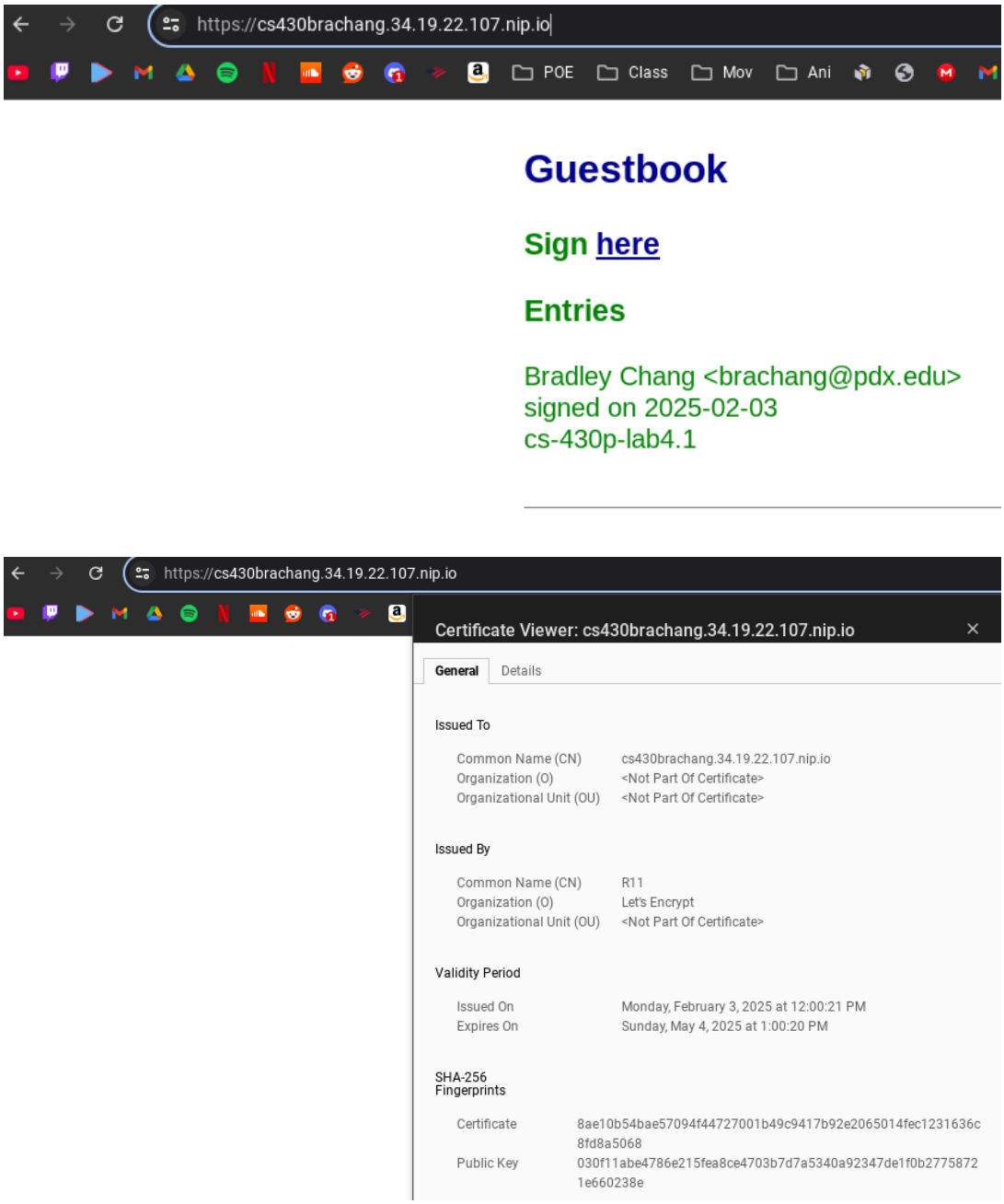
Bradley Chang

04.1g: nginx Compute Engine Guestbook

6. Install the application



Note: Couldn't get both the website UI and the certificate to show up on one screenshot since the certificate window covers up the website UI and I can't move that window in any way.

04.2g. Docker Guestbook

2. Version 1 Ubuntu

```
# Use Ubuntu 20.04 as the base image
FROM ubuntu:20.04

# Specify your e-mail address as the maintainer of the container image
LABEL maintainer="brachang@pdx.edu"

# Execute apt-get update and install to get Python's package manager
#  installed (pip)
RUN apt-get update -y
RUN apt-get install -y python3-pip

# Copy the contents of the current directory into the container directory /app
COPY . /app

# Set the working directory of the container to /app
WORKDIR /app

# Install the Python packages specified by requirements.txt into the container
RUN pip install -r requirements.txt

# Set the program that is invoked upon container instantiation
ENTRYPOINT ["python3"]

# Set the parameters to the program
CMD ["app.py"]
```

3. Build and run the Ubuntu-based container

Take a screenshot of the results for your lab notebook

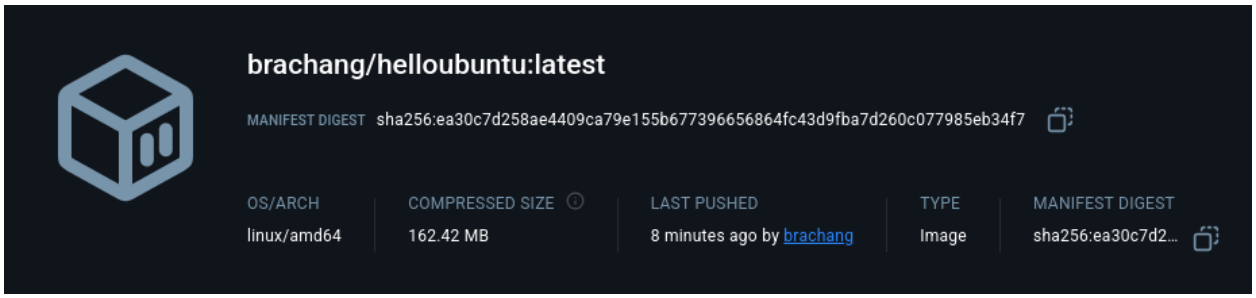
```
brachang@course-vm:~/cs430/cs430-src/04_container_dockerhub$ docker images
REPOSITORY    TAG       IMAGE ID       CREATED          SIZE
helloubuntu   latest    acdb1e293ad2   23 seconds ago   455MB
ubuntu        20.04     6013ae1a63c2   3 months ago     72.8MB
brachang@course-vm:~/cs430/cs430-src/04_container_dockerhub$
```

6. Running from Docker Hub

Run the image directly from Docker Hub and show a screenshot of the output of the command in your lab notebook.

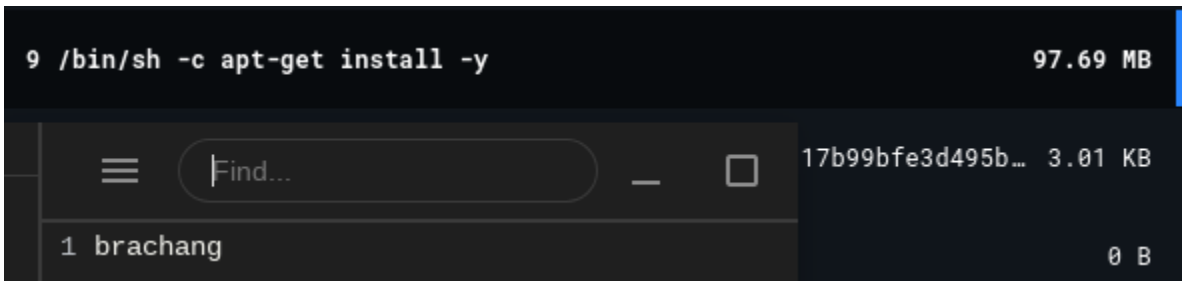
```
brachang@course-vm:~/cs430/cs430-src/04_container_dockerhub$ docker run -di -p 8000:5000 --name hellou brachang/helloubuntu
Unable to find image 'brachang/helloubuntu:latest' locally
latest: Pulling from brachang/helloubuntu
d9802f032d67: Already exists
cd3ac2d15e22: Pull complete
7aed4d496510: Pull complete
fe9dd151d4e6: Pull complete
e371580723c8: Pull complete
Digest: sha256:ea30c7d258ae4409ca79e155b677396656864fc43d9fba7d260c077985eb34f7
Status: Downloaded newer image for brachang/helloubuntu:latest
b1cfcb9c6fbfd9ca9264bc689e14be25ecc1618a7345d1db4175ed6d736d3810
brachang@course-vm:~/cs430/cs430-src/04_container_dockerhub$
```

Take a screenshot of the container image and its size for your lab notebook.



What layer adds the most to the container image? How much does it add?

The “/bin/sh -c apt-get install -y” takes up the most space.



7. Version 2: Alpine

```
# Use the Python version of alpine as the base image
FROM python:alpine

# Specify your e-mail address as the maintainer of the container image
LABEL maintainer="brachang@pdx.edu"

# Copy the contents of the current directory into the container directory /app
COPY . /app

# Set the working directory of the container to /app
WORKDIR /app

# Install the Python packages specified by requirements.txt into the container
RUN pip install --no-cache -r requirements.txt

# Set the program that is invoked upon container instantiation
ENTRYPOINT ["python3"]

# Set the parameters to the program
CMD ["app.py"]
```

8. Build and run the Alpine-based container

Take a screenshot of the image generated and its size for your lab notebook. How much smaller is the image than the Ubuntu one?

It's about 400 MB smaller than the Ubuntu one

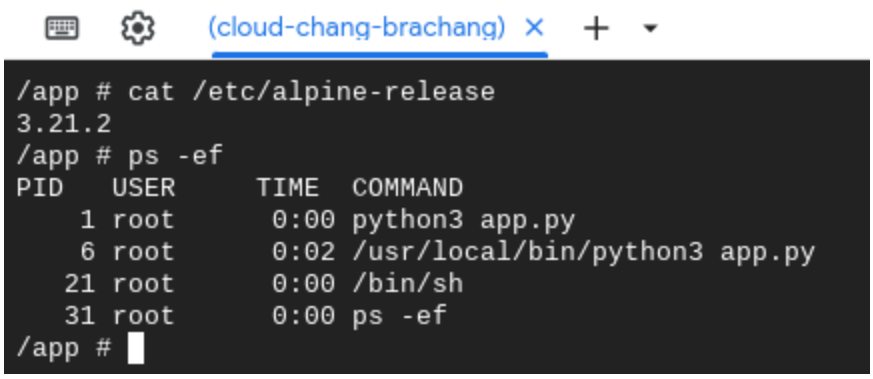
```
brachang@course-vm:~/cs430/cs430-src/04_container_dockerhub$ docker images
REPOSITORY    TAG       IMAGE ID       CREATED          SIZE
helloalpine   latest    a22825f0eca4   16 seconds ago   57.7MB
python        alpine    d5cb4e1bd67f   2 weeks ago      44.9MB
ubuntu        20.04     6013ae1a63c2   3 months ago     72.8MB
brachang@course-vm:~/cs430/cs430-src/04_container_dockerhub$
```

Show the output of this command in a screenshot for your lab notebook. What might have happened?

It appears there is no bash

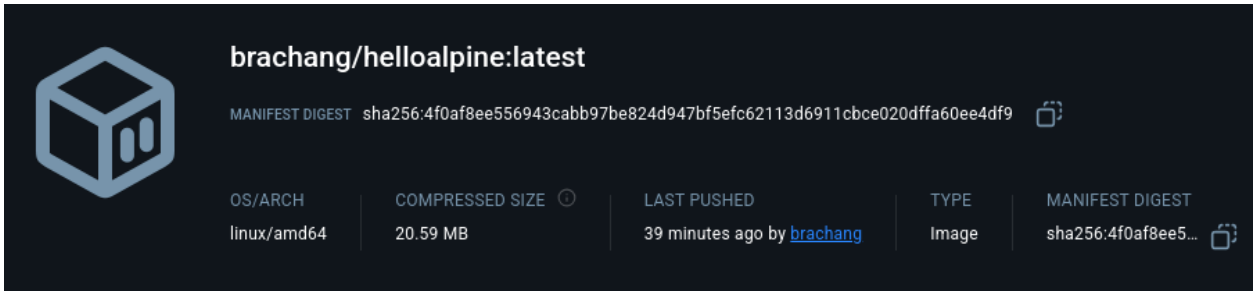
```
brachang@course-vm:~/cs430/cs430-src/04_container_dockerhub$ docker exec -it helloa /bin/bash
OCI runtime exec failed: exec failed: unable to start container process: exec: "/bin/bash": stat /bin/bash: no such file or directory: unknown
brachang@course-vm:~/cs430/cs430-src/04_container_dockerhub$
```

Take a screenshot of the output of each



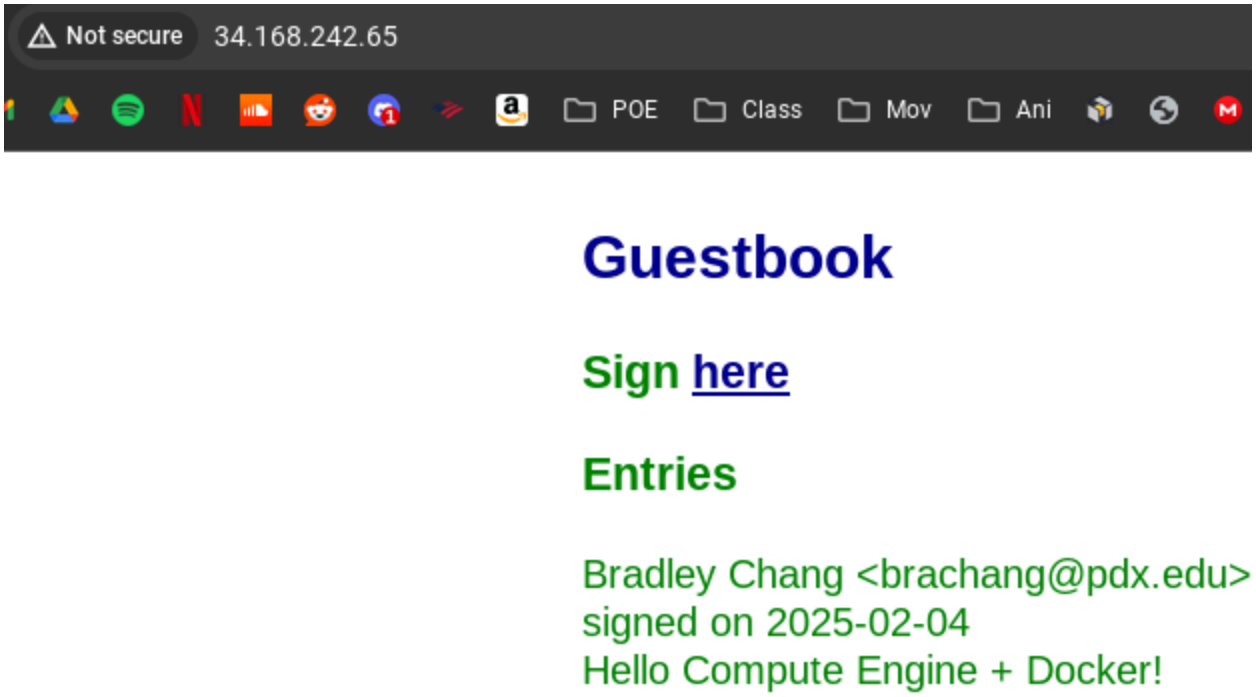
9. Docker Hub Alpine

Take a screenshot of the container image and its size.



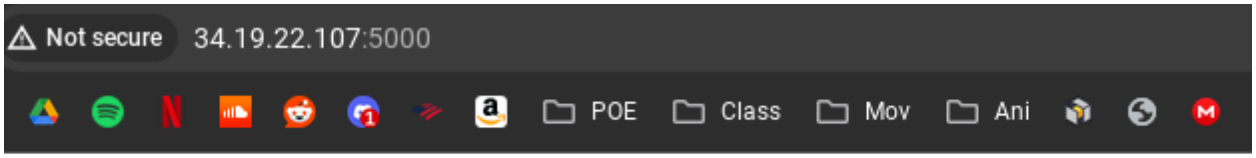
10. Compute Engine Ubuntu VM deployment

Take a screenshot of the entry that includes the VM's external IP address for your lab notebook



13.-

Take a screenshot of the entry that includes the VM's external IP address for your lab notebook



Guestbook

Sign here

Entries

Bradley Chang <brachang@pdx.edu>
signed on 2025-02-04
Hello ContainerOS!