

## Question 1 (Git)

- git init output:

```
[siddham@Siddhams-MacBook-Air 2023ebcs655-docker-git % git init  
Initialized empty Git repository in /Users/siddham/Documents/BITS/assignments/2023ebcs655-docker-git/.  
git/  
siddham@Siddhams-MacBook-Air 2023ebcs655-docker-git % ]
```

- git status output (I have created all the html files in web-app)

```
[siddham@Siddhams-MacBook-Air 2023ebcs655-docker-git % git status  
On branch main  
  
No commits yet  
  
Untracked files:  
  (use "git add <file>..." to include in what will be committed)  
    web-app/  
  
nothing added to commit but untracked files present (use "git add" to track)  
siddham@Siddhams-MacBook-Air 2023ebcs655-docker-git % ]
```

- git add and git status output

```
[siddham@Siddhams-MacBook-Air 2023ebcs655-docker-git % git add .  
[siddham@Siddhams-MacBook-Air 2023ebcs655-docker-git % git status  
On branch main  
  
No commits yet  
  
Changes to be committed:  
  (use "git rm --cached <file>..." to unstage)  
    new file:   web-app/about.html  
    new file:   web-app/contact.html  
    new file:   web-app/index.html  
  
siddham@Siddhams-MacBook-Air 2023ebcs655-docker-git % ]
```

- git commit output

```
[siddham@Siddhams-MacBook-Air 2023ebcs655-docker-git %  
[siddham@Siddhams-MacBook-Air 2023ebcs655-docker-git % git commit -m "initial commit: add 3 web pages"  
[main (root-commit) 01057ea] initial commit: add 3 web pages  
  3 files changed, 26 insertions(+)  
  create mode 100644 web-app/about.html  
  create mode 100644 web-app/contact.html  
  create mode 100644 web-app/index.html  
siddham@Siddhams-MacBook-Air 2023ebcs655-docker-git % ]
```

- git log output

```
[siddham@Siddhams-MacBook-Air 2023ebcs655-docker-git % git log --oneline  
01057ea (HEAD -> main) initial commit: add 3 web pages  
siddham@Siddhams-MacBook-Air 2023ebcs655-docker-git % ]
```

- Branching and switching

```
[siddham@Siddhams-MacBook-Air 2023ebcs655-docker-git % git branch feature-page
[siddham@Siddhams-MacBook-Air 2023ebcs655-docker-git % git checkout feature-page
Switched to branch 'feature-page'
siddham@Siddhams-MacBook-Air 2023ebcs655-docker-git % ]
```

```
[siddham@Siddhams-MacBook-Air 2023ebcs655-docker-git % git branch feature-page
[siddham@Siddhams-MacBook-Air 2023ebcs655-docker-git % git checkout feature-page
Switched to branch 'feature-page'
[siddham@Siddhams-MacBook-Air 2023ebcs655-docker-git % git branch
* feature-page
  main
siddham@Siddhams-MacBook-Air 2023ebcs655-docker-git % ]
```

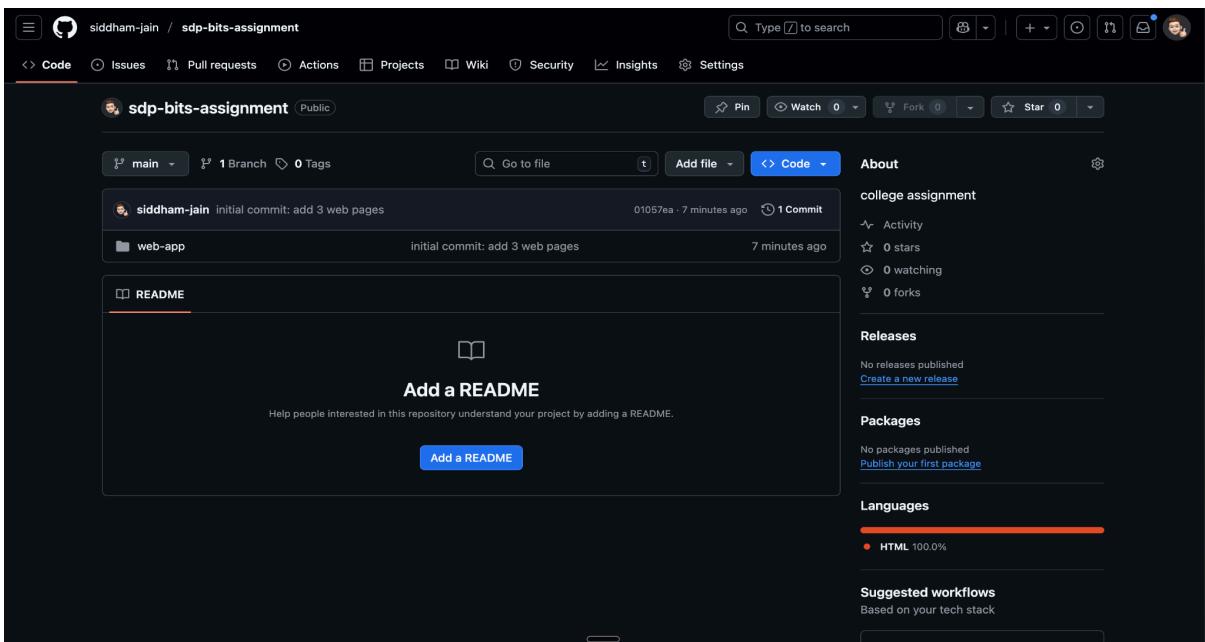
- Back to main

```
[main
[siddham@Siddhams-MacBook-Air 2023ebcs655-docker-git % git checkout main
Switched to branch 'main'
siddham@Siddhams-MacBook-Air 2023ebcs655-docker-git % ]
```

- pushing to origin

```
[siddham@Siddhams-MacBook-Air 2023ebcs655-docker-git % git remote add origin git@github.com:siddham-jain
n/sdp-bits-assignment.git
[siddham@Siddhams-MacBook-Air 2023ebcs655-docker-git % git push -u origin main
Enumerating objects: 6, done.
Counting objects: 100% (6/6), done.
Delta compression using up to 10 threads
Compressing objects: 100% (5/5), done.
Writing objects: 100% (6/6), 746 bytes | 746.00 KiB/s, done.
Total 6 (delta 0), reused 0 (delta 0), pack-reused 0
To github.com:siddham-jain/sdp-bits-assignment.git
 * [new branch]      main -> main
branch 'main' set up to track 'origin/main'.
siddham@Siddhams-MacBook-Air 2023ebcs655-docker-git % ]
```

- Github repository: <https://github.com/siddham-jain/sdp-bits-assignment>



## Question 2: Docker & Docker Hub

- Dockerfile

```
[siddham@Siddhams-MacBook-Air flask-app % cat Dockerfile
# Dockerfile
FROM python:3.9-slim

WORKDIR /app

COPY requirements.txt .
RUN pip install --no-cache-dir -r requirements.txt

COPY . .

CMD ["python", "app.py"]
siddham@Siddhams-MacBook-Air flask-app % ]
```

- Building the docker image

```
[siddham@Siddhams-MacBook-Air flask-app % vim Dockerfile
[siddham@Siddhams-MacBook-Air flask-app % docker build -t myflaskapp .
[+] Building 19.3s (11/11) FINISHED                                            docker:desktop-linux
  => [internal] load build definition from Dockerfile                      0.0s
  => => transferring dockerfile: 199B                                         0.0s
  => [internal] load metadata for docker.io/library/python:3.9-slim        6.4s
  => [auth] library/python:pull token for registry-1.docker.io               0.0s
  => [internal] load .dockerrcignore                                       0.0s
  => => transferring context: 2B                                           0.0s
  => [1/5] FROM docker.io/library/python:3.9-slim@sha256:2d97f6910b16bd338d3060f261f53f144965f7 10.7s
  => => resolve docker.io/library/python:3.9-slim@sha256:2d97f6910b16bd338d3060f261f53f144965f75 0.0s
  => => sha256:c23f4b50347300e01a1a1da6dd0266adcf8e44671002ad28c2386cb6557943d6 251B / 251B 0.9s
  => => sha256:ebfe7d4fa0c501a81a5ba6d1e1e2958e4b005d3ce3827b0adb869d47b8c5122 13.83MB / 13.83MB 5.9s
  => => sha256:479b8ad8bcc3edbeba82d4959dfbdc65226d5b55df3f36914c68455762bf924c 1.27MB / 1.27MB 1.9s
  => => sha256:a16e551192670581ec8359c70ab9eebf8f2af5468ffc79b3d4f9ce21b0366f 30.14MB / 30.14MB 10.1s
  => => extracting sha256:a16e551192670581ec8359c70ab9eebf8f2af5468ffc79b3d4f9ce21b0366f47 0.3s
  => => extracting sha256:479b8ad8bcc3edbeba82d4959dfbdc65226d5b55df3f36914c68455762bf924c 0.0s
  => => extracting sha256:ebfe7d4fa0c501a81a5ba6d1e1e2958e4b005d3ce3827b0adb869d47b8c51229 0.1s
  => => extracting sha256:c23f4b50347300e01a1a1da6dd0266adcf8e44671002ad28c2386cb6557943d6 0.0s
  => [internal] load build context                                         0.0s
  => => transferring context: 519B                                         0.0s
  => [2/5] WORKDIR /app                                              0.1s
  => [3/5] COPY requirements.txt .                                      0.0s
  => [4/5] RUN pip install --no-cache-dir -r requirements.txt          1.7s
  => [5/5] COPY . .
  => exporting to image                                                 0.0s
  => => exporting layers                                              0.3s
  => => exporting manifest sha256:28242563bf3c2bd2b4218e8d80ab5a8a2f0b844d0c579c951b977256b0c3a1 0.0s
  => => exporting config sha256:7fdca25a8bf0e537813d2b1b3ebf42cb16b48eaedf5e585cad1b9a8bfd5bcb3e 0.0s
  => => exporting attestation manifest sha256:9b5e7f2a2735bba712e38ee5580b3b2d726f38e2c5ac83301f 0.0s
  => => exporting manifest list sha256:663f17262aa6b45addec96e65571c66ad5b94a9e2bdcb7bcb7f984508 0.0s
  => => naming to docker.io/library/myflaskapp:latest                  0.0s
  => => unpacking to docker.io/library/myflaskapp:latest                0.1s

View build details: docker-desktop://dashboard/build/desktop-linux/desktop-linux/z01yx6c8jyv18xows7za9j4z1
siddham@Siddhams-MacBook-Air flask-app % ]
```

- Docker images

```
[siddham@Siddhams-MacBook-Air flask-app % docker images
REPOSITORY      TAG      IMAGE ID      CREATED      SIZE
myflaskapp      latest   663f17262aa6  About a minute ago  226MB
linear-clone-app latest   f3c1056acf95f  6 days ago   3.18GB
```

- running the app

```
* Serving Flask app 'app'
* Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI
server instead.
* Running on all addresses (0.0.0.0)
* Running on http://127.0.0.1:5000
* Running on http://172.17.0.2:5000
Press CTRL+C to quit
```

- pushing to docker hub

```
[siddham@Siddhams-MacBook-Air flask-app % docker login
Authenticating with existing credentials... [Username: 22448]
Info → To login with a different account, run 'docker logout' followed by 'docker login'

Login Succeeded
[siddham@Siddhams-MacBook-Air flask-app % docker tag myflaskapp 22448/myflaskapp:latest
[siddham@Siddhams-MacBook-Air flask-app % docker push 22448/myflaskapp:latest
The push refers to repository [docker.io/22448/myflaskapp]
b00257cda761: Pushed
7e995b34338f: Pushed
a16e55119267: Pushed
ebfe7d4fa0c5: Pushed
c23f4b503473: Pushed
bd5425d37b1c: Pushed
e4d73075950a: Pushed
479b8ad8bcc3: Pushed
967ec95a82b1: Pushed
latest: digest: sha256:663f17262aa6b45addec96e65571c66ad5b94a9e2bdcb7bcb7f984508f8bf1b4 size: 856
siddham@Siddhams-MacBook-Air flask-app % ]
```

- running from hub

```
Run docker run --help for more information
[siddham@Siddhams-MacBook-Air flask-app % docker run -d -p 8000:8000 22448/myflaskapp:latest
df9ea6405fc0784131441a22202f7bd16a0e3cf65e3293a96c8dafce68e8cf
siddham@Siddhams-MacBook-Air flask-app % ]
```

- Image pushed to Docker hub

