

Name: *Chinnakotla Jagannath*

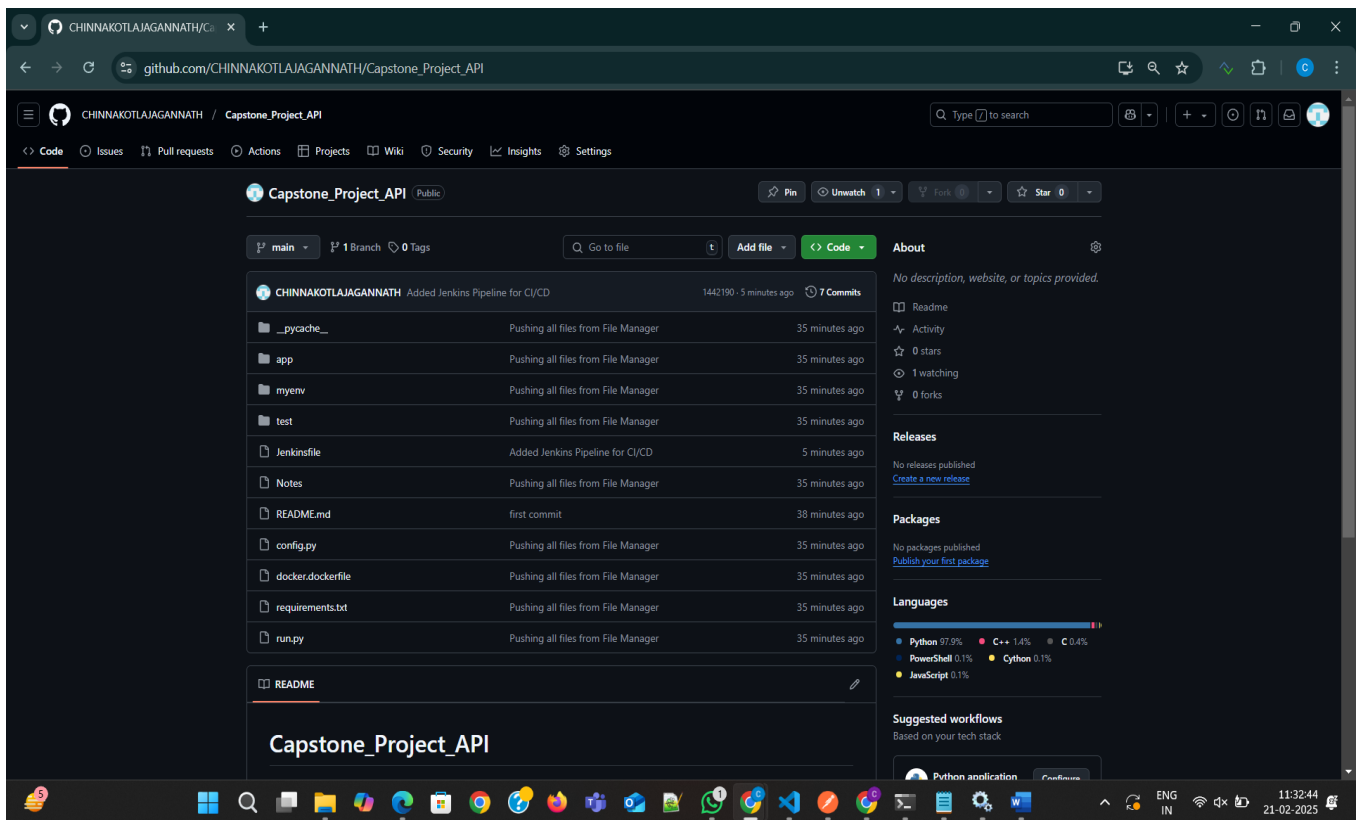
Capstone Project: *DevOps-Driven Flask Application with SQLite and Azure Deployment*

Objectives

1. Develop a Flask API

- Design a RESTful API that allows users to perform CRUD operations.
- Implement authentication and error handling mechanisms.

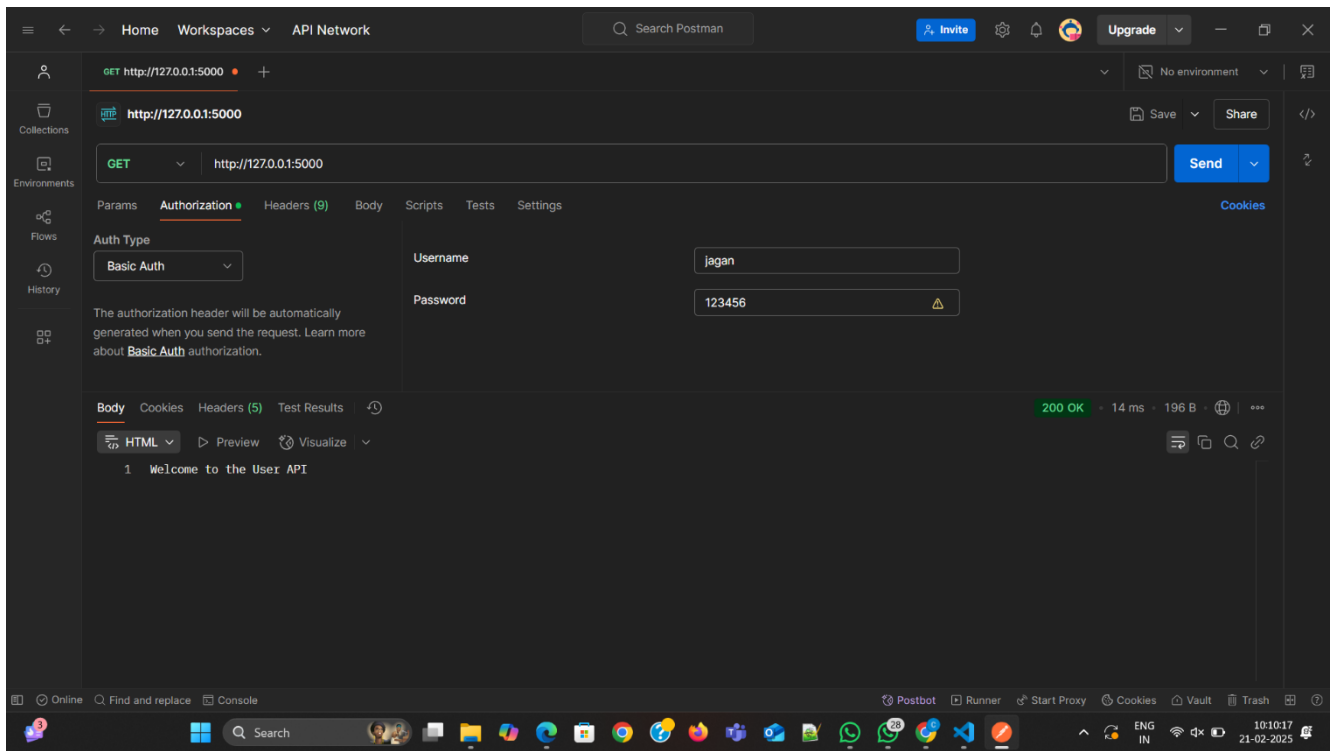
Github_Link: https://github.com/CHINNAKOTLAJAGANNATH/Capstone_Project_API.git



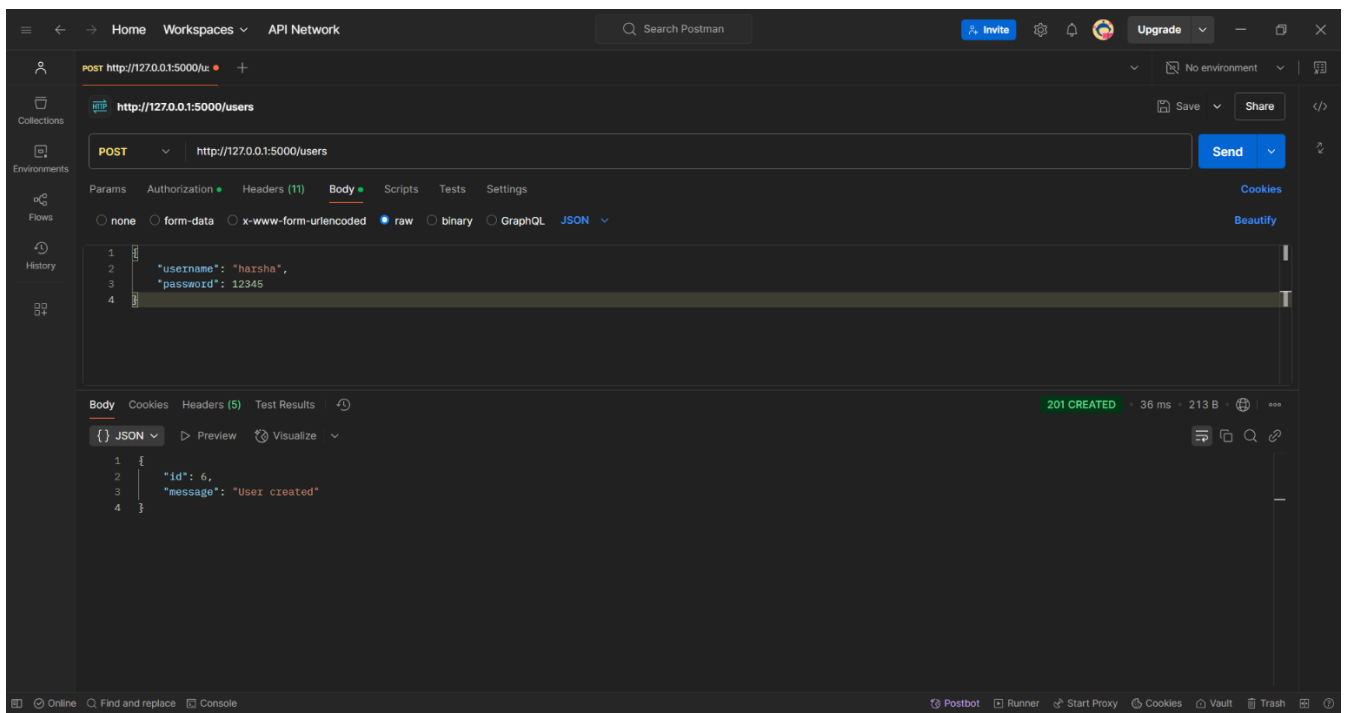
Run: Running on <http://127.0.0.1:5000>

1. User Management API

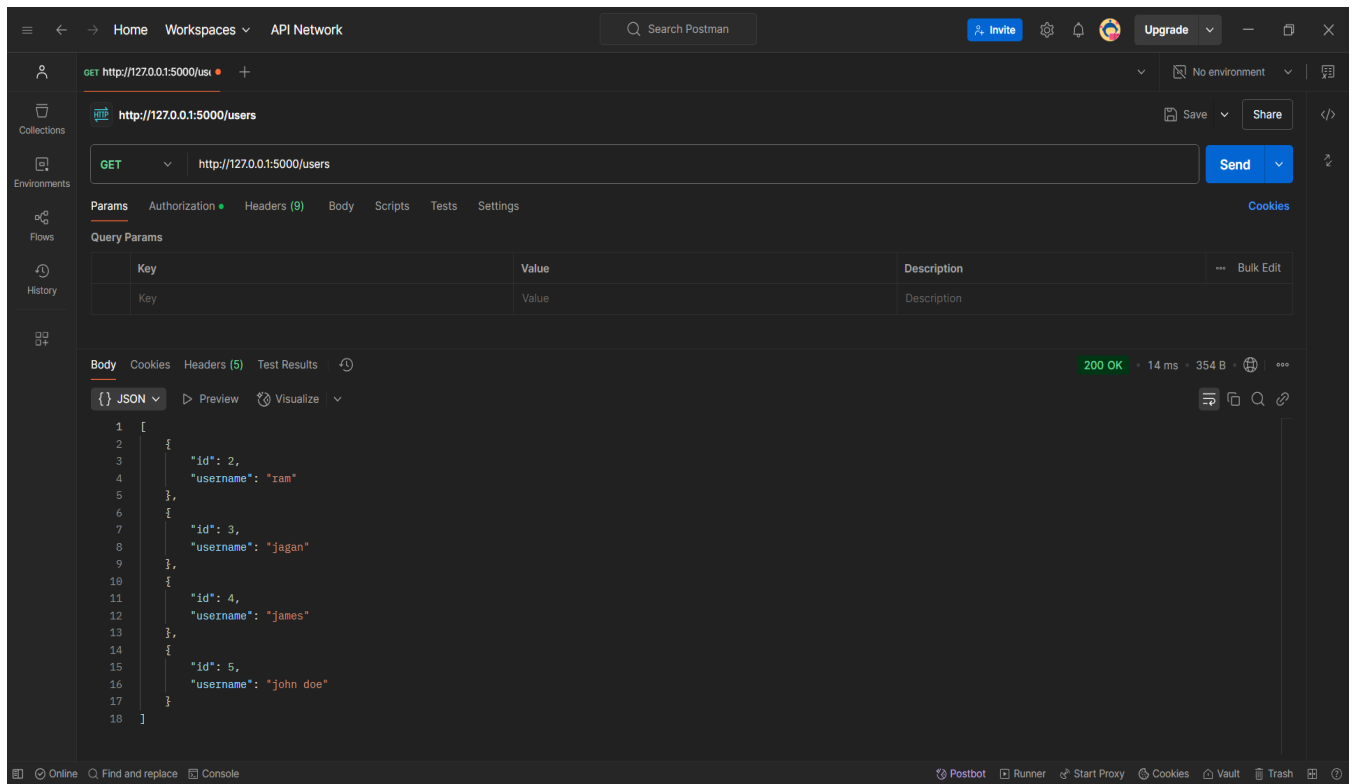
➤ Login



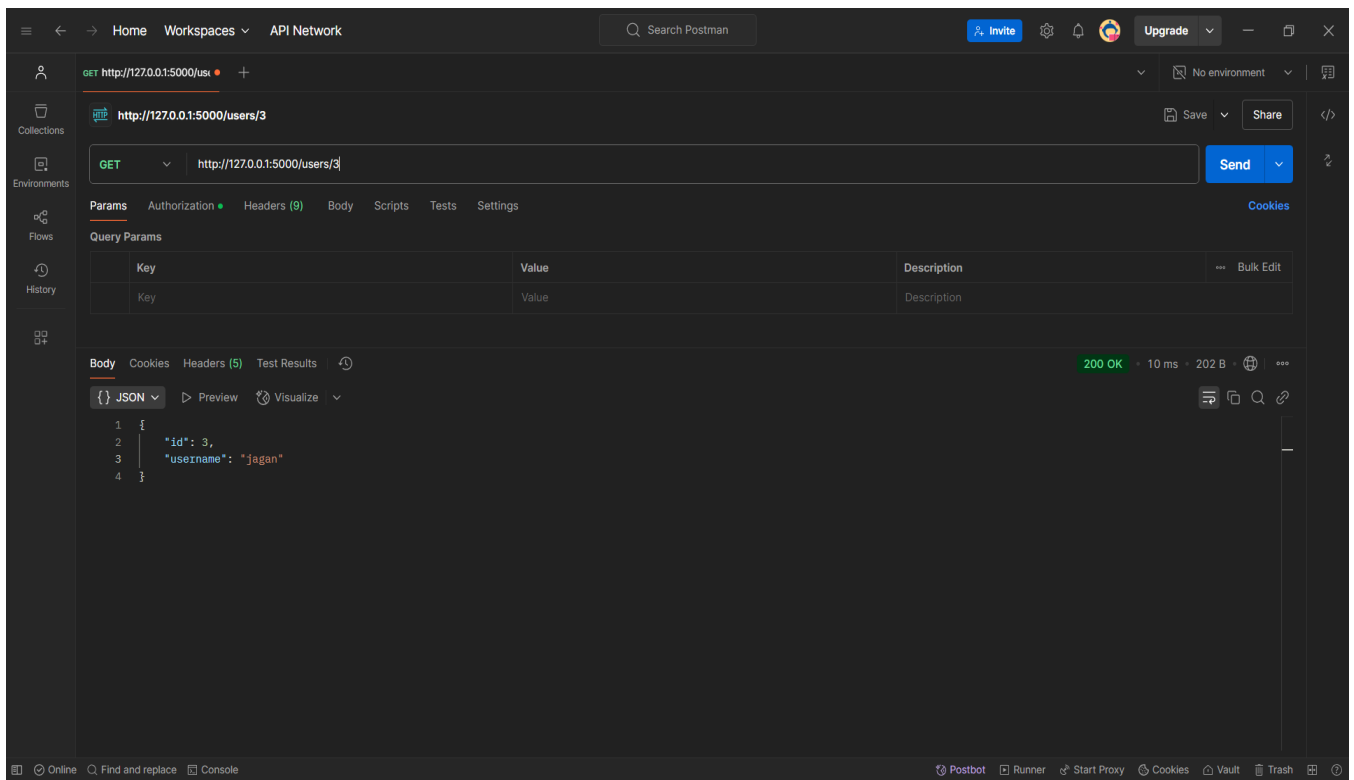
- **POST /users → Add a new user.**
<http://127.0.0.1:5000/users>



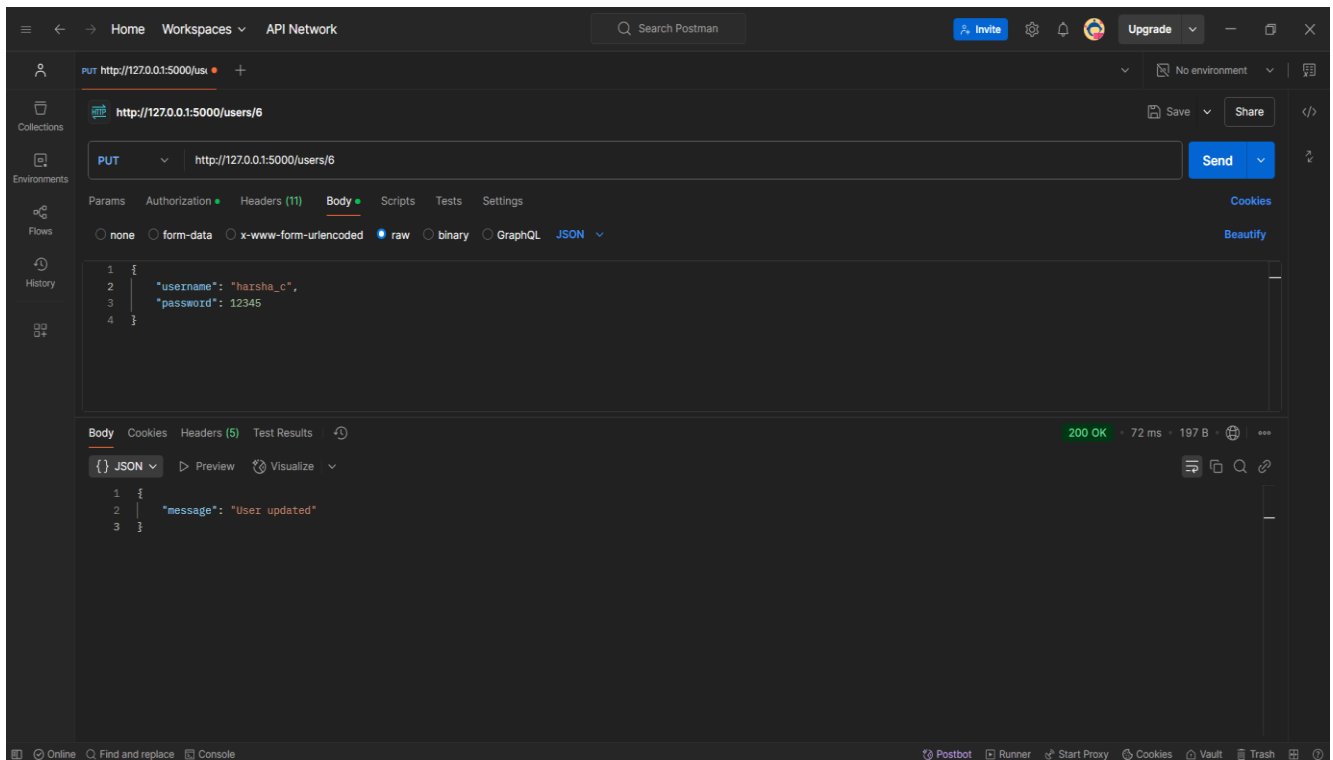
- **GET /users → Retrieve a list of all users.**
<http://127.0.0.1:5000/users>



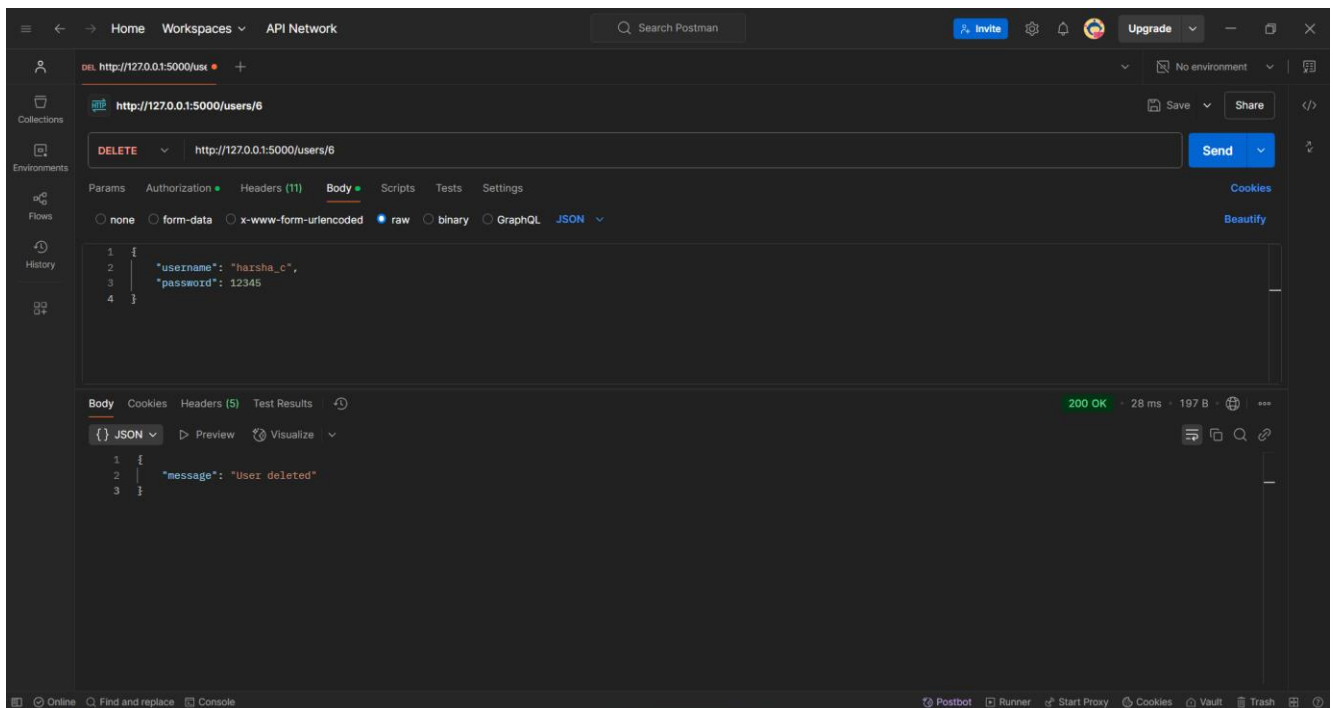
- **Get / users/{id} → Retrieve details of a specific user.**
<http://127.0.0.1:5000/users/3>



- **PUT /users/{id} → Update user details.**
<http://127.0.0.1:5000/users/6>



- **DELETE /users/{id} → Delete a user from the database.**
<http://127.0.0.1:5000/users/6>



2. Integrate an SQLite Database

- Create and manage a database using SQLite.
- Store and retrieve structured data efficiently.

```
Command Prompt - sqlite3 n x + v
C:\Users\JAGANNATH\db>sqlite3 mydb.db
SQLite version 3.46.1 2024-08-13 09:16:08 (UTF-16 console I/O)
Enter ".help" for usage hints.
sqlite>
sqlite> .tables
STUDENT      TEACHER      UserDetails  category      product      user
sqlite>
sqlite> select * from user;
2|ram|ram.1@gmail.com|ram|123456
3|jagan|jagan@gmail.com|jagan|123456
4|james doll|james@gmail.com|james|123456
sqlite>
sqlite> |
```

3. Automate DevOps Pipeline Using Jenkins

- Set up continuous integration and deployment (CI/CD) pipelines.
- Automate building, testing, and deploying the Flask application.

The screenshot shows the Jenkins web interface for a job named 'capstone_project #5'. The 'Console Output' tab is selected, displaying the following log:

```
Started by user Chinnakotla Jagannath
Obtained Jenkinsfile from git https://github.com/CHINNAKOTLAJAGANNATH/Capstone_Project_API.git
[Pipeline] Start of Pipeline
[Pipeline] node
Running on Jenkins in D:\new_jenkins_home\workspace\capstone_project
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Declarative: Checkout SCM)
[Pipeline] checkout
The recommended git tool is: git.exe
No credentials specified
> git.exe rev-parse --resolve-git-dir D:\new_jenkins_home\workspace\capstone_project\.git # timeout=10
Fetching changes from the remote Git repository
> git.exe config remote.origin.url https://github.com/CHINNAKOTLAJAGANNATH/Capstone_Project_API.git # timeout=10
Fetching upstream changes from https://github.com/CHINNAKOTLAJAGANNATH/Capstone_Project_API.git
> git.exe --version # timeout=10
> git --version # 'git version 2.46.1.windows.1'
> git.exe fetch --tags --force --progress -- https://github.com/CHINNAKOTLAJAGANNATH/Capstone_Project_API.git +refs/heads/*:refs/remotes/origin/* # timeout=10
> git.exe rev-parse "refs/remotes/origin/main" (commit) # timeout=10
Checking out Revision 14421900139cd97bec0aa271007302c30e8dffe (refs/remotes/origin/main)
> git.exe config core.sparsecheckout # timeout=10
> git.exe checkout -f 14421900139cd97bec0aa271007302c30e8dffe # timeout=10
Commit message: "Added Jenkins Pipeline for CI/CD"
> git.exe rev-list --no-walk f697dc1f6767b28154b76ad2850b4df4b2b17a71 # timeout=10
[Pipeline] }
[Pipeline] // stage
[Pipeline] withEnv
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Clone Repository)
```

The interface includes a sidebar with navigation options like Status, Changes, Console Output, and Pipeline Console. The top of the page shows the Jenkins logo and user information.

capstone_project #5 Console

localhost:8080/jenkins/job/capstone_project/5/console

Dashboard > capstone_project > #5

```
[Pipeline] // stage
[Pipeline] withEnv
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Clone Repository)
[Pipeline] git
The recommended git tool is: git.exe
using credential cred-jenkins
> git.exe rev-parse --resolve-git-dir D:\new_jenkins_home\workspace\capstone_project\.git # timeout=10
Fetching changes from the remote Git repository
> git.exe config remote.origin.url https://github.com/CHINNAKOTLAJAGANNATH/Capstone_Project_API.git # timeout=10
Fetching upstream changes from https://github.com/CHINNAKOTLAJAGANNATH/Capstone_Project_API.git
> git.exe --version # timeout=10
> git --version # 'git version 2.46.1.windows.1'
using GIT_ASKPASS to set credentials
> git.exe fetch --tags --force --progress -- https://github.com/CHINNAKOTLAJAGANNATH/Capstone_Project_API.git +refs/heads/*:refs/remotes/origin/* # timeout=10
> git.exe rev-parse "refs/remotes/origin/main"[commit] # timeout=10
Checking out Revision 14421900139cd97bec8aa271087302c30e8dffd (refs/remotes/origin/main)
> git.exe config core.sparsecheckout # timeout=10
> git.exe checkout -f 14421900139cd97bec8aa271087302c30e8dffd # timeout=10
> git.exe branch -a -v --no-abbrev # timeout=10
> git.exe branch -D main # timeout=10
> git.exe checkout -b main 14421900139cd97bec8aa271087302c30e8dffd # timeout=10
Commit message: "Added Jenkins Pipeline for CI/CD"
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```

REST API Jenkins 2.492.1

5

Windows Taskbar Icons

System Tray

11:27:50 21-02-2025