THE UNIVERSITY of NEW ORLEANS

CSCI 4452/5452 CLOUD COMPUTING

Fall 2022

Assignment #1: Docker

Assigned: Sep 8 ***Due: Sep 30, 11:59p***

Credits: 20 points

The goal for this assignment is to gain practical experience with using Docker. Your objective is to create a Dockerized web application that uses the Puppeteer library for taking a screenshot of a website and show it to your web application's visitor. You need to host this application publicly on Docker Hub and provide a **single "docker run" command** that a user should be able to run to set up your web app. In this docker run command, the user should specify the port number on their machine where your web app should be visible. For now, assume that a user chose 8055 as this port number. Your Dockerized web application should do the following:

(1) Visiting http://localhost:8055/kitty should a trigger visit to https://genrandom.com/cats/ inside the running Docker container. It should then scrape the image of the cat from the site and then display it to the user

(2) Visiting http://localhost:8055/puppy should trigger a visit to https://random.dog/ inside the running Docker container. It should then scrape the image of a dog from the site and then display it to the user (Please note that this site renders different image types – your code should adapt to all these types).

(3) Suppose the user chooses to ignore the above two options and instead types in a path that begins with "`www`", for example http://localhost:8055/www.google.com or http://localhost:8055/www.reddit.com. In this case, your server should try to visit the home page of the given site.

- If the above happens without any errors, you should output the screenshot of the given site.
- If the above results in an error, you server should display an error message saying that it is unable to visit the given website.

(4) If the user input does not match any of the above conditions, please provide a message from your web server prompting the user to give the right input instead.

5452 student requirement: In cases (1), (2) and (3) above, the images from your Docker container runs should also be output simultaneously to a specified directory in the host. Provide simple and clear instructions on how to pass the name of this directory to Docker.

Submission Requirements:

You should upload **two separate files** to Moodle.

1. A Zipped file that packages all file you used for building the Docker container including your Dockerfile, all scripts you write, as well as any dependencies (for example, binary files) you utilized for building the Docker container.
2. Please submit a PDF to Moodle describing the command that you would need the user to run. You will also need to include the command you used for building the Docker container.

   Note: Please verify that the commands you provide can be run by any public user. I should be able to pull your Docker image from Docker Hub and run it.

Resources:

https://nodejs.org/en/docs/guides/nodejs-docker-webapp/
https://pptr.dev/
https://github.com/puppeteer/puppeteer/blob/main/docker/Dockerfile

Some other resources if you are new to JavaScript:

https://javascript.info/promise-basics
https://blog.risingstack.com/mastering-async-await-in-nodejs/
https://javascript.info/async-await