Individual Homework 1

This is an individual homework, everyone should submit their own work.

Part A

Install Docker

You need to install "Docker" and run hello-world. This is a practice for you to build your develop environment.

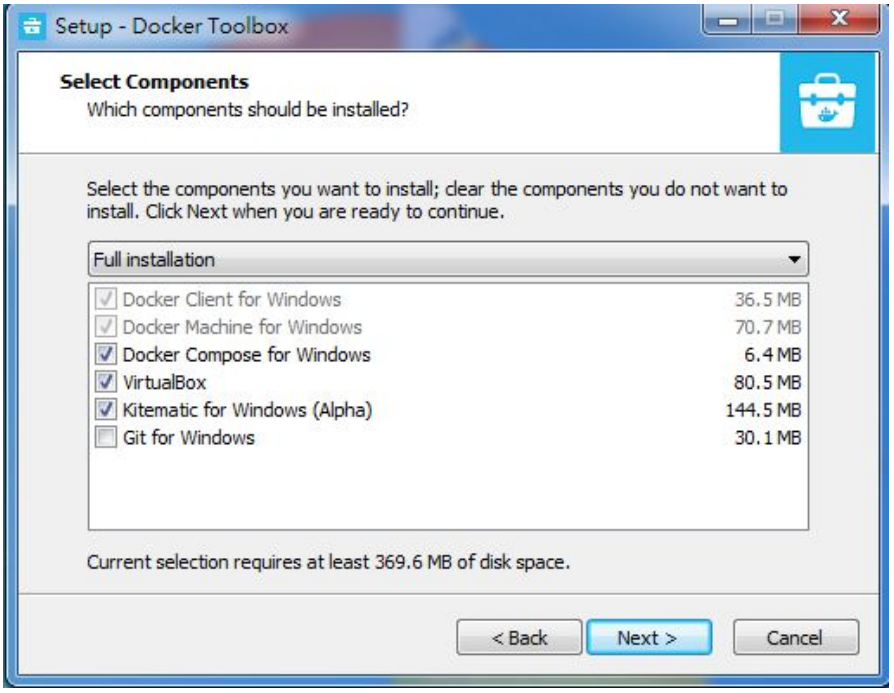
Follow the steps below:

A. For windows

a. visit the website : https://docs.docker.com/docker-for-windows/install/

b. check the system requirements

c. install “Docker Toolbox” or “Docker for windows installer” (determined by step b)



d. run Docker Terminal

e. execute `docker run hello-world`

B. For Mac

a. similar to windows install steps

b. visit the website : https://docs.docker.com/docker-for-mac/install/

C. For linux

a. `$ sudo apt-get update`

b.
```
$ sudo apt-get install \
    apt-transport-https ca-certificates \
    curl software-properties-common
```

c.
```
$ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo \
apt-key add -
```

d.
```
$ sudo apt-key fingerprint 0EBFCD88

pub   4096R/0EBFCD88 2017-02-22
      Key fingerprint = 9DC8 5822 9FC7 DD38 854A  E2D8 8D81 803C \
0EBF CD88
uid                  Docker Release (CE deb) <docker@docker.com>
sub   4096R/F273FCD8 2017-02-22
```

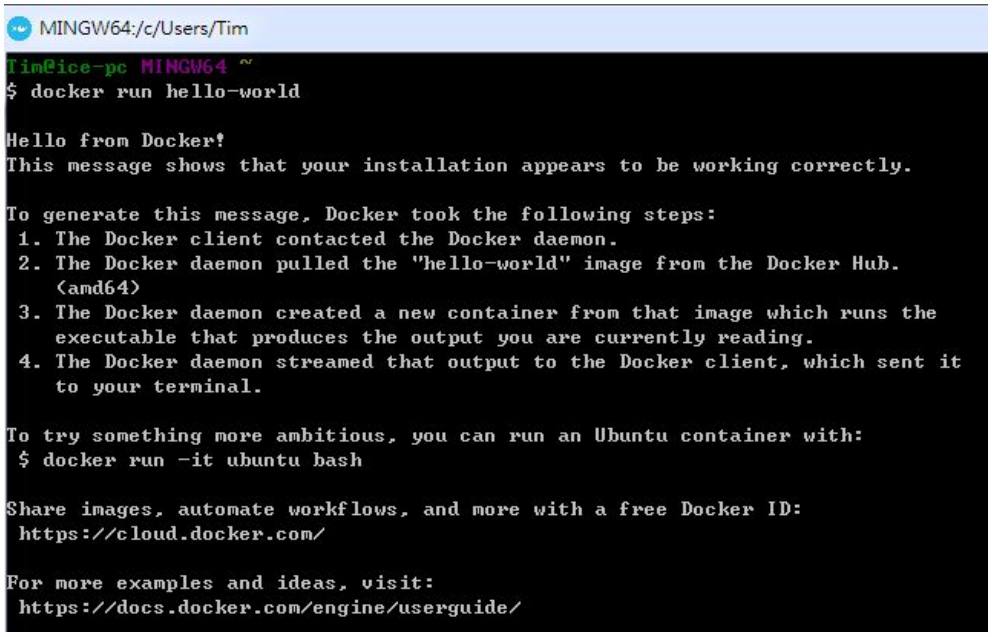
e.
```
$ sudo add-apt-repository \
   "deb [arch=amd64] https://download.docker.com/linux/ubuntu \
   $(lsb_release -cs) stable"
```

f.
```
$ sudo apt-get update
```

g.
```
$ sudo apt-get install docker-ce
```

h.
```
$ sudo docker run hello-world
```

Figure 1 : screenshot



Part B

Design the ER model for CS department system

"Sports week" is an annual event at NCTU. Students sign up as a team to compete. To simplify the registration process, we need to create a sign up system. Now you are assigned to design a Entity-Relationship diagram(ER diagram) to complete this task.

Goal:

You need to draw the ER diagram using the UML tool, *creately* (https://creately.com) based on the entities and relations as follows.

Entities:

A. User
   user id, name, email, department id, gender, phone number

B. Department
   id, name, class, grade
   e.g. 1, computer science, class B, 2

C. Event
   id, name, team limit, max team members, min team members, year

D. Team
   team id, name, user id

E. Registration
   id, event id, team id, time

F. Match
   id, event id, team id, order, score, valid, datetime

Relation:

- Each student can only represent one department, but one department has multiple students.
- Each student can participate in multiple teams. Each team needs to have at least one student or more.
- It is not mandatory for students to participate in sports week. In other words, some students might not sign up for any event.
- Each team can participate in multiple events, but they need to turn in a separate sign up sheet for every event. One sign up sheet can only register for one event.

- There will be multiple matches in each event. Each match belongs to one specific event.
- Each team has many matches and each match contains at least 2 teams.

Requirement:

ER Diagram (Mark primary & foreign keys & candidate keys…)

Submission:

- **Part A**
- Submit one image file

Please take a screenshot of the screen (like Figure 1) after running hello-world.

Filename format : "**HW1a_xxxxxxx.jpeg**", where **xxxxxxx** is your student ID.

- **Part B**
- Submit one image file

You should export your ER-diagram to a jpeg file, the naming rule of the file is "**HW1b_xxxxxxx.jpeg**", where **xxxxxxx** is your student ID.

Discussion

We use HackMD for you to ask question, TA will answer as soon as possible.
Link: https://hackmd.io/s/BJVTyc8tM

Remark

- **The images in Part A and B should be compressed into one zip file, without any folder.**
- **The zip file's filename format: "HW1_xxxxxx.zip", where xxxxxx is your student ID.**
- **The penalty for incorrectly formatted submission is 10%.**
- **The penalty for late homework is 15% per day, and late homework will not be accepted after 4 days past the due date.**
- **Plagiarism is not allowed, you will get 0 score when we found that happened.**

Deadline:

2018/3/30 23:59