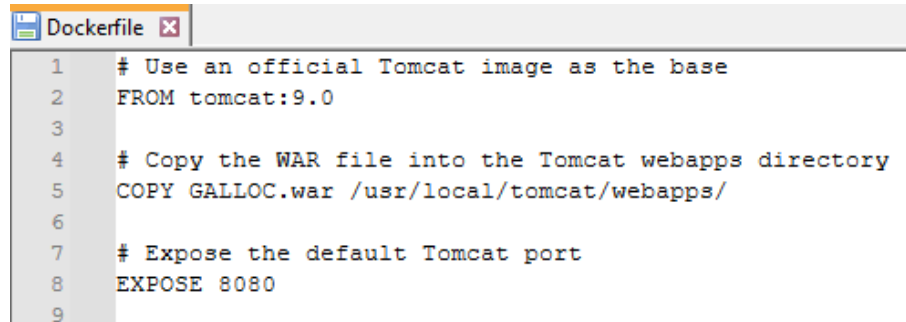


Package and run GALLOC using Docker with .war file:

- (1) Install Docker on your computer (Skip this step if you have already installed it.) and be ready with the .war file;
- (2) Put the .war file in a directory on your computer you will work with, and create a new file named Dockerfile and edit the Dockerfile based on the following example:



```
Dockerfile
1  # Use an official Tomcat image as the base
2  FROM tomcat:9.0
3
4  # Copy the WAR file into the Tomcat webapps directory
5  COPY GALLOC.war /usr/local/tomcat/webapps/
6
7  # Expose the default Tomcat port
8  EXPOSE 8080
9
```

- (3) Navigate to the directory containing your Dockerfile using the Terminal
- (4) Build the Docker image using the following command:
docker build -t your-image-name .
 - your-image-name: assign a name to the image;
- (5) Run a container from the image you build using the command:
docker run -d -p 8080:8080 --name your-container-name your-image-name
 - your-container-name: assign a container name;
- (6) Access the application: open a browser and navigate to: <http://localhost:8080/your-app>
(Replace your-app with your .war file's base name);

Run GALLOC with the image shared on Docker Hub

We have created an image and shared it on Docker Hub with the name of *sunkai8304/galloc:latest*. You can also directly use it.

- (1) Pull the GALLOC Docker image using the following command:
docker pull sunkai8304/galloc:latest
- (2) Verify the image is pulled successfully:
docker images
- (3) Run the Docker container using the following command:
docker run -d -p 8080:8080 sunkai8304/galloc:latest
- (4) Access the application: open a browser and navigate to: <http://localhost:8080/GALLOC>

Note that while our shared .war file and Docker image can be used, the Nominatim and Google Maps service are not working by default. This is because Google Maps service requires an API key linked to a Google account and the user might prefer to use their own local Nominatim instance (for faster service). To configure these two services, one can find a configuration file "config.json" in the folder "src/main/webapp". In this file, the user can add "apiKey" for Google Maps. For Nominatim, one can use its official URL (<https://nominatim.openstreetmap.org/>), or could deploy Nominatim on a local server and then add the local URL to "config.json" file. After editing the "config.json" file, please replace this file and export GALLOC into a new .war file with an IDE, such as Eclipse.