

Program 4: Integrate git with docker for source-controlled application builds

File structure:

/Dockerfile

/package.json

/package

/index.js

Create folder and initialize package.json

Dockerfile

#stage 1

FROM node:18

WORKDIR /app

COPY package*

RUN npm

#stage 3

#Stage 2

FROM node:10
WORKDIR /app

```
COPY --from=build /app /app
```

EXPOSE 3000

CMD ["node", "index.js"]

index_is

```
const express = require('express')
```

```
const app = express()
```

```
app.get('/'.(req,res)=>res.send("Hello from 3rd program"))
```

```
app.listen(3000, ()=>{console.log("Server running on http://localhost:3000");})
```

Run the following command to create docker image and container

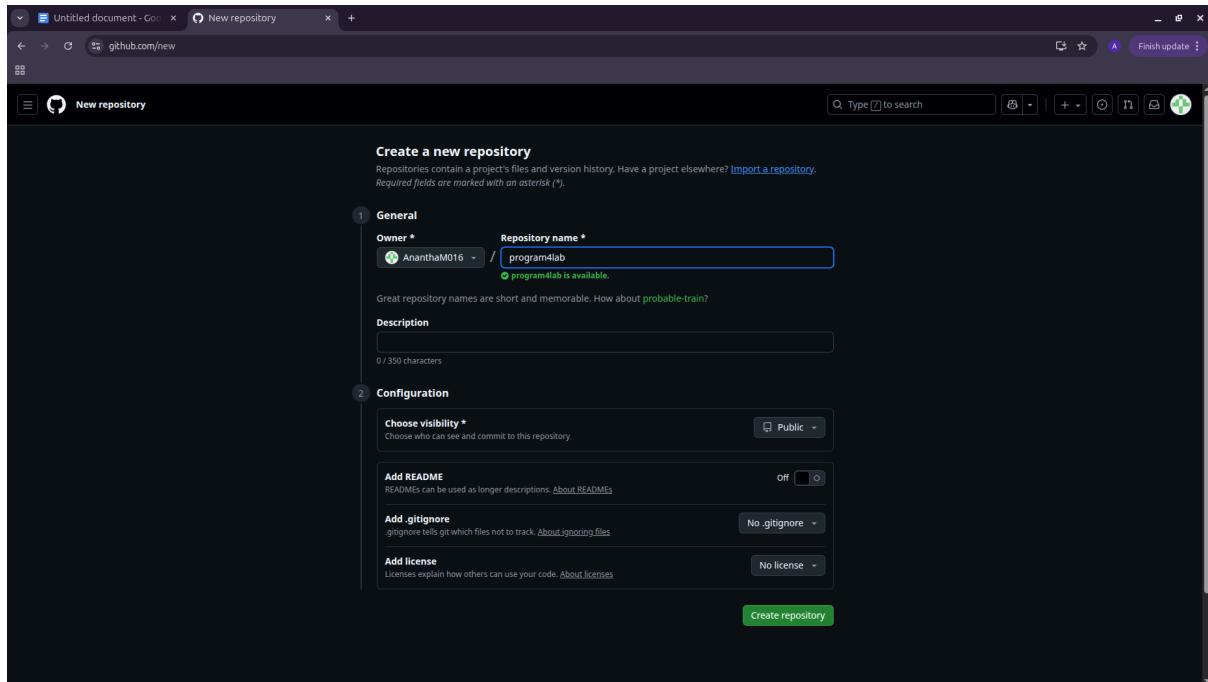
```
sudo docker build -t program4 .
```

```
sudo docker run -d -p 3000:3000 –name pro4 program4
```

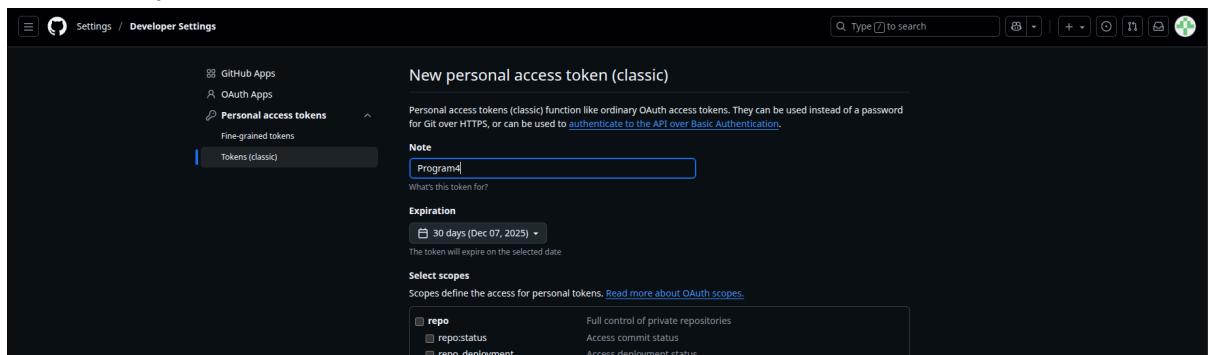
```
[rv24mc016_anantha_m@anantha-ASUS-TUF-Gaming-A15-FAS06IHRB-FAS06IHRZ:~/Desktop/LabPrograms/Lab4$ sudo docker build -t program4 .  
[+] Building 5.8s (14/14) FINISHED  
=> [internal] load build definition from Dockerfile  
=> => transferring dockerfile: 236B  
=> [internal] load metadata for docker.io/library/node:18-slim  
=> [internal] load metadata for docker.io/library/node:18  
=> [internal] load .dockerignore  
=> transferring context: 2B  
=> [build 1/5] FROM docker.io/library/node:18@sha256:c6ae79e38498325db67193d391e6ec1d224d96c693a8a4d943498556716d3783  
=> [internal] load build context  
=> => transferring context: 2.70MB  
=> [stage-1 1/3] FROB docker.io/library/node:18-slim@sha256:f9ab18e354e6855ae56ef2b290dd225c1e51a564f87584b9bd21dd651838830e  
=> CACHED [stage-1 2/3] WORKDIR /app  
=> CACHED [build 2/5] WORKDIR /app  
=> [build 3/5] COPY package.json ./  
=> [build 4/5] RUN npm install  
=> [build 5/5] COPY . .  
=> [stage-1 3/3] COPY --from=build /app /app  
=> exporting to Image  
=> => exporting layers  
=> => writing image sha256:79b476c64819415b3e49a135b58c247d1c5f9020733a73b394b14864457a00d5  
=> => naming to docker.io/library/program4  
[rv24mc016_anantha_m@anantha-ASUS-TUF-Gaming-A15-FAS06IHRB-FAS06IHRZ:~/Desktop/LabPrograms/Lab4$ sudo docker images  
REPOSITORY TAG IMAGE ID CREATED SIZE  
program4 latest 79b476c64819 12 seconds ago 195MB  
program3 latest 4fcfcffca92f 39 seconds ago 198MB  
[rv24mc016_anantha_m@anantha-ASUS-TUF-Gaming-A15-FAS06IHRB-FAS06IHRZ:~/Desktop/LabPrograms/Lab4$ git init  
Initialized empty Git repository in /home/anantha/Desktop/LabPrograms/Lab4/.git/
```

Go to browser and type `http://localhost:3000` to see the output

Login to github account create a repo



Go to profile > settings > developer settings > access tokens > general tokens > create token > copy the token password and keep it safe



Initialize your directory with git

git init

git add .

git commit -m "<message>"

git branch -M main

Add remote git repo to cli

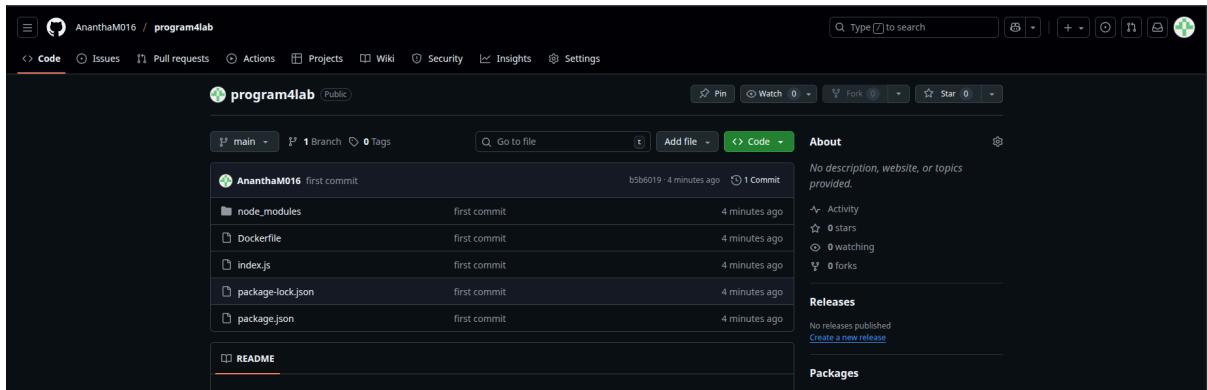
git remote add origin https://github.com/<username>/<repo>.git

git push -u origin main

```
irv24mc016_anantha_m@anantha-ASUS-TUF-Gaming-A15-FA506IHRB-FA506IHRZ:~/Desktop/LabPrograms/Lab4$ git branch -M main
irv24mc016_anantha_m@anantha-ASUS-TUF-Gaming-A15-FA506IHRB-FA506IHRZ:~/Desktop/LabPrograms/Lab4$ git remote add origin https://github.com/AnanthaM016/program4lab.git
Username for 'https://github.com': AnanthaM016
Password for 'https://AnanthaM016@github.com':
Enumerating objects: 722, done.
Counting objects: 100% (722/722), done.
Delta compression using up to 12 threads
Compressing objects: 100% (667/667), done.
Writing objects: 100% (722/722), 734.06 KiB | 10.64 MiB/s, done.
Total 722 (delta 142), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (142/142), done.
To https://github.com/AnanthaM016/program4lab.git
 * [new branch]      main -> main
branch 'main' set up to track 'origin/main'.
irv24mc016_anantha_m@anantha-ASUS-TUF-Gaming-A15-FA506IHRB-FA506IHRZ:~/Desktop/LabPrograms/Lab4$ git status
On branch main
Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean
irv24mc016_anantha_m@anantha-ASUS-TUF-Gaming-A15-FA506IHRB-FA506IHRZ:~/Desktop/LabPrograms/Lab4$
```

Go to repo and see the files were added



The screenshot shows a GitHub repository page for 'program4lab'. The repository is public and has 1 branch and 0 tags. A single commit was made by 'AnanthaM016' titled 'first commit' 4 minutes ago. The commit includes five files: node_modules, Dockerfile, index.js, package-lock.json, and package.json. The 'About' section indicates no description, website, or topics provided. The 'Activity' section shows 0 stars, 0 watching, and 0 forks. There are no releases published, and a link to 'Create a new release' is available. The 'Packages' section is also present.

To list and remove container and images

sudo docker container ls -a

sudo docker container stop <container id>

sudo docker container rm <container id>

sudo docker images

sudo docker rmi <imageid>