --global user.name "Your Name"
to set your account's default identity.
Omit --global to set the identity only in this repository.
fatal: empty ident name (for <cloudshell-user@ip-10-130-33-6.us-west-2.compute.internal>) not allowed
(cloudshell-user@ip-10-130-33-6 wildrydes-site)$
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences
87°F
Mostly cloudy
Search
ENG
IN
7:02 PM
2/15/2024

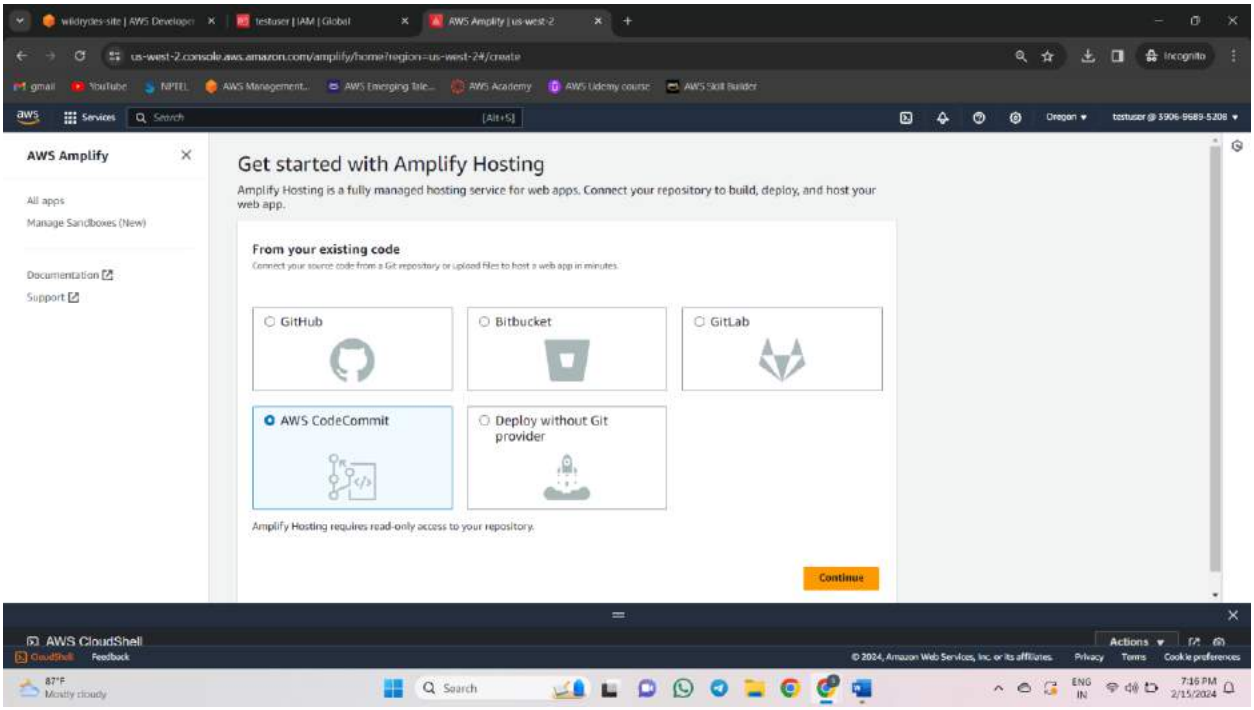

wildrydes-site | AWS Developer
testuser | IAM | Global
us-west-2.console.aws.amazon.com/codesuite/codecommit/repositories/wildrydes-site/setup?region=us-west-2
Developer Tools
CodeCommit
Source • CodeCommit
Getting started
Repositories
Code
Pull requests
Commits
Branches
Copied
https://git-codecommit.us-west-2.amazonaws.com/v1/repos/wildrydes-site
Developer Tools > CodeCommit > Repositories > wildrydes-site
wildrydes-site
Clone URL
Connection steps
AWS CloudShell
Actions
us-west-2
Omit --global to set the identity only in this repository.
fatal: empty ident name (for <cloudshell-user@ip-10-130-33-6.us-west-2.compute.internal>) not allowed
(cloudshell-user@ip-10-130-33-6 wildrydes-site)$ git config --global user.email "salmahtha4225@gmail.com"
(cloudshell-user@ip-10-130-33-6 wildrydes-site)$ git config --global user.name "testuser"
(cloudshell-user@ip-10-130-33-6 wildrydes-site)$ git commit -m "initial commit"
[master d0ddefa] initial commit
31 files changed, 13668 insertions(+), 13668 deletions(-)
(cloudshell-user@ip-10-130-33-6 wildrydes-site)$ git push
Username for 'https://git-codecommit.us-west-2.amazonaws.com': testuser-at-390968695208
Password for 'https://testuser-at-390968695208@git-codecommit.us-west-2.amazonaws.com':
Enumerating objects: 157, done.
Counting objects: 100% (157/157), done.
Delta compression using up to 2 threads
Compressing objects: 100% (153/153), done.
Writing objects: 100% (157/157), 9.51 MiB | 24.71 MiB/s, done.
Total 157 (delta 38), reused 0 (delta 2), pack-reused 0
remote: Validating objects: 100%
To https://git-codecommit.us-west-2.amazonaws.com/v1/repos/wildrydes-site
* [new branch] master -> master
(cloudshell-user@ip-10-130-33-6 wildrydes-site)$
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences
87°F
Mostly cloudy
Search
ENG
IN
7:05 PM
2/15/2024

9. Check the files copied from s3



10. Go to Amplify and host web app




AWS Amplify
All apps
Manage Sandboxes (New)
Documentation
Support
Get started with Amplify Hosting
Amplify Hosting is a fully managed hosting service for web apps. Connect your repository to build, deploy, and host your web app.
From your existing code
Connect your source code from a Git repository or upload files to host a web app in minutes.
GitHub
Bitbucket
GitLab
AWS CodeCommit
Deploy without Git provider
Amplify Hosting requires read-only access to your repository.
Continue
AWS CloudShell
Actions
Feedback
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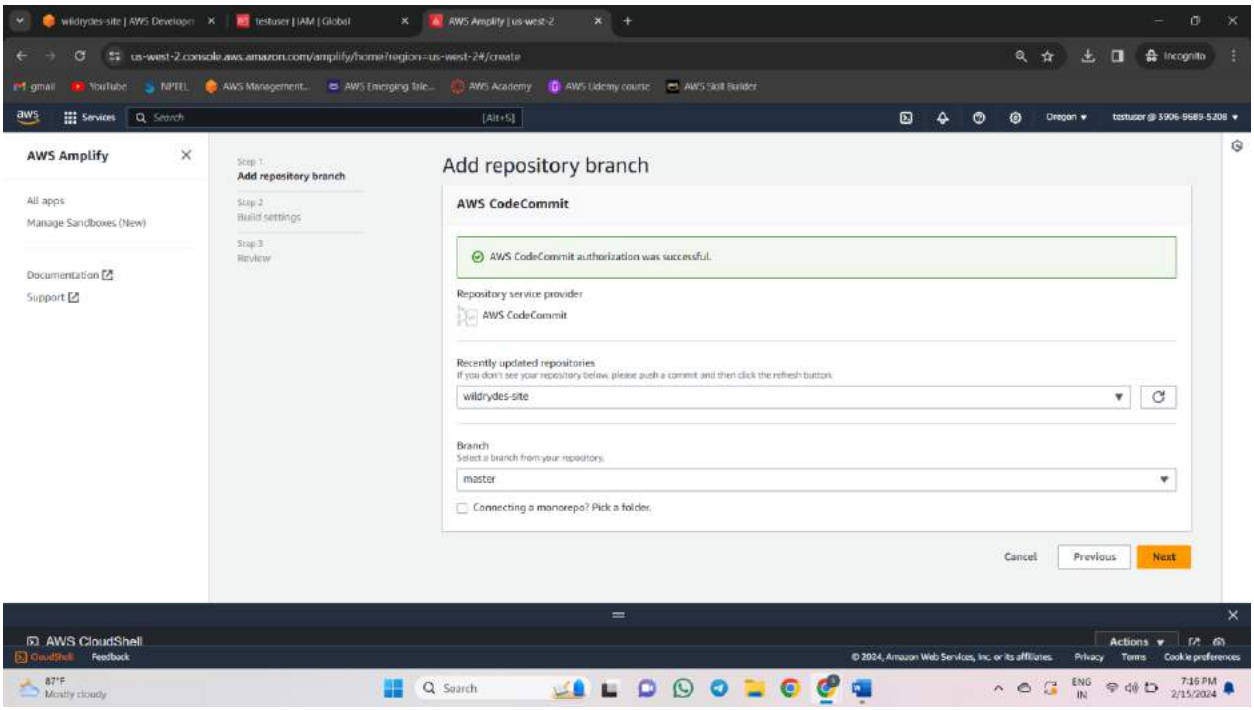
Privacy
Terms
Cookie preferences


AWS Amplify
All apps
Manage Sandboxes (New)
Documentation
Support
Step 1
Add repository branch
Step 2
Build settings
Step 3
Review
Add repository branch
AWS CodeCommit
AWS CodeCommit authorization was successful.
Repository service provider
AWS CodeCommit
Recently updated repositories
If you don't see your repository below, please push a commit and then click the refresh button.
wildrydes-site
Branch
Select a branch from your repository.
master
Connecting a monorepo? Pick a folder.
Cancel
Previous
Next
AWS CloudShell
Actions
Feedback
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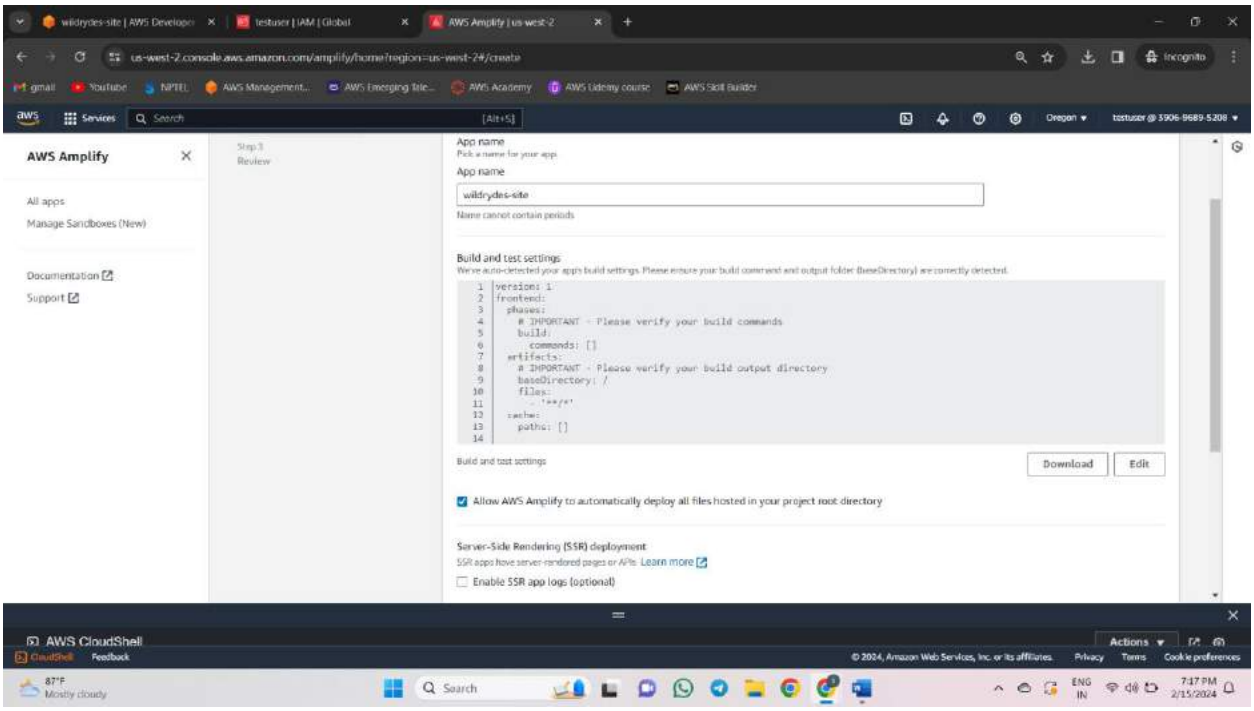
Privacy
Terms
Cookie preferences


AWS Amplify
All apps
Manage Sandboxes (New)
Documentation
Support
Step 3
Review
App name
Pick a name for your app
App name
wildrydes-site
Name cannot contain periods
Build and test settings
We've auto-detected your app's build settings. Please ensure your build command and output folder (baseDirectory) are correctly detected.
version: 1
frontend:
phases:
IMPORTANT - Please verify your build commands
build:
commands: []
artifacts:
IMPORTANT - Please verify your build output directory
baseDirectory: /
files:
- '**/*'
cache:
paths: []
Build and test settings
Download
Edit
Allow AWS Amplify to automatically deploy all files hosted in your project root directory
Server-Side Rendering (SSR) deployment
SSR apps have server-rendered pages or APIs. Learn more
Enable SSR app logs (optional)
AWS CloudShell
Feedback
Actions
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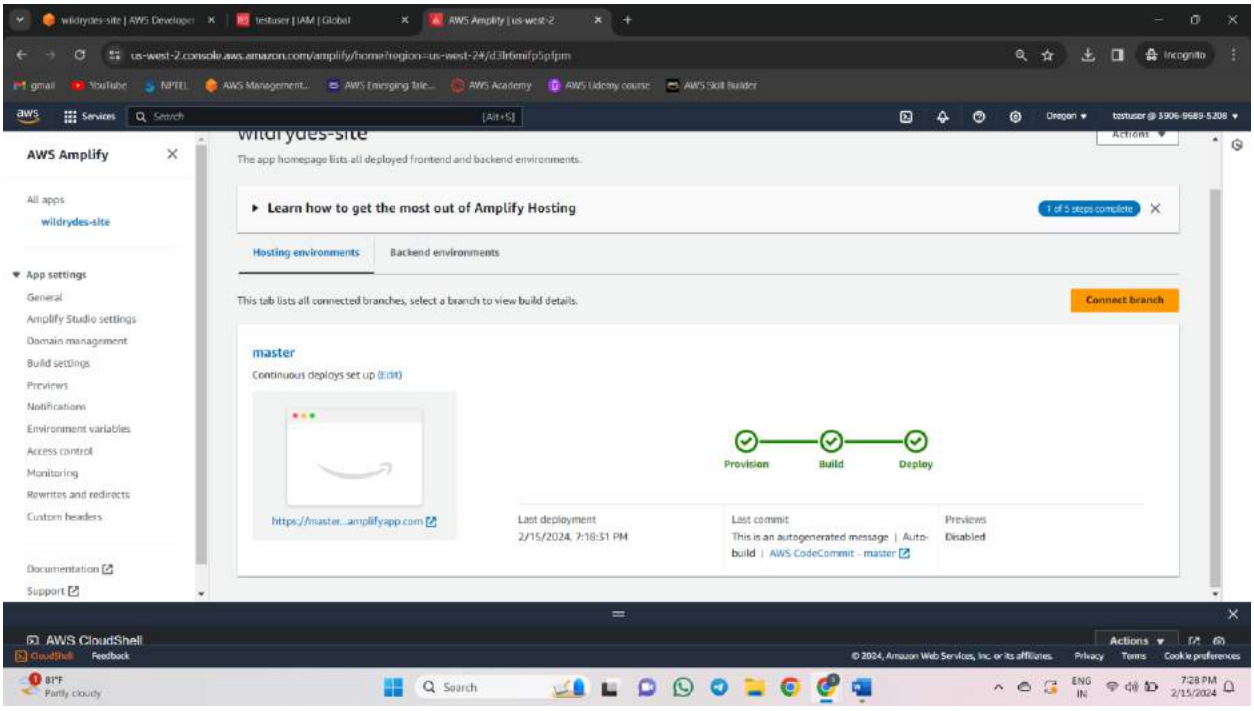
Privacy
Terms
Cookie preferences
87°F
Mostly cloudy
Search
ENG
IN
7:17 PM
2/15/2024


AWS Amplify
All apps
wildrydes-site
App settings
General
Amplify Studio settings
Domain management
Build settings
Previews
Notifications
Environment variables
Access control
Monitoring
Rewrites and redirects
Custom headers
Documentation
Support
wildrydes-site
Actions
The app homepage lists all deployed frontend and backend environments.
Learn how to get the most out of Amplify Hosting
1 of 5 steps complete
Hosting environments
Backend environments
This tab lists all connected branches, select a branch to view build details.
Connect branch
master
Continuous deploys set up (Edit)
https://master...amplifyapp.com
Provision
Build
Deploy
Last deployment
2/15/2024, 7:18:51 PM
Last commit
This is an autogenerated message | Auto-build | AWS CodeCommit - master
Previews
Disabled
AWS CloudShell
Feedback
Actions
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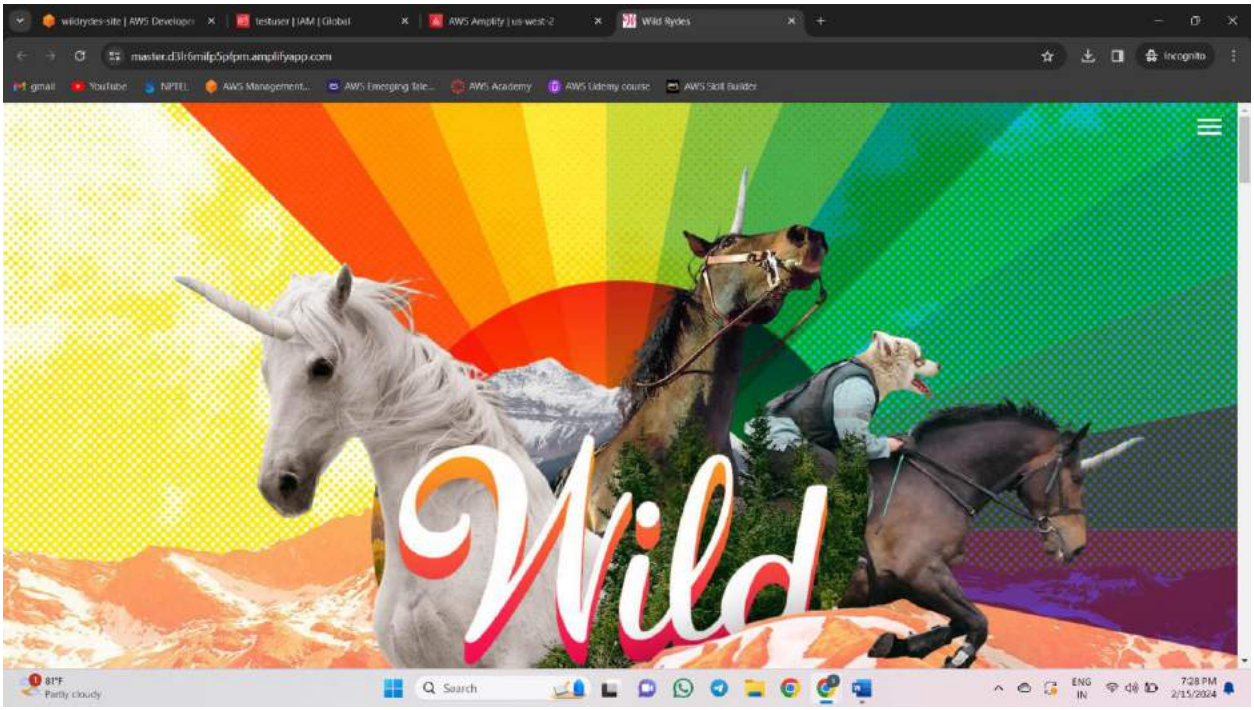
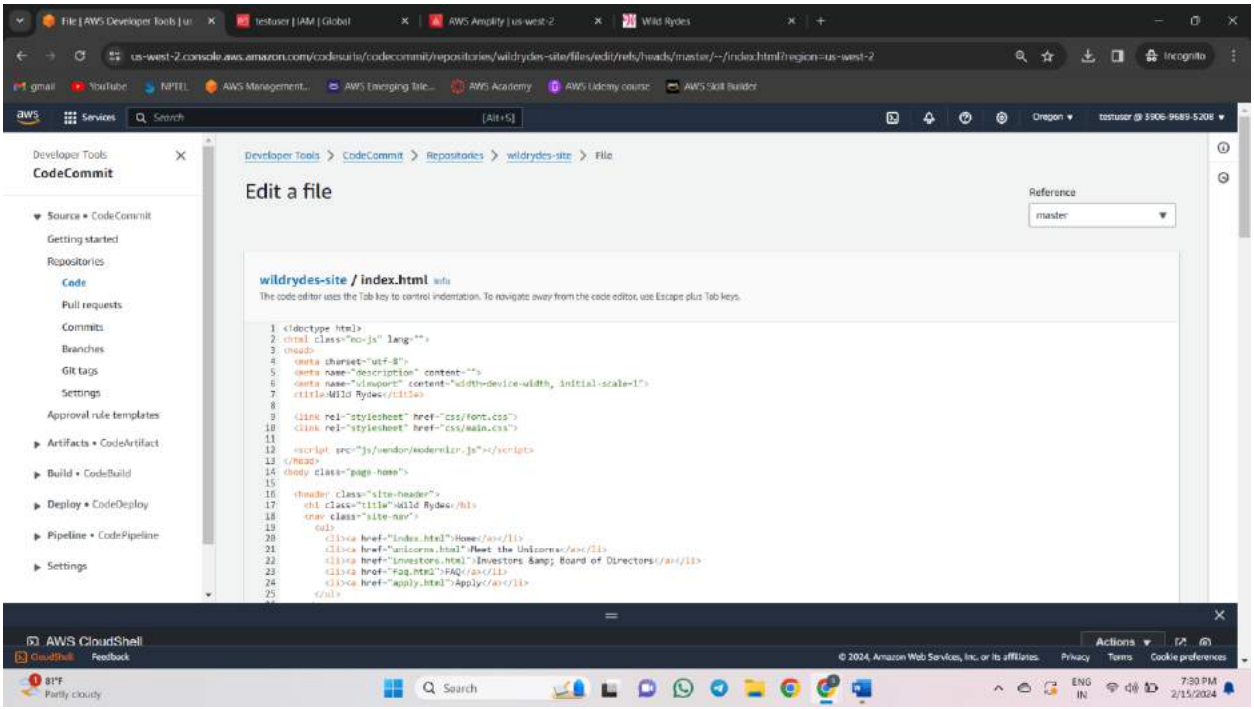
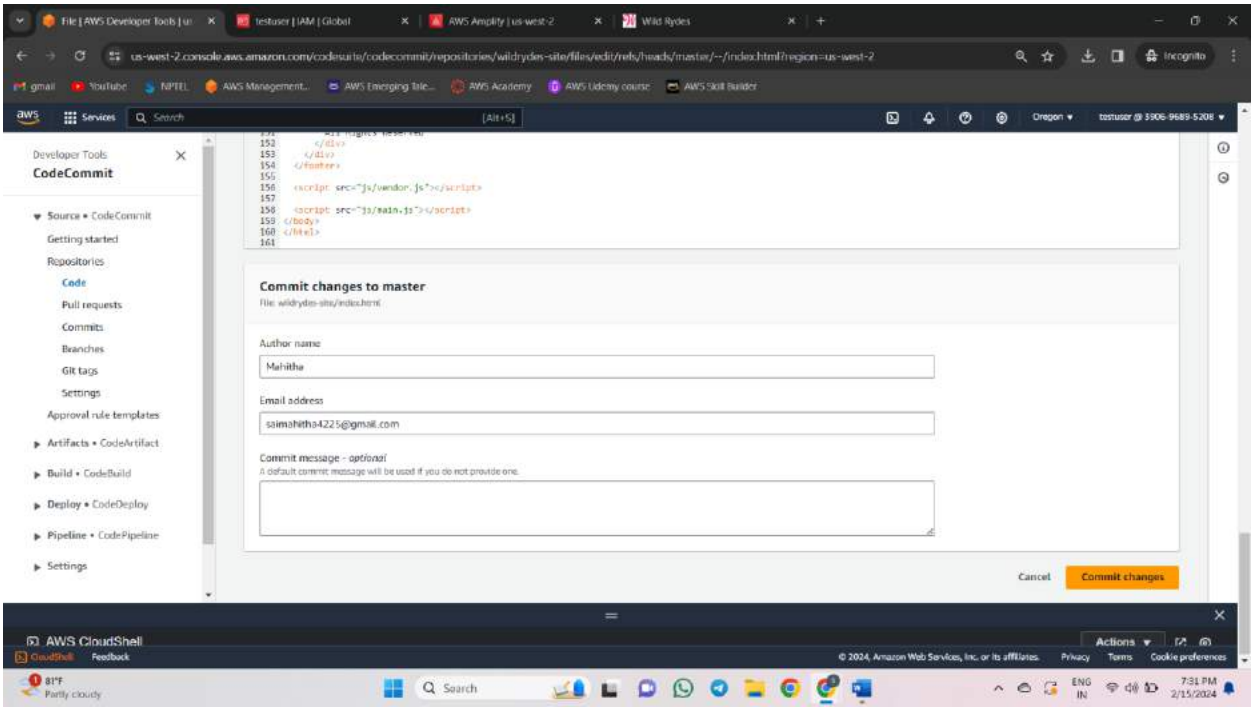
Privacy
Terms
Cookie preferences
81°F
Partly cloudy
Search
ENG
IN
7:28 PM
2/15/2024

11. Open the url

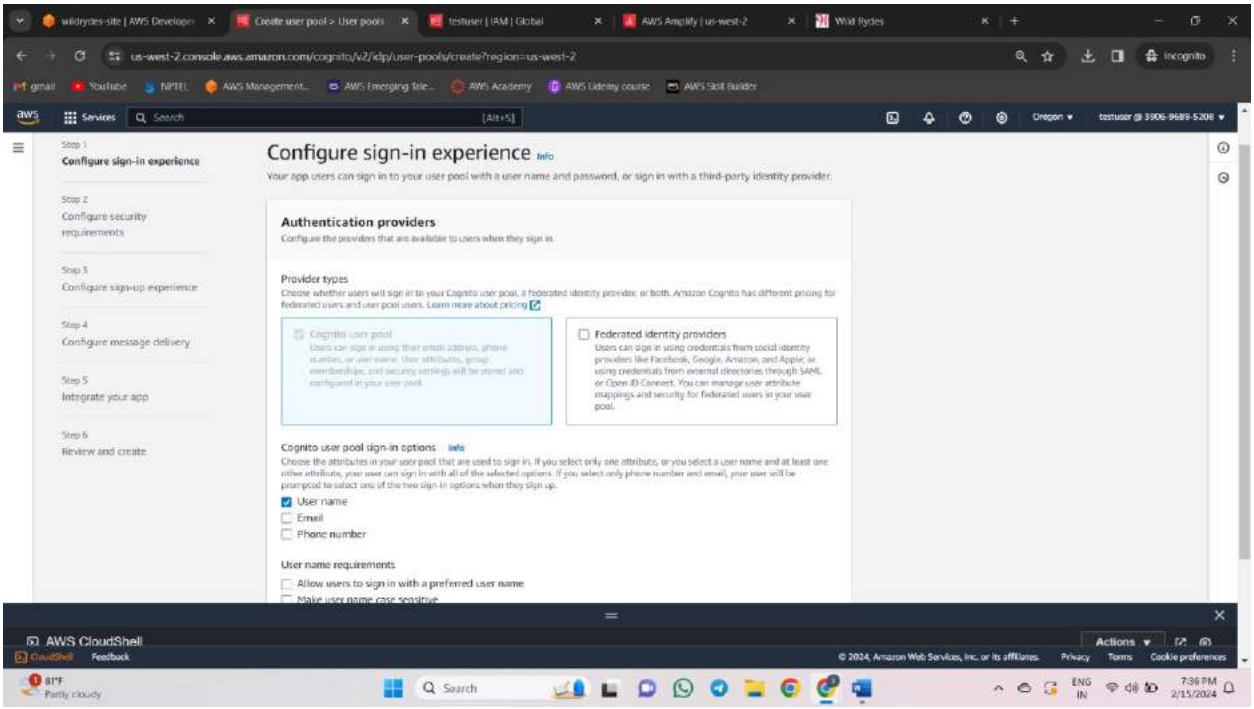


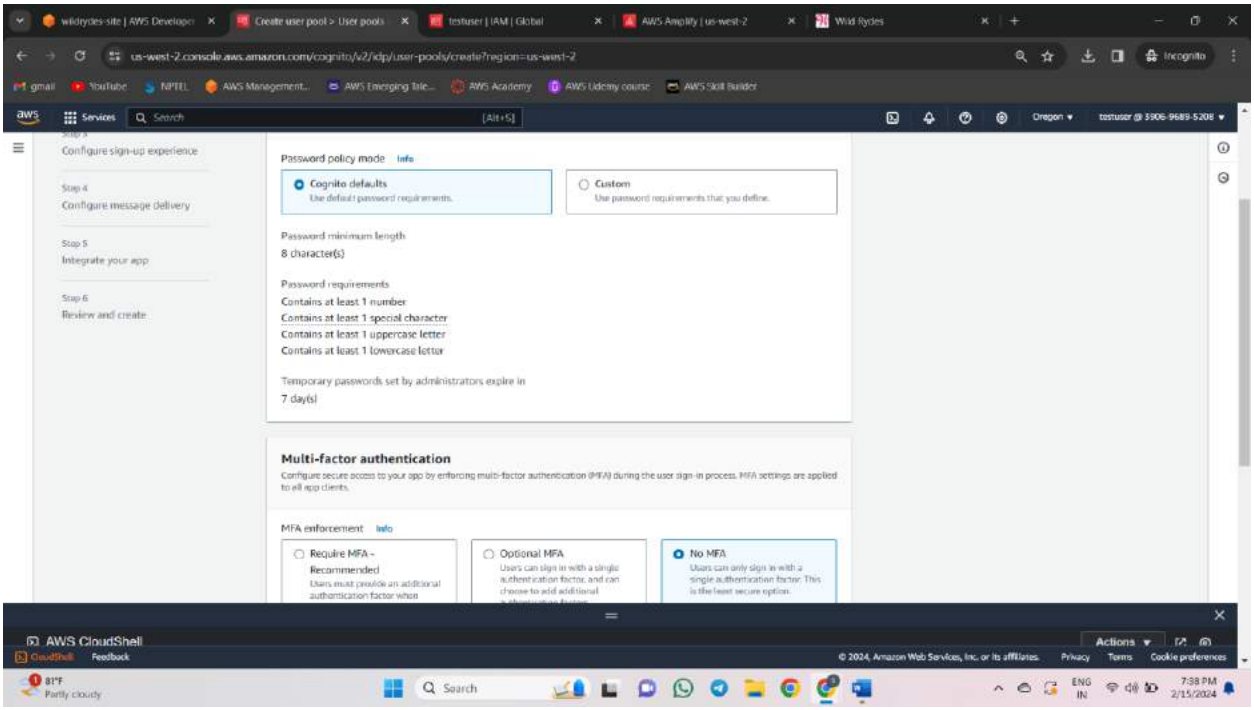
12. Edit the index.html in repository and check in Amplify

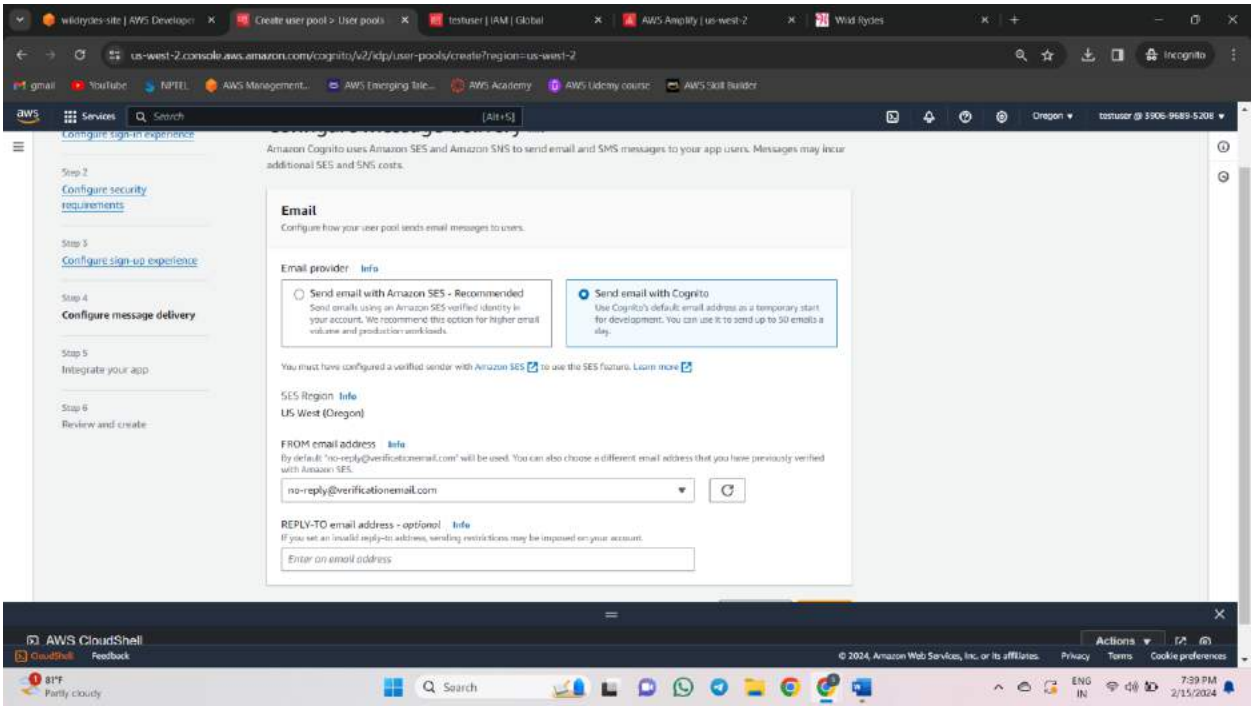




13. Create user pool in Cognito for authentication




Create user pool > User pools
us-west-2.console.aws.amazon.com/cognito/v2/idp/user-pools/create?region=us-west-2
Configure sign-up experience
Configure message delivery
Integrate your app
Review and create
Password policy mode Info
Cognito defaults
Use default password requirements.
Custom
Use password requirements that you define.
Password minimum length
8 character(s)
Password requirements
Contains at least 1 number
Contains at least 1 special character
Contains at least 1 uppercase letter
Contains at least 1 lowercase letter
Temporary passwords set by administrators expire in
7 day(s)
Multi-factor authentication
Configure secure access to your app by enforcing multi-factor authentication (MFA) during the user sign-in process. MFA settings are applied to all app clients.
MFA enforcement Info
Require MFA - Recommended
Optional MFA
No MFA
AWS CloudShell
Actions
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences


Create user pool > User pools
us-west-2.console.aws.amazon.com/cognito/v2/idp/user-pools/create?region=us-west-2
Configure sign-in experience
Configure security requirements
Configure sign-up experience
Configure message delivery
Integrate your app
Review and create
Amazon Cognito uses Amazon SES and Amazon SNS to send email and SMS messages to your app users. Messages may incur additional SES and SNS costs.
Email
Configure how your user pool sends email messages to users.
Email provider Info
Send email with Amazon SES - Recommended
Send emails using an Amazon SES verified identity in your account. We recommend this option for higher email volume and production workloads.
Send email with Cognito
Use Cognito's default email address as a temporary start for development. You can use it to send up to 50 emails a day.
You must have configured a verified sender with Amazon SES to use the SES feature. Learn more
SES Region Info
US West (Oregon)
FROM email address Info
By default "no-reply@verificationemail.com" will be used. You can also choose a different email address that you have previously verified with Amazon SES.
no-reply@verificationemail.com
REPLY-TO email address - optional Info
If you set an invalid reply-to address, sending restrictions may be imposed on your account.
Enter an email address
AWS CloudShell
Actions
Feedback
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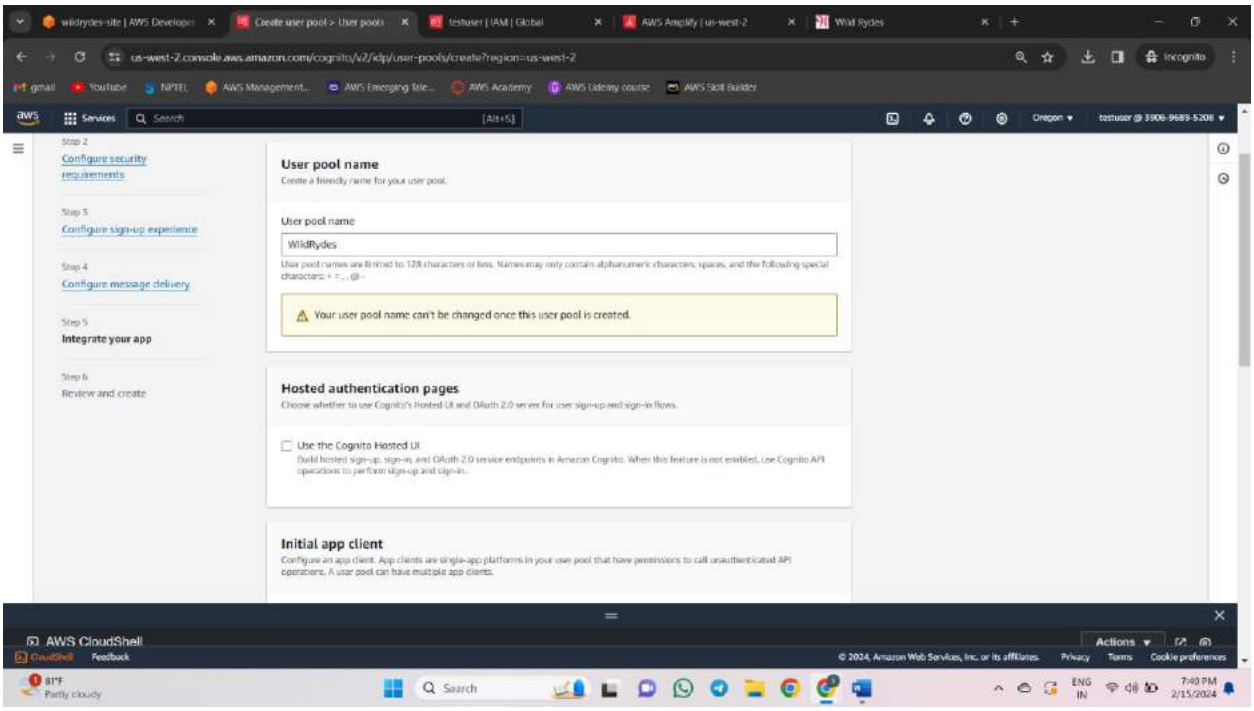
Privacy
Terms
Cookie preferences


Create user pool > User pools
us-west-2.console.aws.amazon.com/cognito/v2/idp/user-pools/create?region=us-west-2
Configure security requirements
Configure sign-up experience
Configure message delivery
Integrate your app
Review and create
User pool name
Create a friendly name for your user pool.
User pool name
WildRydes
Your user pool name can't be changed once this user pool is created.
Hosted authentication pages
Choose whether to use Cognito's Hosted UI and OAuth 2.0 server for user sign-up and sign-in flows.
Use the Cognito Hosted UI
Initial app client
Configure an app client. App clients are single-app platforms in your user pool that have permissions to call unauthenticated API operations. A user pool can have multiple app clients.
AWS CloudShell
Actions
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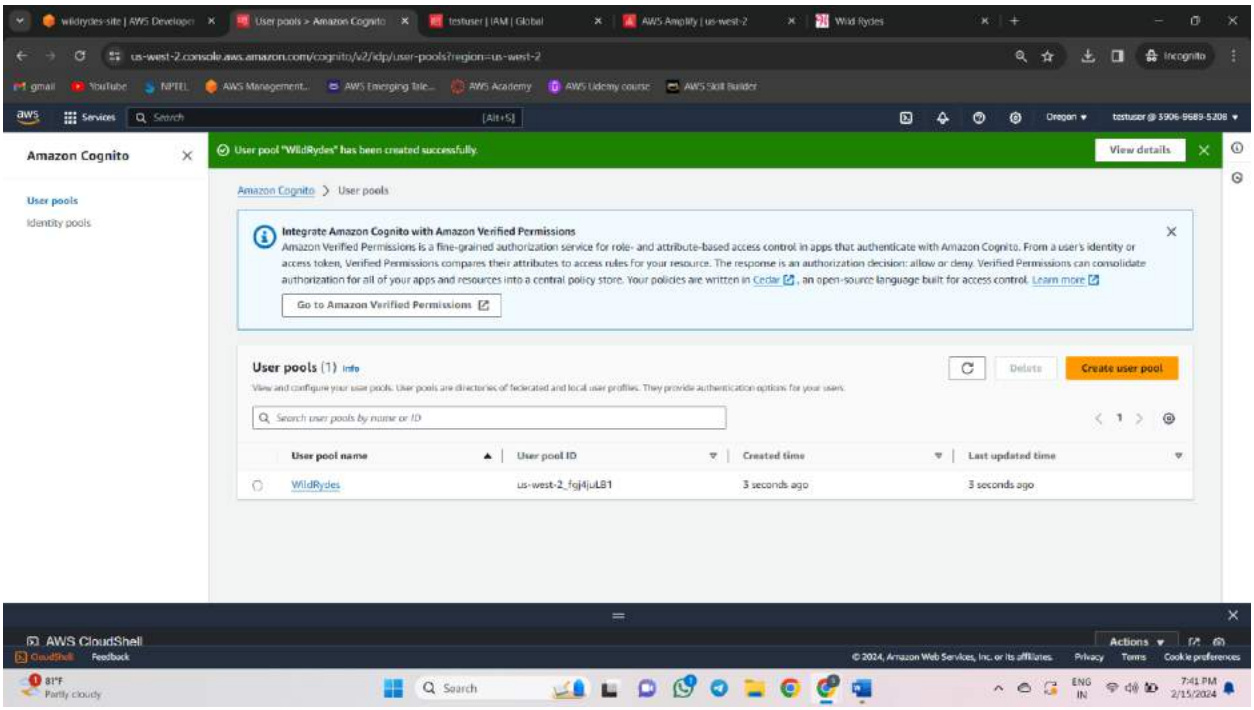
Cookie preferences


User pools > Amazon Cognito
us-west-2.console.aws.amazon.com/cognito/v2/idp/user-pools?region=us-west-2
Amazon Cognito
User pools
Identity pools
User pool "WildRydes" has been created successfully.
View details
Amazon Cognito > User pools
Integrate Amazon Cognito with Amazon Verified Permissions
Go to Amazon Verified Permissions
User pools (1) Info
Delete
Create user pool
Search user pools by name or ID
User pool name
User pool ID
Created time
Last updated time
WildRydes
us-west-2_fgj4juLB1
3 seconds ago
3 seconds ago
AWS CloudShell
Actions
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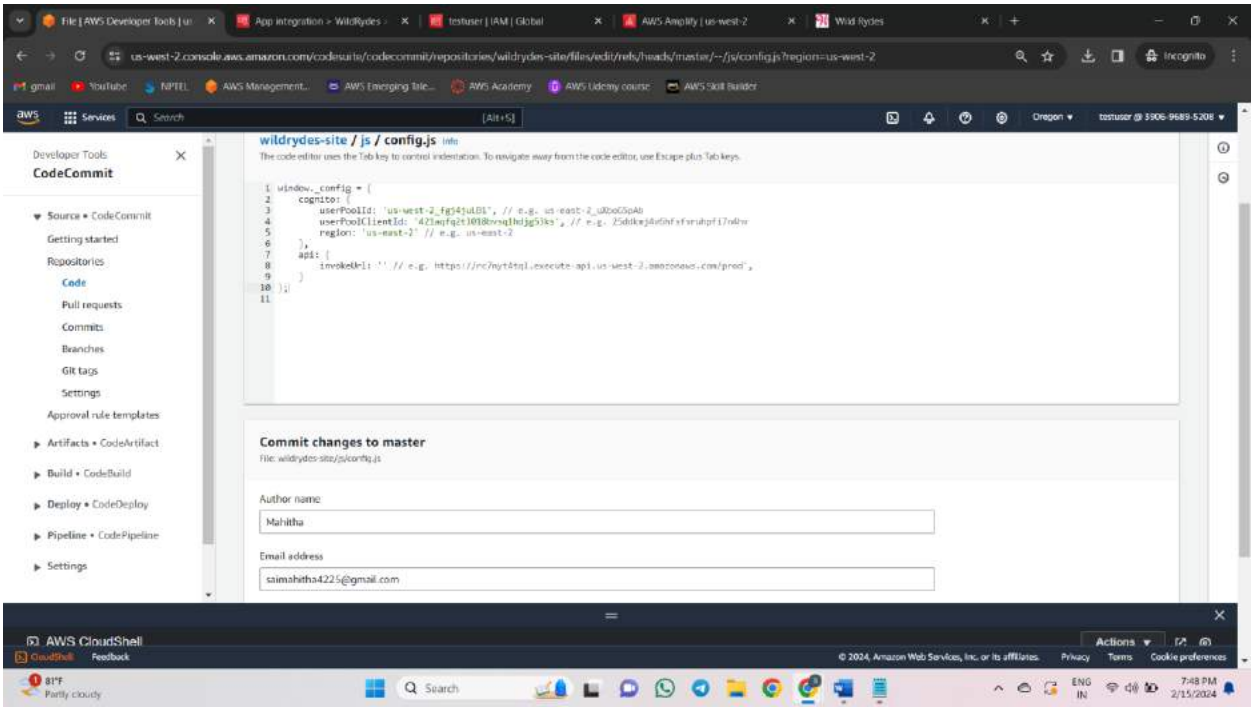
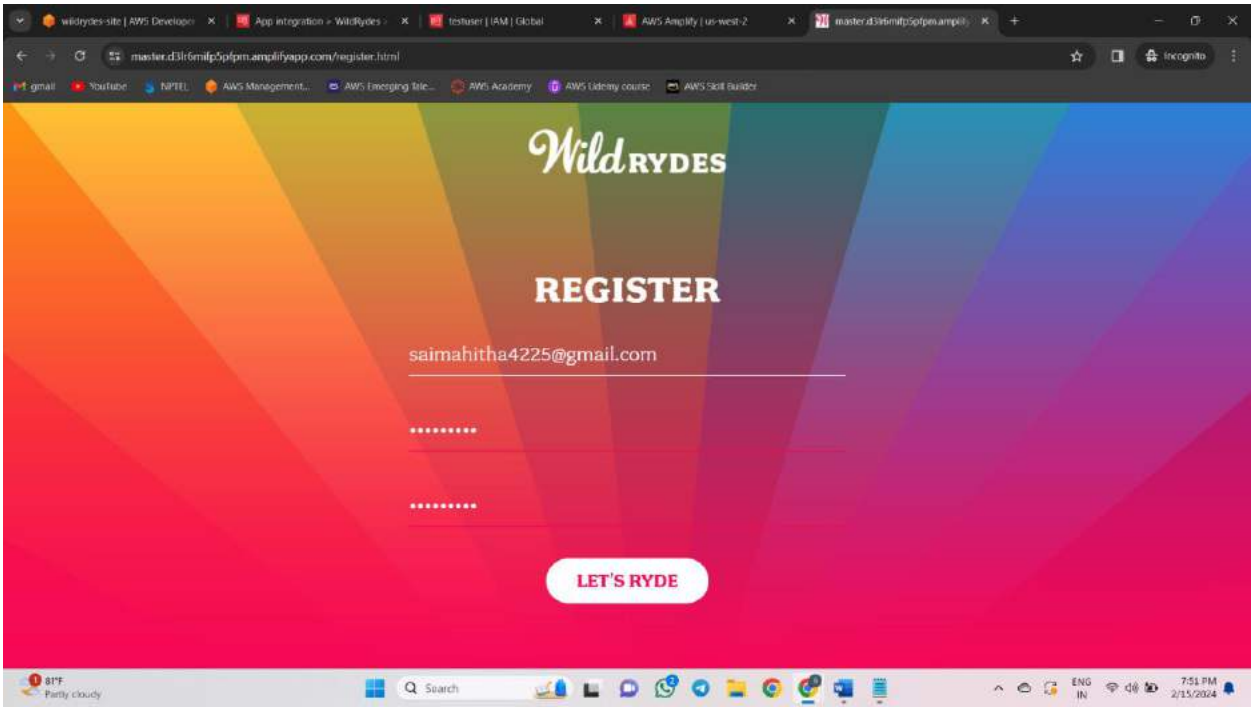
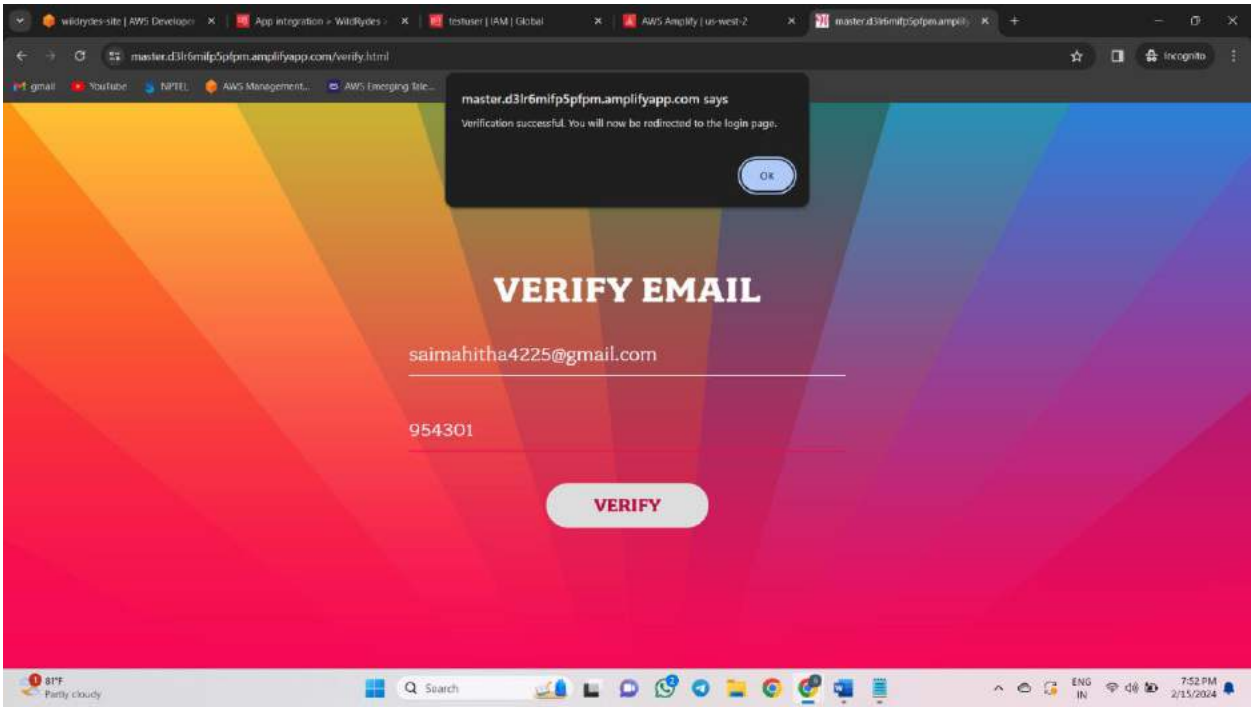
Cookie preferences

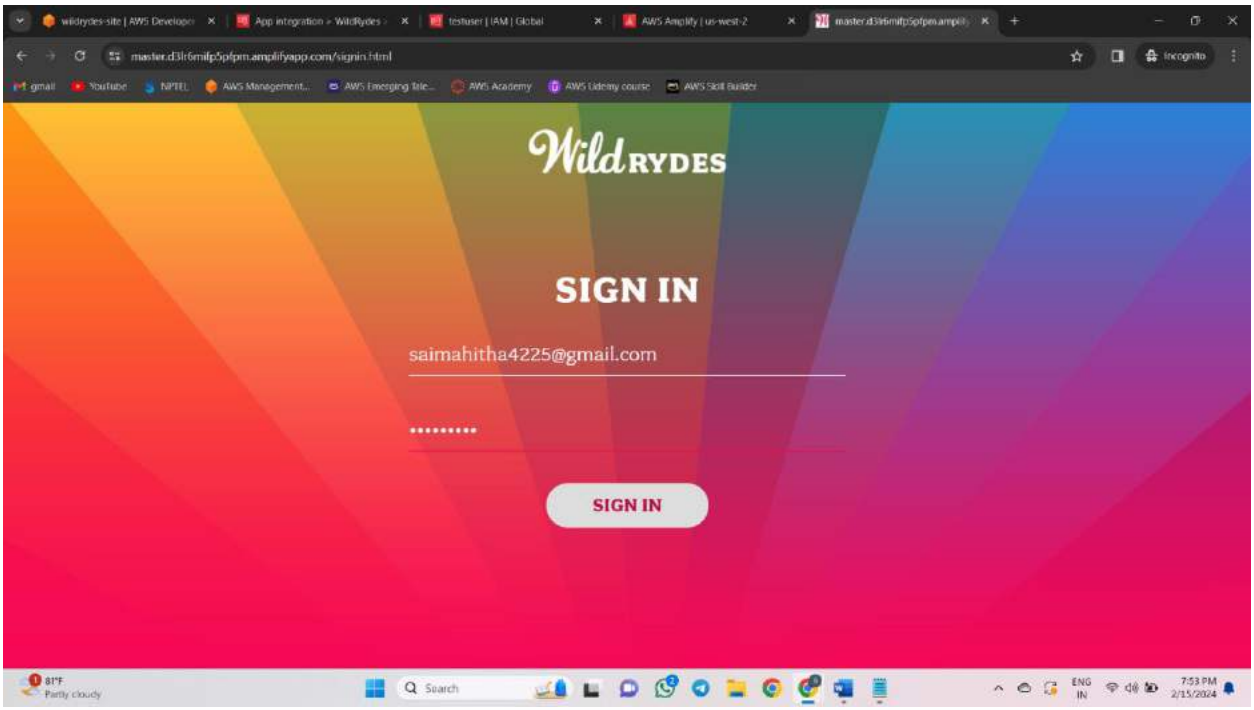
14. Copy the user pool id and client id in js/config.js in repository



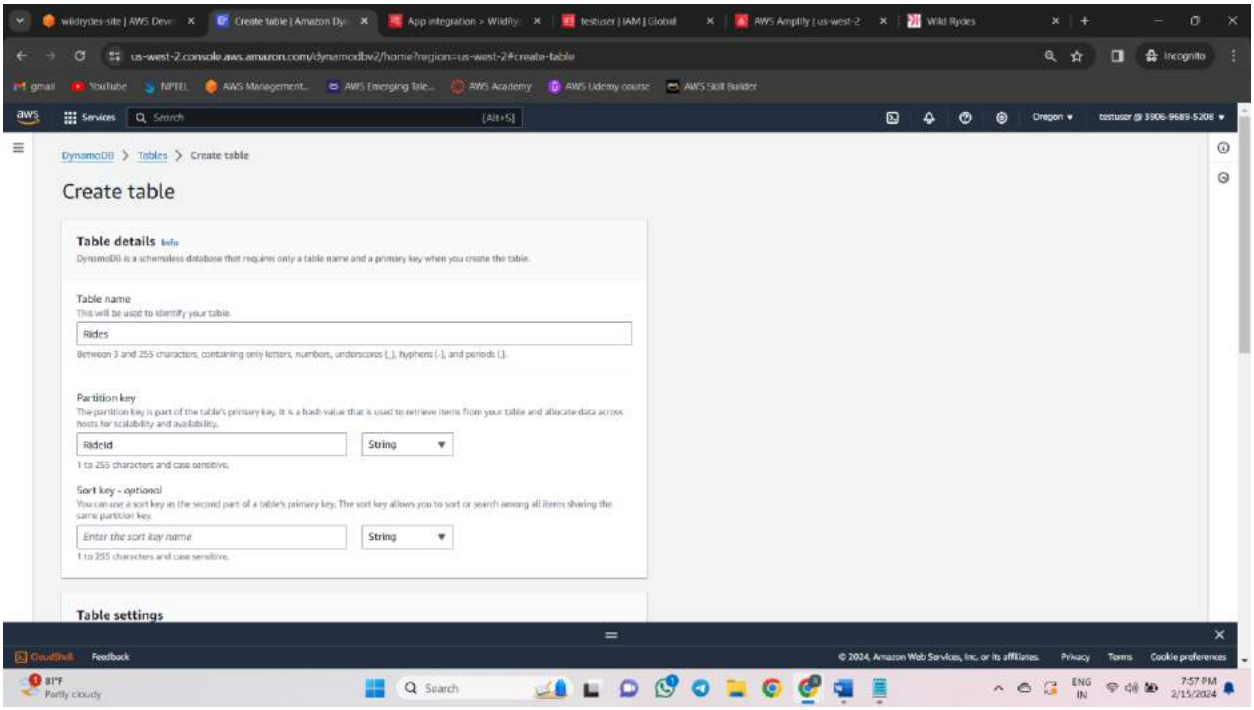
15. Register in the web giving your email with verification code

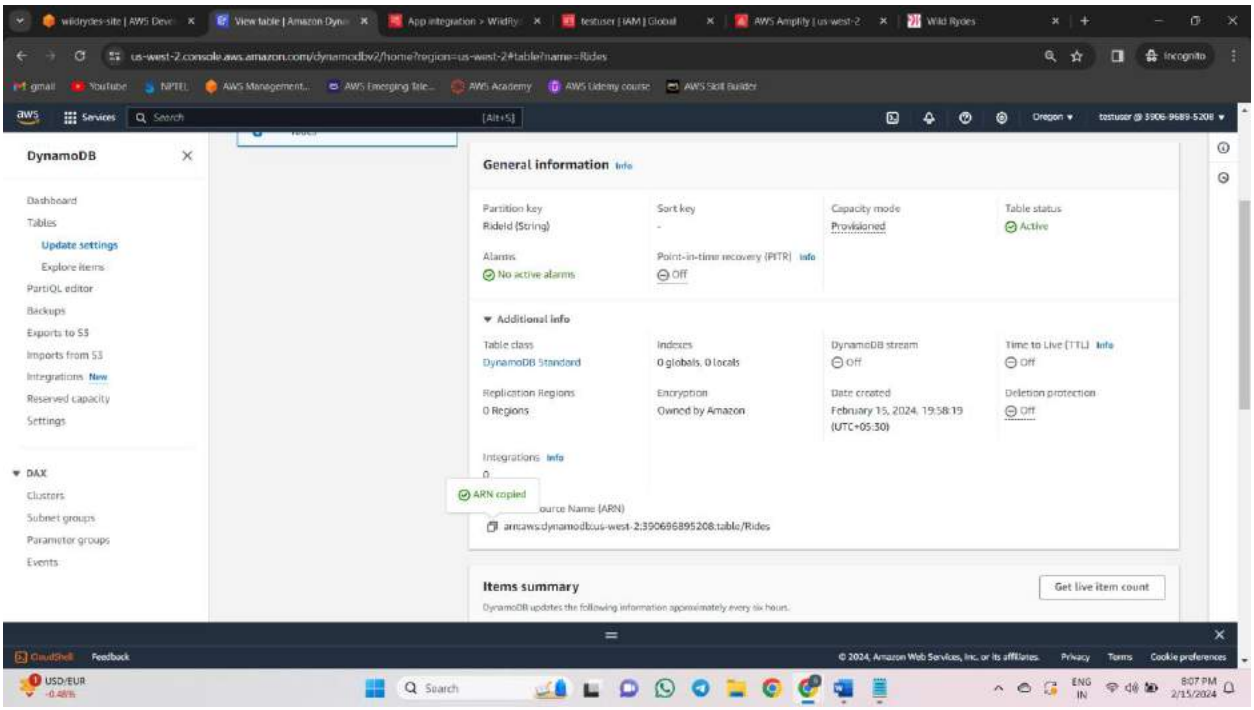



master.d3lr6mifp5pfpm.amplifyapp.com says
Verification successful. You will now be redirected to the login page.
OK
VERIFY EMAIL
saimahitha4225@gmail.com
954301
VERIFY

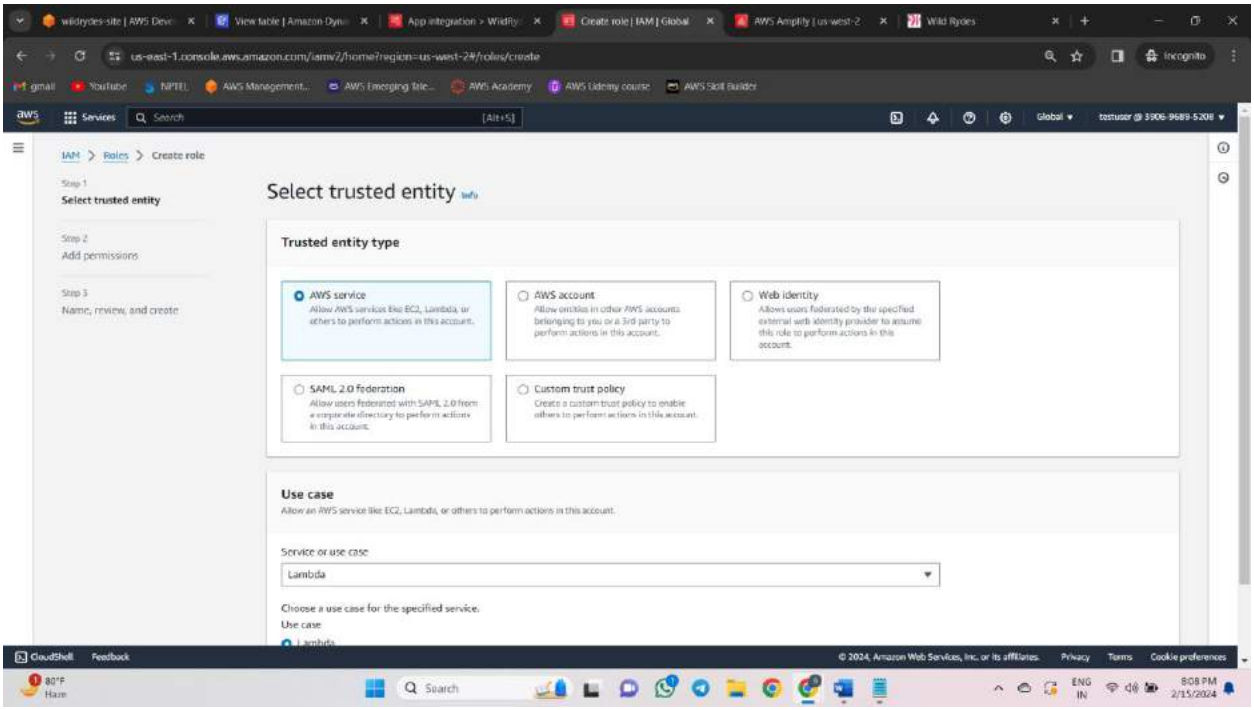

WildRYDES
SIGN IN
saimahitha4225@gmail.com
SIGN IN

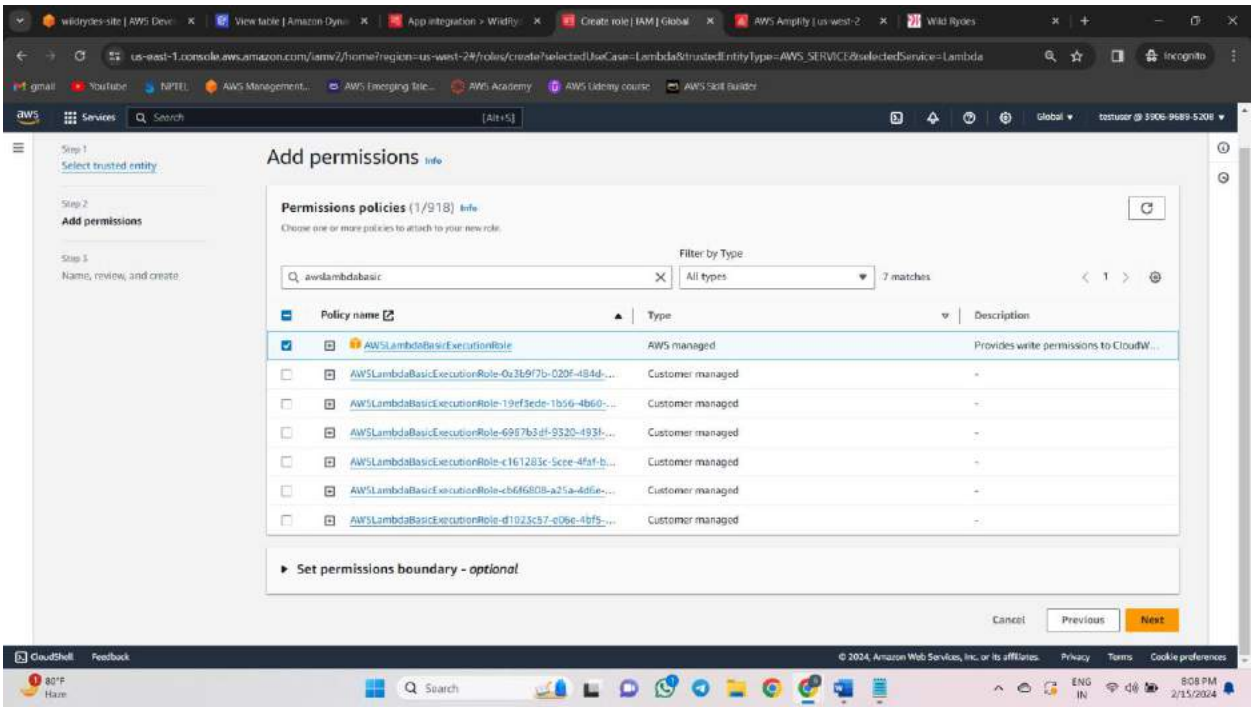
16. Create table in DynamoDB

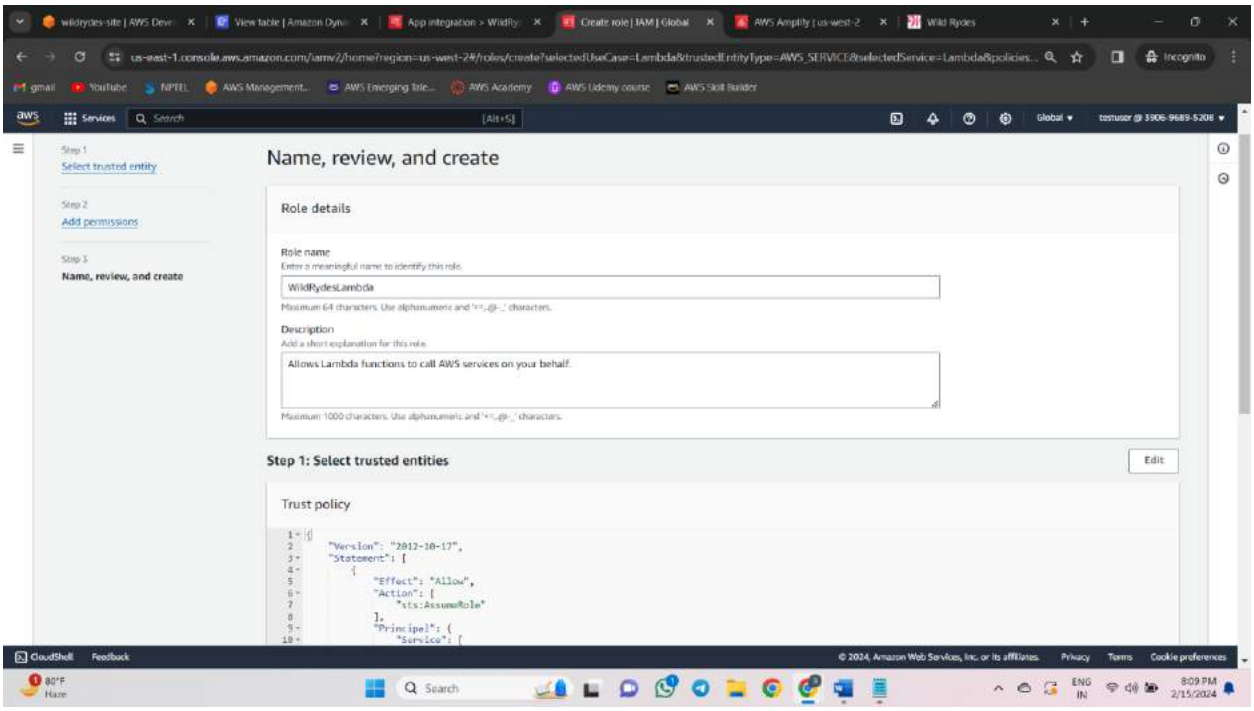




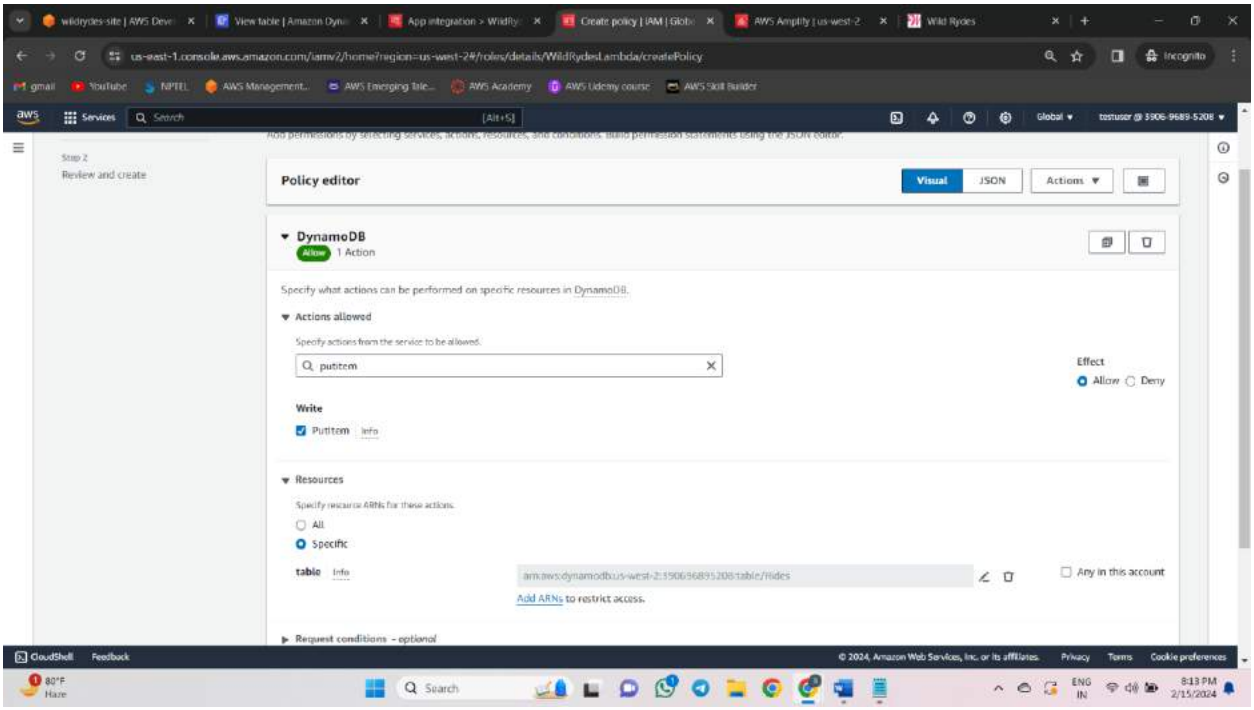
17. Create a role in IAM

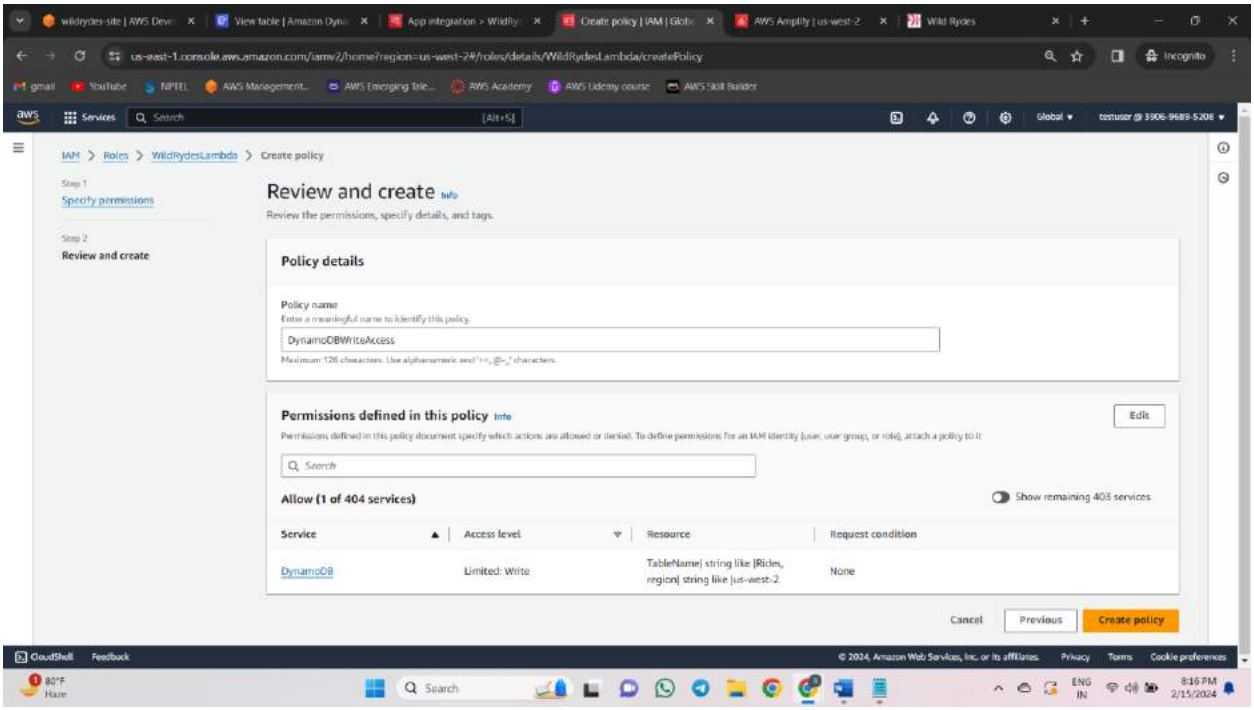




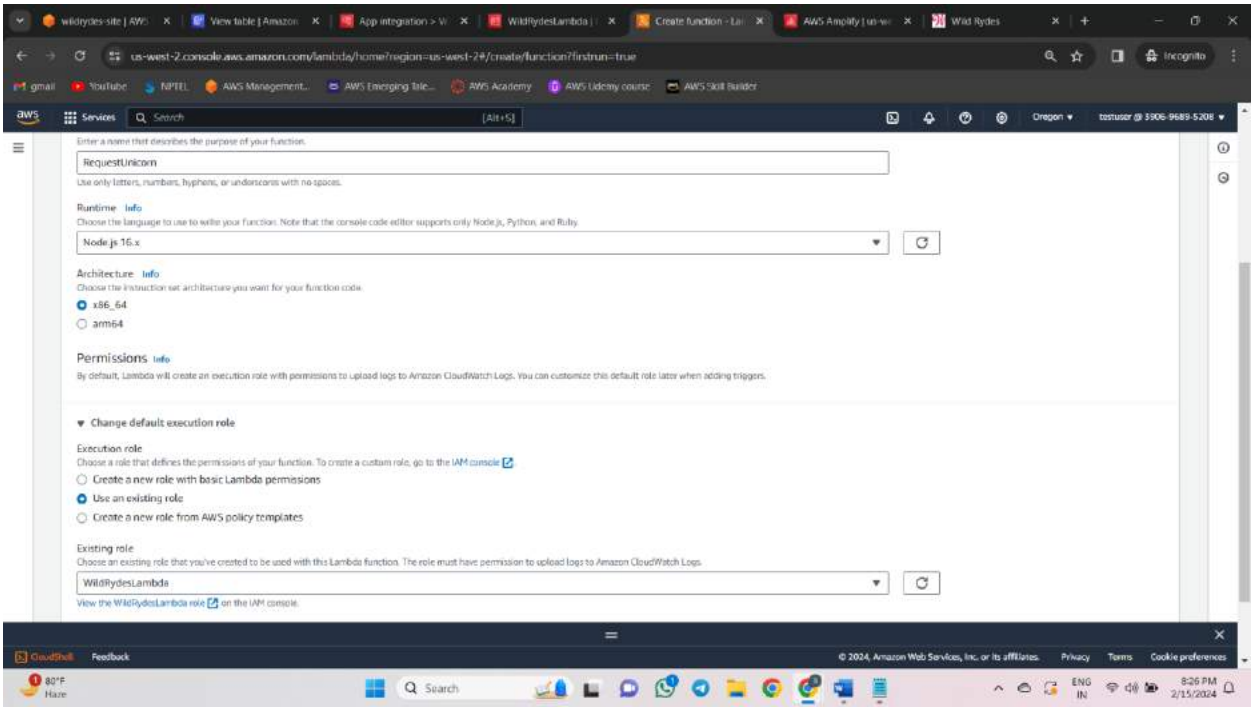


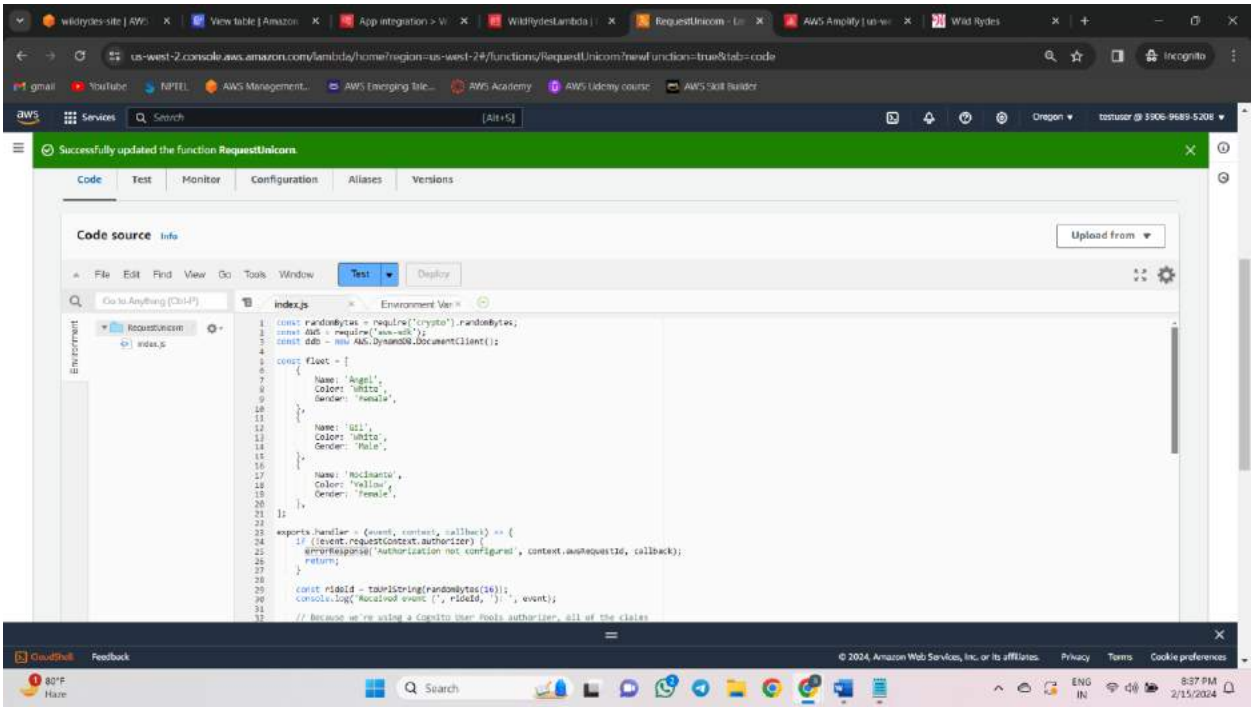
18. Create inline policy to that Role

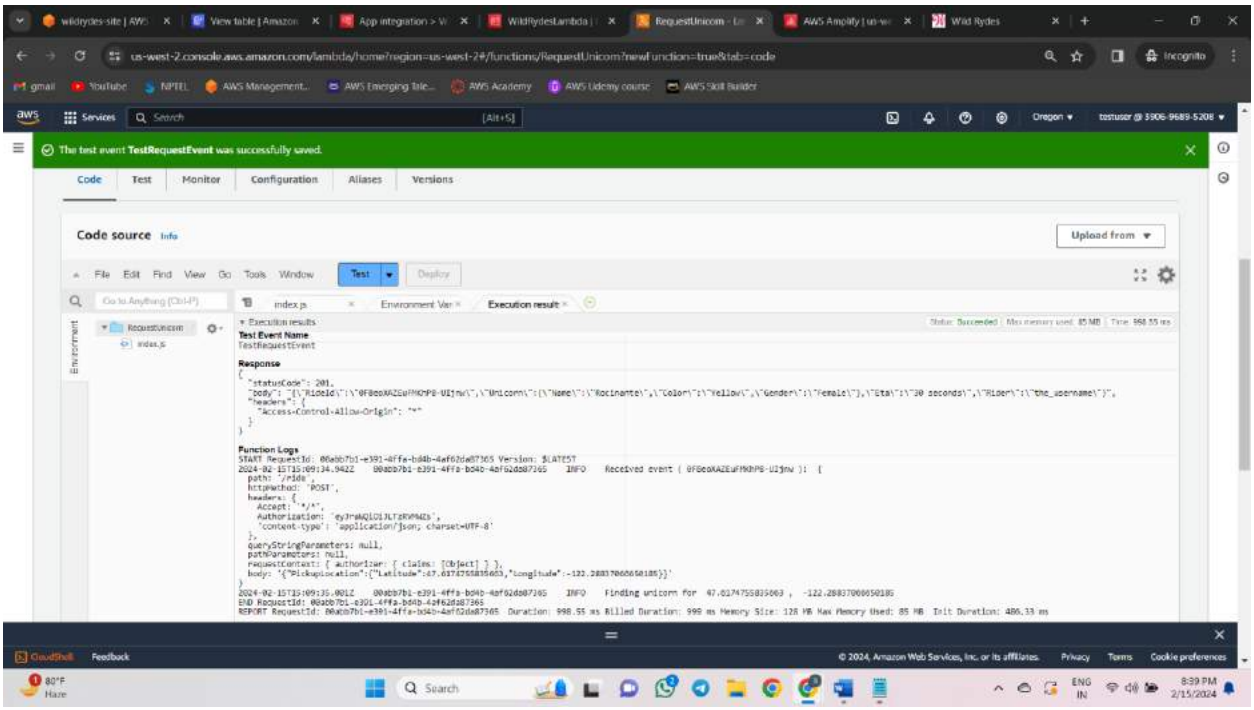


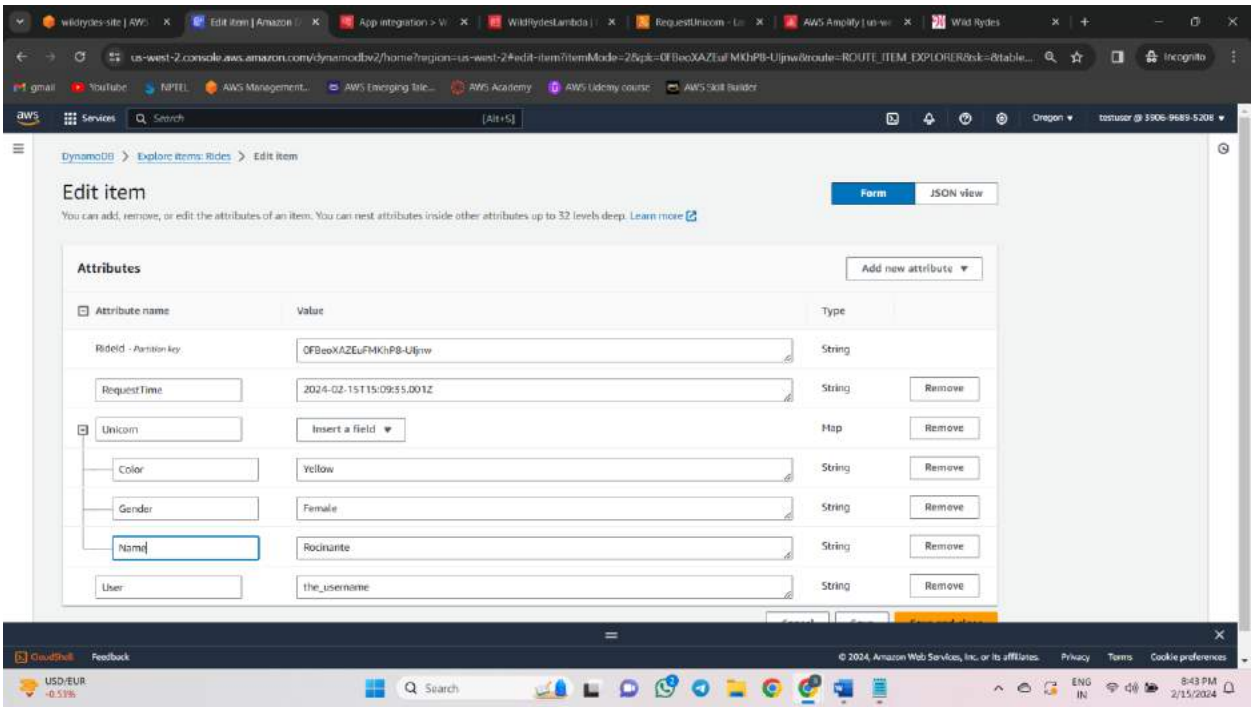


19. Create a lambda function “RequestUnicorn”

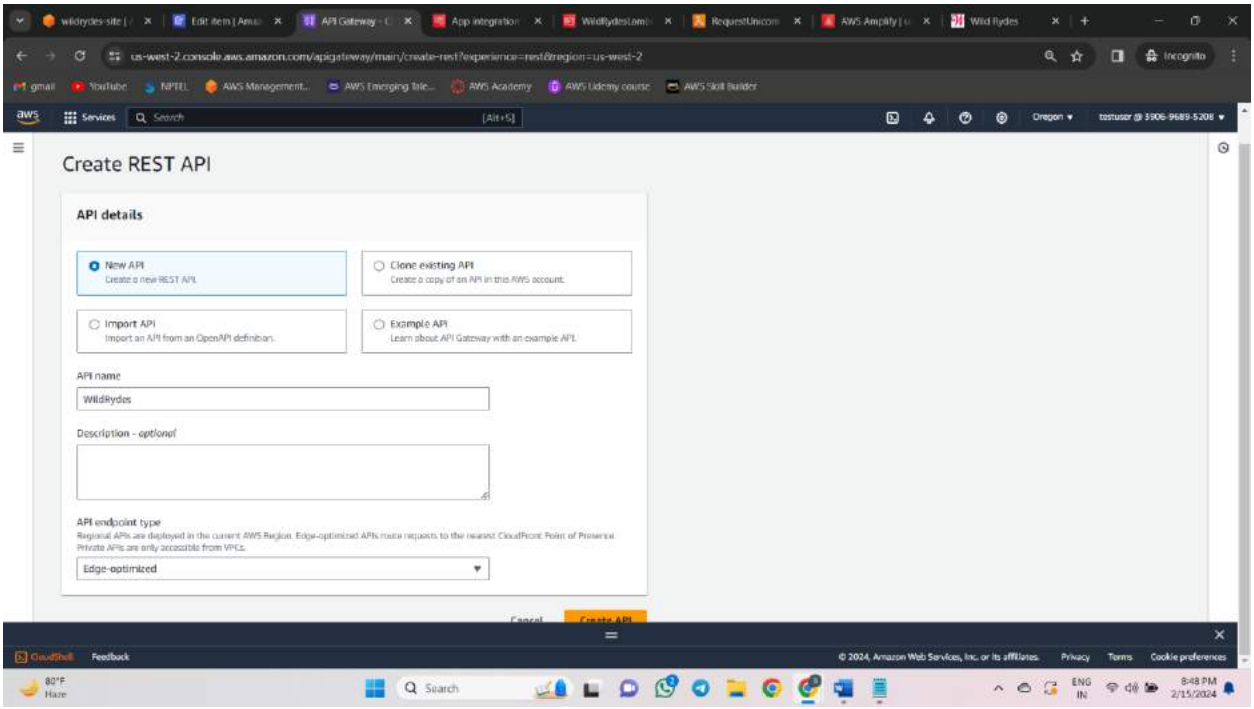


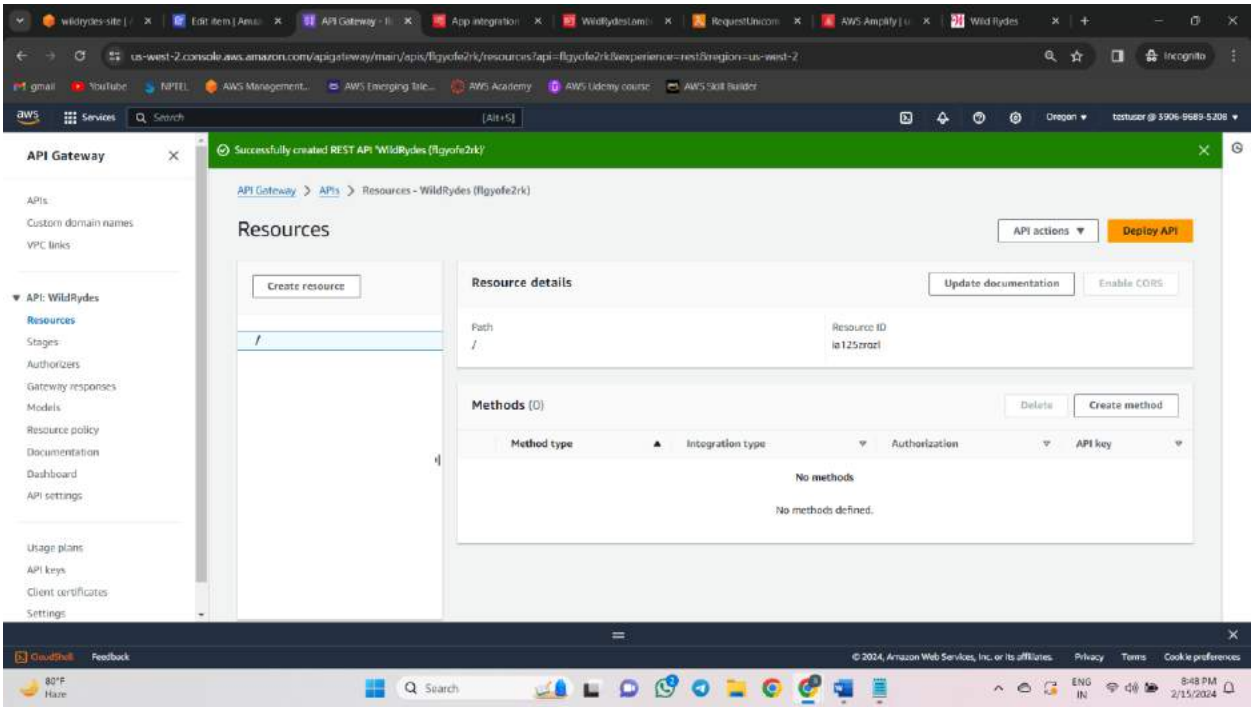

Successfully updated the function RequestUnicorn.
Code
Test
Monitor
Configuration
Aliases
Versions
Code source Info
Upload from
File Edit Find View Go Tools Window
Test
Deploy
index.js
Environment Var
RequestUnicorn
index.js
const randomBytes = require('crypto').randomBytes;
const AWS = require('aws-sdk');
const ddb = new AWS.DynamoDB.DocumentClient();
const fleet = [
{
Name: 'Angel',
Color: 'White',
Gender: 'Female',
},
{
Name: 'Gil',
Color: 'White',
Gender: 'Male',
},
{
Name: 'Rocinante',
Color: 'Yellow',
Gender: 'Female',
},
];
exports.handler = (event, context, callback) => {
if (!event.requestContext.authorizer) {
errorResponse('Authorization not configured', context.awsRequestId, callback);
return;
}
const rideId = toUrlString(randomBytes(16));
console.log('Received event (', rideId, '): ', event);
// Because we're using a Cognito User Pools authorizer, all of the claims
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences
80°F
Haze
Search
ENG
IN
8:37 PM
2/15/2024


The test event TestRequestEvent was successfully saved.
Code
Test
Monitor
Configuration
Aliases
Versions
Code source Info
Upload from
File Edit Find View Go Tools Window
Test
Deploy
index.js
Environment Var
Execution result
Execution results
Test Event Name
TestRequestEvent
Response
{
"statusCode": 201,
"body": "{\"RideId\":\"0FBeoKAZEuFMKhPB-UIjnw\",\"Unicorn\":{\"Name\":\"Rocinante\",\"Color\":\"Yellow\",\"Gender\":\"Female\"},\"Eta\":\"30 seconds\",\"Rider\":\"the_username\"}",
"headers": {
"Access-Control-Allow-Origin": "*"
}
}
Function Logs
START RequestId: 06abb7b1-e391-4ffa-b04b-4af62da87365 Version: $LATEST
2024-02-15T15:09:34.942Z 00abb7b1-e391-4ffa-b04b-4af62da87365 INFO Received event (0FBeoKAZEuFMKhPB-UIjnw): {
path: '/ride',
httpMethod: 'POST',
headers: {
Accept: '*/*',
Authorization: 'eyJraWQiOiJLT1RVPWE5',
'content-type': 'application/json; charset=UTF-8'
},
queryStringParameters: null,
pathParameters: null,
requestContext: { authorizer: { claims: [Object] } },
body: '{"PickupLocation":{"Latitude":47.617475585063,"Longitude":-122.28837066650185}}'
}
2024-02-15T15:09:35.001Z 00abb7b1-e391-4ffa-b04b-4af62da87365 INFO Finding unicorn for 47.617475585063 , -122.28837066650185
END RequestId: 00abb7b1-e391-4ffa-b04b-4af62da87365
REPORT RequestId: 00abb7b1-e391-4ffa-b04b-4af62da87365 Duration: 998.55 ms Billed Duration: 999 ms Memory Size: 128 MB Max Memory Used: 85 MB Init Duration: 486.33 ms
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences
80°F
Haze
Search
ENG
IN
8:39 PM
2/15/2024

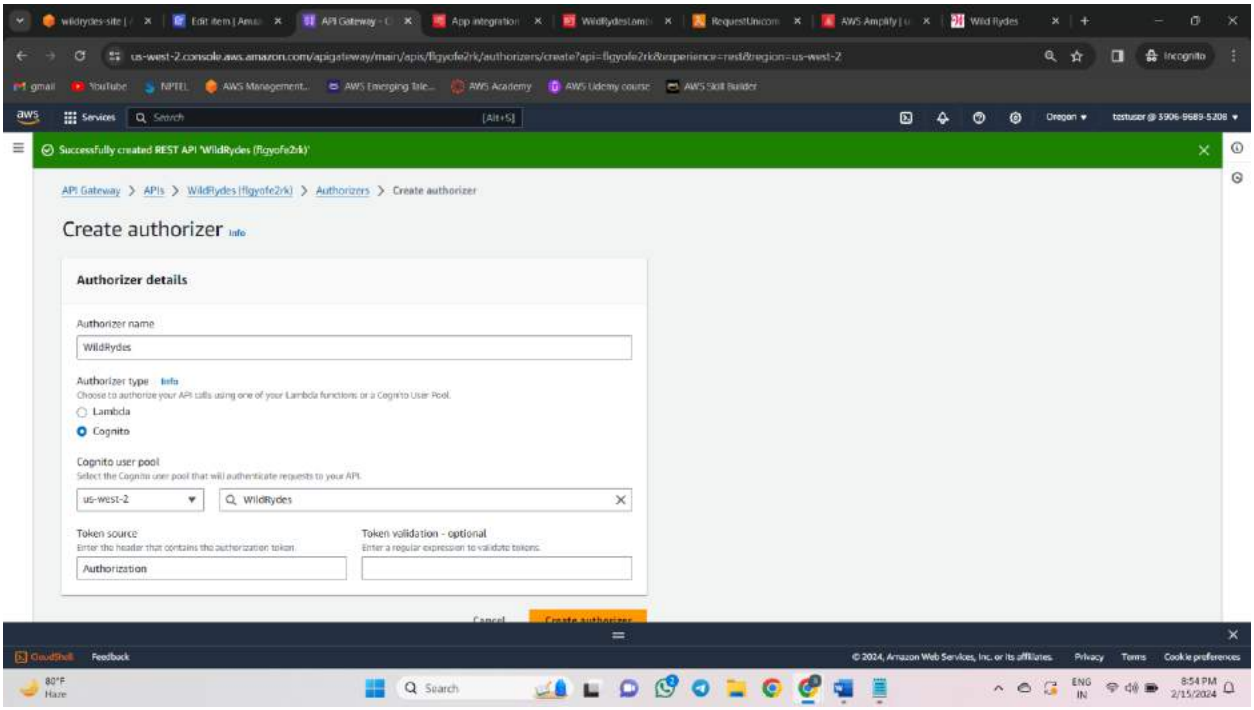


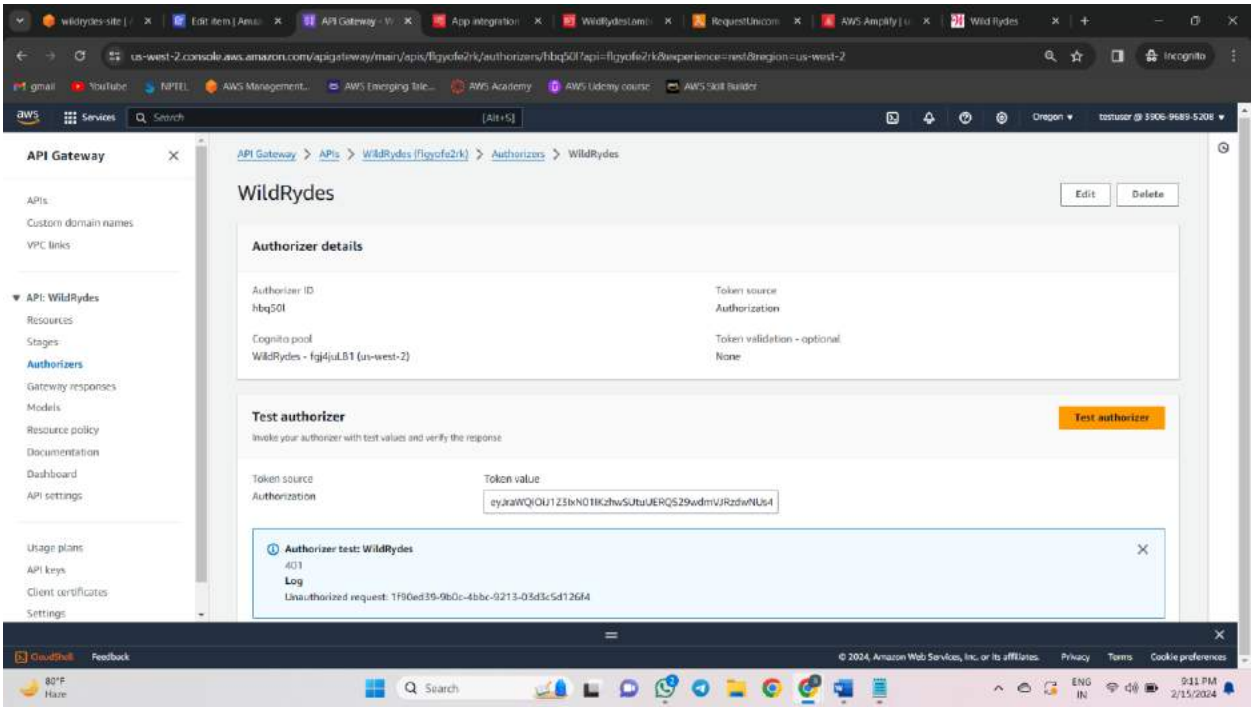
20. Create API Gateway



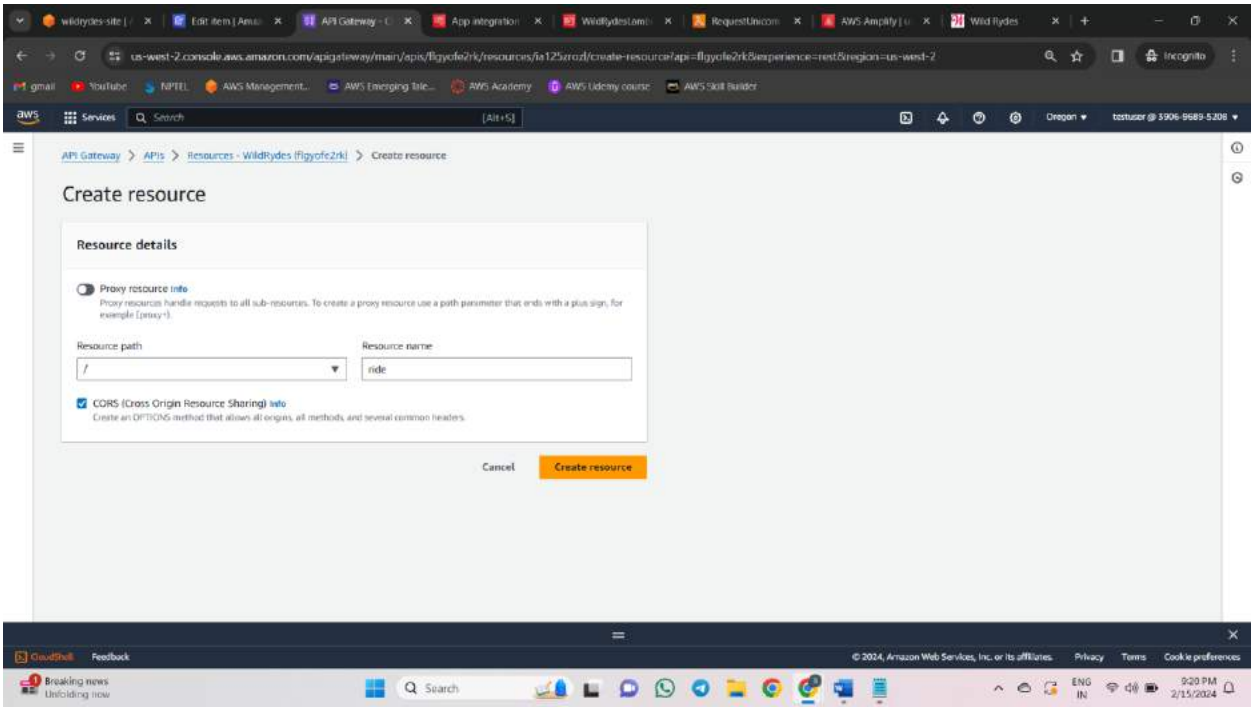


21. Create authorizer named “WildRydes” and test authorizer

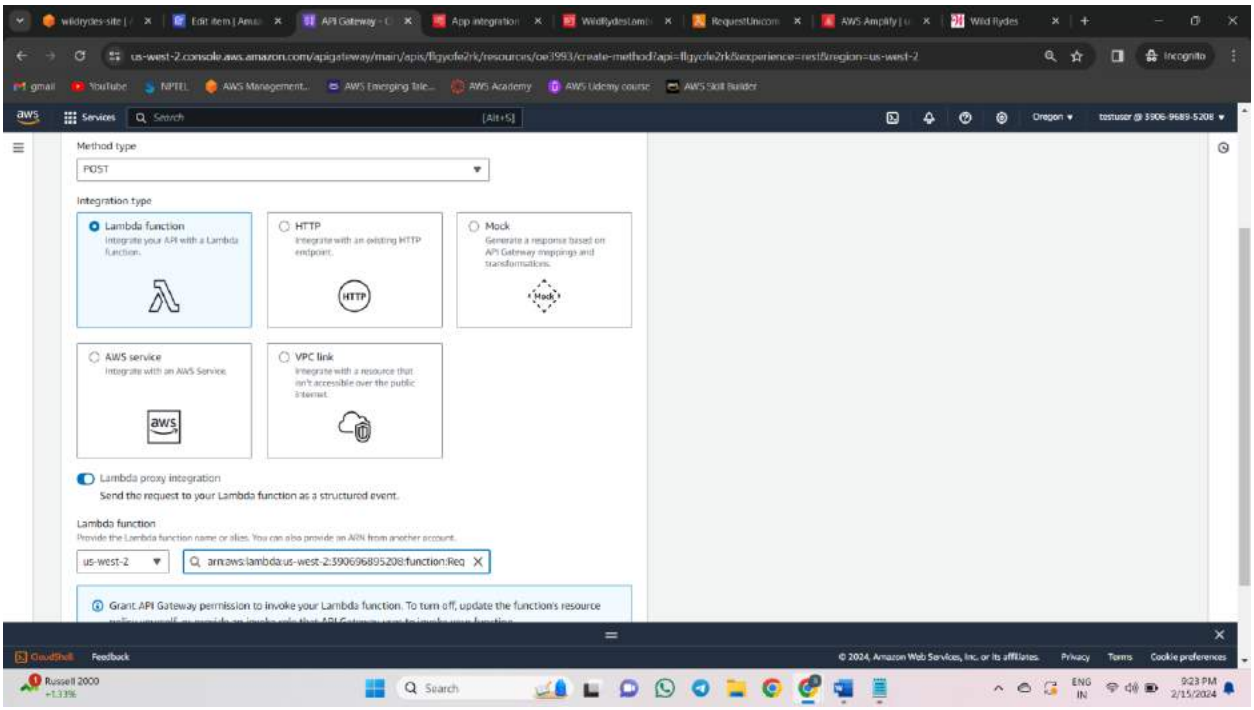




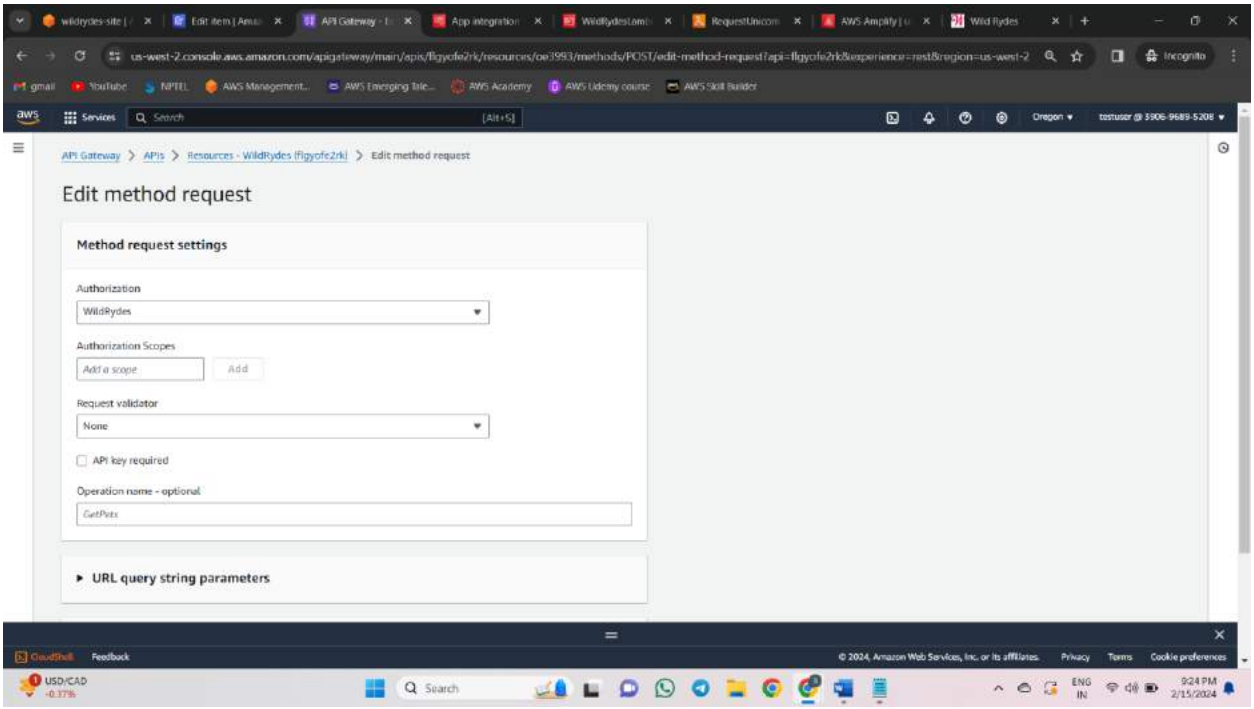
22. Create resource in API named “/ride”

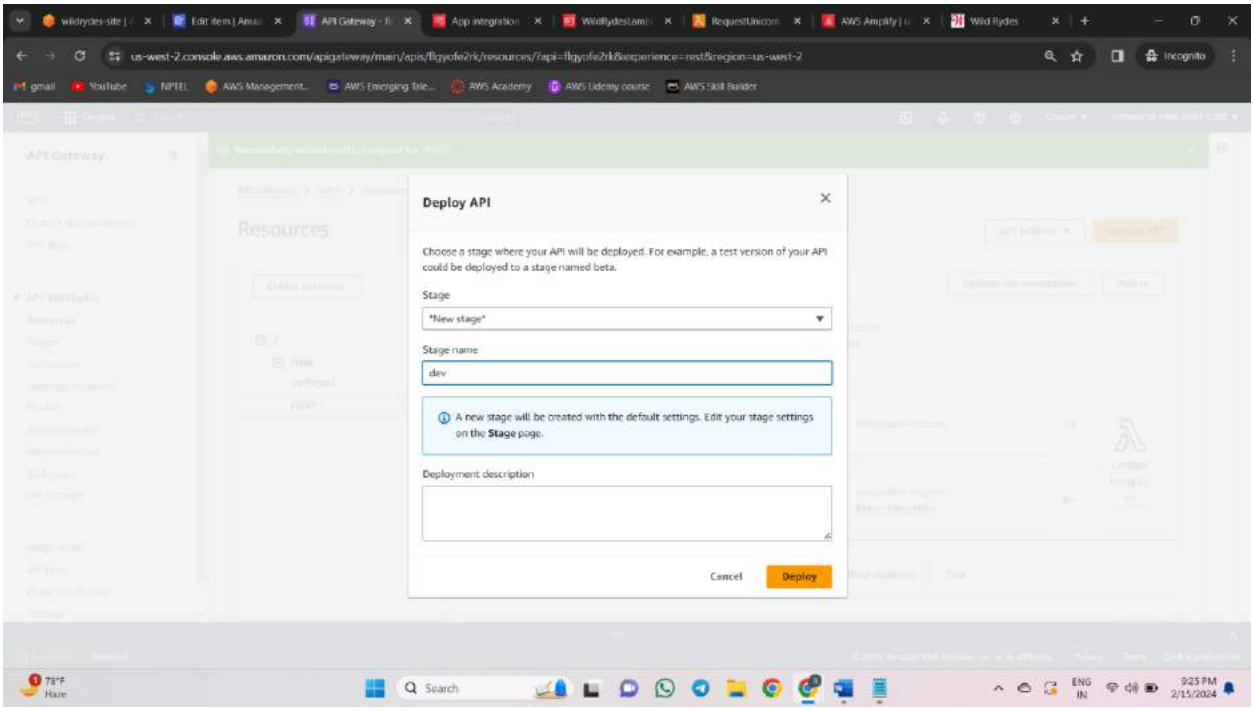


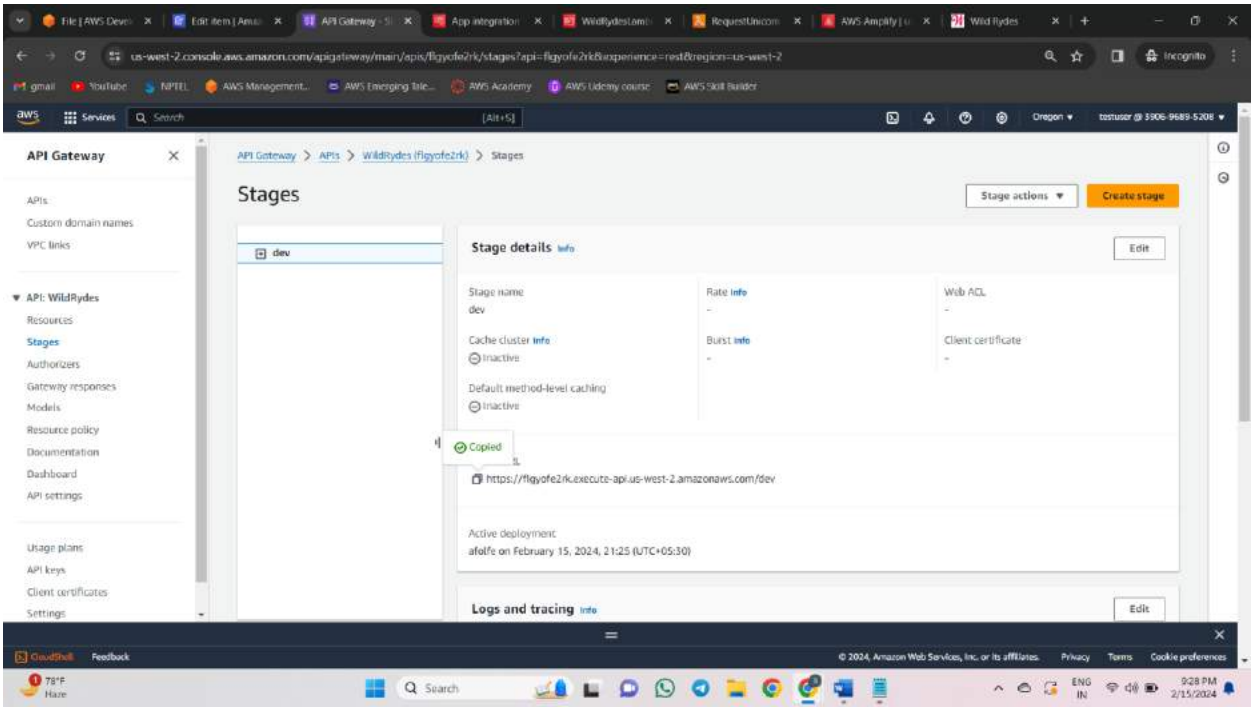
23. Create method in resource /ride



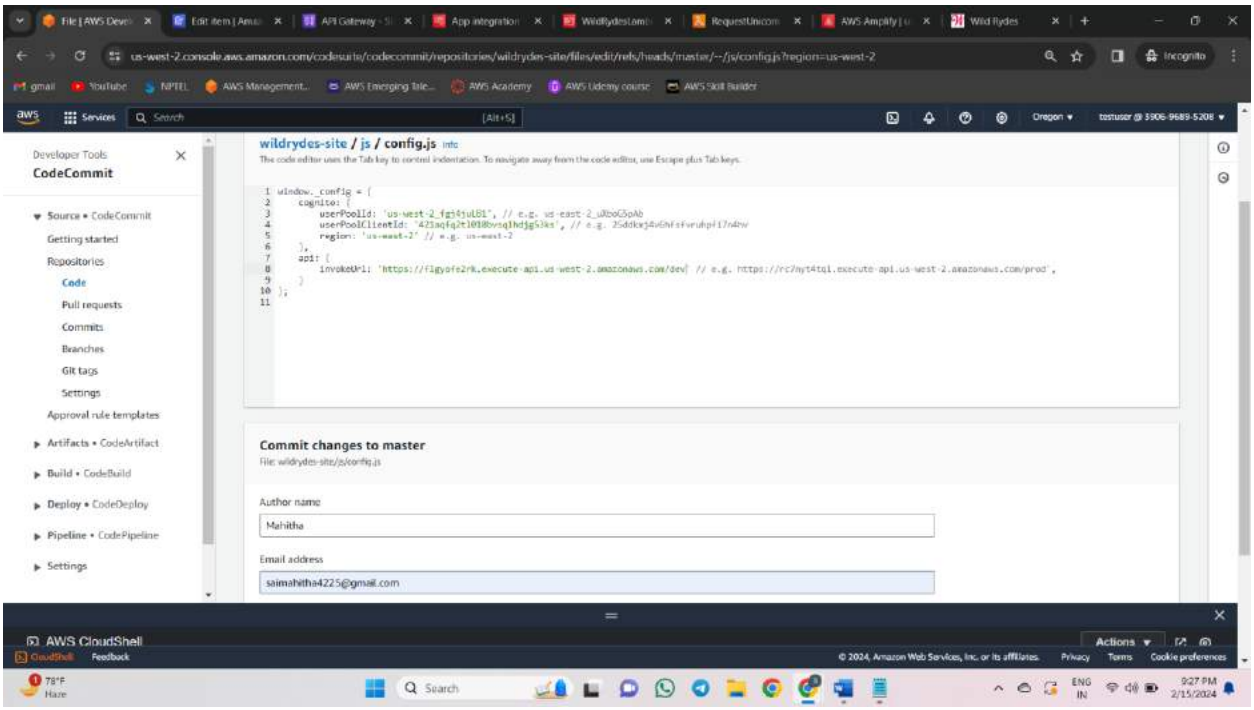
24. Edit the method request and deploy API

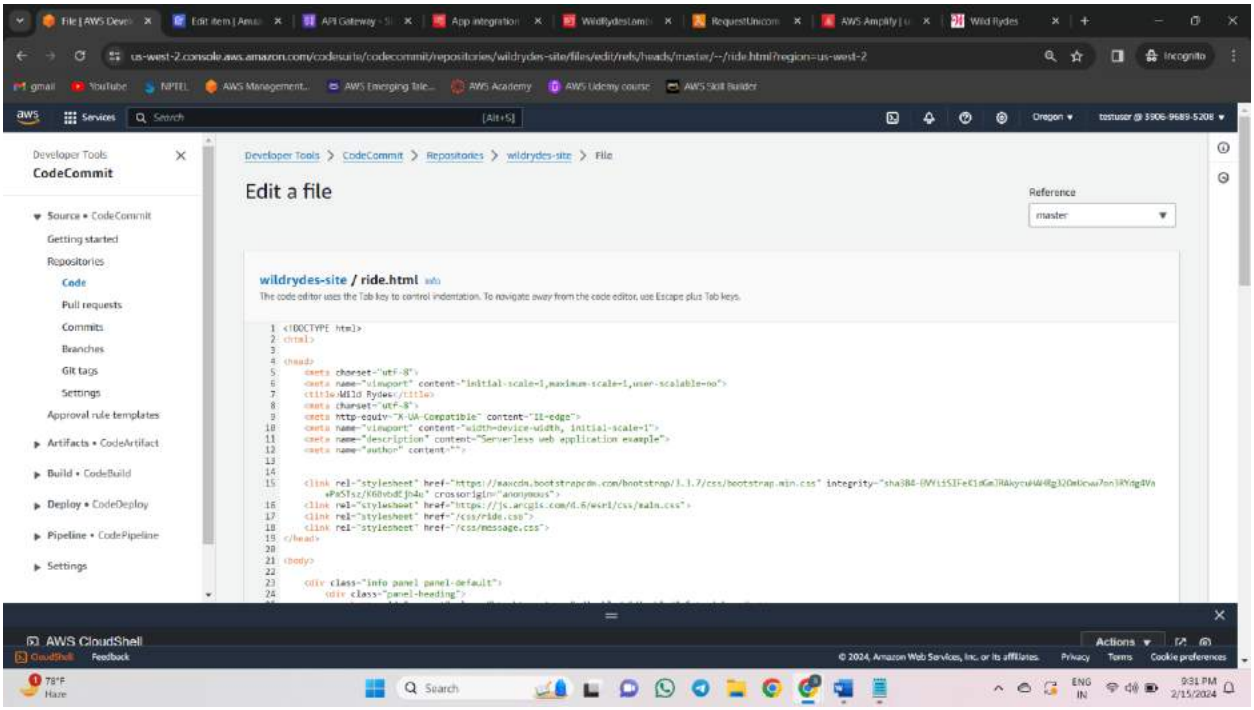



Deploy API
Choose a stage where your API will be deployed. For example, a test version of your API could be deployed to a stage named beta.
Stage
New stage
Stage name
dev
A new stage will be created with the default settings. Edit your stage settings on the Stage page.
Deployment description
Cancel
Deploy

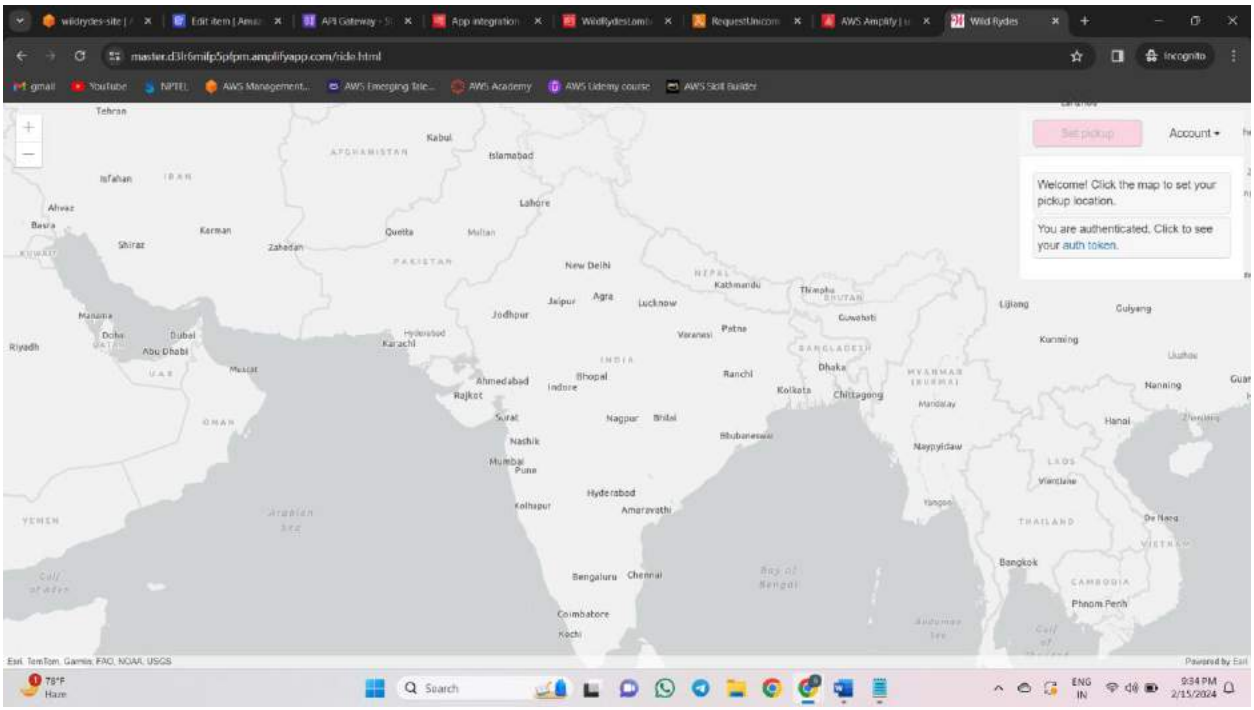

API Gateway
APIs
Custom domain names
VPC links
API: WildRydes
Resources
Stages
Authorizers
Gateway responses
Models
Resource policy
Documentation
Dashboard
API settings
Usage plans
API keys
Client certificates
Settings
API Gateway > APIs > WildRydes (flgyofe2rk) > Stages
Stages
Stage actions
Create stage
dev
Stage details
Edit
Stage name
dev
Rate
Web ACL
Cache cluster
Inactive
Burst
Client certificate
Default method-level caching
Inactive
Copied
https://flgyofe2rk.execute-api.us-west-2.amazonaws.com/dev
Active deployment
afolfe on February 15, 2024, 21:25 (UTC+05:30)
Logs and tracing
Edit
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

25. Copy the invoke url in /js/config.js, edit ride.html and check deployment in Amplify

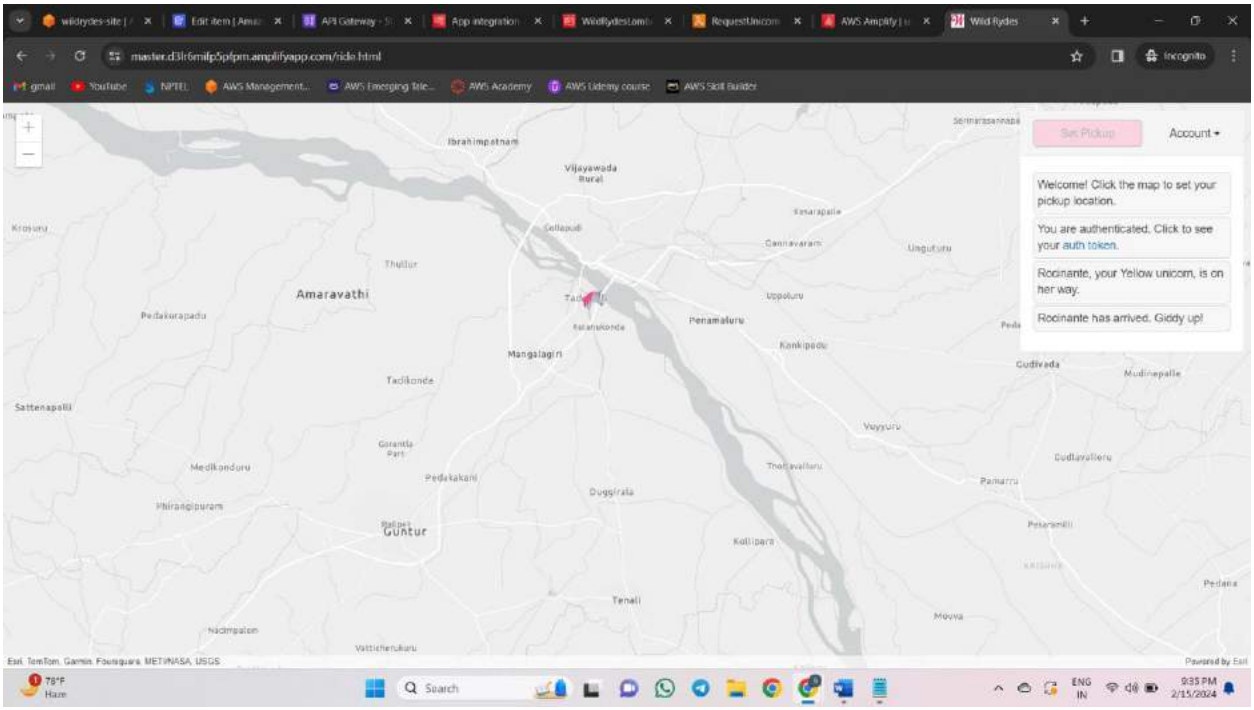




Output:



Requesting a unicorn at some point



LINKS:

LinkedIn Article: https://www.linkedin.com/pulse/building-end-to-end-serverless-web-application-using-aws-sai-mahitha-xjgzc/?trackingId=xIOsQPJkQuqGceTPSpcOrg%3D%3D

YouTube Video: https://youtu.be/p5yJ7XfMiEo

Github Post: https://github.com/SaiMahitha4225/Building-End-to-End-Serverless-Web-Application-using-AWS