

**[Fall-2021]**

## **HW2**

**Deadline:** September 30<sup>th</sup> 11:59PM EST (8:59PM PST)

### **General Description:**

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

In the first container (15 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.
- Deploy your container to Google Cloud Platform Cluster and run the container on your GCP cluster.

In your second container (5 points):

- Pull the following docker image: [https://hub.docker.com/\\_/microsoft-mmlspark-release](https://hub.docker.com/_/microsoft-mmlspark-release)
- Run this docker image on your machine.

### **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. (5 pts) URL for your Docker image that is uploaded to your Docker Hub account (Make sure it’s publicly shared).
  2. (5 pts) Screenshot for the execution of your docker container on GCP, showing the “Hello World” message on the console. Your screenshot

should show the command you used to run your container on GCP along with the output. Make sure your screenshot includes the cluster name.

**\*\*If you are unable to combine both in one screenshot, submit one screenshot for the docker command you used on GCP and another screenshot for the output on GCP.**

3. (5 pts) Print for your Dockerfile contents and the source code file.
  - For the second container, submit the following:
    1. (5 pts) Screenshot for running Jupyter notebook that is provided from this docker image (i.e. the output of running <http://localhost:8888> in your browser).

**Don't forget to disable billing after you finish using GCP**

**Extra Credit:**

- (3 pts) Deploy your first docker container to Kubernetes cluster and deploy the Kubernetes cluster to your GCP cluster. Submit a screenshot of running your Kubernetes cluster on GCP. Make sure your screenshot includes the cluster name.

**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)