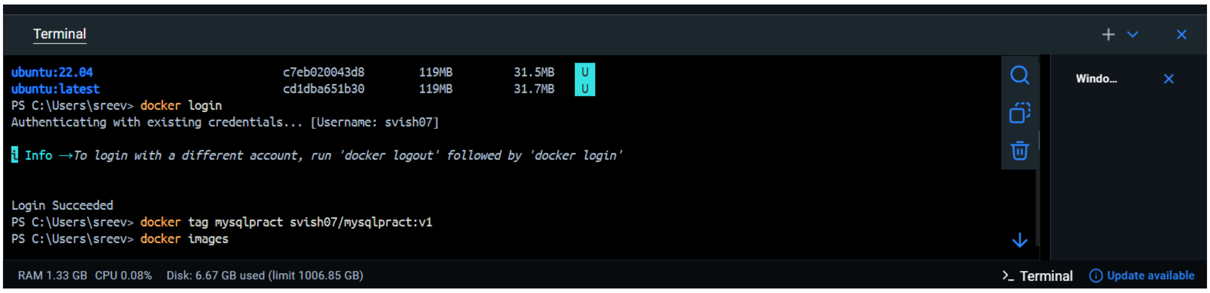
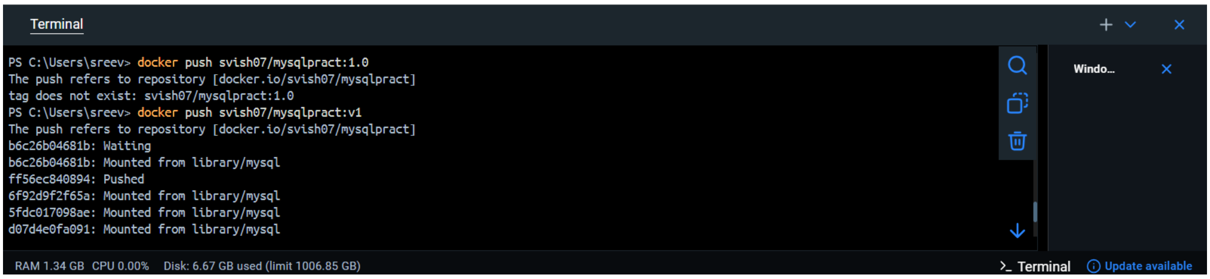
Docker Practice and Advanced work:

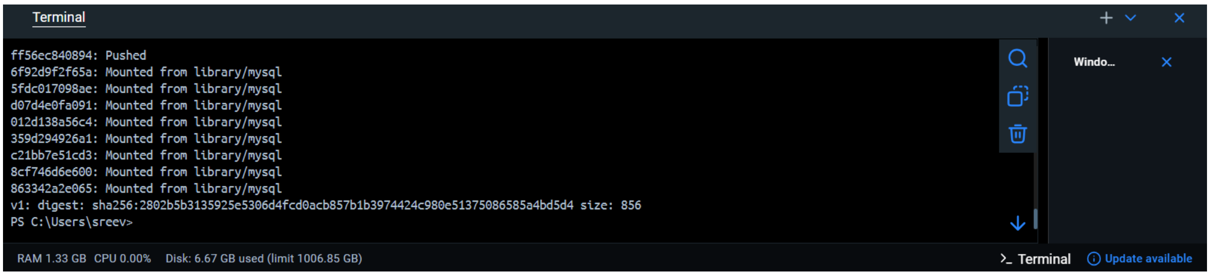
Practice 1: Demonstration of Docker Image Tagging and Push to Remote Registry



```
ubuntu:22.04                        c7eb020043d8       119MB        31.5MB    U
ubuntu:latest                       cd1dba651b30       119MB        31.7MB    U
PS C:\Users\sreev> docker login
Authenticating with existing credentials... [Username: svish07]

i Info →To login with a different account, run 'docker logout' followed by 'docker login'


Login Succeeded
PS C:\Users\sreev> docker tag mysqlpract svish07/mysqlpract:v1
PS C:\Users\sreev> docker images
```

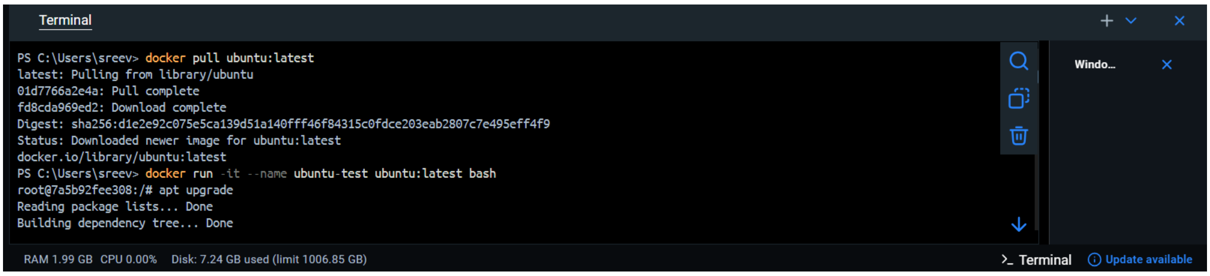


```
PS C:\Users\sreev> docker push svish07/mysqlpract:1.0
The push refers to repository [docker.io/svish07/mysqlpract]
tag does not exist: svish07/mysqlpract:1.0
PS C:\Users\sreev> docker push svish07/mysqlpract:v1
The push refers to repository [docker.io/svish07/mysqlpract]
b6c26b04681b: Waiting
b6c26b04681b: Mounted from library/mysql
ff56ec840894: Pushed
6f92d9f2f65a: Mounted from library/mysql
5fdc017098ae: Mounted from library/mysql
d07d4e0fa091: Mounted from library/mysql
```

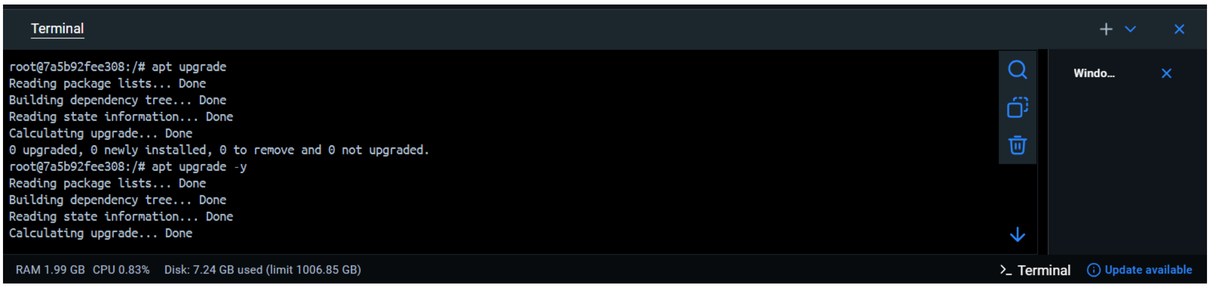


```
ff56ec840894: Pushed
6f92d9f2f65a: Mounted from library/mysql
5fdc017098ae: Mounted from library/mysql
d07d4e0fa091: Mounted from library/mysql
012d138a56c4: Mounted from library/mysql
359d294926a1: Mounted from library/mysql
c21bb7e51cd3: Mounted from library/mysql
8cf746d6e600: Mounted from library/mysql
863342a2e065: Mounted from library/mysql
v1: digest: sha256:2802b5b3135925e5306d4fcd0acb857b1b3974424c980e51375086585a4bd5d4 size: 856
PS C:\Users\sreev>
```

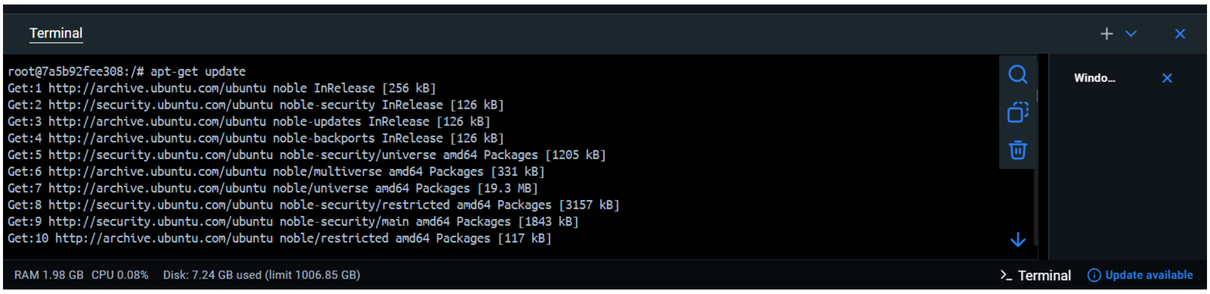
Practical question: Container Modification, Image Commit, and Base vs Updated Image Size Comparison



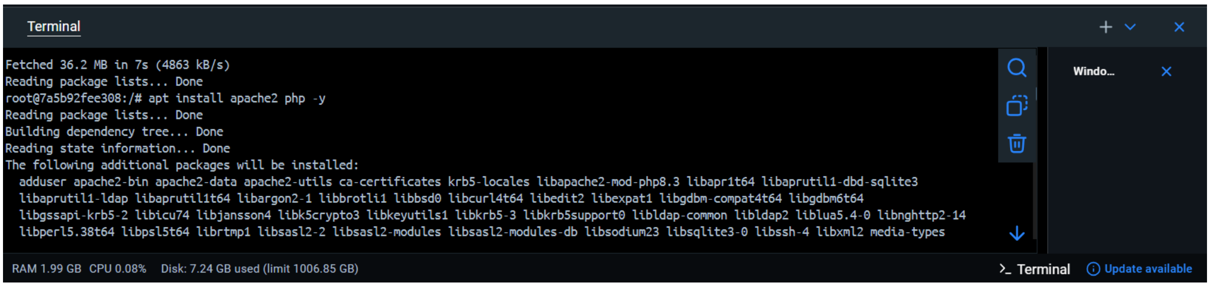
```
PS C:\Users\sreev> docker pull ubuntu:latest
latest: Pulling from library/ubuntu
01d7766a2e4a: Pull complete
fd8cda969ed2: Download complete
Digest: sha256:d1e2e92c075e5ca139d51a140fff46f84315c0fdce203eab2807c7e495eff4f9
Status: Downloaded newer image for ubuntu:latest
docker.io/library/ubuntu:latest
PS C:\Users\sreev> docker run -it --name ubuntu-test ubuntu:latest bash
root@7a5b92fee308:/# apt upgrade
Reading package lists... Done
Building dependency tree... Done
```



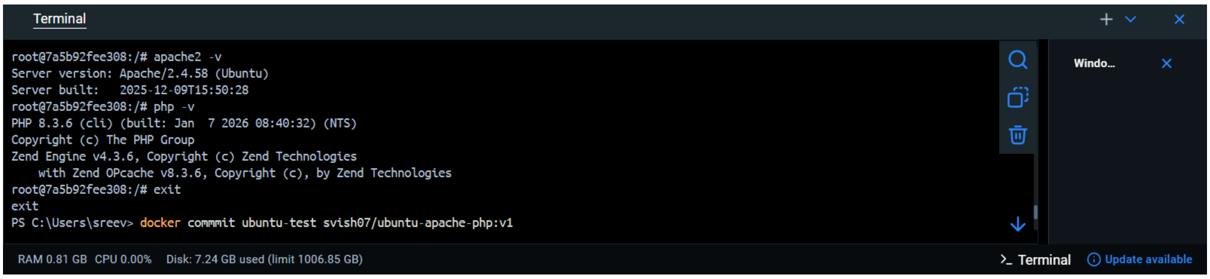
```
root@7a5b92fee308:/# apt upgrade
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
root@7a5b92fee308:/# apt upgrade -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
```



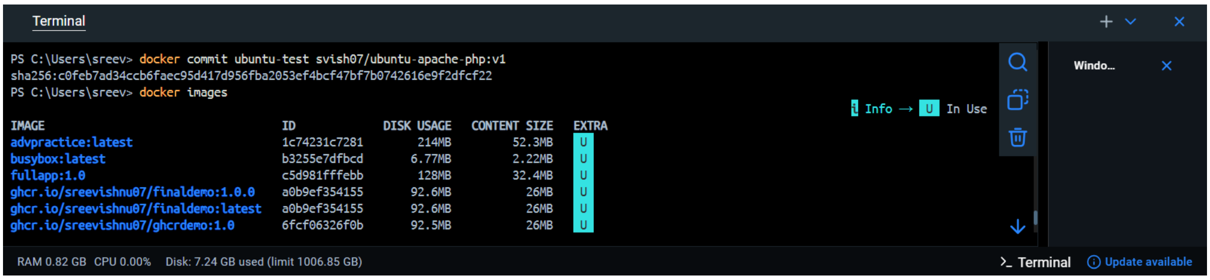
```
root@7a5b92fee308:/# apt-get update
Get:1 http://archive.ubuntu.com/ubuntu noble InRelease [256 kB]
Get:2 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:3 http://archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:4 http://archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:5 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [1205 kB]
Get:6 http://archive.ubuntu.com/ubuntu noble/multiverse amd64 Packages [331 kB]
Get:7 http://archive.ubuntu.com/ubuntu noble/universe amd64 Packages [19.3 MB]
Get:8 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Packages [3157 kB]
Get:9 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [1843 kB]
Get:10 http://archive.ubuntu.com/ubuntu noble/restricted amd64 Packages [117 kB]
```



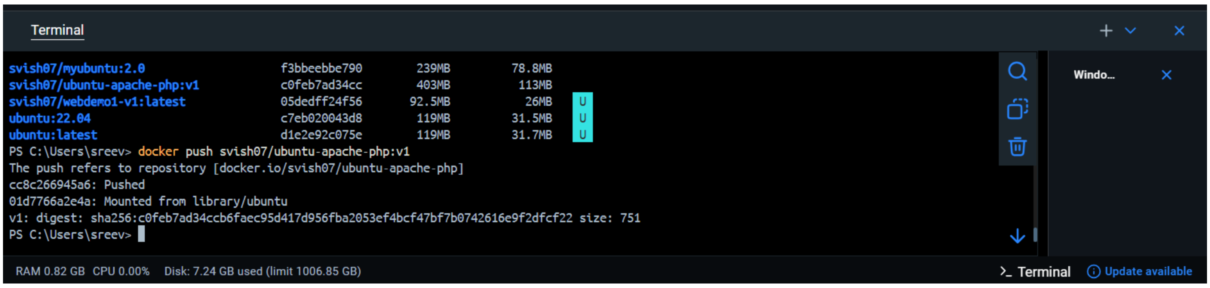
```
Fetched 36.2 MB in 7s (4863 kB/s)
Reading package lists... Done
root@7a5b92fee308:/# apt install apache2 php -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  adduser apache2-bin apache2-data apache2-utils ca-certificates krb5-locales libapache2-mod-php8.3 libapr1t64 libaprutil1-dbd-sqlite3
  libaprutil1-ldap libaprutil1t64 libargon2-1 libbrotli1 libbsd0 libcurl4t64 libedit2 libexpat1 libgdbm-compat4t64 libgdbm6t64
  libgssapi-krb5-2 libicu74 libjansson4 libk5crypto3 libkeyutils1 libkrb5-3 libkrb5support0 libldap-common libldap2 liblua5.4-0 libnghttp2-14
  libperl5.38t64 libpsl5t64 librtmp1 libsasl2-2 libsasl2-modules libsasl2-modules-db libsodium23 libsqlite3-0 libssh-4 libxml2 media-types
```



```
root@7a5b92fee308:/# apache2 -v
Server version: Apache/2.4.58 (Ubuntu)
Server built:   2025-12-09T15:50:28
root@7a5b92fee308:/# php -v
PHP 8.3.6 (cli) (built: Jan  7 2026 08:40:32) (NTS)
Copyright (c) The PHP Group
Zend Engine v4.3.6, Copyright (c) Zend Technologies
    with Zend OPcache v8.3.6, Copyright (c), by Zend Technologies
root@7a5b92fee308:/# exit
exit
PS C:\Users\sreev> docker commit ubuntu-test svish07/ubuntu-apache-php:v1
```

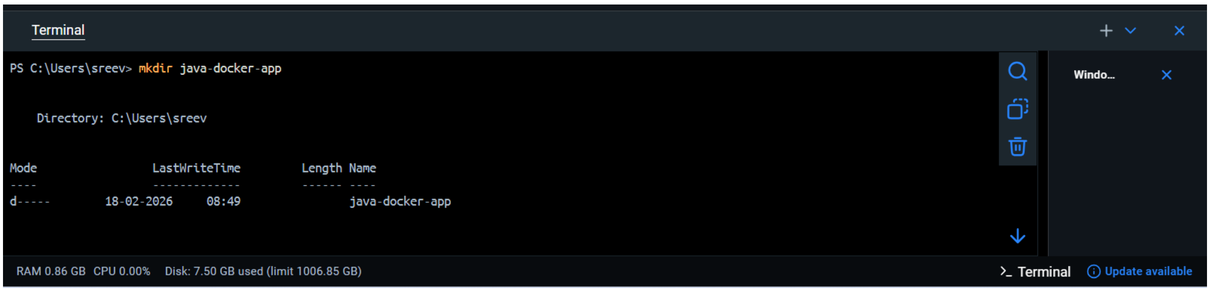


```
PS C:\Users\sreev> docker commit ubuntu-test svish07/ubuntu-apache-php:v1
sha256:c0feb7ad34ccb6faec95d417d956fba2053ef4bcf47bf7b0742616e9f2dfcf22
PS C:\Users\sreev> docker images
                                                                                      i Info → U In Use
IMAGE                                   ID             DISK USAGE   CONTENT SIZE   EXTRA
advpractice:latest                      1c74231c7281        214MB         52.3MB     U
busybox:latest                          b3255e7dfbcd       6.77MB         2.22MB     U
fullapp:1.0                             c5d981fffebb        128MB         32.4MB     U
ghcr.io/sreevishnu07/finaldemo:1.0.0    a0b9ef354155       92.6MB           26MB     U
ghcr.io/sreevishnu07/finaldemo:latest   a0b9ef354155       92.6MB           26MB     U
ghcr.io/sreevishnu07/ghcrdemo:1.0       6fcf06326f0b       92.5MB           26MB     U
```

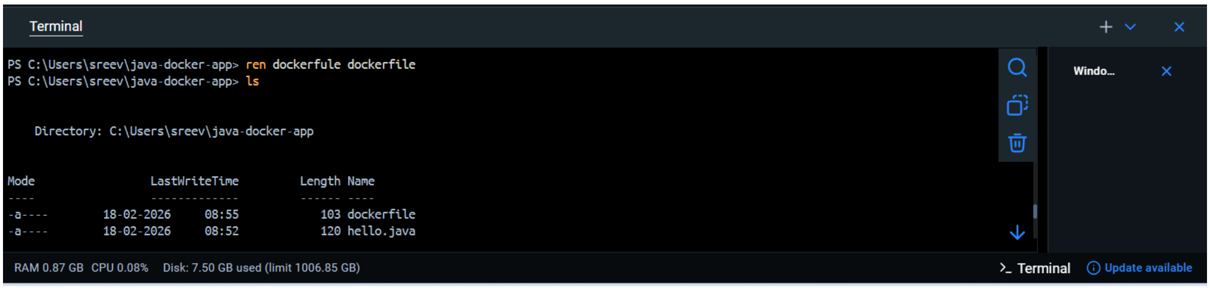


```
svish07/myubuntu:2.0                    f3bbeebbe790        239MB         78.8MB
svish07/ubuntu-apache-php:v1            c0feb7ad34cc        403MB          113MB
svish07/webdemo1-v1:latest              05dedff24f56       92.5MB           26MB     U
ubuntu:22.04                            c7eb020043d8        119MB         31.5MB     U
ubuntu:latest                           d1e2e92c075e        119MB         31.7MB     U
PS C:\Users\sreev> docker push svish07/ubuntu-apache-php:v1
The push refers to repository [docker.io/svish07/ubuntu-apache-php]
cc8c266945a6: Pushed
01d7766a2e4a: Mounted from library/ubuntu
v1: digest: sha256:c0feb7ad34ccb6faec95d417d956fba2053ef4bcf47bf7b0742616e9f2dfcf22 size: 751
PS C:\Users\sreev>
```

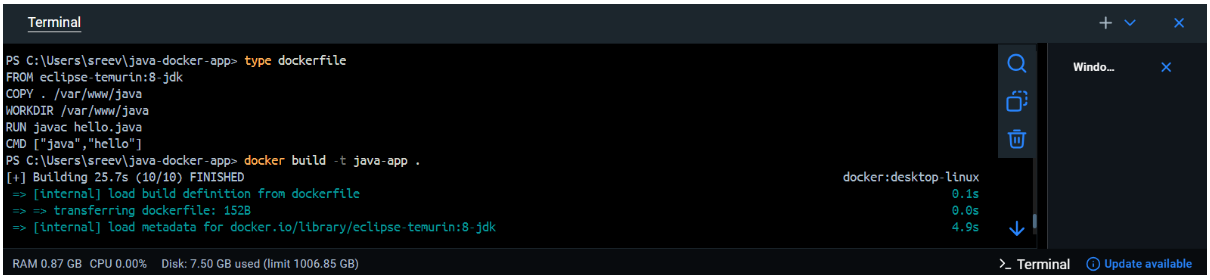
Practical: Containerization of a Java Application Using Docker



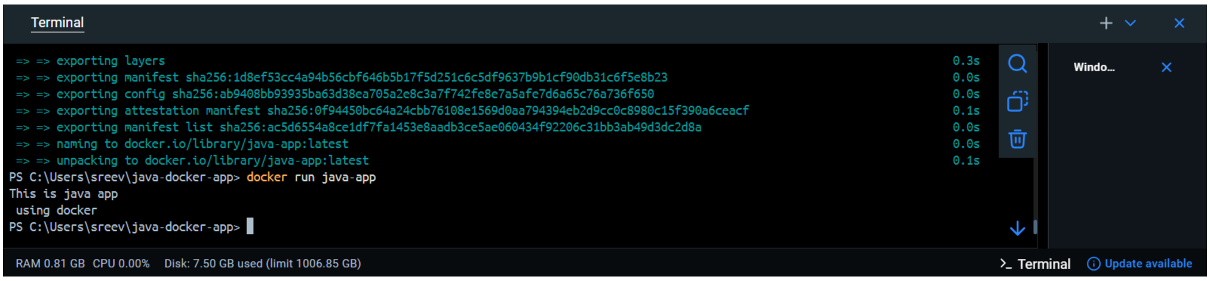
```
PS C:\Users\sreev> mkdir java-docker-app


    Directory: C:\Users\sreev


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
d-----        18-02-2026     08:49                java-docker-app
```



```
PS C:\Users\sreev\java-docker-app> ren dockerfule dockerfile
PS C:\Users\sreev\java-docker-app> ls


    Directory: C:\Users\sreev\java-docker-app


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a----        18-02-2026     08:55            103 dockerfile
-a----        18-02-2026     08:52            120 hello.java
```

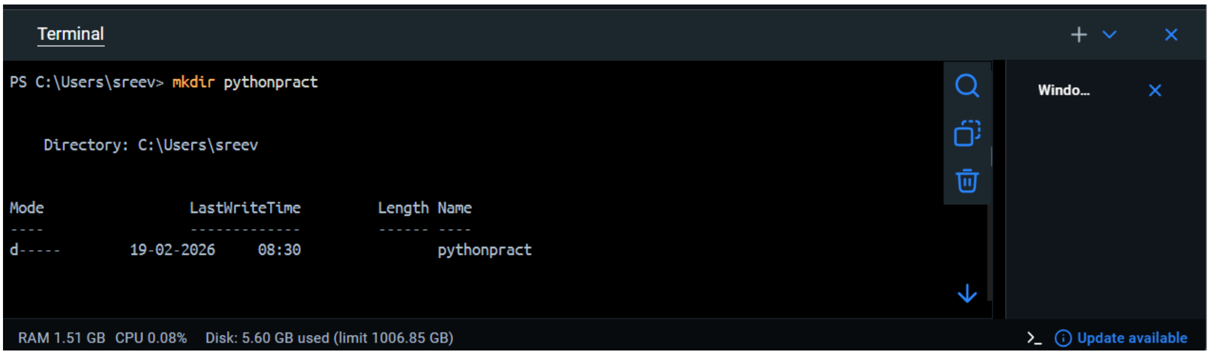


```
PS C:\Users\sreev\java-docker-app> type dockerfile
FROM eclipse-temurin:8-jdk
COPY . /var/www/java
WORKDIR /var/www/java
RUN javac hello.java
CMD ["java","hello"]
PS C:\Users\sreev\java-docker-app> docker build -t java-app .
[+] Building 25.7s (10/10) FINISHED                                                     docker:desktop-linux
 => [internal] load build definition from dockerfile                                                    0.1s
 => => transferring dockerfile: 152B                                                                    0.0s
 => [internal] load metadata for docker.io/library/eclipse-temurin:8-jdk                                4.9s
```

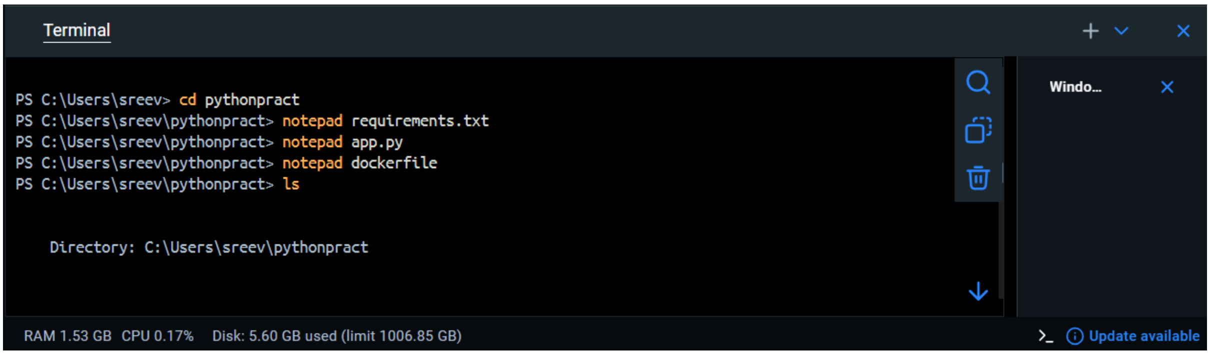


```
 => => exporting layers                                                                                 0.3s
 => => exporting manifest sha256:1d8ef53cc4a94b56cbf646b5b17f5d251c6c5df9637b9b1cf90db31c6f5e8b23       0.0s
 => => exporting config sha256:ab9408bb93935ba63d38ea705a2e8c3a7f742fe8e7a5afe7d6a65c76a736f650         0.0s
 => => exporting attestation manifest sha256:0f94450bc64a24cbb76108e1569d0aa794394eb2d9cc0c8980c15f390a6ceacf 0.1s
 => => exporting manifest list sha256:ac5d6554a8ce1df7fa1453e8aadb3ce5ae060434f92206c31bb3ab49d3dc2d8a  0.0s
 => => naming to docker.io/library/java-app:latest                                                      0.0s
 => => unpacking to docker.io/library/java-app:latest                                                   0.1s
PS C:\Users\sreev\java-docker-app> docker run java-app
This is java app
 using docker
PS C:\Users\sreev\java-docker-app> ▌
```

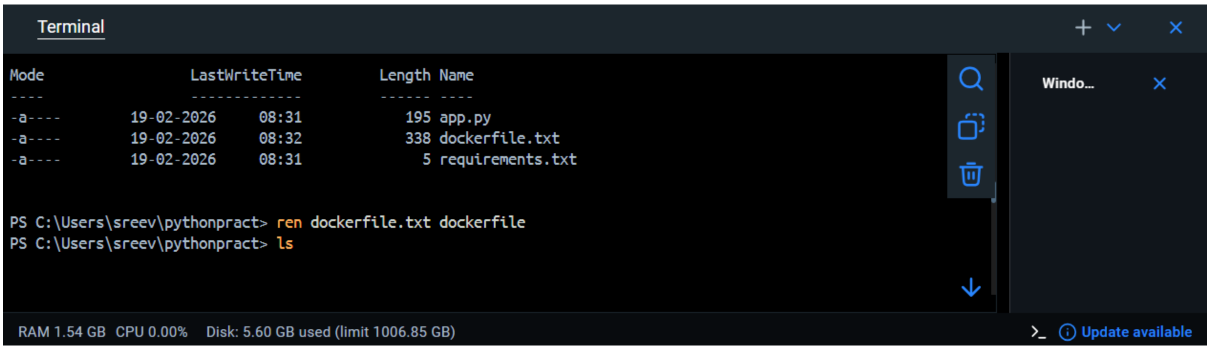
Practical: Containerizing a Flask Application Using Docker



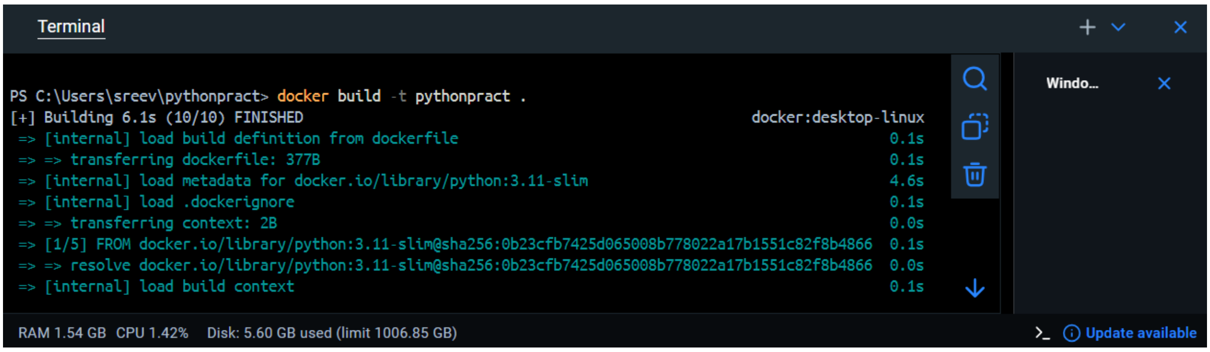
```
PS C:\Users\sreev> mkdir pythonpract


    Directory: C:\Users\sreev


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
d-----        19-02-2026     08:30                pythonpract
```



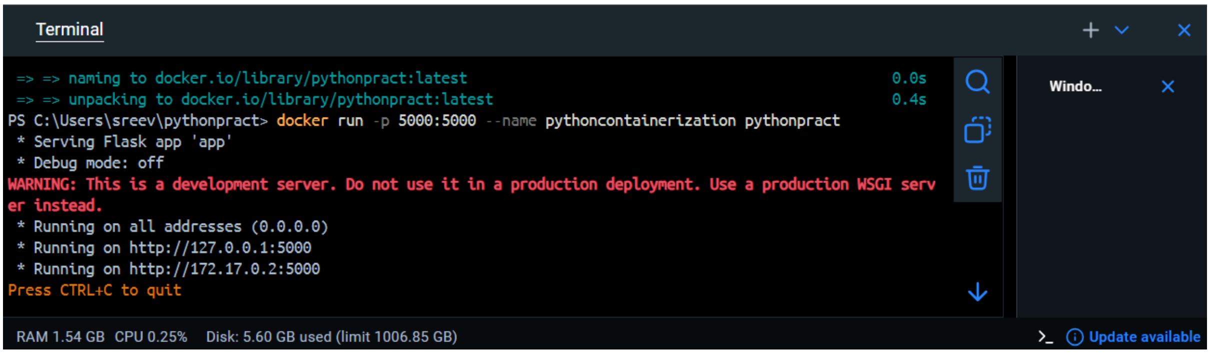
```
PS C:\Users\sreev> cd pythonpract
PS C:\Users\sreev\pythonpract> notepad requirements.txt
PS C:\Users\sreev\pythonpract> notepad app.py
PS C:\Users\sreev\pythonpract> notepad dockerfile
PS C:\Users\sreev\pythonpract> ls


    Directory: C:\Users\sreev\pythonpract
```



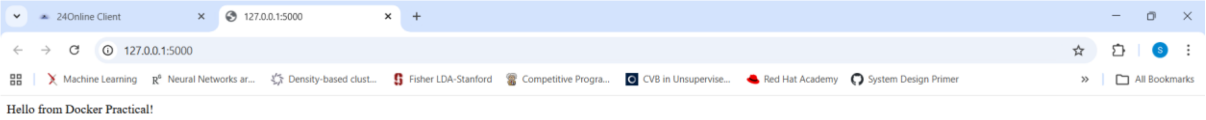
```
Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a----        19-02-2026     08:31            195 app.py
-a----        19-02-2026     08:32            338 dockerfile.txt
-a----        19-02-2026     08:31              5 requirements.txt


PS C:\Users\sreev\pythonpract> ren dockerfile.txt dockerfile
PS C:\Users\sreev\pythonpract> ls
```



```
PS C:\Users\sreev\pythonpract> docker build -t pythonpract .
[+] Building 6.1s (10/10) FINISHED                                            docker:desktop-linux
 => [internal] load build definition from dockerfile                                          0.1s
 => => transferring dockerfile: 377B                                                         0.1s
 => [internal] load metadata for docker.io/library/python:3.11-slim                           4.6s
 => [internal] load .dockerignore                                                             0.1s
 => => transferring context: 2B                                                               0.0s
 => [1/5] FROM docker.io/library/python:3.11-slim@sha256:0b23cfb7425d065008b778022a17b1551c82f8b4866  0.1s
 => => resolve docker.io/library/python:3.11-slim@sha256:0b23cfb7425d065008b778022a17b1551c82f8b4866  0.0s
 => [internal] load build context                                                             0.1s
```



```
 => => naming to docker.io/library/pythonpract:latest                                         0.0s
 => => unpacking to docker.io/library/pythonpract:latest                                      0.4s
PS C:\Users\sreev\pythonpract> docker run -p 5000:5000 --name pythoncontainerization pythonpract
 * 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 serv
er 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
```



Hello from Docker Practical!