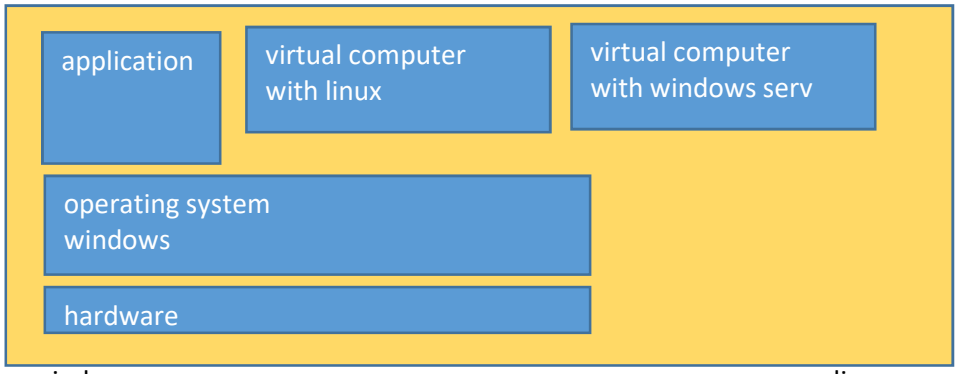
Virtualization

Virtual computer




microsoft vpc
microsoft virtual server
microsoft hyperv
VMWare
Oracle virtualbox

windows linux

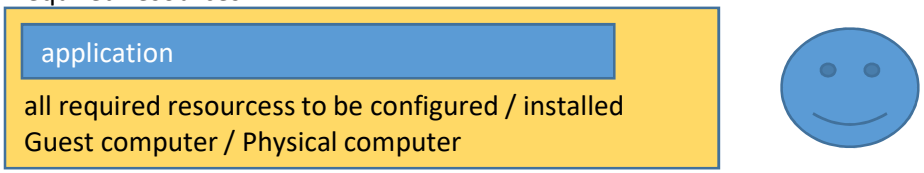
virtual router GNS

virtual application

MyCalculator

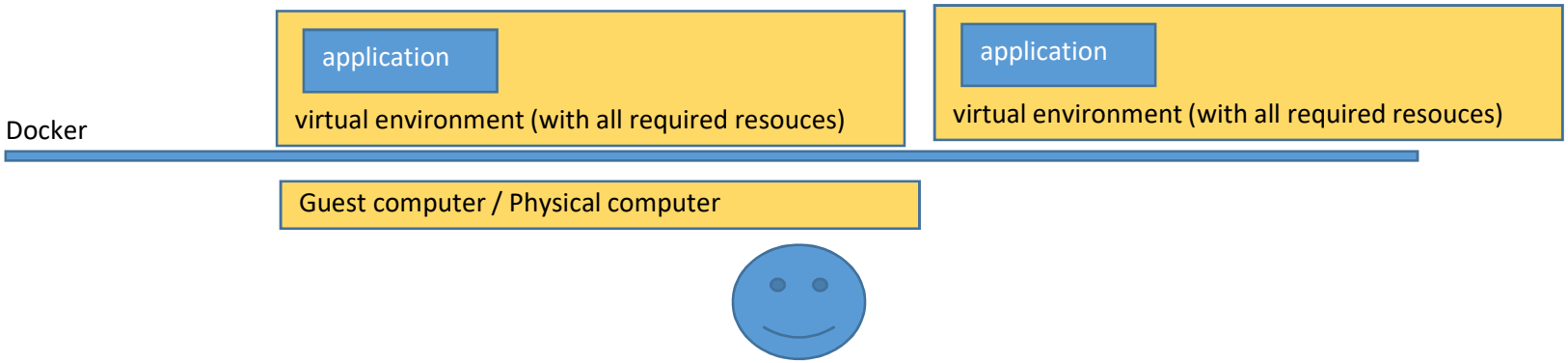
java libraries
abcd services
xyz plugins
mnop configurations

traditional way of application to run
installing application on local machine along with all required resources





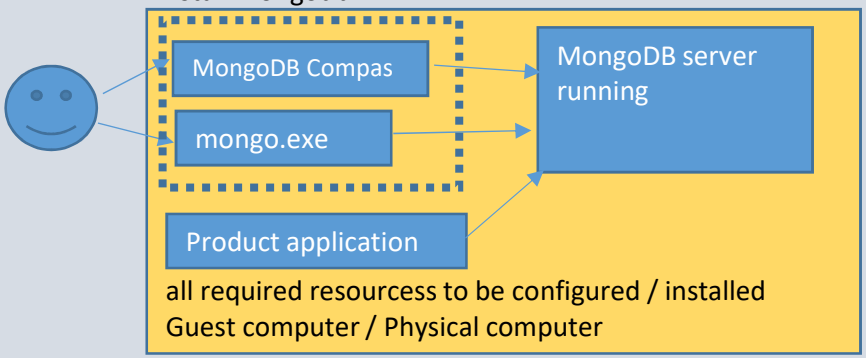

create virtual environment (container)
will all required resources for application to run
run application in container



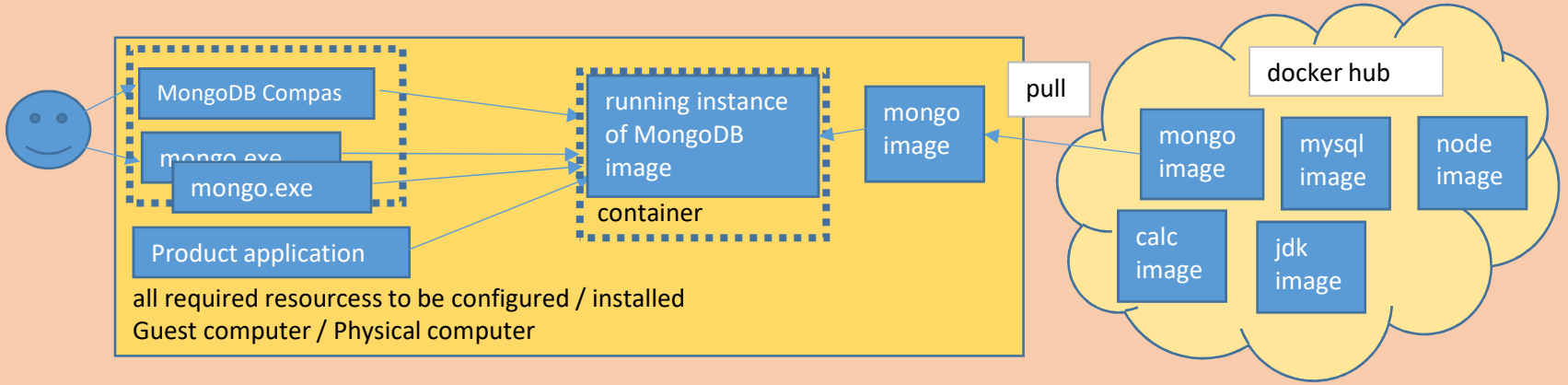
What is the traditional way to use MongoDB on my computer

download mongdb setup

install mongodb




Alternate way to make mongodb server available on our machine (without installing and configuring mongodb)




Docker image

compact type of application with all required libraries and other resources

readonly (immutable)

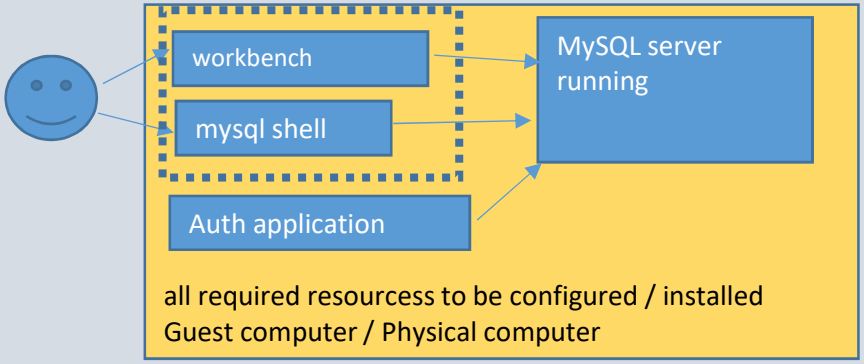
Docker container

running instance of image

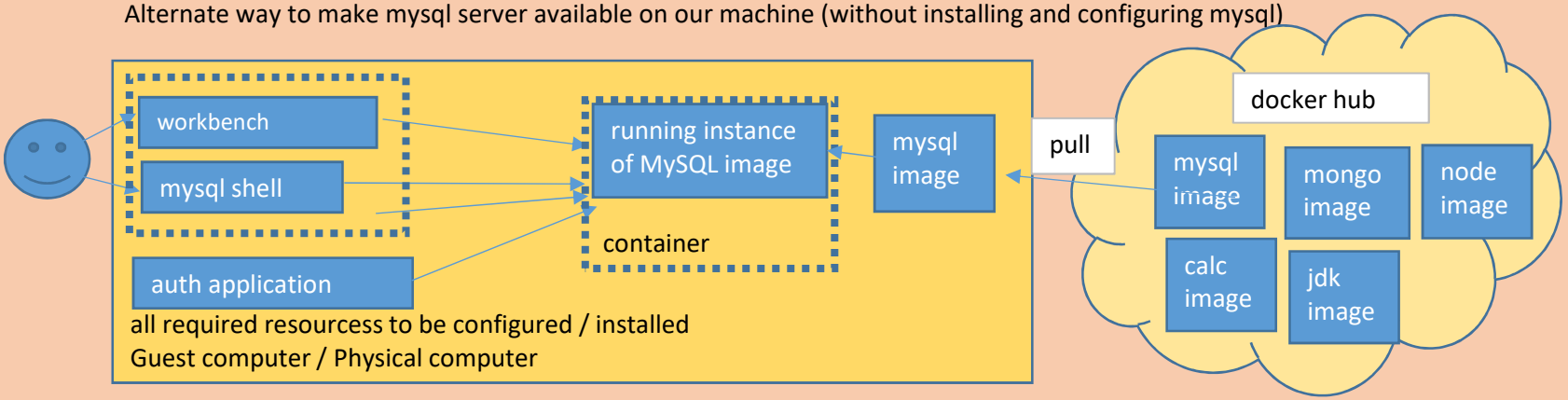
What is the traditional way to use MySQL on my computer

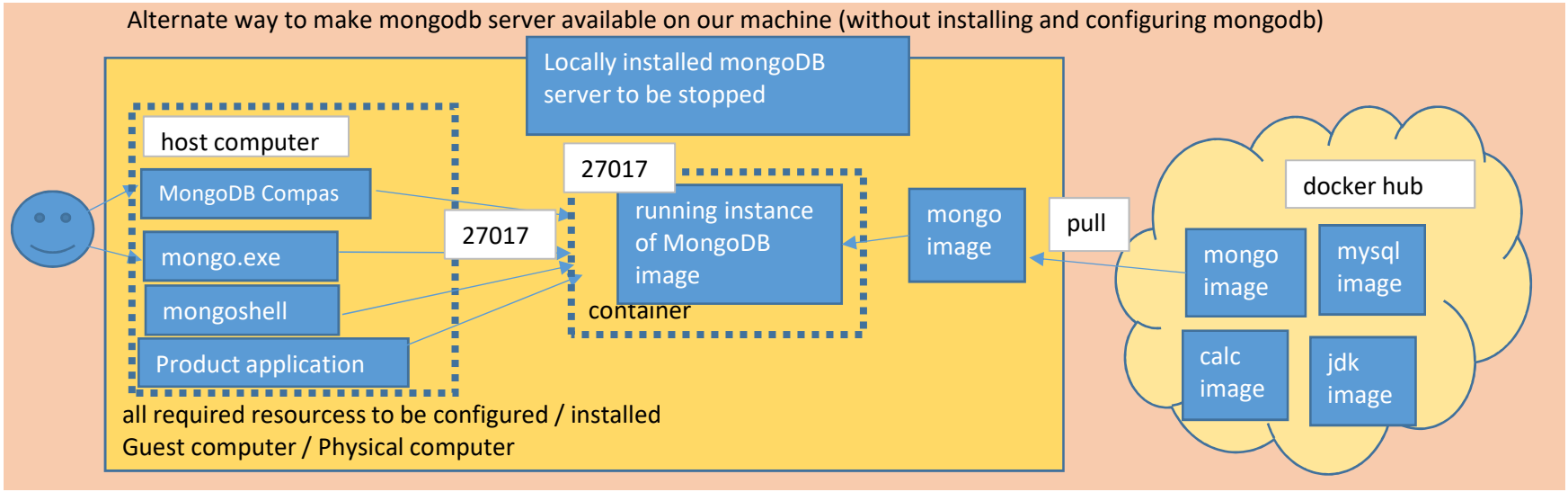
download mysql setup

install mysql




Alternate way to make mysql server available on our machine (without installing and configuring mysql)






Demo 1

Pulling mongodb image from docker hub to local machine

Starting container with pulled mongodb image

Note : Stop locally installed mongoDB service

windows : run->services.msc

stop mongoDB service

when we create and start container

container name

with which imge container gets created

port mapping to be done

Demo 2

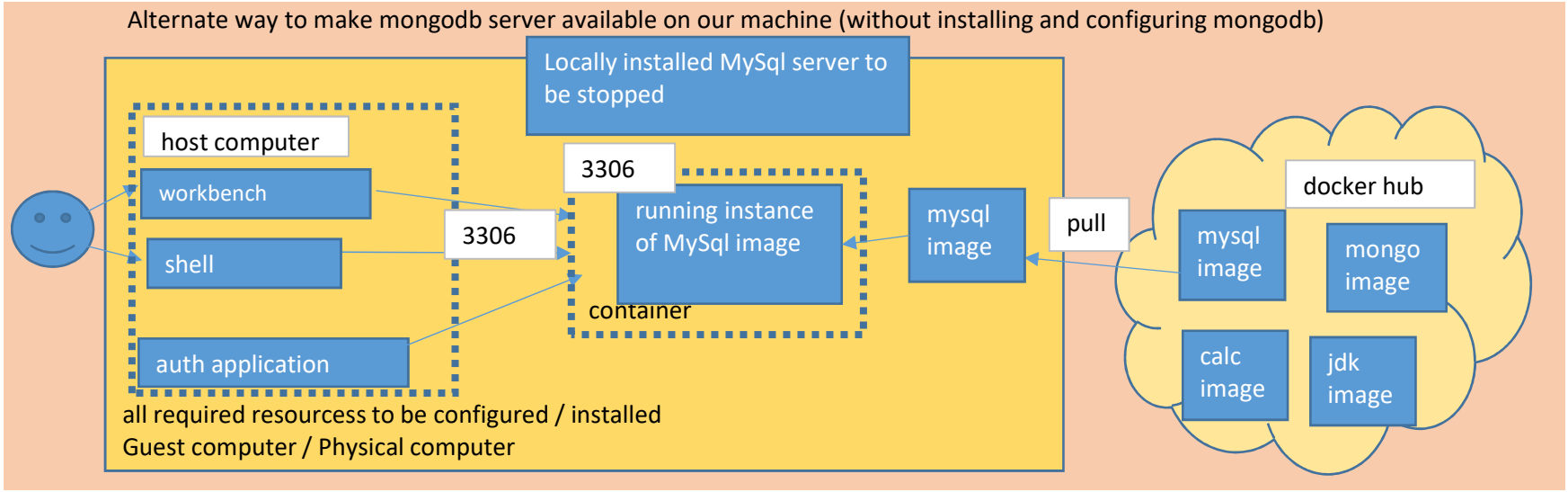
Pulling mysql image from docker hub to local machine

Starting container with pulled mysql image (root passowrd to be provided while starting container)

Note : Stop locally installed MySql service

windows : run->services.msc

stop mysql service




Note : stop local mysql service

pull mysql image from docker hu

```
C:\Users\Babji>docker pull mysql
Using default tag: latest
latest: Pulling from library/mysql
0ed027b72ddc: Already exists
0296159747f1: Pull complete
3d2f9b664bd3: Pull complete
df6519f81c26: Pull complete
36bb5e56d458: Pull complete
054e8fde88d0: Pull complete
f2b494c50c7f: Pull complete
132bc0d471b8: Pull complete
135ec7033a05: Pull complete
5961f0272472: Pull complete
75b5f7a3d3a4: Pull complete
Digest: sha256:3d7ae561cf6095f6aca8eb7830e1d14734227b1fb4748092f2be2cfbccf7d614
Status: Downloaded newer image for mysql:latest
docker.io/library/mysql:latest

C:\Users\Babji>docker images
REPOSITORY   TAG       IMAGE ID       CREATED       SIZE
mysql        latest    7484689f290f   4 weeks ago   538MB
```

start mysql container with port maping and root password

**docker run --name mysql_container1 -e MYSQL_ROOT_PASSWORD=root -p 3306:3306 mysql**

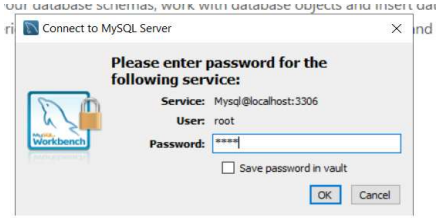
```
C:\Users\Babji>docker run --name mysql_container1 -e MYSQL_ROOT_PASSWORD=root -p 3306:3306 mysql
2023-01-04 09:50:12+00:00 [Note] [Entrypoint]: Entrypoint script for MySQL Server 8.0.31-1.el8 started.
2023-01-04 09:50:13+00:00 [Note] [Entrypoint]: Switching to dedicated user 'mysql'
2023-01-04 09:50:13+00:00 [Note] [Entrypoint]: Entrypoint script for MySQL Server 8.0.31-1.el8 started.
```

```
C:\Users\Babji>docker ps -a
CONTAINER ID   IMAGE     COMMAND                  CREATED             STATUS             PORTS                               NAMES
fef21cb4a98e   mysql     "docker-entrypoint.s…"   About a minute ago   Up About a minute   0.0.0.0:3306->3306/tcp, 33060/tcp   mysql_container1
```

how to check

start container

open workbrench - connect to mysql server




open shell using below command

**docker exec -it mysql_container1 bash**

```
C:\Users\Babji>docker exec -it mysql_container1 bash
bash-4.4# mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 16
Server version: 8.0.31 MySQL Community Server - GPL

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```