Title: Documentation for Streamlit App Running in Docker

Introduction

This document provides a step-by-step guide to setting up and running a simple Streamlit application inside

The application displays a basic title and a text message.

Prerequisites

Before proceeding, ensure you have the following installed on your system:

- Python (>=3.7)

- Streamlit (latest version)

- Docker (latest stable version)

Code Explanation

The following Python code creates a simple Streamlit application:

```
import streamlit as st


st.title("Hello, World!")
st.write("This is a simple Streamlit app running in Docker.")
```

Breakdown:

1. import streamlit as st - Imports the Streamlit library.

2. st.title("Hello, World!") - Displays a title on the web page.

3. st.write("This is a simple Streamlit app running in Docker.") - Writes a simple text message on the page.

Setting Up the Project

Step 1: Install Streamlit

If you haven't installed Streamlit yet, use the following command:

pip install streamlit

Step 2: Create the Python Script

Save the above Python code in a file named app.py.

Dockerization

To containerize the Streamlit app, follow these steps:

Step 3: Create a Dockerfile

Create a file named Dockerfile in the same directory as app.py and add the following content:

```
# Use the official Python image as a base
FROM python:3.9

# Set the working directory
WORKDIR /app

# Copy the application files
COPY app.py /app

# Install Streamlit
RUN pip install streamlit

# Expose the necessary port
EXPOSE 8501
```

Run the Streamlit app

```
CMD ["streamlit", "run", "app.py", "--server.port=8501", "--server.address=0.0.0.0"]
```

Step 4: Build the Docker Image

Run the following command in the terminal:

```
docker build -t streamlit-app .
```

Step 5: Run the Docker Container

Once the build is complete, run the container using:

```
docker run -p 8501:8501 streamlit-app
```

Step 6: Access the Application

Open your web browser and go to:

http://localhost:8501

You should see the Streamlit app running.

Conclusion

This document covers how to set up and deploy a basic Streamlit app inside a Docker container.

You can expand this app by adding interactive widgets, data visualizations, and more.

References

- Streamlit Documentation: https://docs.streamlit.io/

- Docker Documentation: https://docs.docker.com/