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Branch - CBA      Batch - 61

EADC Practical 2

## **Aim : 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.

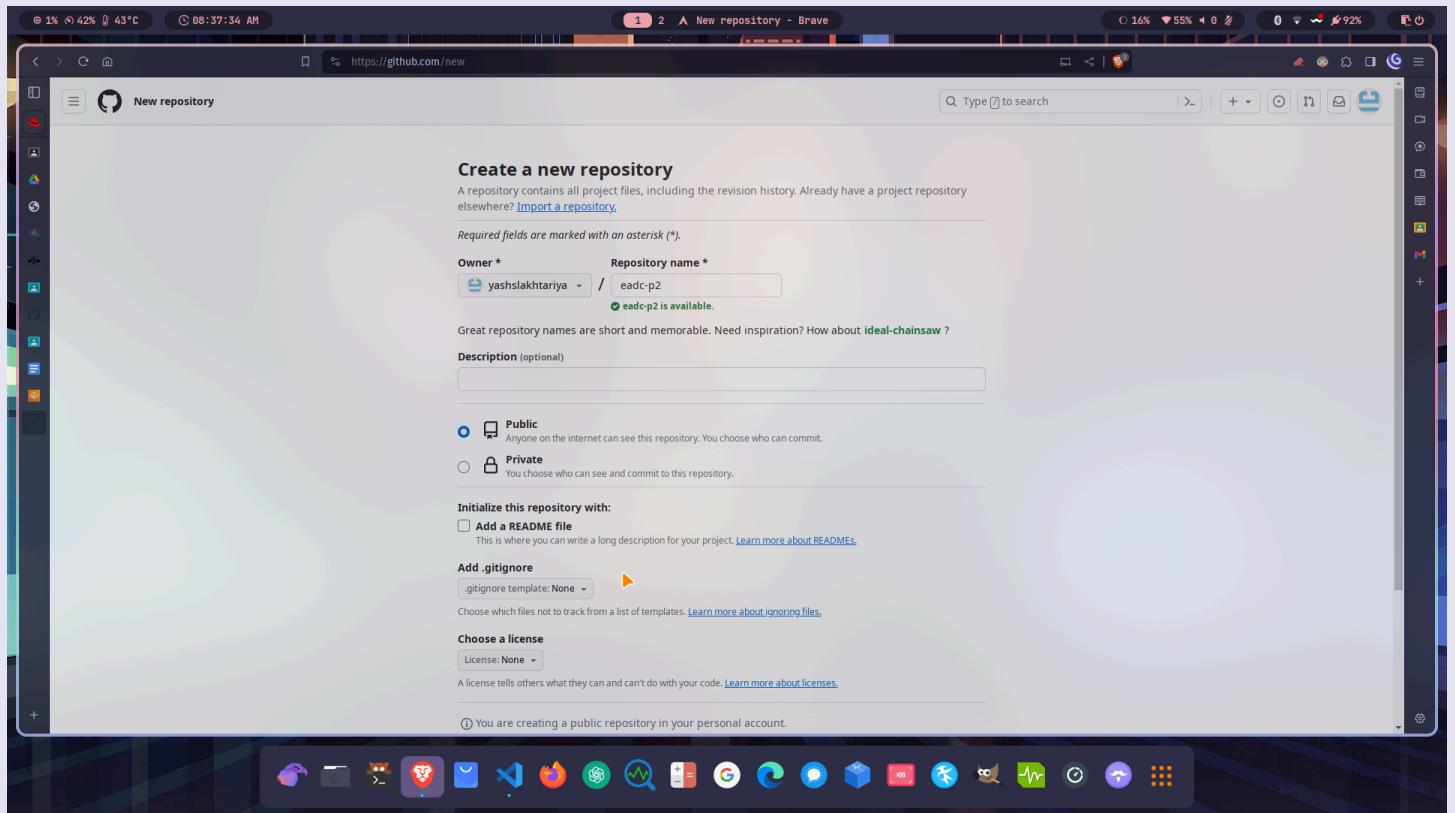
### **Software Requirements :**

- Git Account
- Git CLI installed in the system and logged in
- Code editor (Visual Studio Code recommended)
- AWS Account and free usage for EC2, Elastic Beanstalk and CodePipeline services

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## Steps :

1. Create an empty git repository in the account.



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2. Create a nodejs project which renders a webpage using express module.

Code and repo link : <https://github.com/yashslakhtariya/eadc-p2.git>

The screenshot shows a terminal window with the following command history:

```
yash ~/Practical-2 > main ! @ v18.18.2 08:39 git init
Reinitialized existing Git repository in /home/yash/Downloads/Practical-2.git/
yash ~/Practical-2 > main ! @ v18.18.2 08:39 git status
On branch main
Your branch is up to date with 'origin/main'.

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
    modified:   app.js

no changes added to commit (use "git add" and/or "git commit -a")

yash ~/Practical-2 > main ! @ v18.18.2 08:40 git add *
warning: In the working copy of 'app.js', CRLF will be replaced by LF the next time Git touches it
The following paths are ignored by one of your .gitignore files:
  node_modules
```

### Commands :

- git init (to create empty git local repo)
- git status (to check status of current repo and project at github)

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### 3. Commit changes to local repo.

The screenshot shows a terminal window with the following session:

```
yash ~/Practical-2 main + @ v18.18.2 08:47 git add .
yash ~/Practical-2 main + @ v18.18.2 08:47 git commit -m 'updated'
[main 647f85f] updated
13 files changed, 771 insertions(+), 4 deletions(-)
create mode 100644 public/css/style.css
create mode 100644 public/images/Cowbot_Design.jpg
create mode 100644 public/images/Cowbot_Design_2.jpg
create mode 100644 public/images/Cowbot_Design_Basic.jpg
create mode 100644 public/images/Leobot_Design.jpg
create mode 100644 public/images/banner.png
create mode 100644 public/images/banner2.png
create mode 100644 public/images/contact-bg.jpg
create mode 100644 public/images/user.png
create mode 100644 public/index.html
create mode 100644 public/js/script.js
create mode 100644 public/ysl.pdf
```

At the bottom of the terminal, the status bar shows: Raman Preet, 3 weeks ago | Ln 7, Col 4 | Spaces: 2 | UTF-8 | CRLF | JavaScript | Prettier

#### Commands :

- git add . (to add all contents of 'dot' directory, i.e. current directory at commit stage)
- git commit -m 'updated' (to commit all changes with 'updated' as commit message)

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#### 4. Push changes to remote repository on github.

The screenshot shows a terminal window within a code editor interface. The terminal output is as follows:

```
yash ~/.../Practical-2 > M main ↑ @ v18.18.2 08:48 git branch -M main
yash ~/.../Practical-2 > M main ↑ @ v18.18.2 08:48 git remote remove origin
yash ~/.../Practical-2 > M main ↑ @ v18.18.2 08:48 git remote add origin https://github.com/yashslakhtariya/eadc-p2.git
yash ~/.../Practical-2 > M main ↑ @ v18.18.2 08:49 git add .
yash ~/.../Practical-2 > M main ↑ @ v18.18.2 08:49 git commit -m 'updated'
On branch main
nothing to commit, working tree clean
yash ~/.../Practical-2 > M main ↑ @ v18.18.2 08:49 git push
fatal: The current branch main has no upstream branch.
To push the current branch and set the remote as upstream, use
  git push --set-upstream origin main
```

The terminal shows the user navigating through their project directory, performing a series of Git commands to update the local repository and then attempting to push it to the remote GitHub repository. The final command fails because the local 'main' branch does not have an upstream branch defined.

#### Commands :

- git branch -M main
- git remote remove origin
- git remote add origin https://github.com/yashslakhtariya/eadc-p2.git
- git add .
- git commit -m 'updated'
- git push
- git push --set-upstream origin main

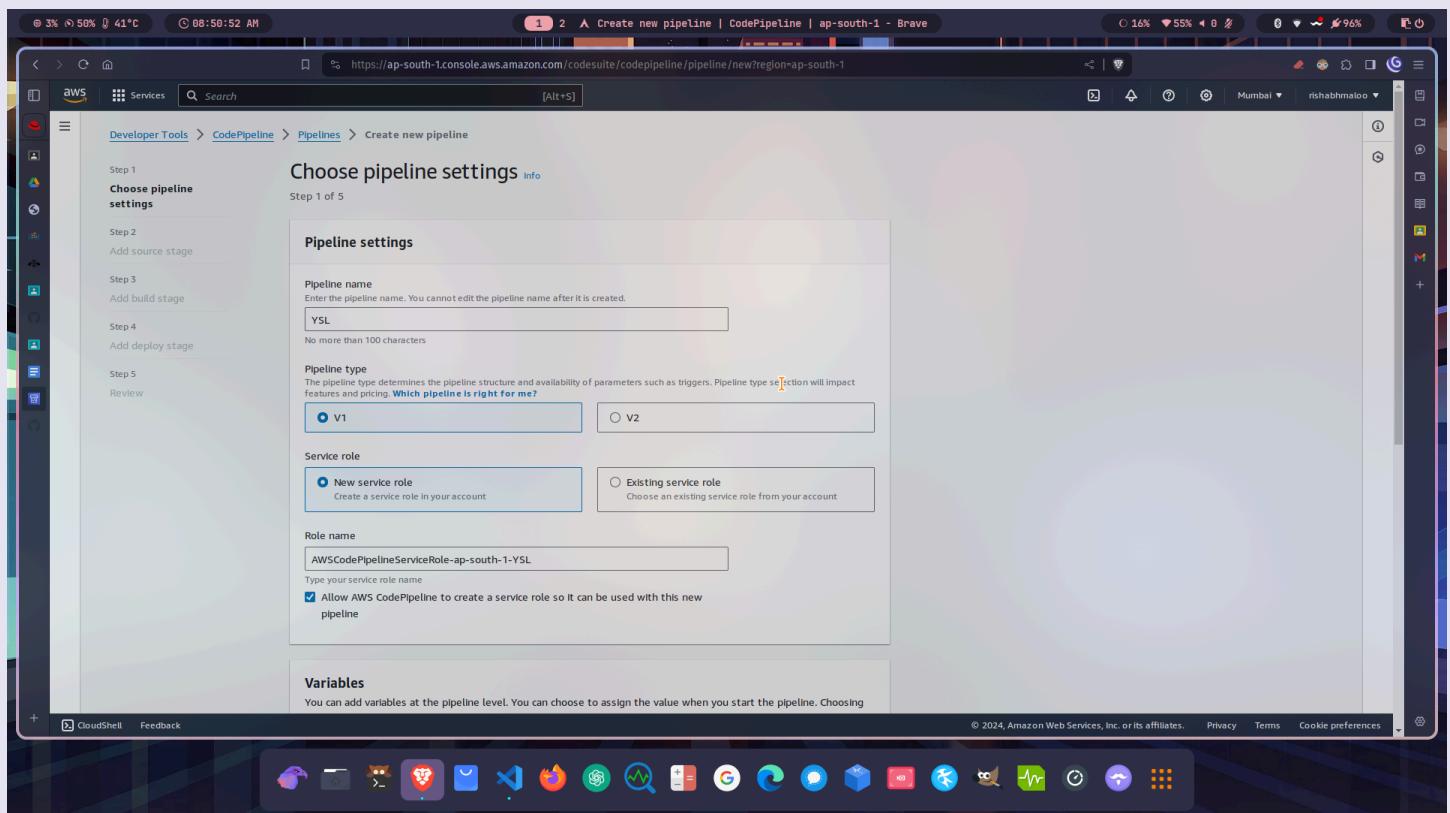
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5. Create a pipeline in CodePipeline AWS service. Use V1 as version and create new service role for the same.



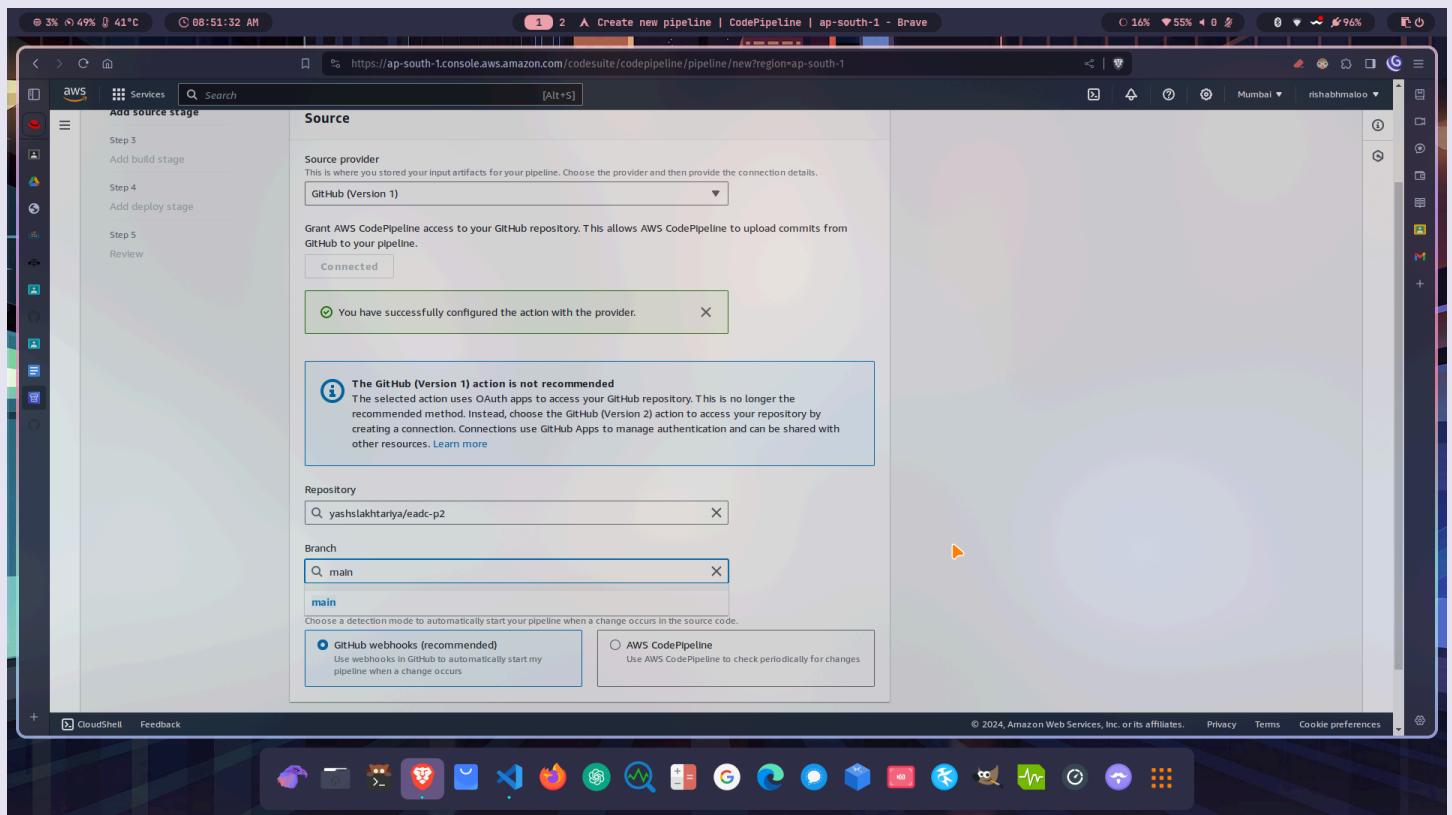
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## 6. Select and authorize Github (Version 1) as source provider.

The screenshot displays two browser windows side-by-side. The left window is the AWS CodePipeline 'Create new pipeline' interface, specifically the 'Add source stage' step. It shows 'Source' selected as the provider, with 'GitHub (Version 1)' chosen. A note indicates that this action uses OAuth apps to access the GitHub repository, which is no longer recommended. Below this, 'Change detection options' are set to 'GitHub webhooks (recommended)'. The right window is a GitHub OAuth authorization screen titled 'Authorize AWS CodePipeline (Mumbai)'. It shows 'AWS CodePipeline (Mumbai) by aws-codesuite' requesting 'Admin access' for 'Repository webhooks and services'. The 'Repositories' section shows 'Public and private'. A large green button at the bottom right says 'Authorize'.

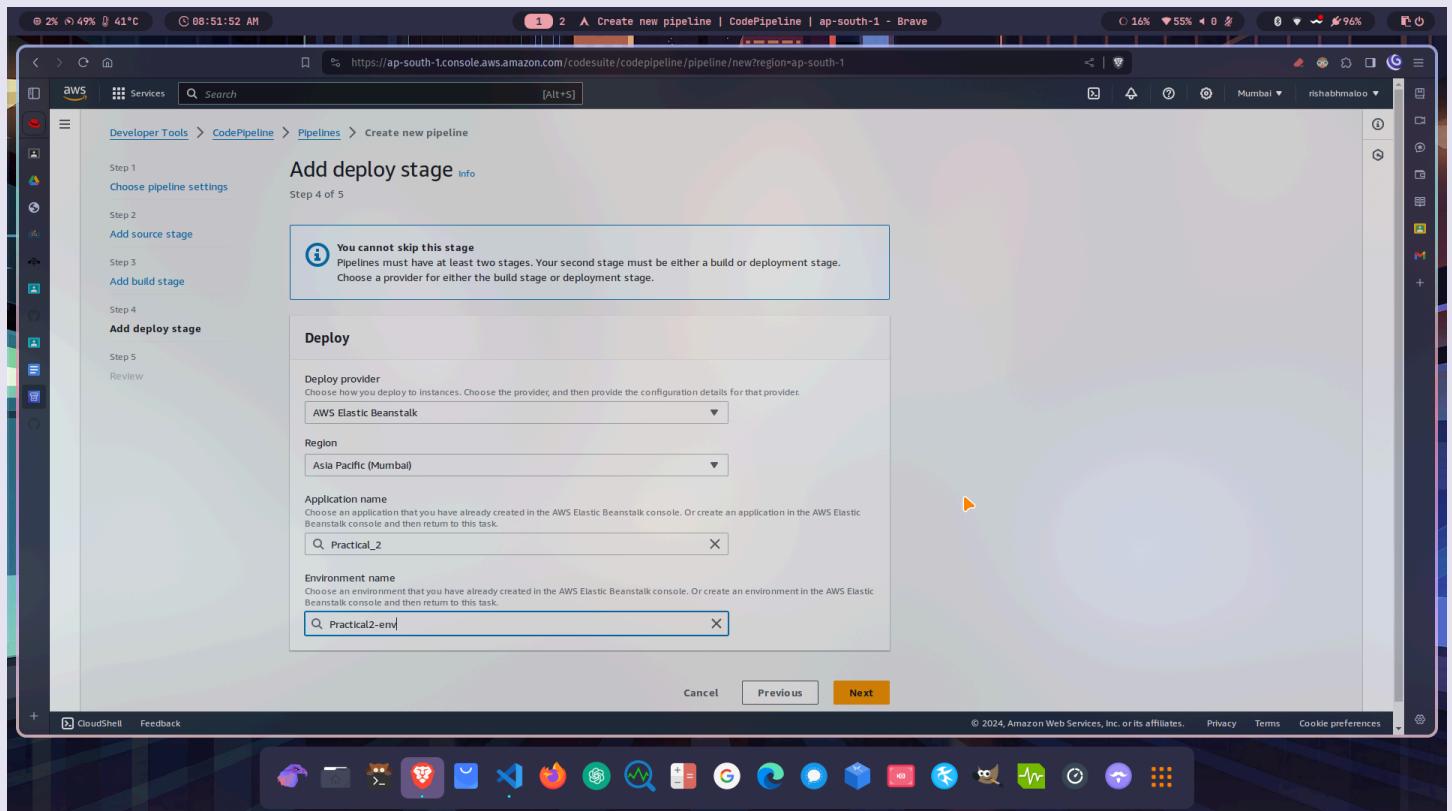
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## 7. Add the repository and branch for the same.



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8. For deployment of our application, select AWS Elastic Beanstalk Environment previously created.



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## 9. Wait for the pipeline and deployment to complete the operations.

The screenshot shows the AWS CodePipeline console. A green banner at the top says "Success" and "Congratulations! The pipeline YSL has been created." The pipeline type is listed as V1. The pipeline consists of two stages: "Source" and "Deploy". The "Source" stage is currently "In progress" (status: Just now). The "Deploy" stage is listed as "Didn't Run". The pipeline execution ID is 502d75c4-c20a-4ccb-b18a-bf1fff734bf7. The browser status bar indicates it's 08:52:28 AM.

The screenshot shows the AWS CodePipeline console after the pipeline has completed. The "Source" stage is now marked as "Succeeded" (status: Just now). The "Deploy" stage is also marked as "Succeeded" (status: Just now). Both stages show a "Source: updated" message. The pipeline execution ID remains 502d75c4-c20a-4ccb-b18a-bf1fff734bf7. The browser status bar indicates it's 08:53:12 AM.

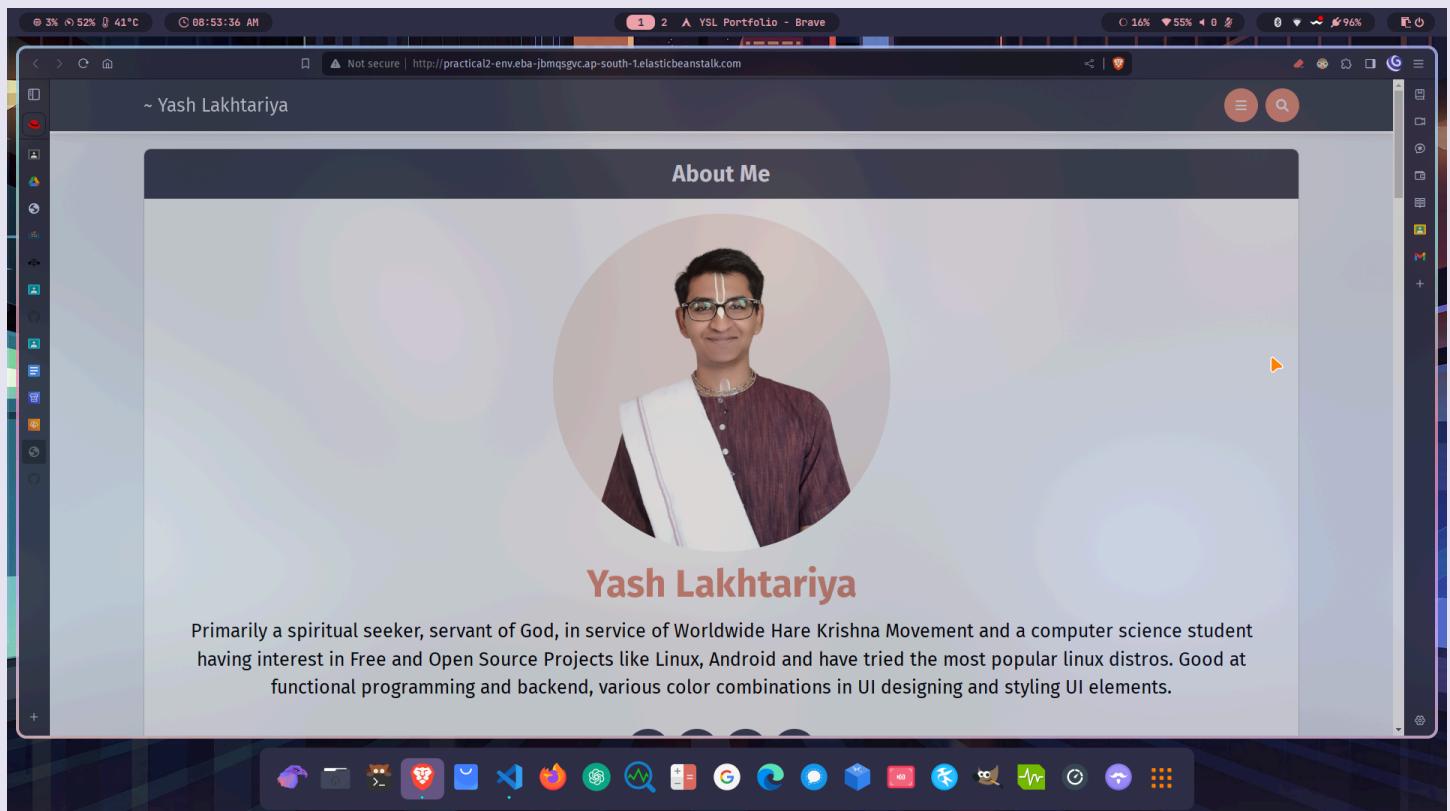
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10. Check the domain, if the changes are successful.



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