**DOCKER**

Installing Docker :

Google for install docker. Go to Docker site i.e. docs.docker.com

Click Download from Docker Hub and install docker

Once you’ve installed, Launch it and you will see the whale kind icon in status bar

Open command prompt and enter docker –version command to check docker version. Make sure version should be atleast 19 or greater.

RECOMMENDATION : Use PowerShell in Windows!

**Recommendation 1**

If you are using Windows, make sure that you use PowerShell instead of Command Prompt.

**Recommendation 2**

If you are using **Window 10** and are using **docker toolbox**

=> Use **192.168.99.100** instead of **localhost**.

**Note:**If **192.168.99.100** does not work, you can find the IP by using the command docker-machine ip

**Reason**

**In Window 10** when using **docker toolbox**, docker is configured to use the default machine with IP 192.168.99.100

Command to run docker :

docker run in28min/todo-rest-api-h2:1.0.0.RELEASE

**Docker Concepts – Registry , Repository , Tag , Image and Containers**

Docker Registry - https://hub.docker.com

Command : docker run in28min/todo-rest-api-h2:1.0.0.RELEASE

image : in28min/todo-rest-api-h2

Image will get downloaded from hub.docker.com

A registry contains a lot of repositories, a lot of different versions of different applications, and because this is a public registry, anybody can access this.

Typically when you're working in an enterprise, we would be using private repositories, so that our images can only be accessed by somebody who has the right credentials.

If we go to hub.docker.com/r/in28min/todo-rest-api-h2

you would go to something called a repository. So, a hub.docker.com is a registry,

it can contain multiple repositories, and inside that, in28min/todo-rest-api-h2 is a repository stores all the versions of a specific application.

Default Registry (hub.docker.com) > Repository (in28min/todo-rest-api-h2) > Tag (1.0.0.RELEASE)

When we run command , from the registry image will get downloaded to our machine and once the image is downloaded, it is runs as an application in your machine

Image – A Static Template – A set of bytes and when it’s running, it’s called a Container. It’s a static version

Container – Running version of your Image,( It’s a running version )

For the same image you can have multiple containers running.

You will see port in console logs. By default it runs on port 5000.

Ctrl + c to stop the running container.

Run docker with port number : -p 5000:5000 => -p{HostPort}:{ContainerPort}

Command : docker run –p 5000:5000 in28min/todo-rest-api-h2:1.0.0.RELEASE

What happens is by default, any container that you run is part of something called a bridge network in Docker. You can kind of think of it like an internal Docker network.

Nobody will be able to access it, unless you specifically expose it onto the host, onto the system, where your container is running.

So, what we are doing in here is we are saying I'd want to take the internal port, the container port 5000 and map it to a host port to the port on the system where the container is running, which is 5000. So, now We would be able to access the application on port 5000.

Enter and run image on port 5000

If you will go to

* localhost:5000/hello-world
* localhost:5000/hello-world-bean

you will see response

Tip : Add JSON UI plugin in chrome for better json format.

When we execute the command, the image is downloaded from something called Docker Hub. Docker Hub is something called a Docker registry.

A registry contains a number of repositories.

When we are specifying the name i.e. in28min/todo-rest-api-h2, it's actually name of one of the repositories and we are specifying which VERSION/TAG of that REPOSITORY to get and once we specify that, we saw that the image was downloaded and run.

The running version of the image is called a Container.A Image is a static version and the running dynamic version of it is called a Container.

Image is like a Class. Container is like an object.

and at the end, we also saw that we had to publish the container port to a host port to be able to

access the application.