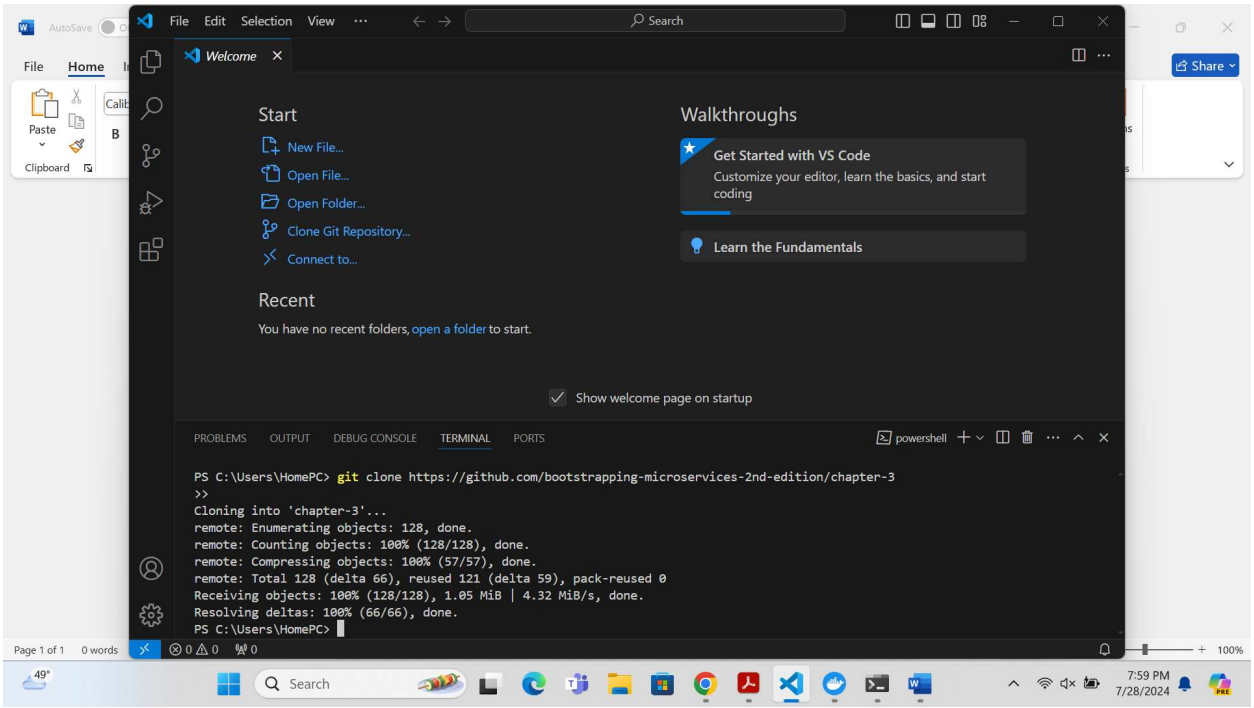
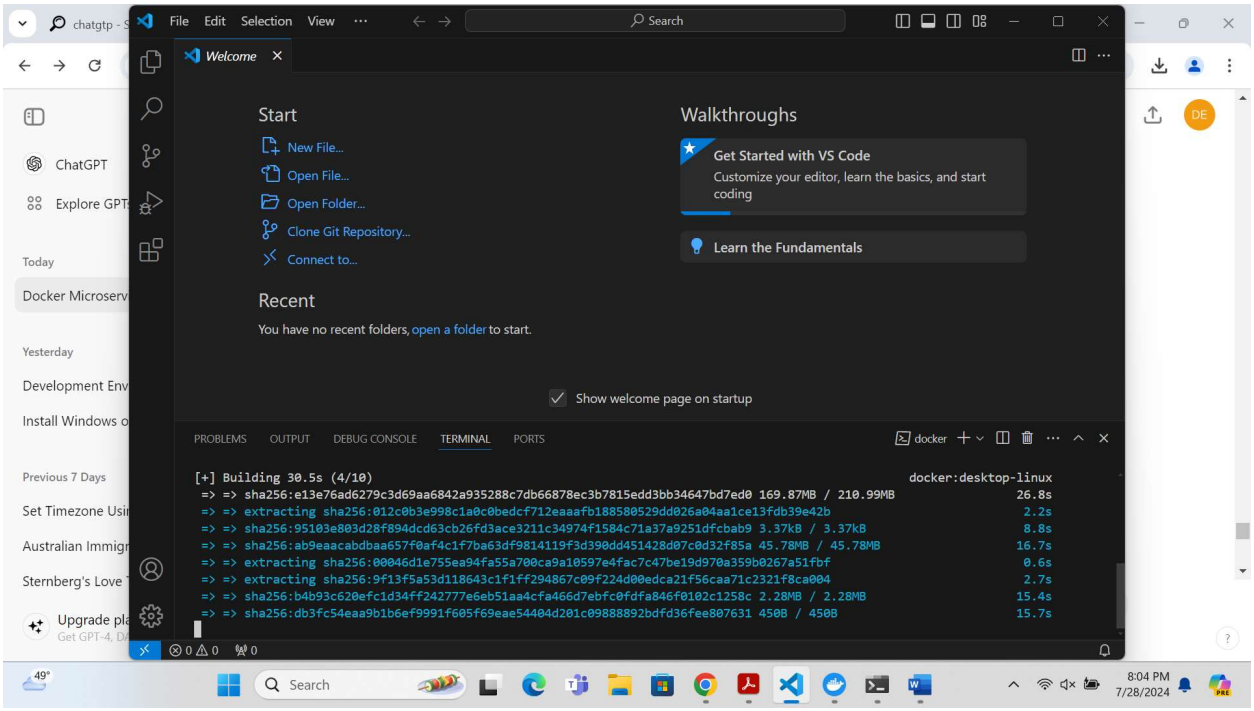
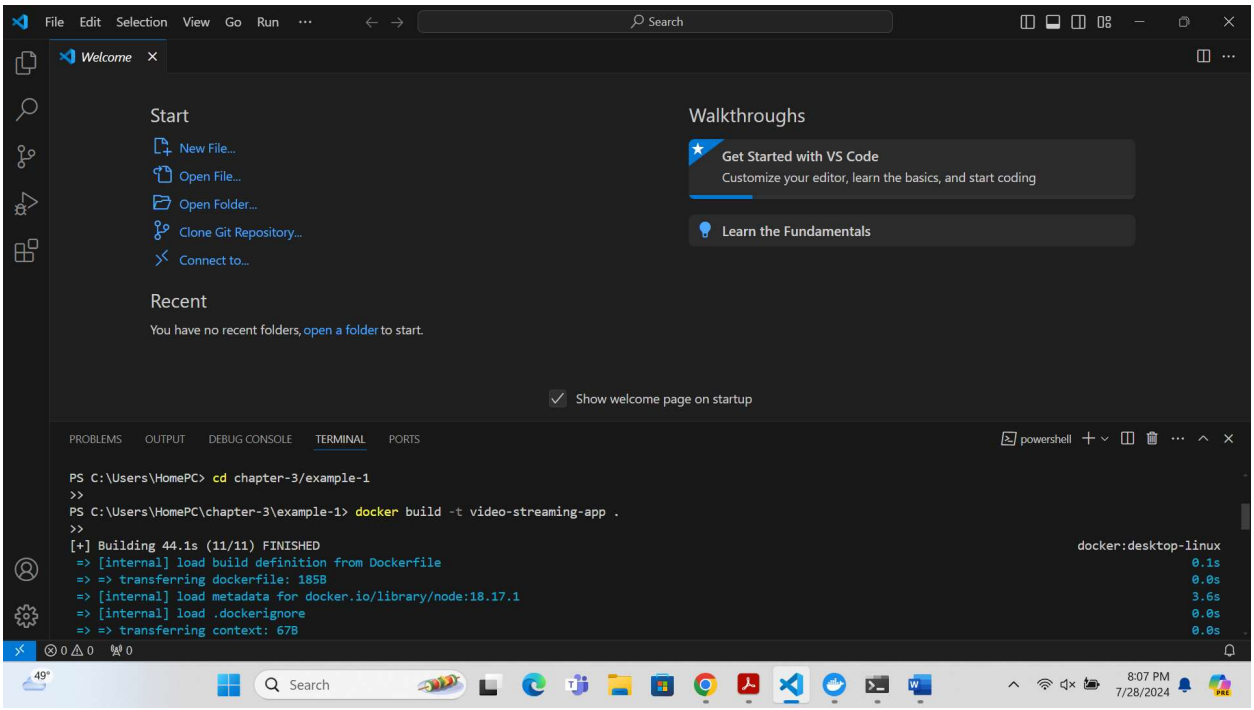
DENNIS KIMUTAI KIMAIYO

S223224152

A screenshot of your VS Code console executing the appropriate git clone https://github.com/bootstrapping-microservices-2nd-edition/chapter-3 command to obtain a copy of the source code folder.




File Edit Selection View
Search
Welcome
Start
New File...
Open File...
Open Folder...
Clone Git Repository...
Connect to...
Walkthroughs
Get Started with VS Code
Customize your editor, learn the basics, and start coding
Learn the Fundamentals
Recent
You have no recent folders, open a folder to start.
Show welcome page on startup
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
docker
[+] Building 30.5s (4/10) docker:desktop-linux
=> => sha256:e13e76ad6279c3d69aa6842a935288c7db66878ec3b7815edd3bb34647bd7ed0 169.87MB / 210.99MB 26.8s
=> => extracting sha256:012c0b3e998c1a0c0bedcf712eaaafb188580529dd026a04aa1ce13fdb39e42b 2.2s
=> => sha256:95103e803d28f894dcd63cb26fd3ace3211c34974f1584c71a37a9251dfcbab9 3.37kB / 3.37kB 8.8s
=> => sha256:ab9eaacabdbaa657f0af4c1f7ba63df9814119f3d390dd451428d07c0d32f85a 45.78MB / 45.78MB 16.7s
=> => extracting sha256:00046d1e755ea94fa55a700ca9a10597e4fac7c47be19d970a359b0267a51fbf 0.6s
=> => extracting sha256:9f13f5a53d118643c1f1ff294867c09f224d00edca21f56caa71c2321f8ca004 2.7s
=> => sha256:b4b93c620efc1d34ff242777e6eb51aa4cfa466d7ebfc0fdfa846f0102c1258c 2.28MB / 2.28MB 15.4s
=> => sha256:db3fc54eaa9b1b6ef9991f605f69eae54404d201c09888892bdfd36fee807631 450B / 450B 15.7s
Search
8:04 PM
7/28/2024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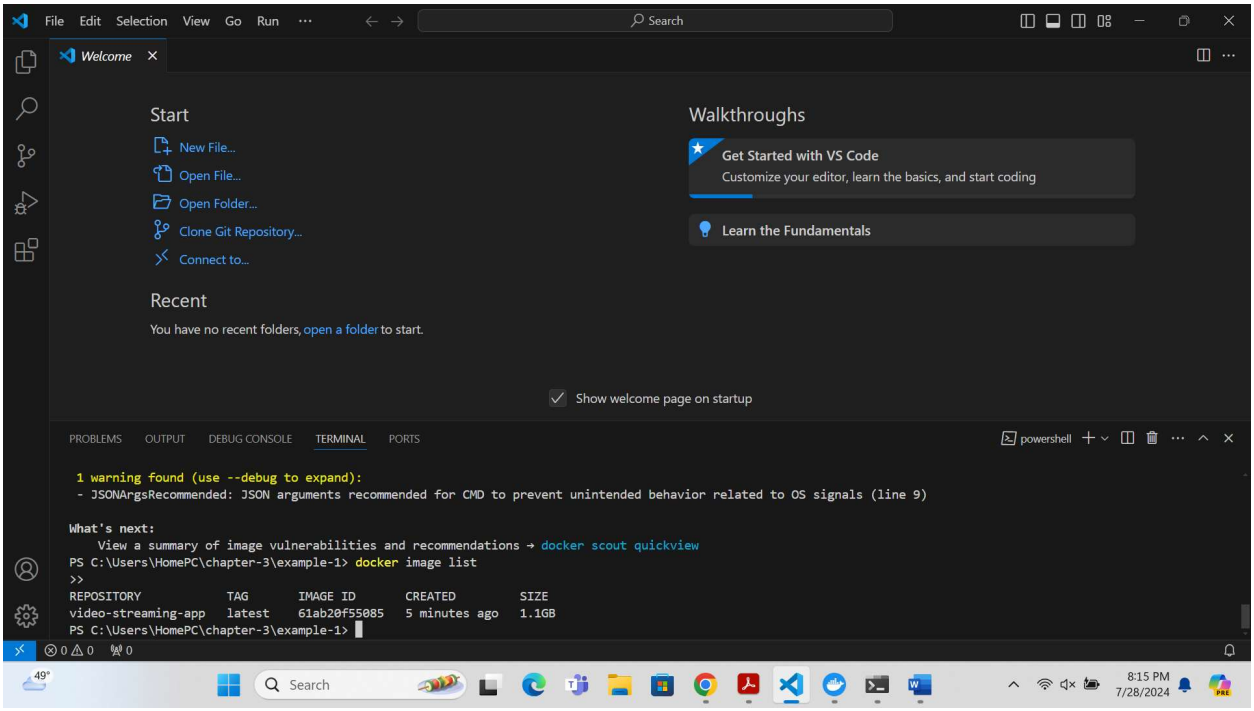
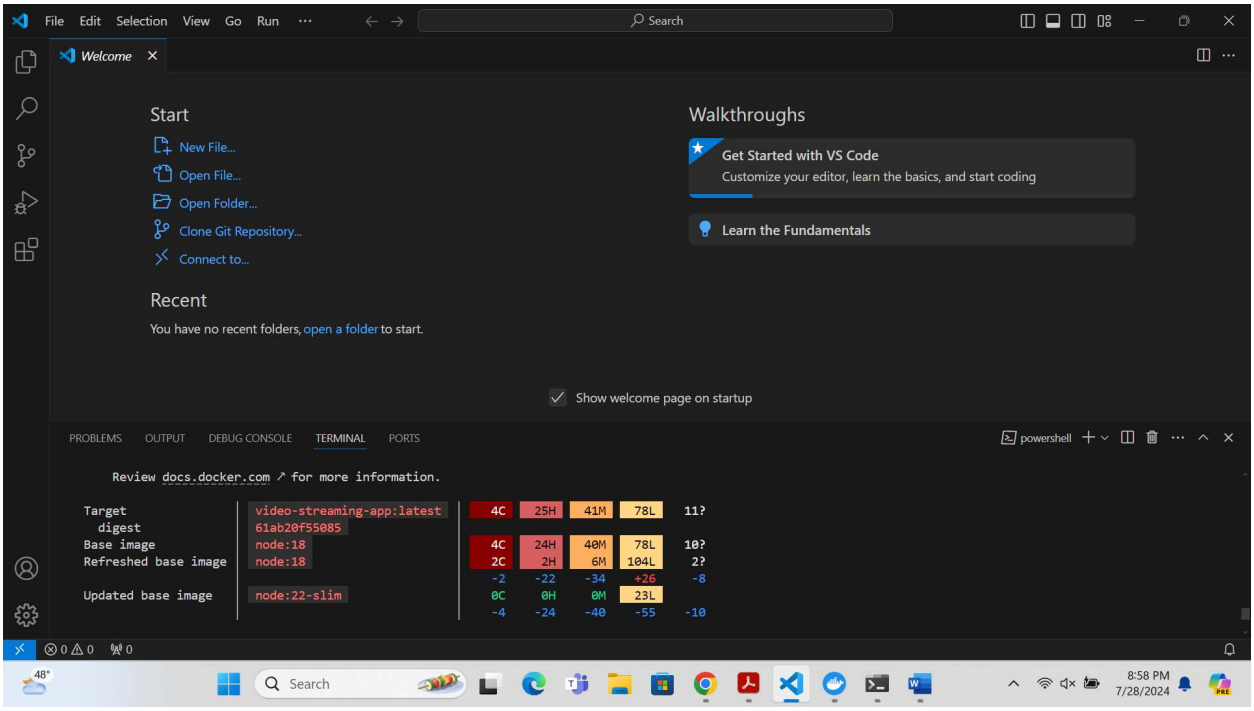
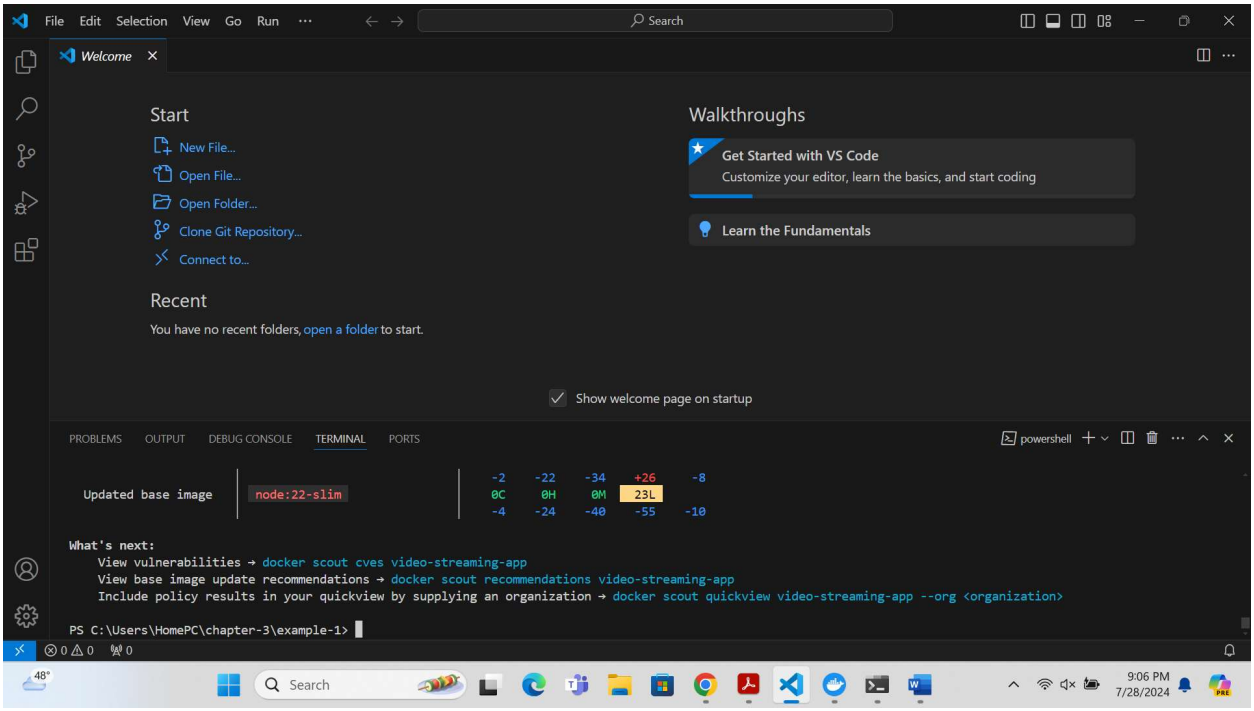
powershell
PS C:\Users\HomePC> cd chapter-3/example-1
>>
PS C:\Users\HomePC\chapter-3\example-1> docker build -t video-streaming-app .
>>
[+] Building 44.1s (11/11) FINISHED docker:desktop-linux
=> [internal] load build definition from Dockerfile 0.1s
=> => transferring dockerfile: 185B 0.0s
=> [internal] load metadata for docker.io/library/node:18.17.1 3.6s
=> [internal] load .dockerignore 0.0s
=> => transferring context: 67B 0.0s
Search
8:07 PM
7/28/2024



A screenshot showing the console with the output of docker scout quickviewcommand displaying the analysis of the newly built Docker Image.

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powershell
Updated base image
node:22-slim
-2 -22 -34 +26 -8
0C 0H 0M 23L
-4 -24 -40 -55 -10
What's next:
View vulnerabilities → docker scout cves video-streaming-app
View base image update recommendations → docker scout recommendations video-streaming-app
Include policy results in your quickview by supplying an organization → docker scout quickview video-streaming-app --org <organization>
PS C:\Users\HomePC\chapter-3\example-1>
9:06 PM
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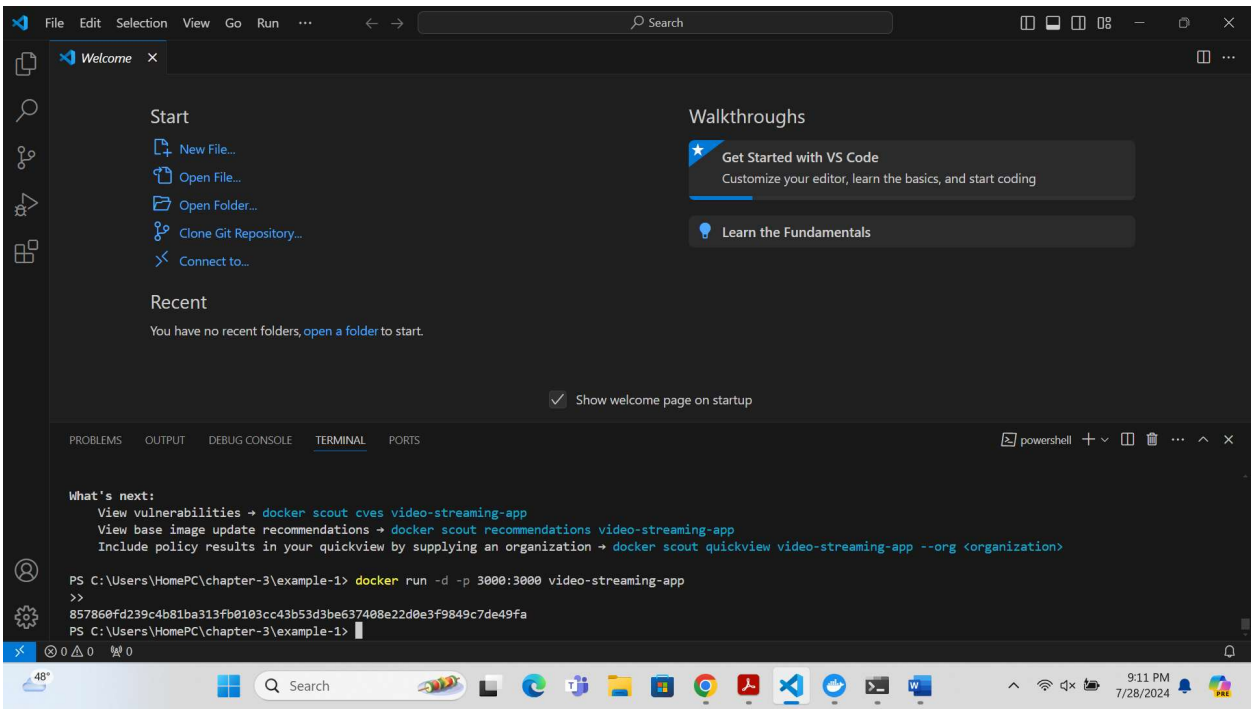
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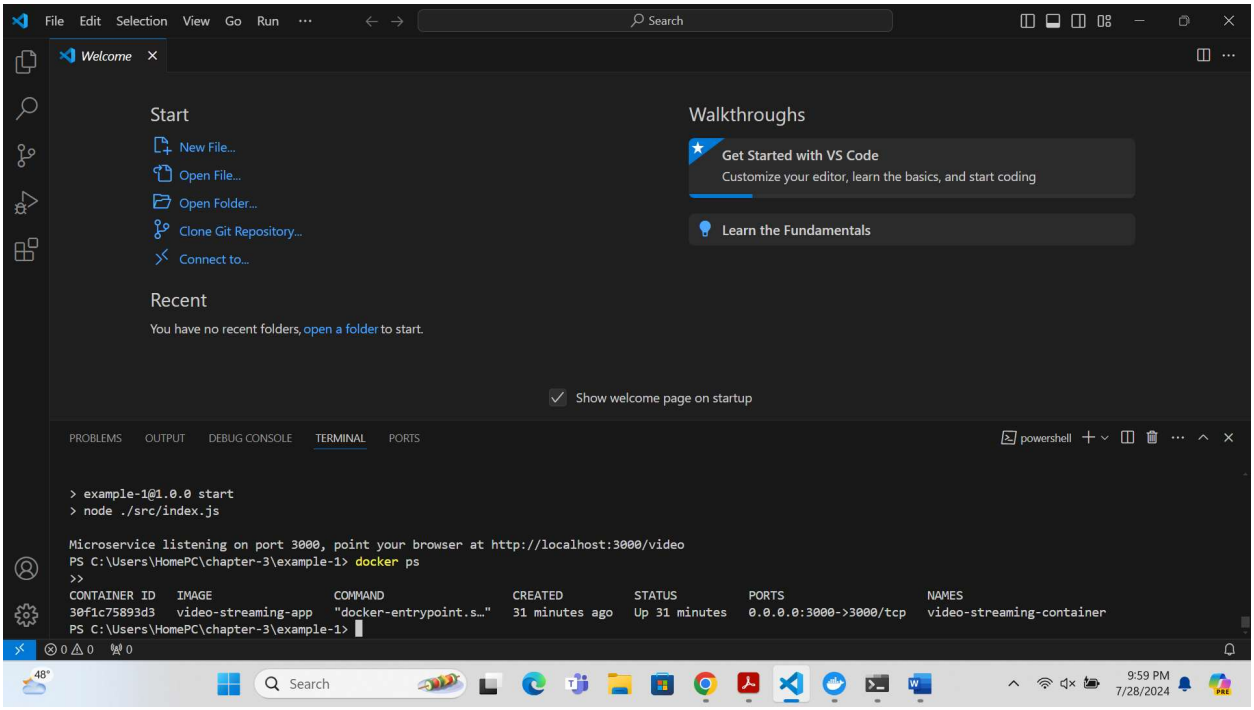
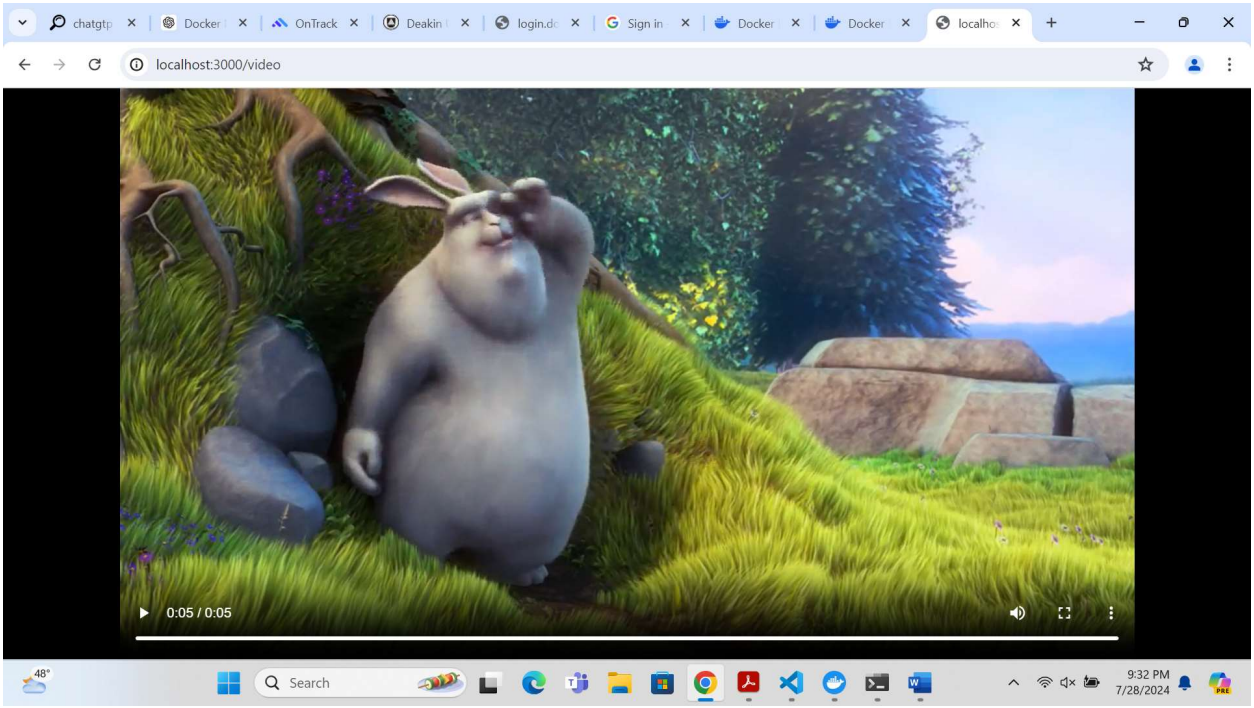
PS C:\Users\HomePC\chapter-3\example-1> docker run -d -p 3000:3000 video-streaming-app
>>
857860fd239c4b81ba313fb0103cc43b53d3be637408e22d0e3f9849c7de49fa
PS C:\Users\HomePC\chapter-3\example-1>
9:11 PM
7/28/2024

A screenshot showing the console with the output of docker container listcommand displaying the running Docker Container



A screenshot of the browser displaying the streamed video.



1**. Describe in your own words what each of the lines in the Dockerfile do.**

FROM node:16

This line sets the base image for our Docker image, which is the official Node.js image version 16. This base image includes Node.js and npm, which are necessary to run our application.

WORKDIR /usr/src/app

This line specifies the working directory inside the container. All subsequent commands will be run from this directory, /usr/src/app.

COPY package*.json ./

This line copies the package.json and package-lock.json files from the host system to the working directory in the container. These files list the project's dependencies.

RUN npm install

This line runs npm install inside the container to install the dependencies defined in the package.json file.

COPY . .

This line copies all the files from the current directory on the host machine to the working directory in the container, including the application code.

EXPOSE 3000

This line tells Docker that the container will use port 3000. This does not publish the port but provides a hint for users running the container.

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

This line specifies the command to run when the container starts. It runs the Node.js application located at src/index.js.

2. What does the -p argument in the docker run command do? What would happen if you changed this to -p 3001:3000?

The -p argument in the docker run command maps a port on the host machine to a port inside the container. For example, -p 3000:3000 means that port 3000 on the host is forwarded to port 3000 in the container. This allows us to access the application running in the container via http://localhost:3000.If you change the argument to -p 3001:3000, the host's port 3001 will be mapped to the container's port 3000. Thus, to access the application, you would need to go to http://localhost:3001 instead of http://localhost:3000.

3. Explain what the output from the docker scout quickview command is suggesting you should do and why.

The docker scout quickview command analyzes the Docker image for vulnerabilities and gives suggestions for improvements. The output typically includes:

Vulnerability Summary: Lists of detected vulnerabilities in the image, categorized by severity (e.g., critical, high, medium, low).

Base Image Update Recommendations: Advises updating the base image to a more secure version if available. This can reduce the number of vulnerabilities.

Policy Results: Checks against predefined security policies and indicates any violations.

Importance of These Suggestions:

- *Security:* Addressing vulnerabilities is crucial to prevent potential attacks that could exploit weaknesses in the application or container.
- *Performance and Stability*: Using an updated base image can provide performance improvements and bug fixes, leading to a more stable and efficient application.
- *Compliance:* Adhering to security policies helps in maintaining a secure environment, which is often a requirement in regulated industries.