Docker Assignment 6

1. What is the .dockerignore file's purpose?

   The . dockerignore file allows you to exclude files from the context like a . gitignore file.

2. How necessary is it to create a cache in Docker?

   *When building an image, Docker steps through the instructions in your Docker file, executing each in the order specified. As each instruction is examined, Docker looks for an existing image in its cache that it can reuse rather than building it. This can save a lot of time if the instruction is a slow one like npm install or bundle install.

   *Usually, caching is desirable and beneficial, but at times we want new rebuilds due to changes in layers which could not be detected by the docker daemon. For example, change of command provided with RUN instruction. Sometimes, due to faulty installations, our application crashes. We wish to install everything from the beginning, but the cache may create conflicts.

   To resolve such issues, we can opt for builds using —no-cache flag. With this flag, cache is ignored and the build is treated as a new one and everything begins from the start.

3. What is the significance of docker monitoring?

The benefits of monitoring include:

• Identifying issues proactively to avoid system outages.

• Monitoring time-series data to help applications run better.

• Implement changes safely by catching problems early and resolving issues quickly.

4. Differences between Windows and Hyper-V Containers/

Hyper-V containers are still using Windows containers within the VM. The only difference is the Windows container is now running inside a Hyper-V VM which provides kernel isolation and separation of the host patch/version level from that used by the application.

5. How do I use docker-compose to declare default environment variables?

Compose supports declaring default environment variables in an environment file named .env placed in the folder where the docker-compose command is executed (current working directory).

Example: The below example demonstrate how to declare default environmental variable for Docker Compose.

$ cat .env

TAG=v1.5

$ cat docker-compose.yml

version: '3'

```
services:
  web:
    image: "webapp:${TAG}"
```
When you run docker-compose up, the web service defined above uses the image webapp:v1.5. You can verify this with the `docker-compose config` command which prints your resolved application config to the terminal.

6. What is the trusted registry for Docker?

- The Docker Trusted Registry is for enterprise use cases where control and reliability mean that unofficial images are not preferred for reasons of asset and workflow predictability.
- Lots of these images are ''official'' and have passed through Docker's series of best practice and security checks. But the Docker Hub is also full of unofficial images that are unreliable in reliability and security.
- Enterprises often require more control over their assets and workflow, preferring a repository they control and supervise.

7. How do you determine the version of the Docker client and server?

Open a command prompt and run **docker version.**

8. Can you tell the difference between the COPY and ADD commands in a Dockerfile?

COPY takes in a source and destination. It only lets you copy in a local or directory from your host (the machine-building the Docker image) into the Docker image itself.

ADD lets you do that too, but it also supports two other sources. First, you can use a URL instead of a local file/directory. Secondly, you can extract tar from the source directory into the destination.

9. Is it possible for a container to restart on its own?

Yes container restarts on its own by mentioning some condition like when to restart.

10.   What is the volume parameter in a docker run command used for?

The volume parameter is used for syncing a directory of a container with any of the host directories.

This also ensures data security in cases of container deletion. This ensures that even if the container is deleted, the data of the container exists in the volume mapped host location making it the easiest way to store the container data.