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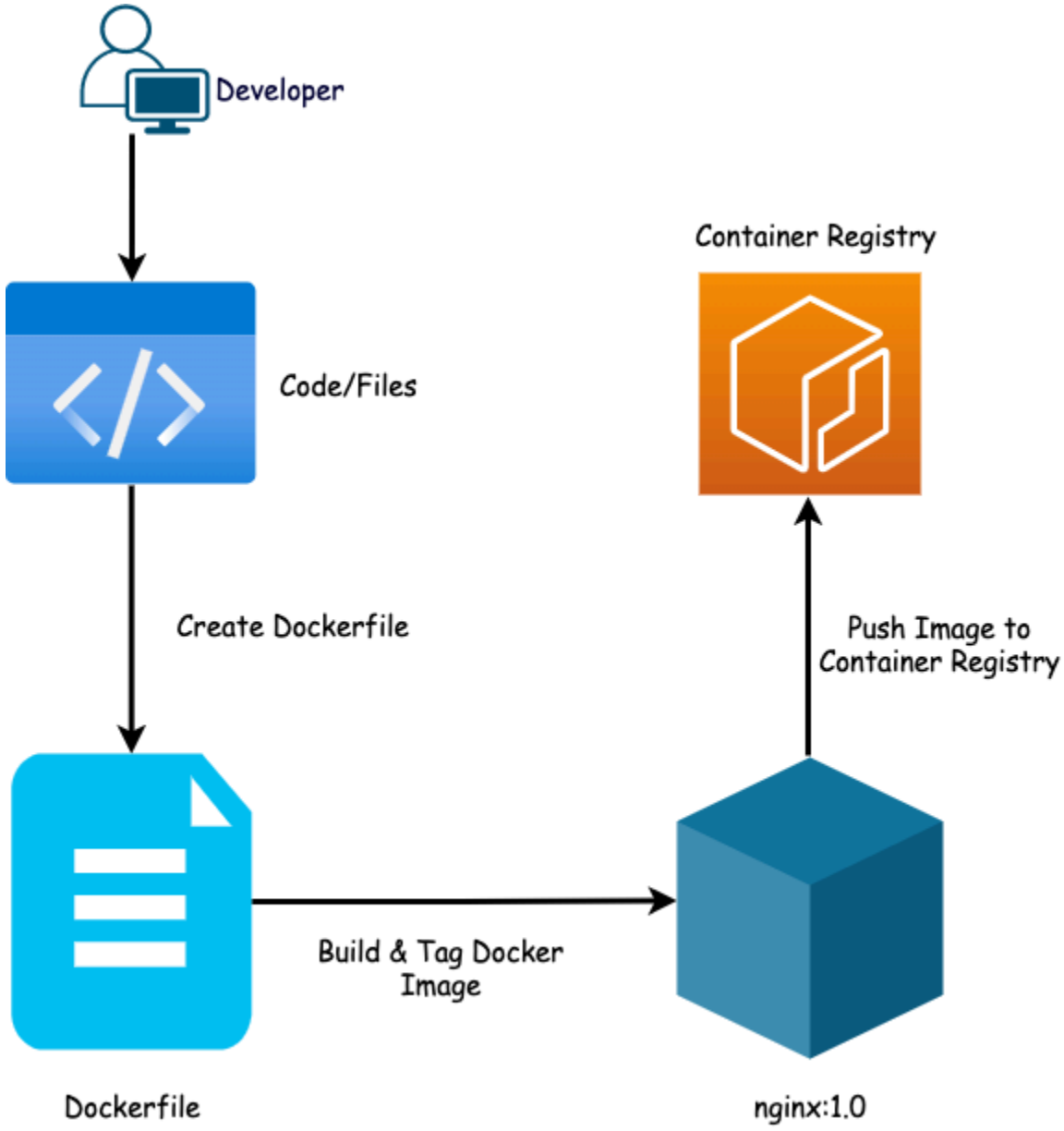
AIM:

To create a Dockerfile for building a Docker image of a sample web application.

Theory:

Dockerfile is a text file that contains instructions for building a Docker image. Each instruction in a Dockerfile represents a layer in the image. By creating a Dockerfile, we can define the environment and dependencies required to run an application inside a Docker container.



To build a Docker image for a sample web application, we typically follow these steps:

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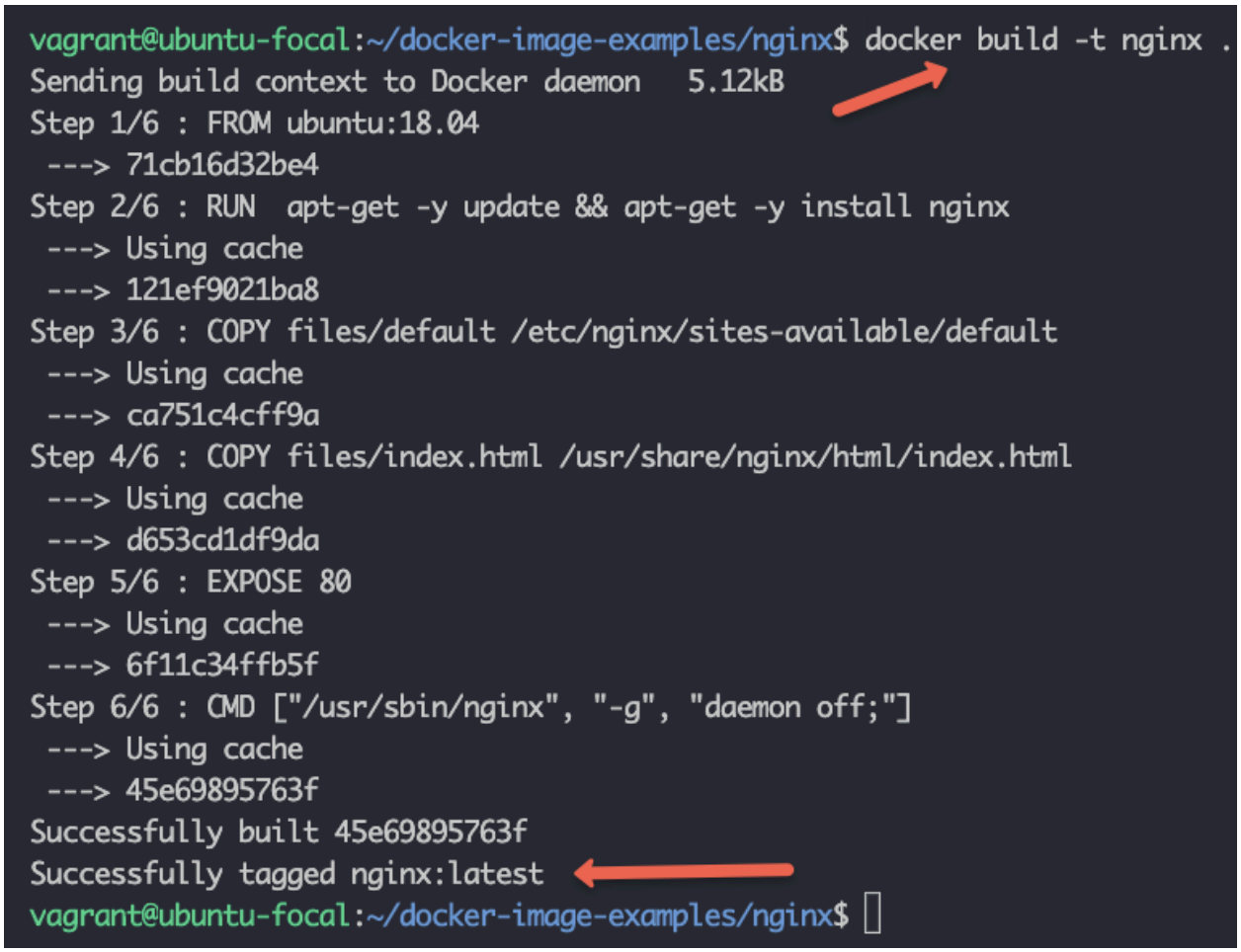
1. Specify a base image: Choose an existing Docker image that serves as the starting point for your application. This could be an official image from Docker Hub or a custom image.
2. Install dependencies: Use instructions like RUN to install any necessary software or packages required by your web application.
3. Copy application files: Use the COPY instruction to add your web application files into the Docker image.
4. Expose ports: Use the EXPOSE instruction to specify which ports your application listens on.
5. Define startup command: Use the CMD instruction to specify the command that should be executed when the container starts. This usually starts the web server or application.



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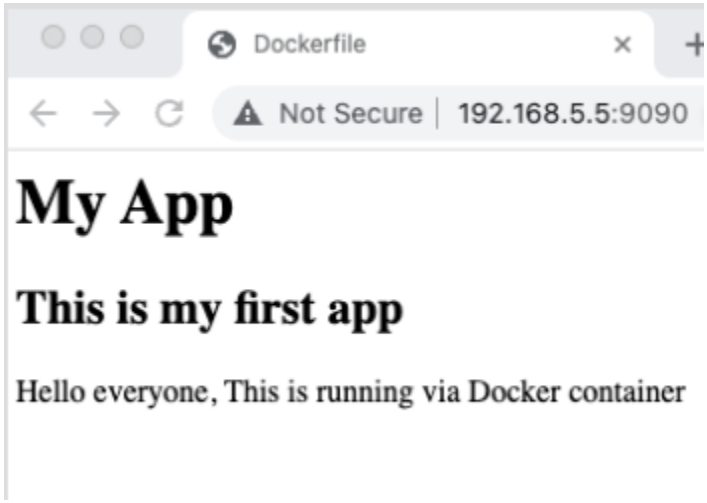

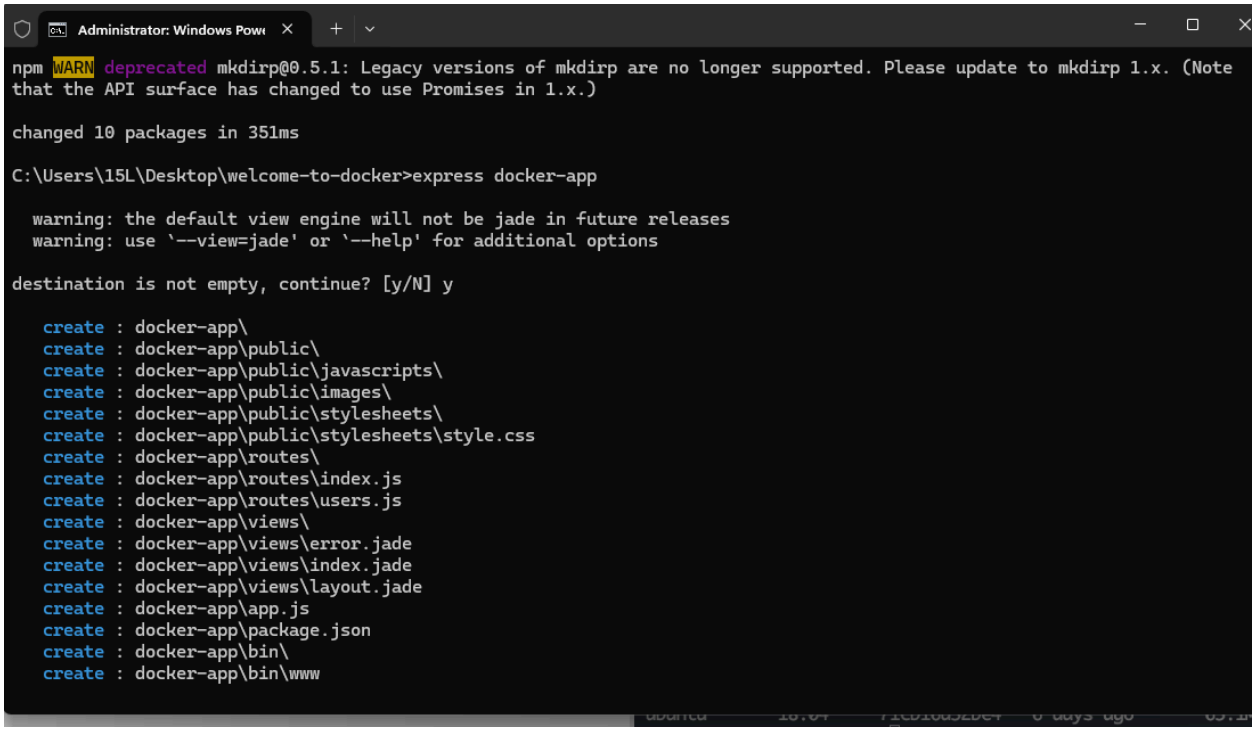

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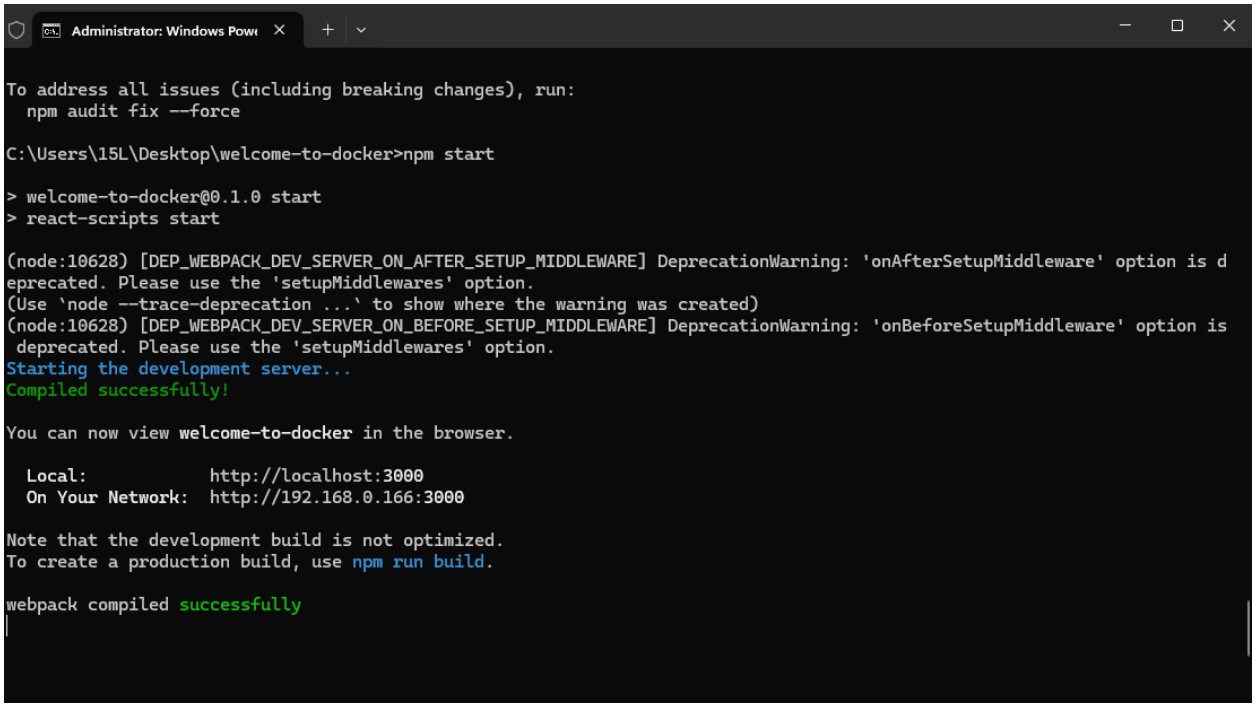

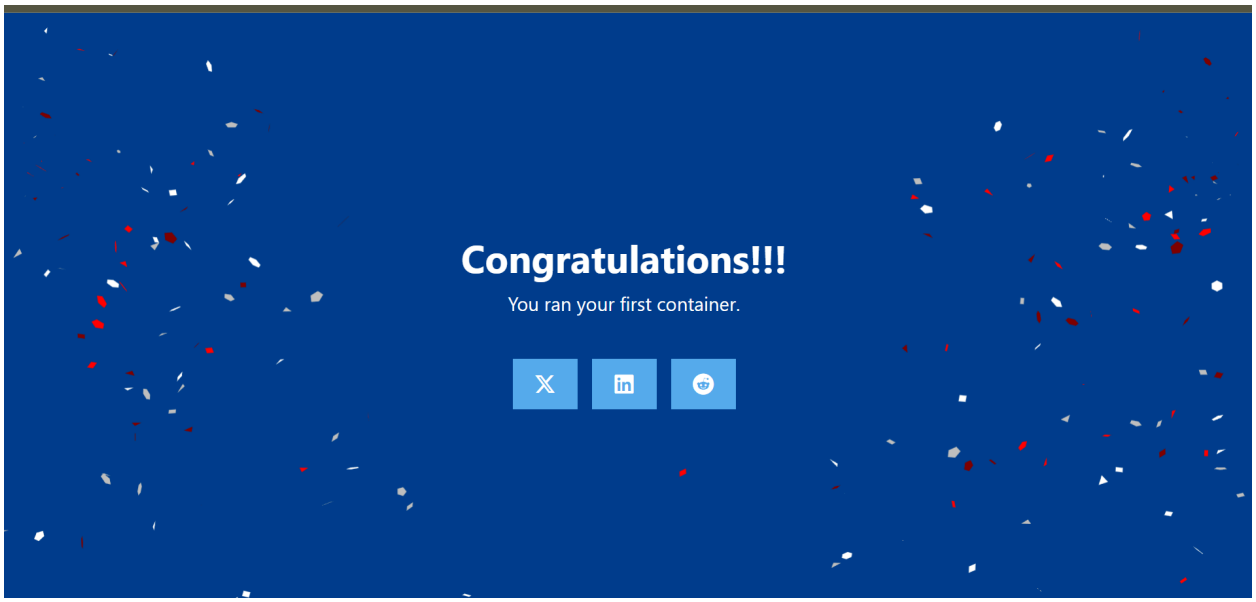

Conclusion:

Creating a Dockerfile allows us to define the environment and dependencies required to run a web application in a Docker container. By following best practices and optimizing our Dockerfile, we can efficiently build Docker images that are portable, reproducible, and scalable. This enables us to deploy our applications consistently across different environments, making development and deployment processes more streamlined and reliable.