User Manual for Caliper Streamlit Application

This manual provides instructions on how to install Docker and run the Caliper Streamlit application using the provided Docker image file `caliper_streamlit_app.tar`.

Part 1: Installing Docker

For Windows / Mac:

1. Download Docker Desktop:

   - Visit the [Docker Hub](https://www.docker.com/products/docker-desktop) and download the appropriate installer for your operating system.

2. Install Docker Desktop:

   - Run the installer and follow the on-screen instructions to install Docker Desktop on your system.

3. Start Docker Desktop:

   - Launch Docker Desktop from your Applications folder (Mac) or Start Menu (Windows). On the first launch, Docker Desktop may ask for additional permissions.

4. Configure Docker Desktop (if necessary):

   - Docker Desktop should work with default settings, but you can adjust resources (like CPU and memory) allocated to Docker via the settings/preferences menu if needed.

For Linux:

1. Update Package List:

   - Open a terminal window and run the following command:

   sudo apt-get update

2. Install Docker:

   - Install Docker using the following command:

   sudo apt-get install docker-ce docker-ce-cli containerd.io

3. Start Docker:

   - You can start Docker with the following command:

   sudo systemctl start docker

4. Enable Docker on Boot (optional):

   - To make sure Docker starts when your system boots, run the following command:

   sudo systemctl enable docker

5. Manage Docker as a non-root User (optional):

   - To run Docker commands without `sudo`, add your user to the `docker` group using the following command:

   sudo usermod -aG docker your-user

   - Replace `your-user` with your username. Log out and log back in for this to take effect.

Part 2: Loading and Running the Docker Image

1. Receive the Docker Image File:

   - Obtain the `**caliper_streamlit_app.tar**` file from the sender or download it from OVGU GitLab repo and save it to a known directory on your system.

2. Load the Docker Image:

   - Open a terminal (or Command Prompt on Windows, Terminal on Mac) and navigate to the directory where you saved the `caliper_streamlit_app.tar` file.

Run the following command to load the image into Docker:

   docker load < caliper_streamlit_app.tar

3. Run the Docker Container:

   - Start the container with the following command:

   docker run -p 8501:8501 caliper_streamlit_app

   - This command tells Docker to map port 8501 on your local machine to port 8501 inside the Docker container, making the app accessible via `http://localhost:8501`.

Fig.1: Loading and running caliper_streamlit_app.tar using Command Prompt on Windows

4. Access the Streamlit Application:

   - After running the container, open your web browser and navigate to `**http://localhost:8501**`. You should see the Caliper Streamlit app running.

Note:
A default Network URL and External URL will be given by Streamlit, as shown in Fig.1. If these URLs do not work, you can use **http://localhost:8501** to open Caliper Streamlit app.
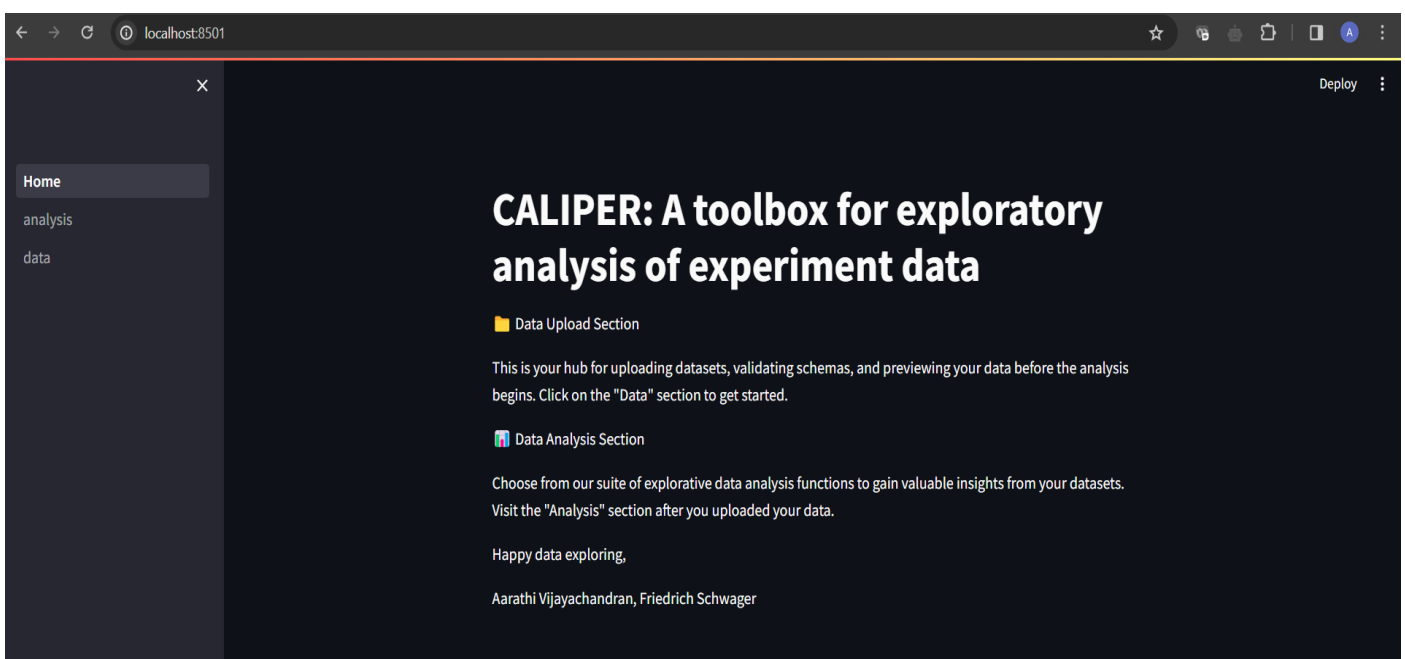

Fig.2: Caliper Streamlit app Home page

Additional Tips:

- Ensure Docker is running before attempting to load or run the Docker image.

- If there is an error related to port allocation (e.g., the port is already in use), you can map the Streamlit app to a different port by changing the first port number in the run command (e.g., `-p 8502:8501` to use port 8502 on the host).

- If you encounter any issues, refer to the official Docker documentation, the support forums or contact the developers for troubleshooting assistance.

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