Name: Tushar Panchal

En.No: 21162101014

Sub: EADC (Enterprise Application Development for Cloud)

Branch: CBA

Batch:61

---------------------------PRACTICAL 02----------------------------

❖ **Question :**

Deploying a Simple Node.js Express App on AWS Elastic Beanstalk with CodePipeline

You are a developer tasked with deploying a basic Node.js Express application to AWS Elastic Beanstalk. The goal is to automate the deployment process using AWS Code Pipeline for continuous integration and continuous deployment (CI/CD).

Requirements:

Version Control: The application code is hosted on a Git repository (e.g., GitHub).

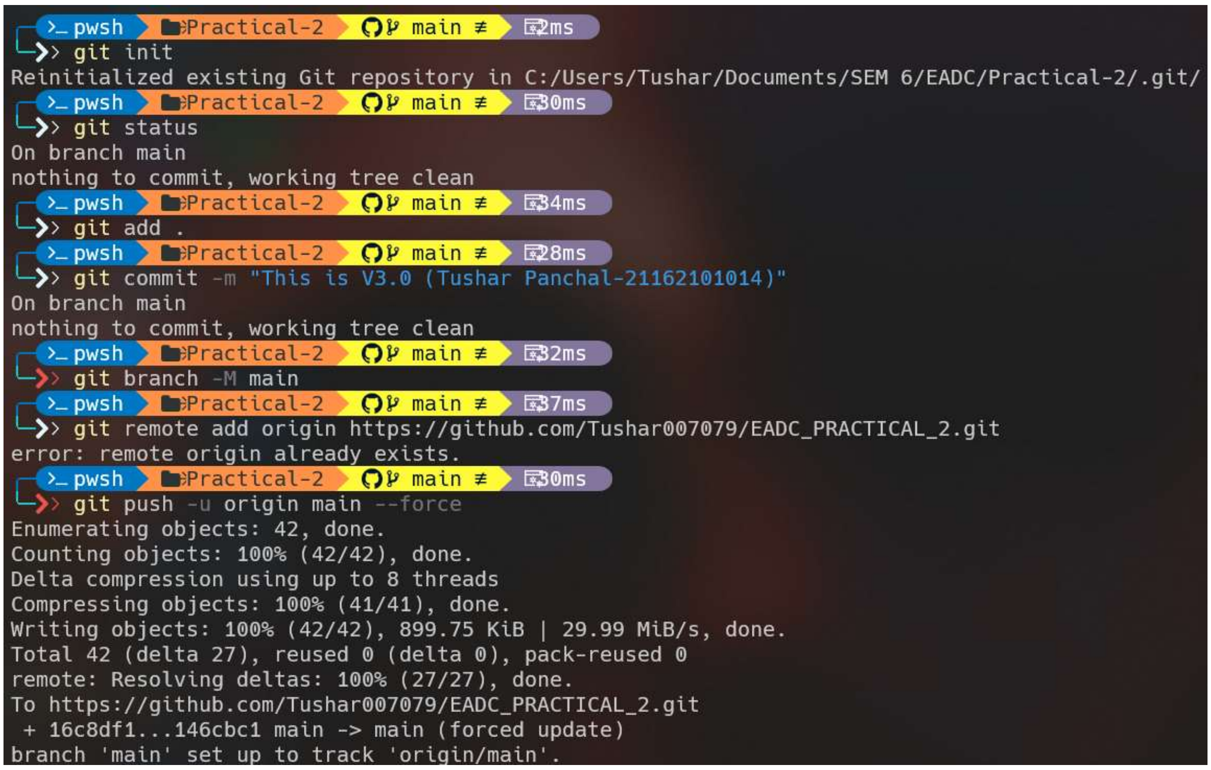
Build Automation: Use AWS CodePipeline to automate the build process.

Deployment: Deploy the application to AWS Elastic Beanstalk, a scalable and fully managed service for hosting web applications.

To work with code pipeline first thing is to do is we have to configure our github with our system :

- Firstly create empty repository on your github account .
- To upload the local code on repository :

Go to same directory where your main code is and run and run this commands as shown below :



```
>_ pwsh  Practical-2  main ≢  2ms
└─» git init
Reinitialized existing Git repository in C:/Users/Tushar/Documents/SEM 6/EADC/Practical-2/.git/
>_ pwsh  Practical-2  main ≢  30ms
└─» git status
On branch main
nothing to commit, working tree clean
>_ pwsh  Practical-2  main ≢  34ms
└─» git add .
>_ pwsh  Practical-2  main ≢  28ms
└─» git commit -m "This is V3.0 (Tushar Panchal-21162101014)"
On branch main
nothing to commit, working tree clean
>_ pwsh  Practical-2  main ≢  32ms
└─» git branch -M main
>_ pwsh  Practical-2  main ≢  37ms
└─» git remote add origin https://github.com/Tushar007079/EADC_PRACTICAL_2.git
error: remote origin already exists.
>_ pwsh  Practical-2  main ≢  30ms
└─» git push -u origin main --force
Enumerating objects: 42, done.
Counting objects: 100% (42/42), done.
Delta compression using up to 8 threads
Compressing objects: 100% (41/41), done.
Writing objects: 100% (42/42), 899.75 KiB | 29.99 MiB/s, done.
Total 42 (delta 27), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (27/27), done.
To https://github.com/Tushar007079/EADC_PRACTICAL_2.git
 + 16c8df1...146cbc1 main -> main (forced update)
branch 'main' set up to track 'origin/main'.
```

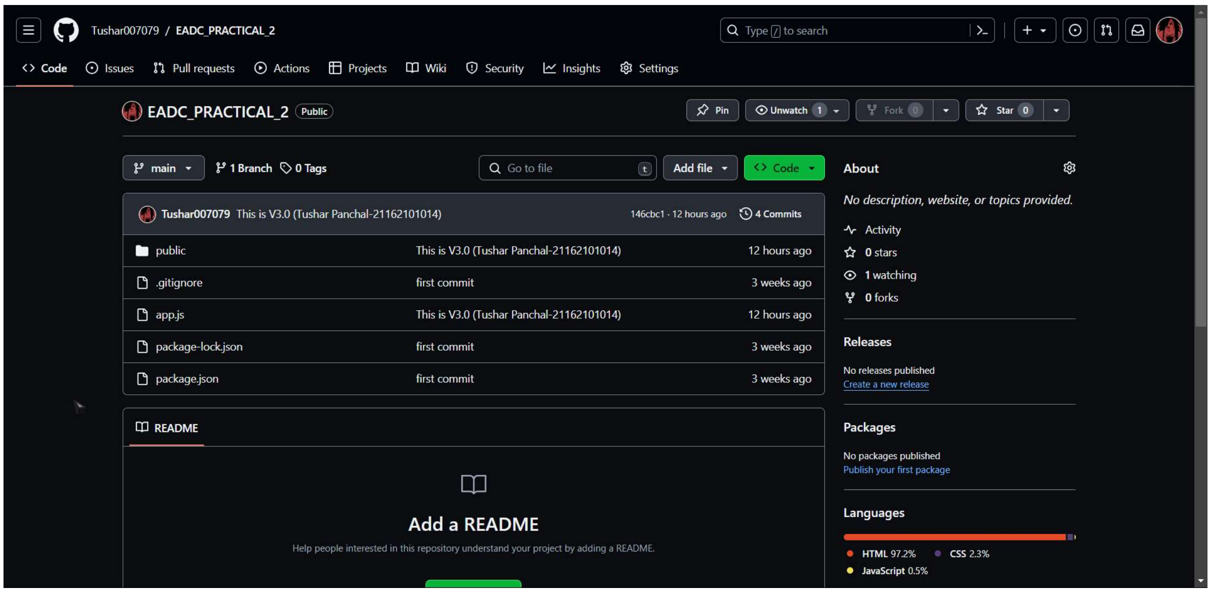
Let's break down the commands we've executed :

1. **git init:** Initializes a new Git repository in the current directory. This command creates a hidden subfolder within your existing project that houses the internal data structure required for version control.
2. **git status:** Shows the status of changes as untracked, modified, or staged. It helps you understand the current state of your working directory and staging area.
3. **git add .:** Stages all changes in the working directory for the next commit. The dot (.) represents all files and directories.

4. **git commit -m "Tushar V1":** Records the changes staged in the working directory, creating a new commit with a descriptive message ("Tushar V1" in this case) summarizing the changes made.
5. **git remote remove origin:** Removes the remote repository named "origin." This is useful if you want to disconnect your local repository from a remote one.
6. **git branch -M main:** Renames the default branch from "master" to "main." This is a good practice to use a more inclusive and neutral term.
7. **git remote add origin <repo link>:** Adds a new remote repository named "origin" with the provided repository link. This is typically done after creating a new repository on a platform like GitHub.
8. **git push -u origin main:** Pushes the committed changes to the remote repository's "main" branch. The **-u** option establishes a tracking relationship between the local and remote branches, and it's used only for the first push.

In the case where you can't run the command due to conflicts or other issues, you might consider using a force push (**git push -u origin main --force**). However, force pushing should be used with caution, especially when working collaboratively, as it can overwrite changes on the remote repository. It's generally advisable to use it only when you are certain that it won't cause conflicts or data loss.

Here as you can we have created our github repository and pushed our local code on github using git commands :



Tushar007079 / EADC_PRACTICAL_2

EADC_PRACTICAL_2 Public

main · 1 Branch · 0 Tags

Tushar007079 This is V3.0 (Tushar Panchal-21162101014) 146cbc1 · 12 hours ago · 4 Commits

public	This is V3.0 (Tushar Panchal-21162101014)	12 hours ago
.gitignore	first commit	3 weeks ago
app.js	This is V3.0 (Tushar Panchal-21162101014)	12 hours ago
package-lock.json	first commit	3 weeks ago
package.json	first commit	3 weeks ago

About: No description, website, or topics provided. Activity · 0 stars · 1 watching · 0 forks

Releases: No releases published. Create a new release

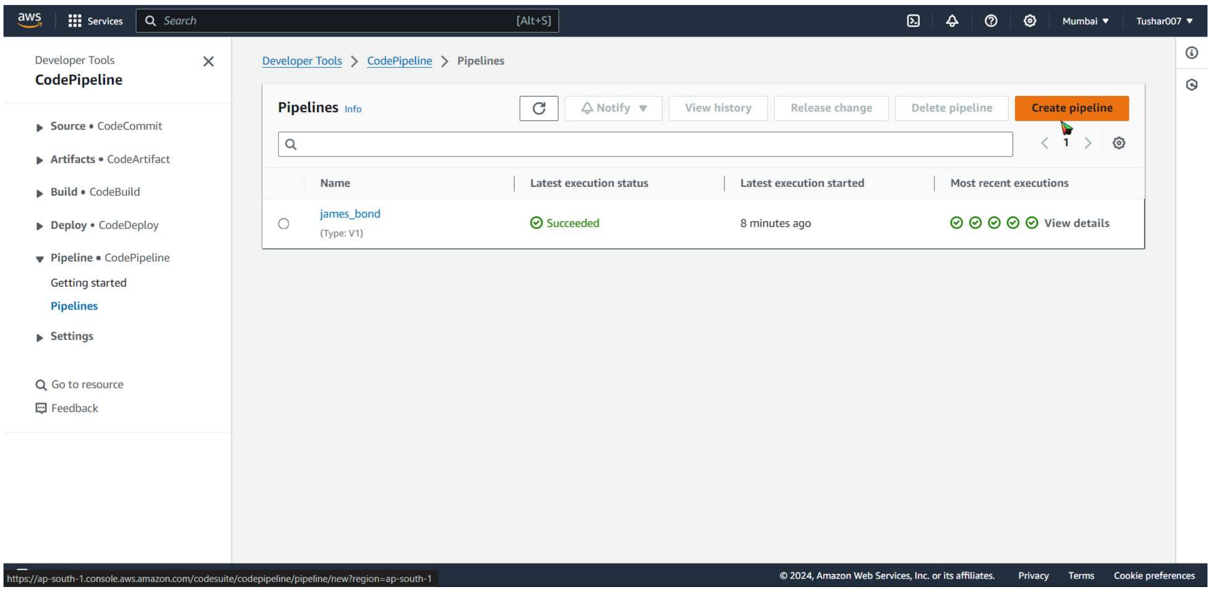
Packages: No packages published. Publish your first package

Languages: HTML 97.2% · CSS 2.3% · JavaScript 0.5%

Add a README. Help people interested in this repository understand your project by adding a README.

After done pushing our local code to github , let's create our code pipeline on AWS :

- ➢ First go to search bar on aws and search for code pipeline then select click on create application to create :



Developer Tools > CodePipeline > Pipelines

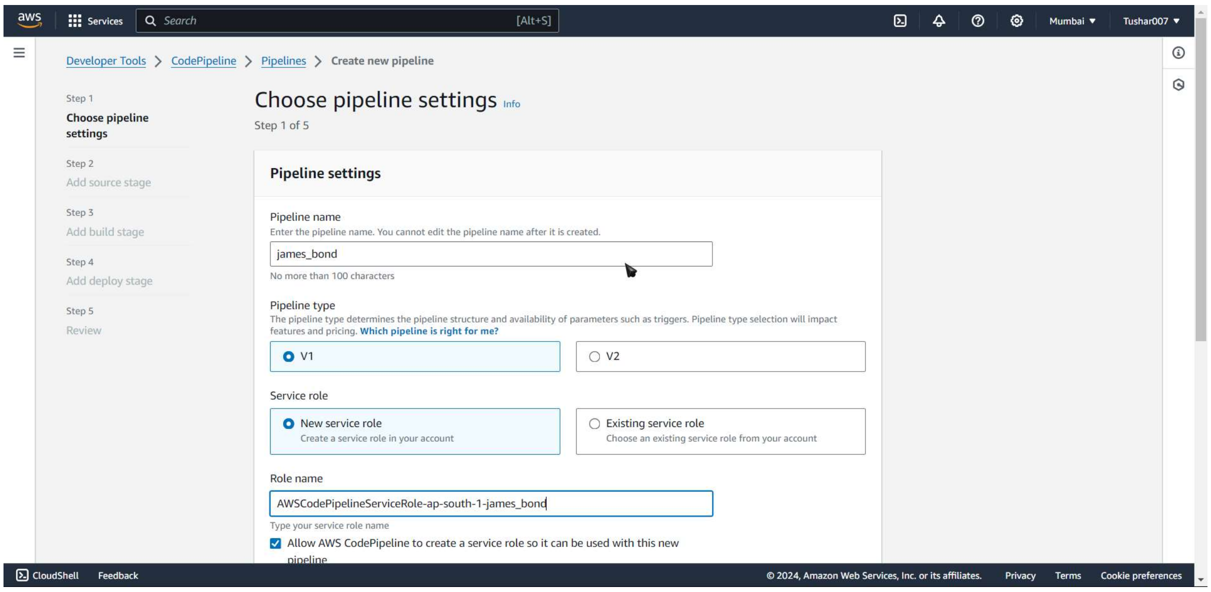
Pipelines · Create pipeline

Name	Latest execution status	Latest execution started	Most recent executions
james_bond (Type: V1)	Succeeded	8 minutes ago	View details

https://ap-south-1.console.aws.amazon.com/codesuite/codepipeline/pipeline/new?region=ap-south-1

© 2024, Amazon Web Services, Inc. or its affiliates.

➢ Then name your pipeline and select pipeline type as V1 and don't do any change in service role and check right in role name to allow to create a service role :


Developer Tools > CodePipeline > Pipelines > Create new pipeline

Step 1
Choose pipeline settings
Step 2
Add source stage
Step 3
Add build stage
Step 4
Add deploy stage
Step 5
Review

Choose pipeline settings Info
Step 1 of 5

Pipeline settings

Pipeline name
Enter the pipeline name. You cannot edit the pipeline name after it is created.
james_bond
No more than 100 characters

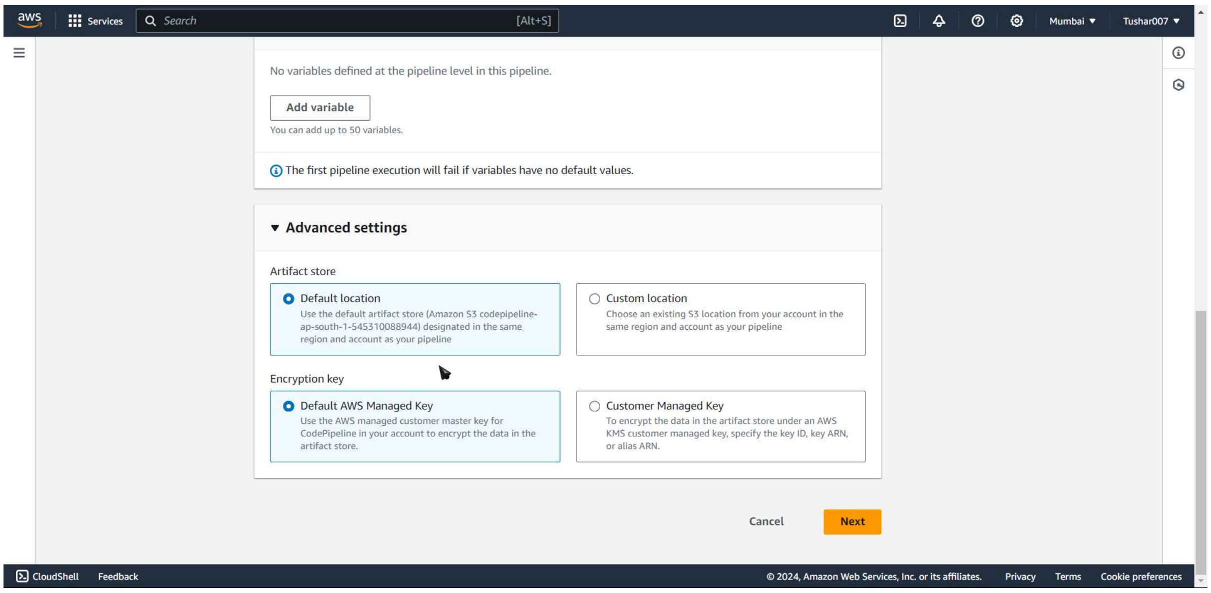
Pipeline type
The pipeline type determines the pipeline structure and availability of parameters such as triggers. Pipeline type selection will impact features and pricing. Which pipeline is right for me?
[✓ V1] V2

Service role
[✓ New service role — Create a service role in your account]
Existing service role — Choose an existing service role from your account

Role name
AWSCodePipelineServiceRole-ap-south-1-james_bond
Type your service role name
☑ Allow AWS CodePipeline to create a service role so it can be used with this new pipeline

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

➢ At bottom don't do any changes in advanced settings and hit next :


No variables defined at the pipeline level in this pipeline.
Add variable
You can add up to 50 variables.
The first pipeline execution will fail if variables have no default values.

Advanced settings

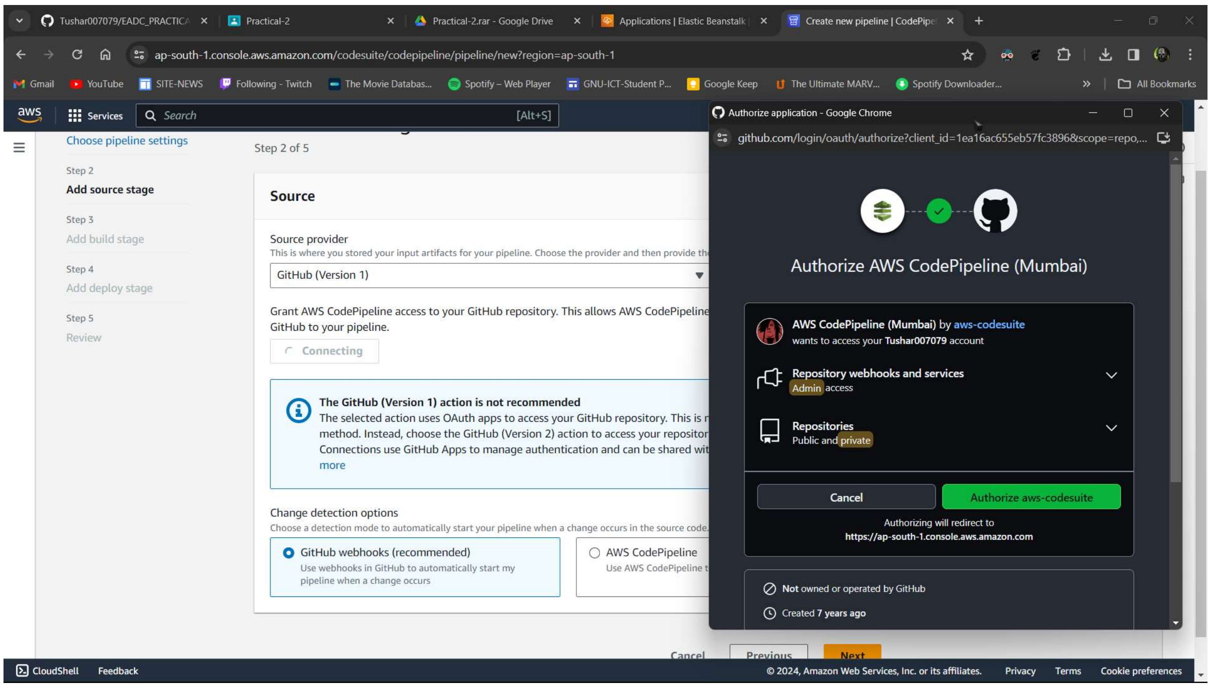
Artifact store
[✓ Default location — Use the default artifact store (Amazon S3 codepipeline-ap-south-1-545310088944) designated in the same region and account as your pipeline]
Custom location — Choose an existing S3 location from your account in the same region and account as your pipeline

Encryption key
[✓ Default AWS Managed Key — Use the AWS managed customer master key for CodePipeline in your account to encrypt the data in the artifact store.]
Customer Managed Key — To encrypt the data in the artifact store under an AWS KMS customer managed key, specify the key ID, key ARN, or alias ARN.

Cancel Next

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

➢ Then in source provider search for github & select V1 and connect to your github account :


Tushar007079/EADC_PRACTIC
Practical-2
Practical-2.rar - Google Drive
Applications | Elastic Beanstalk
Create new pipeline | CodePipe
ap-south-1.console.aws.amazon.com/codesuite/codepipeline/pipeline/new?region=ap-south-1
Services
Search
[Alt+S]
Choose pipeline settings
Step 2
Add source stage
Step 3
Add build stage
Step 4
Add deploy stage
Step 5
Review
Cancel
Previous
Next
CloudShell
Feedback
Authorize application - Google Chrome
Cancel
Authorize aws-codesuite

Step 2 of 5

Source

Source provider
This is where you stored your input artifacts for your pipeline. Choose the provider and then provide th
GitHub (Version 1)

Grant AWS CodePipeline access to your GitHub repository. This allows AWS CodePipeline
GitHub to your pipeline.
Connecting

The GitHub (Version 1) action is not recommended
The selected action uses OAuth apps to access your GitHub repository. This is r
method. Instead, choose the GitHub (Version 2) action to access your repositor
Connections use GitHub Apps to manage authentication and can be shared wit
more

Change detection options
Choose a detection mode to automatically start your pipeline when a change occurs in the source code.
(●) GitHub webhooks (recommended)
Use webhooks in GitHub to automatically start my pipeline when a change occurs
( ) AWS CodePipeline
Use AWS CodePipeline t

github.com/login/oauth/authorize?client_id=1ea16ac655eb57fc3896&scope=repo,...

Authorize AWS CodePipeline (Mumbai)

AWS CodePipeline (Mumbai) by aws-codesuite
wants to access your Tushar007079 account

Repository webhooks and services
Admin access

Repositories
Public and private

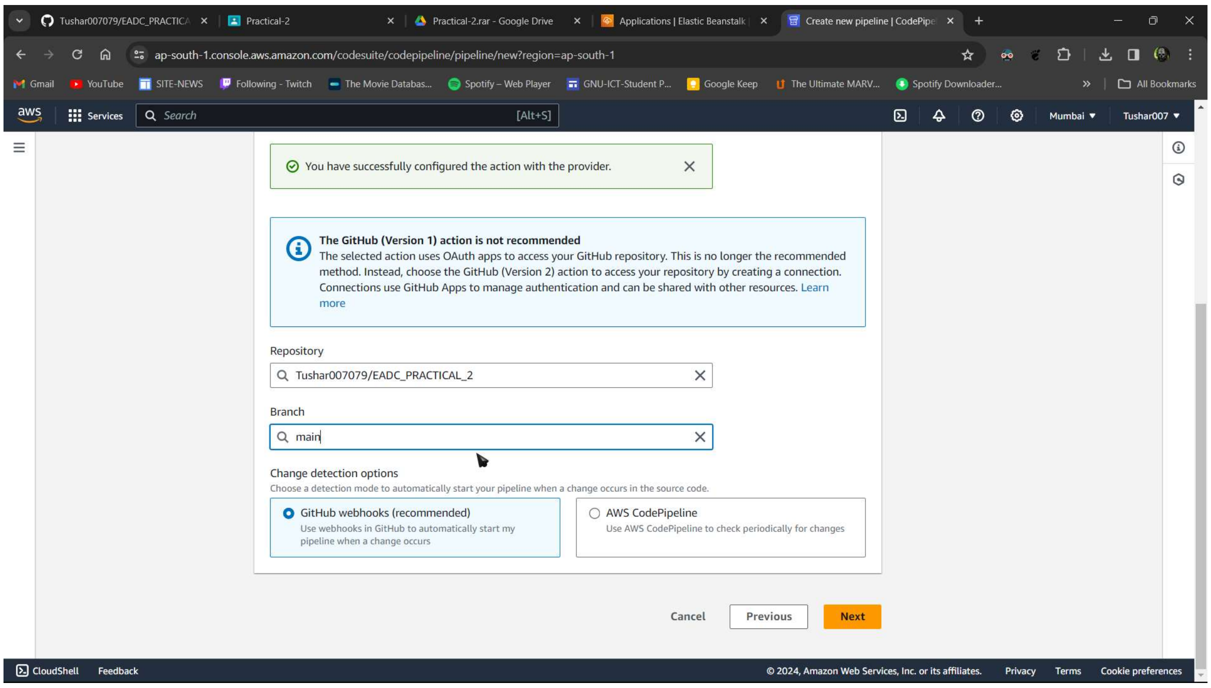
Authorizing will redirect to
https://ap-south-1.console.aws.amazon.com

Not owned or operated by GitHub
Created 7 years ago

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

➢ If the connection done perfectly you will see the message of connection is successfully configured .

➢ Then search for that github repository that we made and select your branch here I selected main :


Tushar007079/EADC_PRACTIC
Practical-2
Practical-2.rar - Google Drive
Applications | Elastic Beanstalk
Create new pipeline | CodePipe
ap-south-1.console.aws.amazon.com/codesuite/codepipeline/pipeline/new?region=ap-south-1
Services
Search
[Alt+S]
Mumbai
Tushar007
Cancel
Previous
Next
CloudShell
Feedback

You have successfully configured the action with the provider.

The GitHub (Version 1) action is not recommended
The selected action uses OAuth apps to access your GitHub repository. This is no longer the recommended method. Instead, choose the GitHub (Version 2) action to access your repository by creating a connection. Connections use GitHub Apps to manage authentication and can be shared with other resources. Learn more

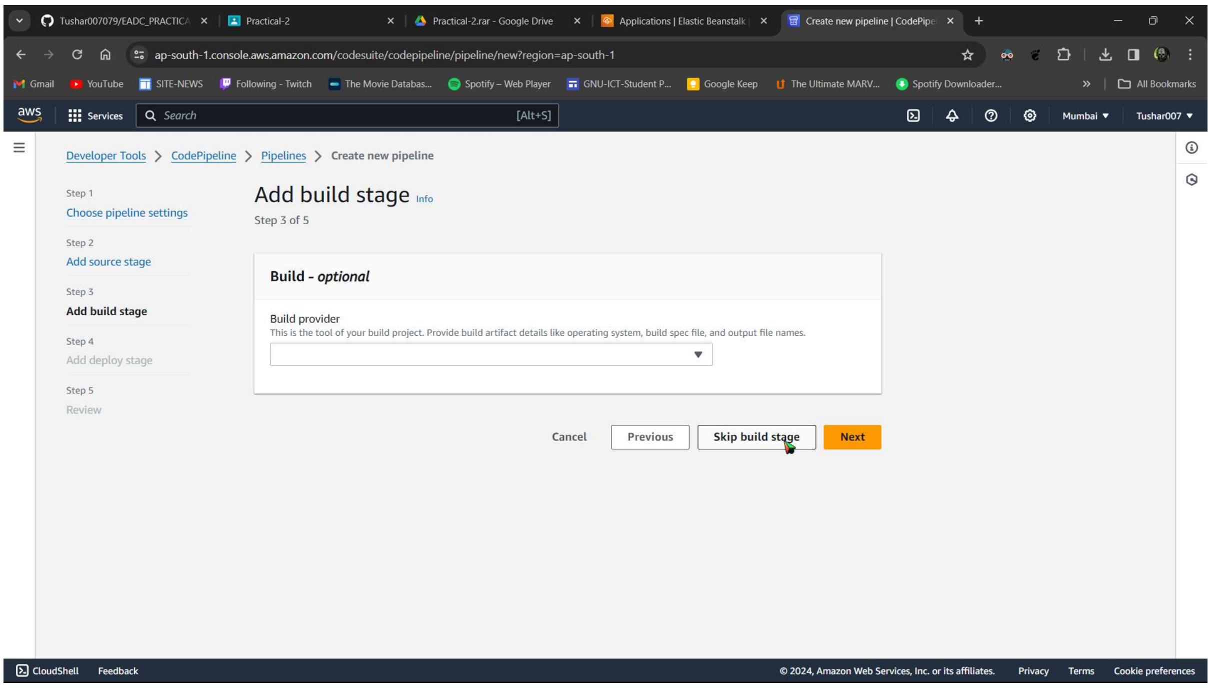
Repository
Tushar007079/EADC_PRACTICAL_2

Branch
main

Change detection options
Choose a detection mode to automatically start your pipeline when a change occurs in the source code.
(●) GitHub webhooks (recommended)
Use webhooks in GitHub to automatically start my pipeline when a change occurs
( ) AWS CodePipeline
Use AWS CodePipeline to check periodically for changes

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

➢ After that hit next and skip the add build stage part :


Add build stage Info

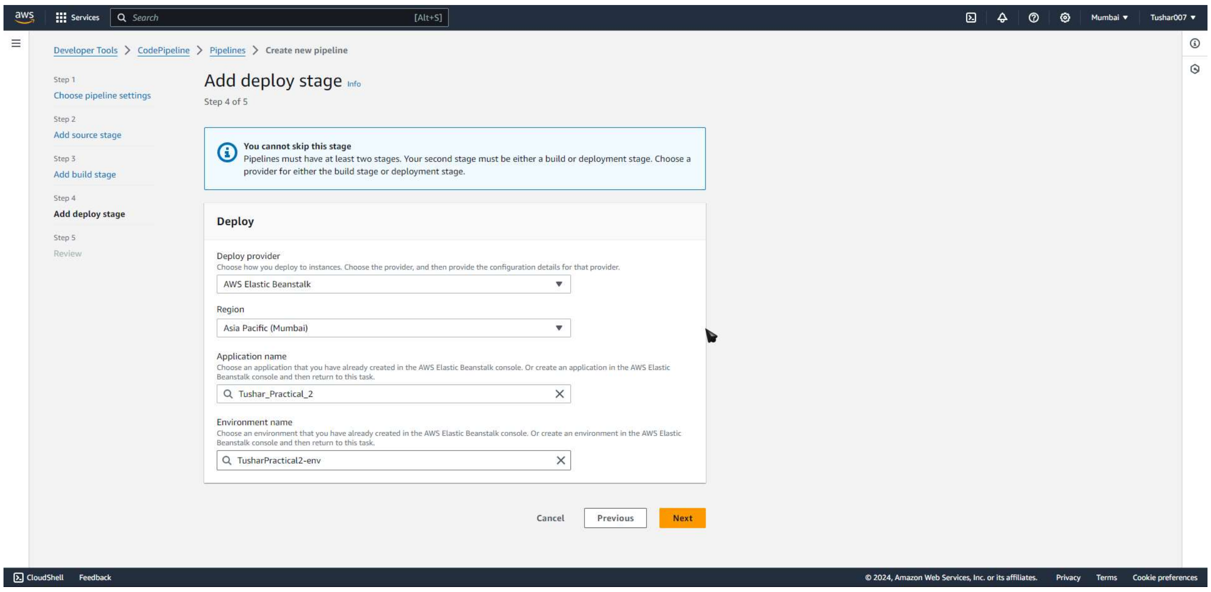
Step 3 of 5

Build - *optional*

Build provider

This is the tool of your build project. Provide build artifact details like operating system, build spec file, and output file names.

➢ In add deploy stage in provider search for AWS Elastic Beanstalk & select it and select your select your application that you have created & select environment :


Add deploy stage Info

Step 4 of 5

You cannot skip this stage

Pipelines must have at least two stages. Your second stage must be either a build or deployment stage. Choose a provider for either the build stage or deployment stage.

Deploy

Deploy provider

Choose how you deploy to instances. Choose the provider, and then provide the configuration details for that provider.

AWS Elastic Beanstalk

Region

Asia Pacific (Mumbai)

Application name

Choose an application that you have already created in the AWS Elastic Beanstalk console. Or create an application in the AWS Elastic Beanstalk console and then return to this task.

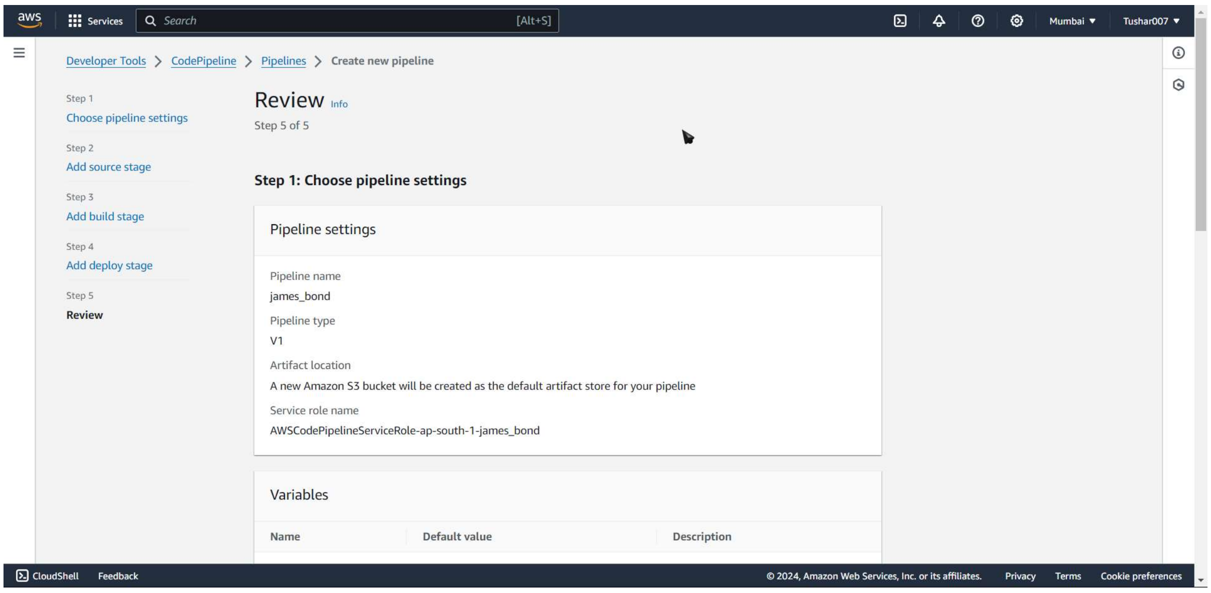
Tushar_Practical_2

Environment name

Choose an environment that you have already created in the AWS Elastic Beanstalk console. Or create an environment in the AWS Elastic Beanstalk console and then return to this task.

TusharPractical2-env

➢ After that hit next and in next review your code pipeline then hit create pipeline :



Developer Tools > CodePipeline > Pipelines > Create new pipeline

Step 1
Choose pipeline settings
Step 2
Add source stage
Step 3
Add build stage
Step 4
Add deploy stage
Step 5
Review

Review Info
Step 5 of 5

Step 1: Choose pipeline settings

Pipeline settings

Pipeline name
james_bond

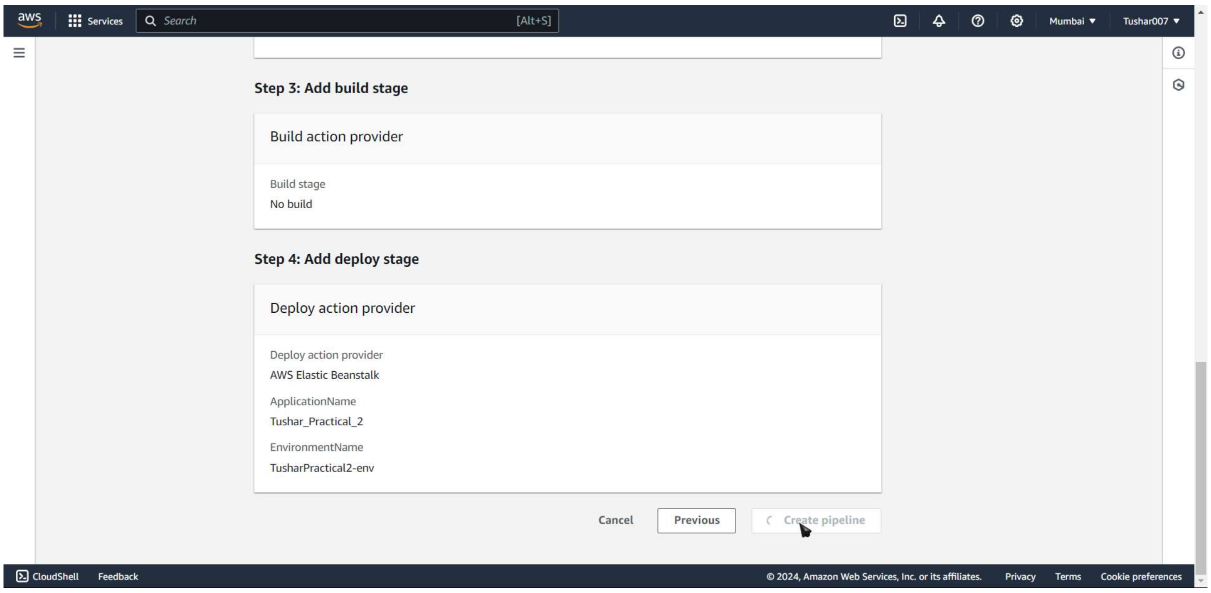
Pipeline type
V1

Artifact location
A new Amazon S3 bucket will be created as the default artifact store for your pipeline

Service role name
AWSCodePipelineServiceRole-ap-south-1-james_bond

Variables

Name	Default value	Description



Step 3: Add build stage

Build action provider

Build stage
No build

Step 4: Add deploy stage

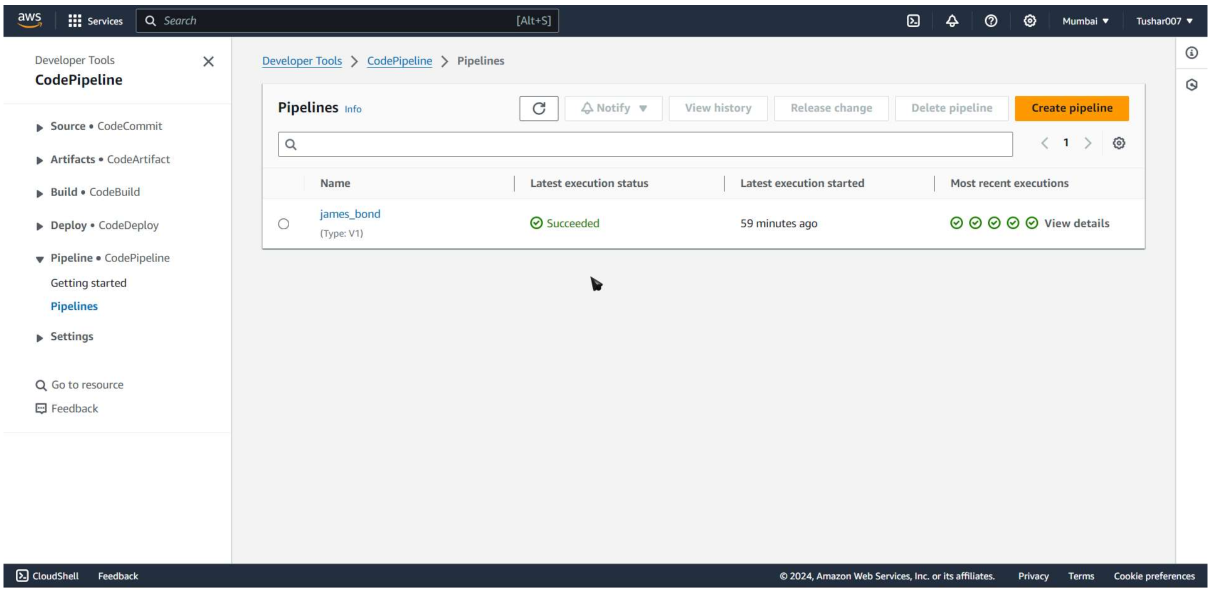
Deploy action provider

Deploy action provider
AWS Elastic Beanstalk

ApplicationName
Tushar_Practical_2

EnvironmentName
TusharPractical2-env

➢ That’s it we have finally created our pipeline :

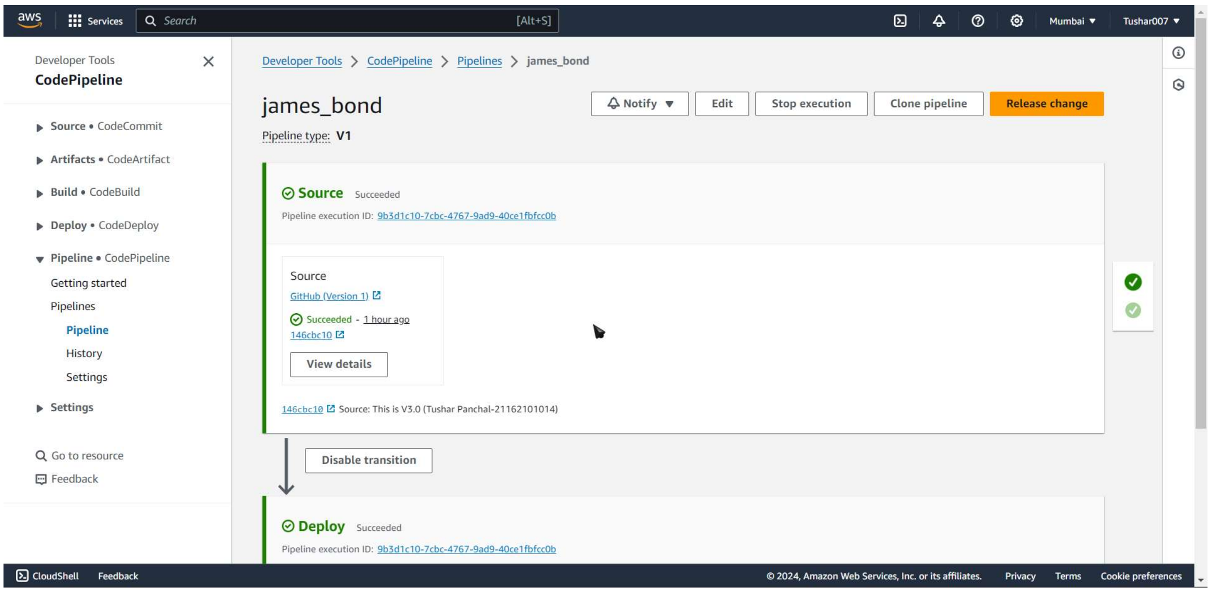


Developer Tools > CodePipeline > Pipelines

Pipelines Info

Name	Latest execution status	Latest execution started	Most recent executions
james_bond (Type: V1)	Succeeded	59 minutes ago	✓ ✓ ✓ ✓ ✓ View details

© 2024, Amazon Web Services, Inc. or its affiliates.



Developer Tools > CodePipeline > Pipelines > james_bond

james_bond

Pipeline type: V1

Source Succeeded

Pipeline execution ID: 9b3d1c10-7cbc-4767-9ad9-40ce1fbfcc0b

Source
GitHub (Version 1)
Succeeded - 1 hour ago
146cbc10

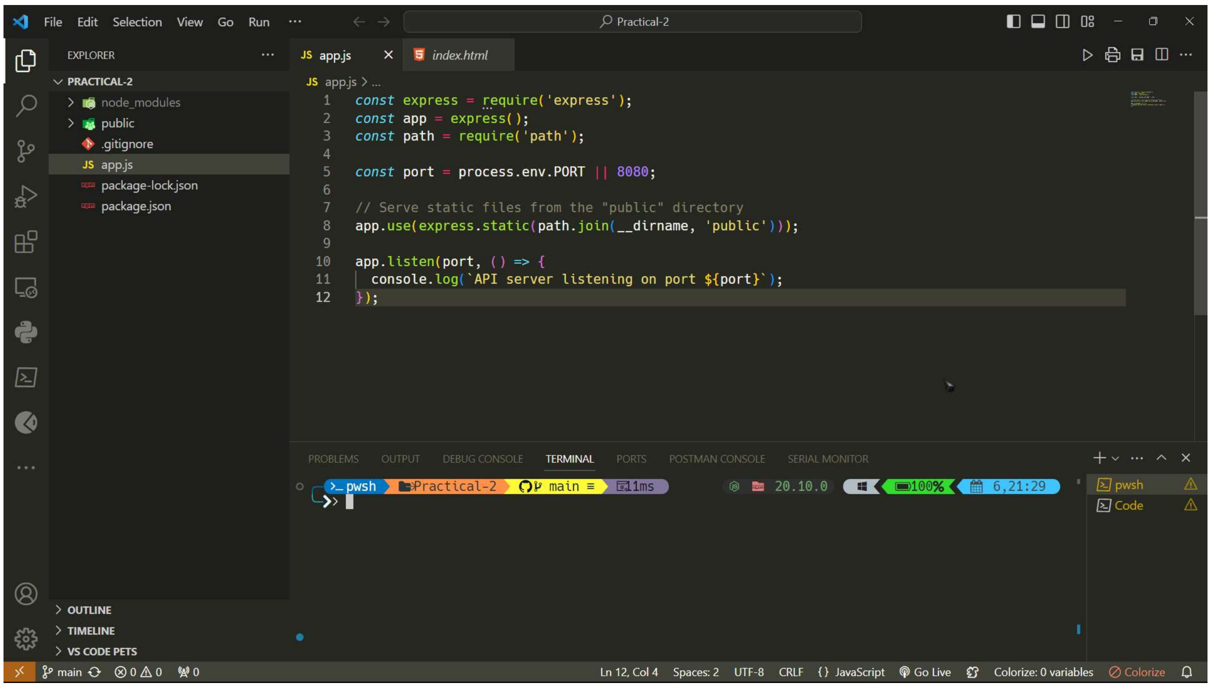
146cbc10 Source: This is V3.0 (Tushar Panchal-21162101014)

Deploy Succeeded

Pipeline execution ID: 9b3d1c10-7cbc-4767-9ad9-40ce1fbfcc0b

© 2024, Amazon Web Services, Inc. or its affiliates.

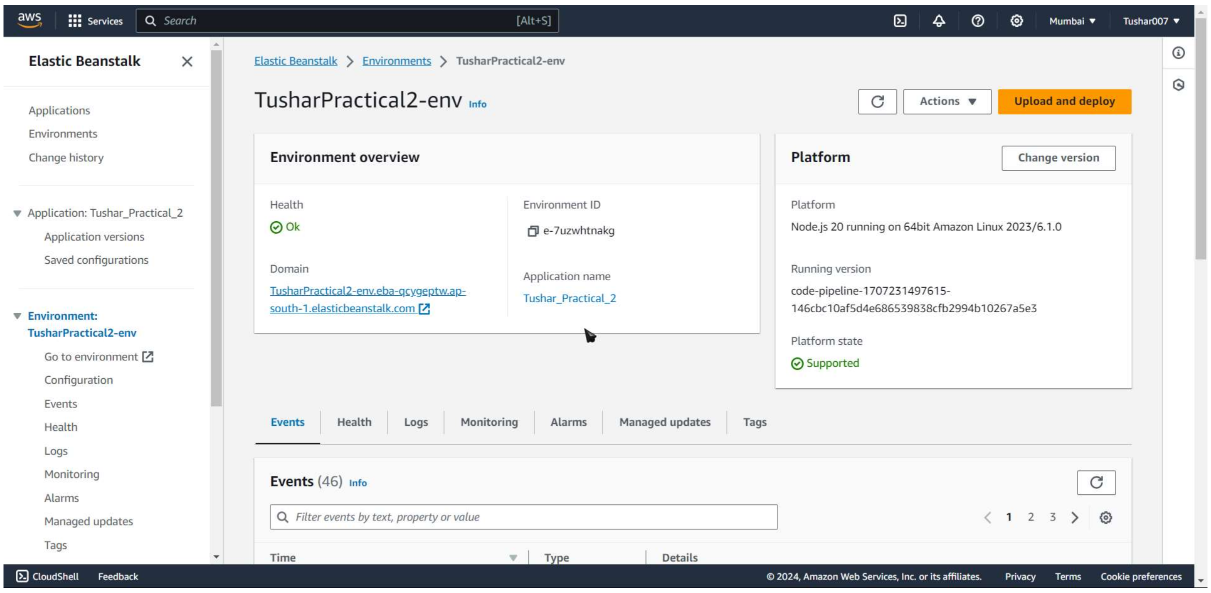
Now I do changes in my code to deploy my application to AWS Elastic Beanstalk :



```javascript
const express = require('express');
const app = express();
const path = require('path');

const port = process.env.PORT || 8080;

// Serve static files from the "public" directory
app.use(express.static(path.join(__dirname, 'public')));

app.listen(port, () => {
  console.log(`API server listening on port ${port}`);
});
```

```
pwsh  Practical-2  main ≡  1ms      20.10.0   100%   6,21:29
>>
```

Now I can see my Node-js application finally deployed on my AWS Elastic Beanstalk application :



Elastic Beanstalk > Environments > TusharPractical2-env

TusharPractical2-env

Environment overview

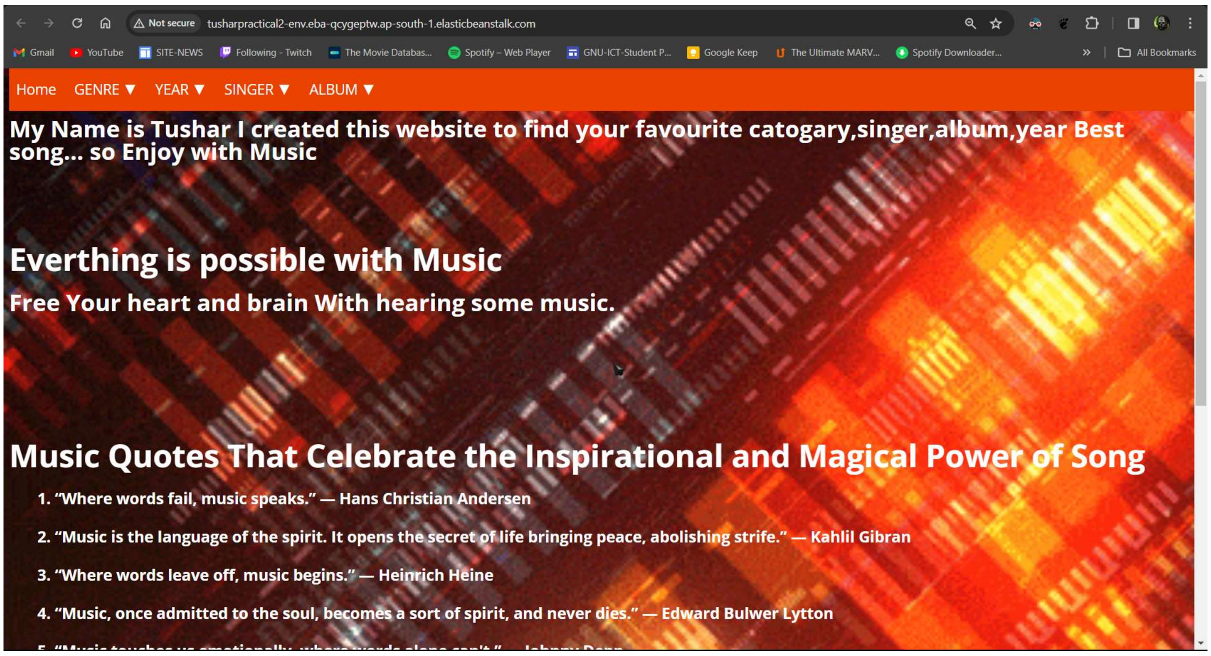
Health: Ok
Environment ID: e-7uzwhtnakg
Domain: TusharPractical2-env.eba-qcygeptw.ap-south-1.elasticbeanstalk.com
Application name: Tushar_Practical_2

Platform

Platform: Node.js 20 running on 64bit Amazon Linux 2023/6.1.0
Running version: code-pipeline-1707231497615-146cbc10af5d4e686539838cfb2994b10267a5e3
Platform state: Supported

Events (46)

» Output of my node-js application(Music Website) :



Not secure tusharpractical2-env.eba-qcygeptw.ap-south-1.elasticbeanstalk.com

Home GENRE ▼ YEAR ▼ SINGER ▼ ALBUM ▼

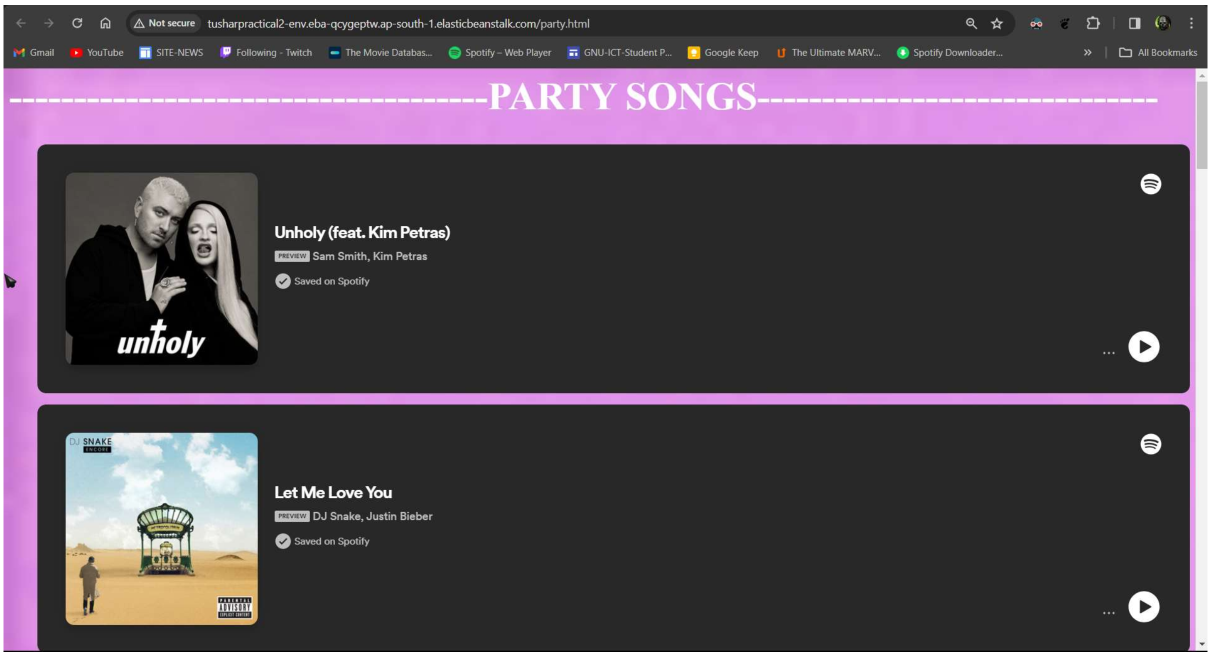
My Name is Tushar I created this website to find your favourite catogary,singer,album,year Best song... so Enjoy with Music

Everthing is possible with Music

Free Your heart and brain With hearing some music.

Music Quotes That Celebrate the Inspirational and Magical Power of Song

1. "Where words fail, music speaks." — Hans Christian Andersen
2. "Music is the language of the spirit. It opens the secret of life bringing peace, abolishing strife." — Kahlil Gibran
3. "Where words leave off, music begins." — Heinrich Heine
4. "Music, once admitted to the soul, becomes a sort of spirit, and never dies." — Edward Bulwer Lytton

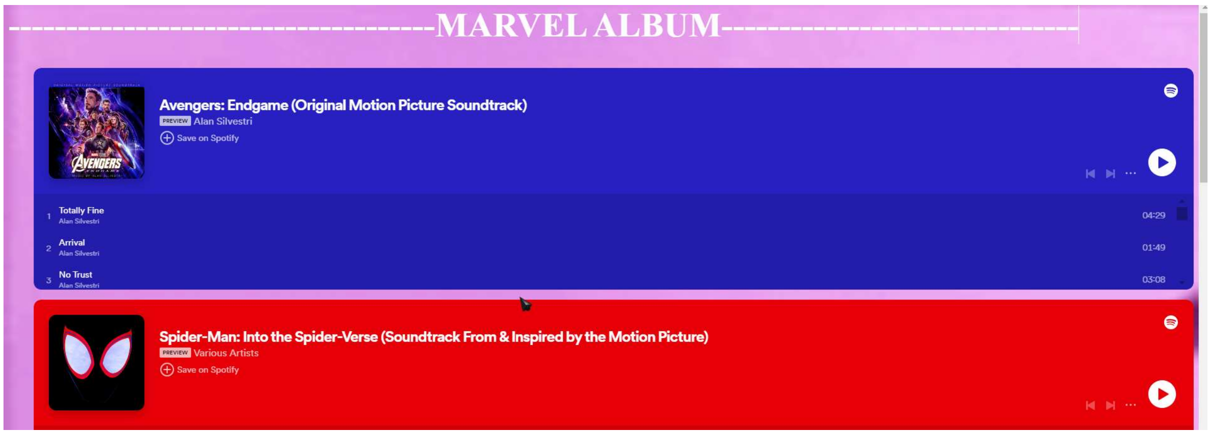


Not secure tusharpractical2-env.eba-qcygeptw.ap-south-1.elasticbeanstalk.com/party.html

------------------------------------PARTY SONGS------------------------------

Unholy (feat. Kim Petras)
PREVIEW Sam Smith, Kim Petras
Saved on Spotify

Let Me Love You
PREVIEW DJ Snake, Justin Bieber
Saved on Spotify



------------------------------------MARVEL ALBUM------------------------------

Avengers: Endgame (Original Motion Picture Soundtrack)
PREVIEW Alan Silvestri
Save on Spotify

1 Totally Fine Alan Silvestri 04:29
2 Arrival Alan Silvestri 01:49
3 No Trust Alan Silvestri 03:08

Spider-Man: Into the Spider-Verse (Soundtrack From & Inspired by the Motion Picture)
PREVIEW Various Artists
Save on Spotify