

Міністерство освіти та науки України
КРИВОРІЗЬКИЙ НАЦІОНАЛЬНИЙ УНІВЕРСИТЕТ
Кафедра моделювання та програмного забезпечення

Практична робота № 6

з дисципліни «Сучасні технології Internet-програмування»

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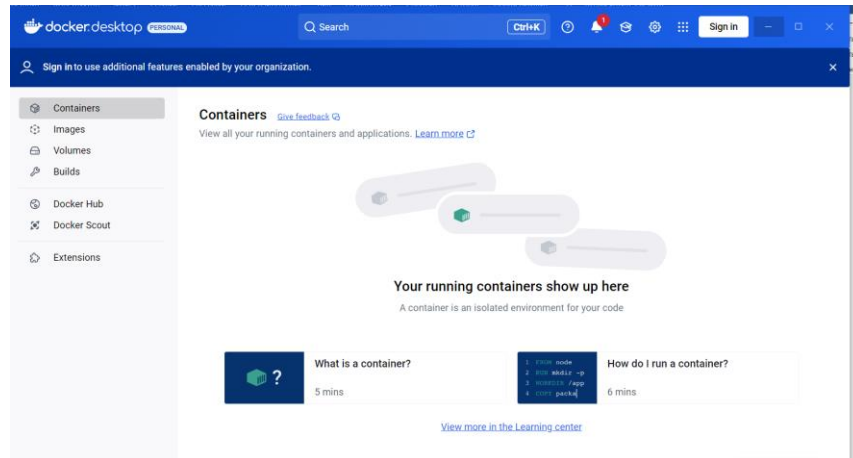
2025 р.

КОНТЕЙНЕРИЗАЦІЯ ТА РОЗГОРТАННЯ

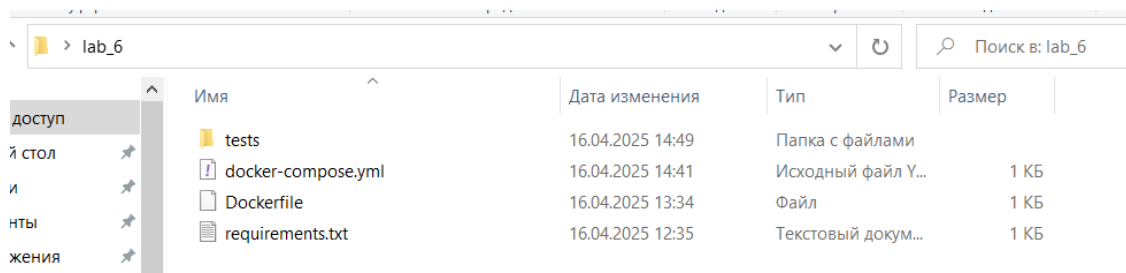
Завдання: варіант № 20. Створення контейнера для тестування додатку за допомогою Selenium.

ХІД РОБОТИ

1. Встановимо Docker Desktop



2. Створимо папку lab_6 з такими файлами:



У папці tests міститься файл lab_6.py

3. Через командний рядок відкриємо папку та «зберемо» контейнер.

```
Командная строка - docker-compose up --build
Microsoft Windows [Version 10.0.19045.3693]
(c) Корпорация Майкрософт (Microsoft Corporation). Все права защищены.

C:\Users\asus>cd "C:\Users\asus\Desktop\lab_6"

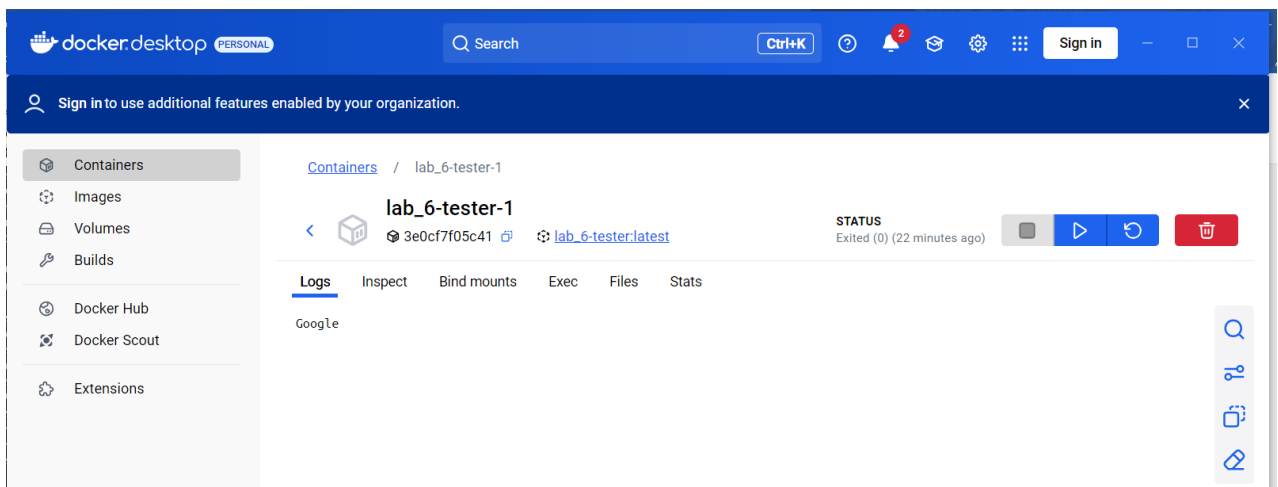
C:\Users\asus\Desktop\lab_6>docker-compose up --build
compose can now delegate builds to bake for better performance.
To do so, set COMPOSE_BAKE=true.
[*] Building 1.3s (11/11) FINISHED                                docker:desktop-linux
=> [tester internal] load build definition from Dockerfile          0.0s
=> => transferring dockerfile: 711B                                0.0s
=> [tester internal] load metadata for docker.io/library/python:3.12 1.0s
=> [tester internal] load .dockerignore                             0.0s
=> => transferring context: 2B                                       0.0s
=> [tester 1/5] FROM docker.io/library/python:3.12@sha256:ea82769a4ac96a0afc6f57eb3ebd3d2ccf9d760ac2321877795453 0.0s
=> => resolve docker.io/library/python:3.12@sha256:ea82769a4ac96a0afc6f57eb3ebd3d2ccf9d760ac2321877795453d145fe5 0.0s
=> [tester internal] load build context                             0.0s
=> => transferring context: 586B                                      0.0s
=> CACHED [tester 2/5] WORKDIR /tests                               0.0s
=> CACHED [tester 3/5] COPY requirements.txt .                       0.0s
=> CACHED [tester 4/5] RUN pip install --no-cache-dir -r requirements.txt 0.0s
=> [tester 5/5] COPY tests/ /tests                                  0.0s
=> [tester] exporting to image                                       0.1s
=> => exporting layers                                              0.0s
=> => exporting manifest sha256:2d31ec09065a2711432756deecbf83c10602135ab55a9e68845cb26226936ce0 0.0s
=> => exporting config sha256:9954948aa12b7cf705e9371f27c02de860d20165d17a74da22a550a160da237c 0.0s
=> => exporting attestation manifest sha256:bab4e6c373aadecdcbe5a103066c8149b5fa3e0177bacbe940a92a9c0eb30cdf 0.0s
=> => exporting manifest list sha256:9fb2934bbe4c585e3db1a80bd21e32585bc45089d97d20064265467791cd4af8 0.0s
=> => naming to docker.io/library/lab_6-tester:latest              0.0s
=> => unpacking to docker.io/library/lab_6-tester:latest           0.0s
```

```
[*] Running 4/4
[tester] Resolving provenance for metadata file                    0.0s
[tester] Built                                                    0.0s
Network lab_6_selenium-net Created                               0.0s
Container lab_6-selenium-1-1 Created                             0.1s
Container lab_6-tester-1 Created                                0.1s
Attaching to selenium-1-1, tester-1
selenium-1-1 | Virtual environment detected at /opt/venv, activating...
selenium-1-1 | Python 3.12.3
selenium-1-1 | 2025-04-16 11:55:08,760 INFO Included extra file "/etc/supervisor/conf.d/chrome-cleanup.conf" during parsing
selenium-1-1 | 2025-04-16 11:55:08,760 INFO Included extra file "/etc/supervisor/conf.d/recorder.conf" during parsing
selenium-1-1 | 2025-04-16 11:55:08,760 INFO Included extra file "/etc/supervisor/conf.d/selenium.conf" during parsing
selenium-1-1 | 2025-04-16 11:55:08,768 INFO Included extra file "/etc/supervisor/conf.d/uploader.conf" during parsing
selenium-1-1 | 2025-04-16 11:55:08,768 INFO RPC interface 'supervisor' initialized
selenium-1-1 | 2025-04-16 11:55:08,768 INFO supervisord started with pid 9
selenium-1-1 | 2025-04-16 11:55:09,771 INFO spawned: 'xvfb' with pid 10
selenium-1-1 | 2025-04-16 11:55:09,772 INFO spawned: 'vnc' with pid 11
selenium-1-1 | 2025-04-16 11:55:09,774 INFO spawned: 'novnc' with pid 12
selenium-1-1 | 2025-04-16 11:55:09,776 INFO spawned: 'selenium-standalone' with pid 13
selenium-1-1 | 2025-04-16 11:55:09,781 INFO success: xvfb entered RUNNING state, process has stayed up for > than 0 seconds (startsecs)
selenium-1-1 | 2025-04-16 11:55:09,781 INFO success: vnc entered RUNNING state, process has stayed up for > than 0 seconds (startsecs)
```

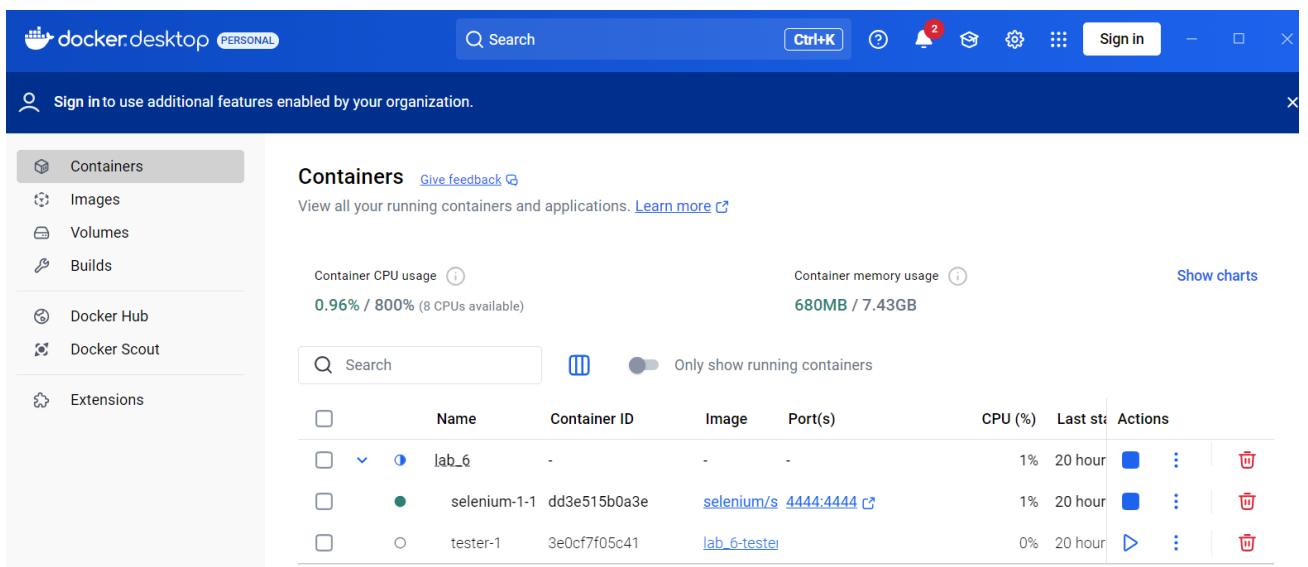
Результат:

```
b9a265f7bb6213bd4
tester-1 | Google
selenium-1-1 | 11:55:16.324 INFO [GridModel.release] - Releasing slot for session id 4b5827744ede181b9a265f7bb6213bd4
selenium-1-1 | 11:55:16.325 INFO [SessionSlot.stop] - Stopping session 4b5827744ede181b9a265f7bb6213bd4
tester-1 exited with code 0

View in Docker Desktop View Config Enable Watch
```



На вкладці “Containers” з’явилися відповідні файли.



Вміст папки lab_6:

DOCKERFILE

```
FROM python:3.12

# 2. Робоча директорія всередині контейнера
WORKDIR /tests

# 3. Копіюємо requirements.txt всередину контейнера
COPY requirements.txt .

# 4. Встановлюємо всі бібліотеки з requirements.txt
RUN pip install --no-cache-dir -r requirements.txt
```

```
# 5. Копіюємо папку з тестами в контейнер
COPY tests/ /tests

ENTRYPOINT ["python"]
CMD ["lab_6.py"]
```

Docker-compose.yml

```
services:
  selenium-1:
    image: selenium/standalone-chrome
    ports:
      - "4444:4444"
    shm_size: '2gb'
    networks:
      - selenium-net

  tester:
    build: .
    depends_on:
      - selenium-1
    volumes:
      - ./tests:/tests
    networks:
      - selenium-net

networks:
  selenium-net:
```

lab_6.py

```
from selenium import webdriver
from selenium.webdriver.chrome.options import Options
import time
time.sleep(5)

chrome_options = Options()
chrome_options.add_argument("--headless")
chrome_options.add_argument("--no-sandbox")
chrome_options.add_argument("--disable-dev-shm-usage")

driver = webdriver.Remote(
    command_executor='http://selenium-1:4444/wd/hub',
    options=chrome_options
)
```

```
driver.get("https://google.com")  
print(driver.title)  
driver.quit()
```

requirements.txt

