

[Fall-2021]

HW4

Deadline: October 17th 11:59PM EST (8:59PM PST)

General Description:

In this homework, you are required to create two docker containers.

In the first container (30 points):

- Write a simple program that displays “Hello World” message.
- Create Docker image from this container.
- Push your Docker Image to Docker Hub. Make sure your Docker hub repository is public.

In your second container (10 points):

- Pull the following docker image: https://hub.docker.com/_/microsoft-mmlspark-release
- Run this docker image in a container on your machine and start jupyter notebook.
 - Make sure run the container on port number 9999 (instead of 8888).

Submission Guidelines:

- Post URL for your GitHub repository to Canvas. Make sure to keep your GitHub repository public.
- Create a folder in your GitHub repository and name it “Docker”. Keep all the Homework related materials under this folder.
- For the first container, submit the following:
 1. (10 pts) URL for your Docker image that is uploaded to your Docker Hub account (Make sure it's publicly shared).
 2. (10 pts) Screenshot for the execution of your docker container on your local machine.

3. (10 pts) Copy of your Dockerfile and the source code file.

- For the second container, submit the following:
 1. (10 pts) Screenshot for running Jupyter notebook that is provided from this docker image (i.e. the output of running <http://localhost:9999> in your browser).

Extra Credit:

- (+10 pts) Deploy your second docker container to the cloud.
 - Run your second docker container on the cloud. Use Google Cloud Platform as your platform to do so.
 - Submit a screenshot of running your second docker container on Google Cloud Platform (<https://console.cloud.google.com/>)
 - Create an account and redeem Free Trial Credit (\$300)
 - Use Cloud Shell to pull your docker image from docker hub into GCP, tag it, and push it to Google Container Registry.
 - Use Cloud Run to run your application on the cloud.

Common Penalties:

- Your GitHub repository is not public: 100% reduction (won't be graded)
- Late submissions on Canvas or GitHub: 100% reduction (won't be graded)