

Use Case Document: Docker Custom Network (mynetwork)

Use Case Name: Docker Custom Network Setup and Verification

Description

This use case demonstrates creating a custom Docker network named mynetwork, deploying two BusyBox containers (app1 and app2) into the network, verifying their existence, checking connectivity between them (ping), and optionally verifying port access **port 80**

Preconditions

- 1. Docker Engine installed and running.
- 2. Python environment configured for running unit tests.
- 3. No existing containers named app1 or app2.
- 4. No existing network named mynetwork.

Postconditions

- mynetwork exists and both containers (app1, app2) are attached.
- Connectivity and port checks completed successfully.

Main Flow (Docker CLI Steps)

| Step | Actions to be performed |
|------|--|
| 1 | Cleanup old containers and network |
| 2 | Create custom network according to the requirement |
| 3 | Run BusyBox containers in a network |
| 4 | Verify containers are running |
| 5 | Check connectivity (ping) |
| 6 | Inspect network |
| 7 | Verify port access |

Notes / Pitfalls

- Containers must be running before inspecting networks.
- Docker inspect output must be parsed as JSON to reliably check connections.
- Ping relies on ICMP; may behave differently on Windows vs Linux.
- Containers can belong to multiple networks; the test checks only for the presence of mynetwork.
- Tests should include exception handling for robust automation.

Steps to run the projects

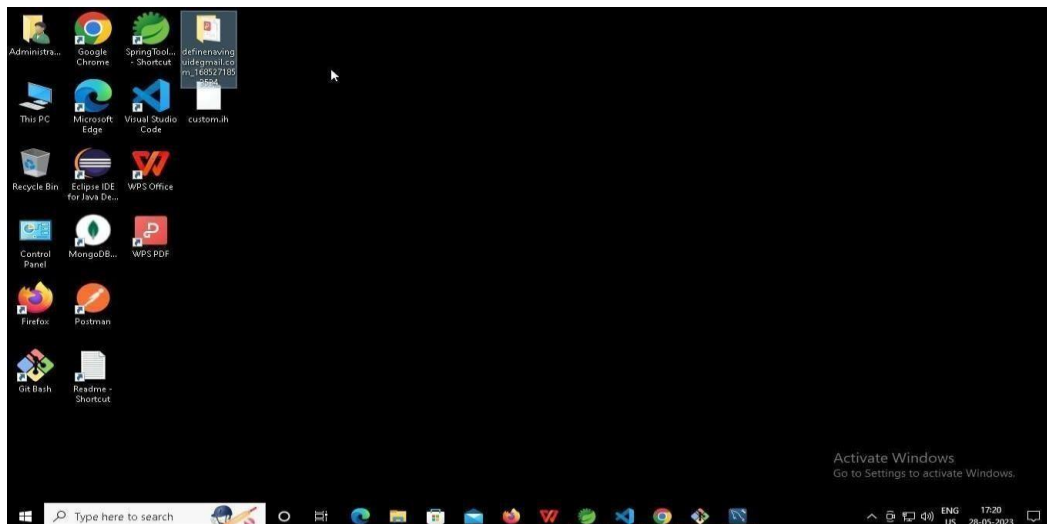
1. Open CMD type the command `pip install docker` .
2. After the application is deployed your application you will need to run the testcases
3. In CMD run the python file `run_tests.py`
4. Wait for the python file to run the testcase
5. Next step is push the code to github

Steps to push the code

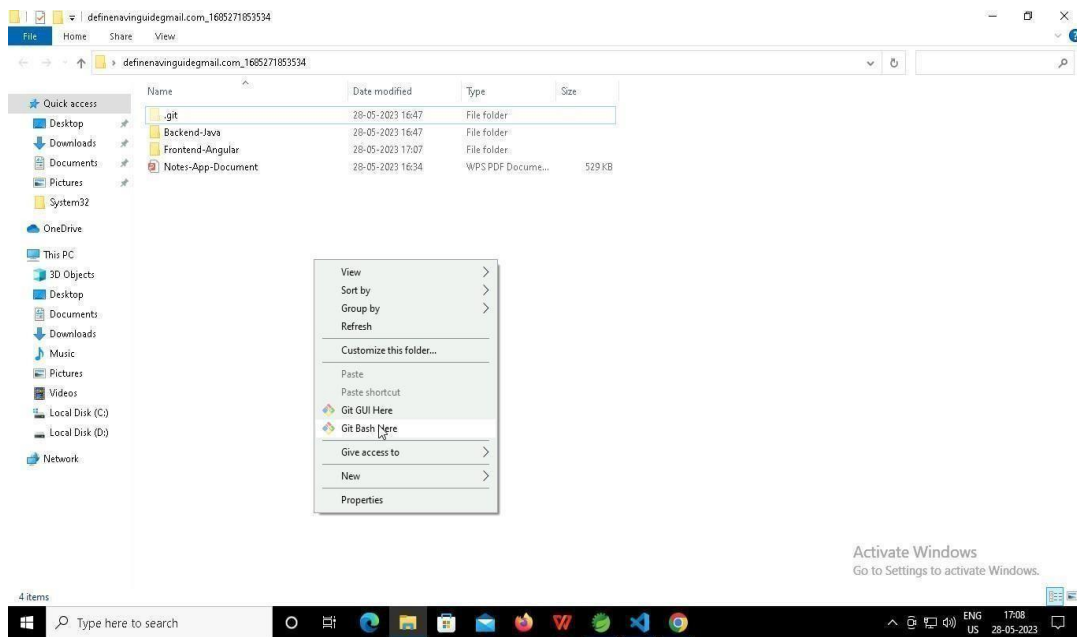
Push the code the repository

You can run test cases as many numbers of times and at any stage of Development, to check how many test cases are passed/failed and accordingly refactor your code.

1. **Make sure before final submission you commit all changes to git.** For that open the project folder available on desktop



- a. Right click in folder and open Git Bash



b. In Git bash terminal, run following commands

c. git status

```

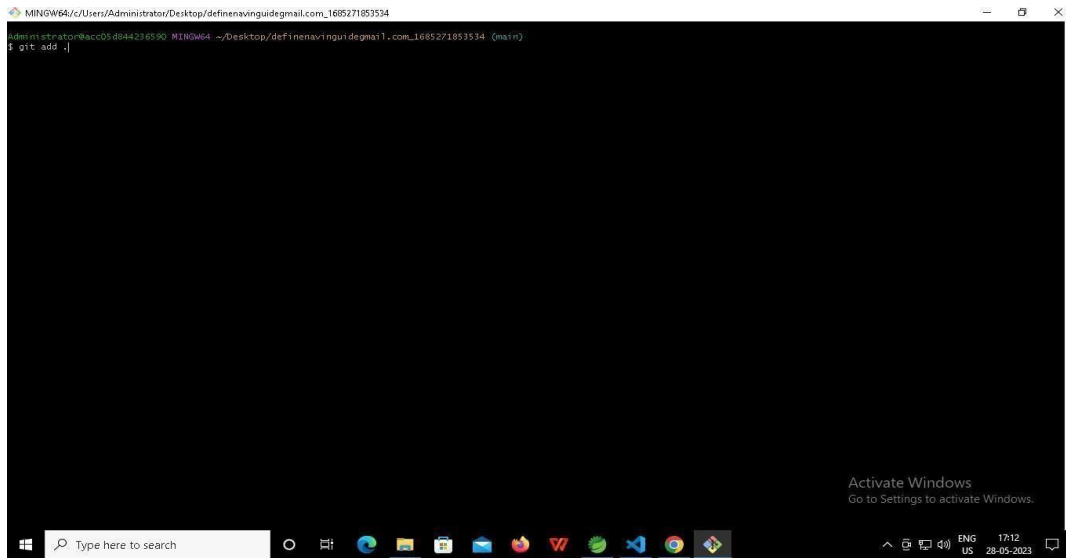
MINGW64 ~/Users/Administrator/Desktop/definavinguidegmail.com_168527185334
Administrator@AC05D844224590: MINGW64 ~$ cd Desktop/definavinguidegmail.com_168527185334
1685334 (main)
$ git status
On branch main
Your branch is up to date with 'origin/main'.

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:   Frontend-Angular/src/app/app.module.ts
    modified:   Frontend-Angular/src/app/app.component.ts

Untracked files:
  (use "git add <file>..." to include in what will be committed)
    Backend-Java/.idea/
    Backend-Java/.project
    Backend-Java/.settings/
    Backend-Java/target/
    Frontend-Angular/.angular/
    Frontend-Angular/node_modules/
    Frontend-Angular/output_backend_frontend_merged.txt
    Frontend-Angular/output_frontend_merged.txt

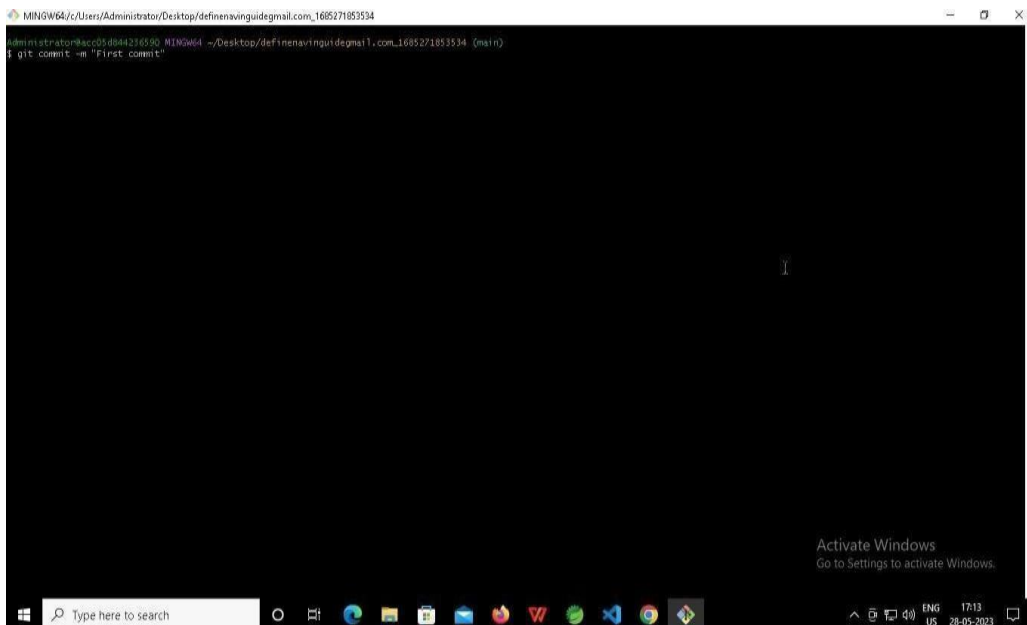
no changes added to commit (use "git add" and/or "git commit -a")
Administrator@AC05D844224590: MINGW64 ~$
  
```

d. git add .



e . git commit -m "First commit"

(You can provide any message every time you commit)



F.git push

```
MIN9W6A/c/Users/Administrator/Desktop/definensavinguidegmail.com_1685271853534 (main)
$ git push
Enumerating objects: 28156, done.
Counting objects: 100% (28156/28156), done.
Delta compression using up to 4 threads
Compressing objects: 100% (15330/15330), done.
Writing objects: 100% (28151/28151), 71.00 MiB | 3.27 MiB/s, done.
Total 28151 (delta 7783), reused 22848 (delta 7780), pack-reused 0
remote: Resolving deltas: 100% (7783/7783), completed with 3 local objects.
remote: warning: See https://gh.io/lfs for more information.
remote: warning: File Frontend-angular/app/angular/cache/315256/angular-webpack/9629720b052dd6ef081cb691ce119f5ada5942/D.pack is 86.24 MB; this is larger than GitHub's recommended maximum file
size of 50.00 MB
remote: warning: GH001: Large files detected. You may want to try Git Large File Storage - https://git-lfs.github.com.
To https://github.com/definensavinguidegmail.com_1685271853534.git
 490c626b..c102266d main -> main
administrator@acc05d844236590: MIN9W6A - ~/Desktop/definensavinguidegmail.com_1685271853534 (main)
$
```

Activate Windows
Go to Settings to activate Windows.

Type here to search

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