

CCL EXP 9 OUTPUT

#BASIC DOCKER COMMANDS

```
> docker version
Client:
  Cloud integration: v1.0.29
  Version:           23.0.1
  API version:       1.42
  Go version:        go1.20
  Git commit:        a5ee5b1dfc
  Built:             Sat Feb 11 13:58:04 2023
  OS/Arch:           linux/amd64
  Context:           default

Server:
  Engine:
    Version:          23.0.1
    API version:      1.42 (minimum version 1.12)
    Go version:       go1.20
    Git commit:       bc3805a0a0
    Built:            Sat Feb 11 13:58:04 2023
    OS/Arch:          linux/amd64
    Experimental:    false
  containerd:
    Version:          v1.7.0
    GitCommit:        1fb70374134b891f97ce19c70b6e50c7b9f4e0d.m
  runc:
    Version:          1.1.4
    GitCommit:
  docker-init:
    Version:          0.19.0
    GitCommit:        de40ad0
```



```
> docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
2ab09b027e7f: Pull complete
Digest: sha256:67211c14fa74f070d27cc59d69a7fa9aeff8e28ea118ef3babca0428a6d21
Status: Downloaded newer image for ubuntu:latest
docker.io/library/ubuntu:latest
```



```

) docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
ubuntu latest 08d22c0ceb15 2 weeks ago 77.8MB
) docker run -it ubuntu /bin/bash
root@930136d481df:/# ls
bin boot dev etc home lib lib32 lib64 libx32 media mnt opt proc root run sbin srv sys tmp

) docker container rm c02f75901786
c02f75901786
) docker container ls -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
930136d481df ubuntu "/bin/bash" 10 minutes ago Exited (100) 9 minutes ago
) docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES

```

```

) docker
Usage: docker [OPTIONS] COMMAND
A self-sufficient runtime for containers

Common Commands:
  run      Create and run a new container from an image
  exec    Execute a command in a running container
  ps       List containers
  build   Build an image from a Dockerfile
  pull    Download an image from a registry
  push    Upload an image to a registry
  images  List images
  login   Log in to a registry
  logout  Log out from a registry
  search  Search Docker Hub for images
  version Show the Docker version information
  info    Display system-wide information

Management Commands:
  builder  Manage builds
  compose* Docker Compose (Docker Inc., v2.15.1)
  container Manage containers
  context   Manage contexts
  dev*     Docker Dev Environments (Docker Inc., v0.0.5)
  extension* Manages Docker extensions (Docker Inc., v0.2.17)
  image    Manage images
  manifest Manage Docker image manifests and manifest lists
  network  Manage networks
  plugin   Manage plugins
  sbom*    View the packaged-based Software Bill Of Materials (SBOM) for an image (Anchore Inc., 0.6.0)
  scan*   Docker Scan (Docker Inc., v0.23.0)
  system   Manage Docker
  trust    Manage trust on Docker images

) docker image list
REPOSITORY TAG IMAGE ID CREATED SIZE
ubuntu latest 08d22c0ceb15 2 weeks ago 77.8MB
) docker image rm 08d22c0ceb15
Untagged: ubuntu:latest
Untagged: ubuntu@sha256:67211c14fa74f070d27cc59d69a7fa9aeff8e28ea118ef3babcf295a0428a6d21
Deleted: sha256:08d22c0ceb150ddeb2237c5fa3129c0183f3cc6f5eeb2e7aa4016da3ad02140a
) docker image ls
REPOSITORY TAG IMAGE ID CREATED SIZE

```

Search Docker Hub for images				
NAME	DESCRIPTION	STARS	OFFICIAL	AUTOMATED
ubuntu	Ubuntu is a Debian-based Linux operating system.	15743	[OK]	
websphere-liberty	WebSphere Liberty multi-architecture images ...	293	[OK]	
open-liberty	Open Liberty multi-architecture images based ...	59	[OK]	
neurodebian	NeuroDebian provides neuroscience research softw...	99	[OK]	
ubuntu-debootstrap	DEPRECATED; use "ubuntu" instead	50	[OK]	
ubuntu-upstart	DEPRECATED, as is Upstart (find other processes)	112	[OK]	
ubuntu/nginx	Nginx, a high-performance reverse proxy & web server	83		
ubuntu/cortex	Cortex provides storage for Prometheus. Long-term ...	3		
ubuntu/squid	Squid is a caching proxy for the Web. Long-term ...	52		
ubuntu/apache2	Apache, a secure & extensible open-source HTTP ...	55		
ubuntu/mysql	MySQL open source fast, stable, multi-threaded ...	43		
ubuntu/redis	Redis, an open source key-value store. Long-term ...	17		
ubuntu/bind9	BIND 9 is a very flexible, full-featured DNS server	46		
ubuntu/prometheus	Prometheus is a systems and service monitoring tool	40		
ubuntu/kafka	Apache Kafka, a distributed event streaming platform	26		
ubuntu/postgres	PostgreSQL is an open source object-relational database	27		
ubuntu/zookeeper	ZooKeeper maintains configuration information and provides distributed synchronization	5		
ubuntu/grafana	Grafana, a feature rich metrics dashboard & visualization tool	7		
ubuntu/memcached	Memcached, an in-memory keyvalue store for small objects	5		
ubuntu/prometheus-alertmanager	Alertmanager handles client alerts from Prometheus	8		
ubuntu/dotnet-deps	Chiselled Ubuntu for self-contained .NET & ASP.NET applications	6		
ubuntu/cassandra	Cassandra, an open source NoSQL distributed database system	2		
ubuntu/dotnet-runtime	Chiselled Ubuntu runtime image for .NET apps	5		
ubuntu/telegraf	Telegraf collects, processes, aggregates & writes metrics	4		
ubuntu/dotnet-aspnet	Chiselled Ubuntu runtime image for ASP.NET applications	3		

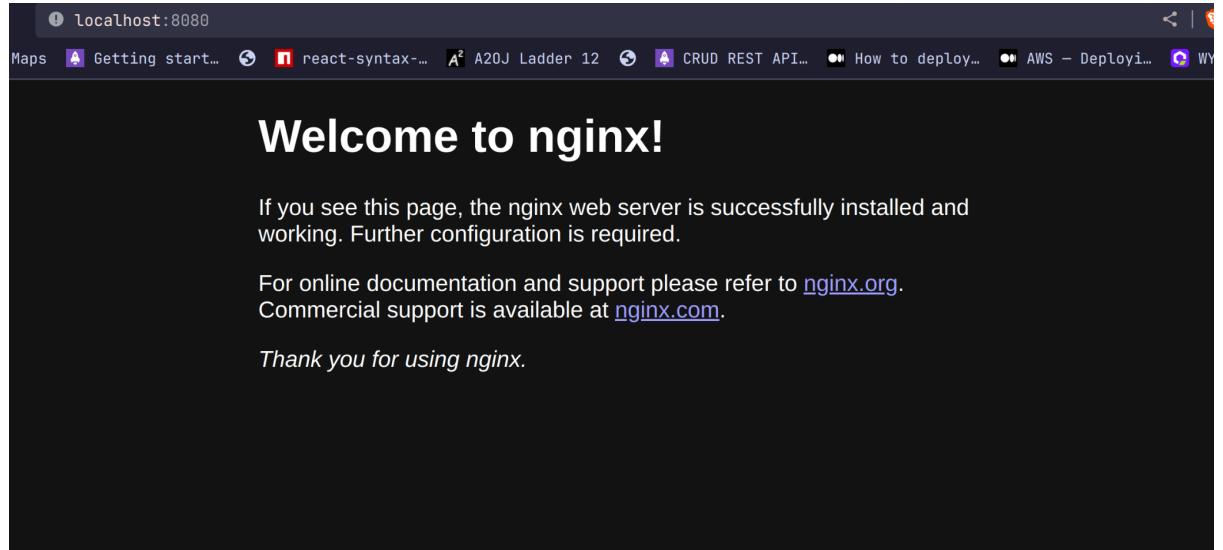
```
) docker search --filter=stars=100 --filter=is-official=true ubuntu
NAME          DESCRIPTION                           STARS  OFFICIAL  AUTOMATED
ubuntu        Ubuntu is a Debian-based Linux operating sys...  15743  [OK]
websphere-liberty  WebSphere Liberty multi-architecture images ...  293   [OK]
ubuntu-upstart  DEPRECATED, as is Upstart (find other proces...  112   [OK]
) docker search --filter=stars=100  ubuntu
NAME          DESCRIPTION                           STARS  OFFICIAL  AUTOMATED
ubuntu        Ubuntu is a Debian-based Linux operating sys...  15743  [OK]
websphere-liberty  WebSphere Liberty multi-architecture images ...  293   [OK]
ubuntu-upstart  DEPRECATED, as is Upstart (find other proces...  112   [OK]
```

```
) docker pull mysql:latest
latest: Pulling from library/mysql
ab8798141d46: Pull complete
75508f0dccd7: Pull complete
b2a1f5f86172: Pull complete
5ccc774632f3: Pull complete
df7d86490565: Pull complete
32480f1416f7: Pull complete
0b89229d2472: Pull complete
229bb5ff022d: Pull complete
a972d41dd67e: Pull complete
c8283d390a92: Pull complete
ddba158ba540: Pull complete
Digest: sha256:ca114710bb35b862062fd51733a7dba1ba3e93be33e4eede442b0ce15c77b718
Status: Downloaded newer image for mysql:latest
docker.io/library/mysql:latest
) docker pull mysql:5.7
5.7: Pulling from library/mysql
2ec521688c56: Pull complete
f911f9b90db6: Pull complete
38eb4fe7ed26: Pull complete
01f772a6b25f: Pull complete
499456357ebf: Pull complete
274f3ad0dcec: Pull complete
3e6a5b12e1de: Pull complete
de0c5c82dbbc: Pull complete
c9bd281f4600: Pull complete
3289c4277a83: Pull complete
8b66f10a11fa: Pull complete
Digest: sha256:1780318bdabc0edd36907bf91b47632eb912e8ea91258eca3590f8aca6f54836
Status: Downloaded newer image for mysql:5.7
```

#NGINX WEB SERVER

```
▶ docker run -it ubuntu /bin/bash
root@9a737ccf9149:/# echo "Hello world" > file1.sh
root@9a737ccf9149:/# bash ./
root@9a737ccf9149:/# bash ./file1.sh
./file1.sh: line 1: Hello: command not found
root@9a737ccf9149:/# vi file1.sh
bash: vi: command not found
root@9a737ccf9149:/# cat file1.sh
Hello world
root@9a737ccf9149:/# echo "echo Hello" > file2.sh
root@9a737ccf9149:/# ./file2.sh
bash: ./file2.sh: Permission denied
root@9a737ccf9149:/# bash ./file2.sh
Hello
root@9a737ccf9149:/#
```

```
▶ docker run --publish 8080:80 nginx
Unable to find image 'nginx:latest' locally
Latest: Pulling from library/nginx
3f9582a2cbe7: Pull complete
9a8c6f286718: Pull complete
e81b85700bc2: Pull complete
73ae4d451120: Pull complete
6058e3569a68: Pull complete
3a1b8f201356: Pull complete
Digest: sha256:1ed4dff2b99011798f2c228667d7cb4f4e2bd76b2adc78fd881d39f923e78c9d
Status: Downloaded newer image for nginx:latest
/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.conf
10-listen-on-ipv6-by-default.sh: info: Enabled listen on IPv6 in /etc/nginx/conf.d/default.conf
/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh
/docker-entrypoint.sh: Configuration complete; ready for start up
2023/03/23 10:25:00 [notice] 1#1: using the "epoll" event method
2023/03/23 10:25:00 [notice] 1#1: nginx/1.23.3
2023/03/23 10:25:00 [notice] 1#1: built by gcc 10.2.1 20210110 (Debian 10.2.1-6)
2023/03/23 10:25:00 [notice] 1#1: OS: Linux 5.15.49-linuxkit
2023/03/23 10:25:00 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2023/03/23 10:25:00 [notice] 1#1: start worker processes
2023/03/23 10:25:00 [notice] 1#1: start worker process 29
2023/03/23 10:25:00 [notice] 1#1: start worker process 30
2023/03/23 10:25:00 [notice] 1#1: start worker process 31
```



```
) docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
9a737ccf9149 ubuntu "/bin/bash" About an hour ago Up About an hour eager_elgamal
) docker run -d --publish 8080:80 nginx
21672cccd484 nginx "/docker-entrypoint..." 4 seconds ago Up 2 seconds 0.0.0.0:8080->80/tcp clever_easley
9a737ccf9149 ubuntu "/bin/bash" 1v2spe About an hour ago Up About an hour eager_elgamal
) docker container stop 9a737ccf9149
9a737ccf9149
) docker container ls -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
21672cccd484 nginx "/docker-entrypoint..." 50 seconds ago Up 48 seconds 0.0.0.0:8080->80/tcp clever_easley
19de70f76155 nginx "/docker-entrypoint..." 34 minutes ago Apps/Exited (0) About a minute ago stupefied_murdock
9a737ccf9149 ubuntu "/bin/bash" About an hour ago Exited (137) 15 seconds ago eager_elgamal
11a79d8dd108 ubuntu "/bin/bash" About an hour ago Exited (0) About an hour ago beautiful_archimedes
) docker container rm 9a737ccf9149
9a737ccf9149
) docker container ls -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
21672cccd484 nginx "/docker-entrypoint..." About a minute ago Up About a minute 0.0.0.0:8080->80/tcp clever_easley
19de70f76155 nginx "/docker-entrypoint..." 35 minutes ago Exited (0) About a minute ago stupefied_murdock
11a79d8dd108 ubuntu "/bin/bash" About an hour ago Exited (0) About an hour ago beautiful_archimedes
) ✓ 16:30:28
```

```

❯ docker image ls
REPOSITORY TAG IMAGE ID CREATED SIZE
mysql latest 483a8bc460a9 11 hours ago 530MB
mysql 5.7 b6ee2207ee7a 39 hours ago 455MB
ubuntu latest 08d22c0ceb15 2 weeks ago 77.8MB
nginx latest 904b8cb13b93 3 weeks ago 142MB
❯ docker image rm b6ee2207ee7a
Untagged: mysql:5.7
Untagged: mysql@sha256:1780318bdabc0edd36907bf91b47632eb912e8ea91258eca3590f8aca6f54836
Deleted: sha256:b6ee2207ee7a9ed4f5c718a507fd00dace311300153b99f6830ce34741f2f093
Deleted: sha256:27c28980b28a3e0bb1d7a80d4f3136ea3eca69d5de7bb870804bb7b0dbc902e0
Deleted: sha256:583125d43a03808d201dc1181edb252b39b296df9e6a0c31898a2b82f05d3e
Deleted: sha256:8240978aeaf625ed05ab08ccce48c6dab8aa6606da9b5f2e5124a1aefb8384f2
Deleted: sha256:7296712ceedb85b33f0835b9689e119a2a3e1a389e2e80720c003b8a490f85db
Deleted: sha256:e386a9e30b80f42d40aaaad7d097601fb10e5451f1b5afc7688889bdc7fbe22e
Deleted: sha256:ea6e25d3740c73a03050e563b0ac6dae1fbdc6769f5020b2dbf43daaf01a50
Deleted: sha256:98ca74aaedf9be797f33b1bda0ac19f9612f687aa638b656cb9123f7d208d39
Deleted: sha256:64647dc09f07073512b49ecabdad92484b0dc79c4a4fb4bcbcd099006dad83
Deleted: sha256:8ac6de7063773537ae49452212d873d1bd1820aa33b00964ccfe76f34ea48efb
Deleted: sha256:1d56f73e14bdb1c2744c23cf49302eb9c1933bcb2d5ee3a2d788fbdd063664e2
Deleted: sha256:c5ea89df554093e449424b58d08a3d32a50db1231bf4f8e354df4c238767876a
❯ docker image ls
REPOSITORY TAG IMAGE ID CREATED ⚡ Run SIZE Apps Emoji Window
mysql latest 483a8bc460a9 11 hours ago 530MB
ubuntu latest 08d22c0ceb15 2 weeks ago 77.8MB
nginx latest 904b8cb13b93 3 weeks ago 142MB
❯ docker run -d -p 8080:80 nginx
ad6b4cd531fe1e2e3f8a57879d4990d8d08b87e397c0e91b16e602abf8119d46
docker: Error response from daemon: driver failed programming external connectivity on endpoint modest_gauss_76aed27b9942685d7c4ca4e3d8ed): Bind for 0.0.0.0:8080 failed: port is already allocated.
❯ docker run -d -p 8081:80 nginx
a220737ee34ae71a5f42397d62b0b7609db8b1ead870c74f3723082342d2f285

```

```

❯ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
a220737ee34a nginx "/docker-entrypoint..." 10 minutes ago Up 10 minutes 0.0.0.0:8081→80/tcp suspicious_turing
21672cccd484 nginx "/docker-entrypoint..." 45 minutes ago Up 45 minutes 0.0.0.0:8080→80/tcp clever_easley
❯ docker container top clever_easley
UID PID PPID C STIME TTY TIME CMD
root 3602 3575 0 10:59 ? 00:00:00 nginx:
master process nginx -g daemon off;
worker process 3655 3602 0 10:59 ? 00:00:00 nginx:
worker process 3656 3602 CreateDOMDocument 0 2to3 10:59 ? 00:00:00 nginx:
worker process 3657 3602 plex-desktop 0 2to3-3d 10:59 ? 00:00:00 nginx:
worker process 3658 3602 xdg-settings 0 4channels 10:59 ? 00:00:00 nginx:
worker process 3659 3602 poweroff 0 DOMCount 10:59 ? 00:00:00 nginx:
worker process 3660 3602 ranger 0 DOMP 10:59 ? 00:00:00 nginx:
worker process 3661 3602 Run 0 Apps 10:59 Window ? 00:00:00 nginx:

```

```
> docker container inspect 21672cdcd484
[
  {
    "Id": "21672cdcd484ab980ed7fac8cb2225e8a63283c967bd56c01e33526d58f26c49",
    "Created": "2023-03-23T10:59:03.950453642Z",
    "Path": "/docker-entrypoint.sh",
    "Args": [
      "nginx",
      "-g",
      "daemon off;"
    ],
    "State": {
      "Status": "running",
      "Running": true,
      "Paused": false,
      "Restarting": false,
      "OOMKilled": false,
      "Dead": false,
    }
  }
]
CONTAINER ID  NAME      CPU %     MEM USAGE / LIMIT   MEM %     NET I/O     BLOCK I/O     PIDS
21672cdcd484  clever_easley  0.00%    5.34MiB / 3.6556iB  0.14%    1.15kB / 0B    0B / 12.3kB  7
```

```
> docker container exec -it 21672cdcd484 /bin/bash
root@21672cdcd484:/#
```

```
> mkdir my-image
> cd my-image
> touch Dockerfile index.html
> ls
-> Dockerfile  index.html
```

```
[-] A ➔ 📂 ~ /Documents/sem6/ccl/my-image ➔ ⚡ main !4 ?7
```

```
| 2 FROM nginx:latest  
1 WORKDIR /usr/share/nginx/html  
3 COPY index.html index.html
```

NORMAL

Dockerfile

main + 3

Bot

```
| 1 <h1>hello World!</h1>
```

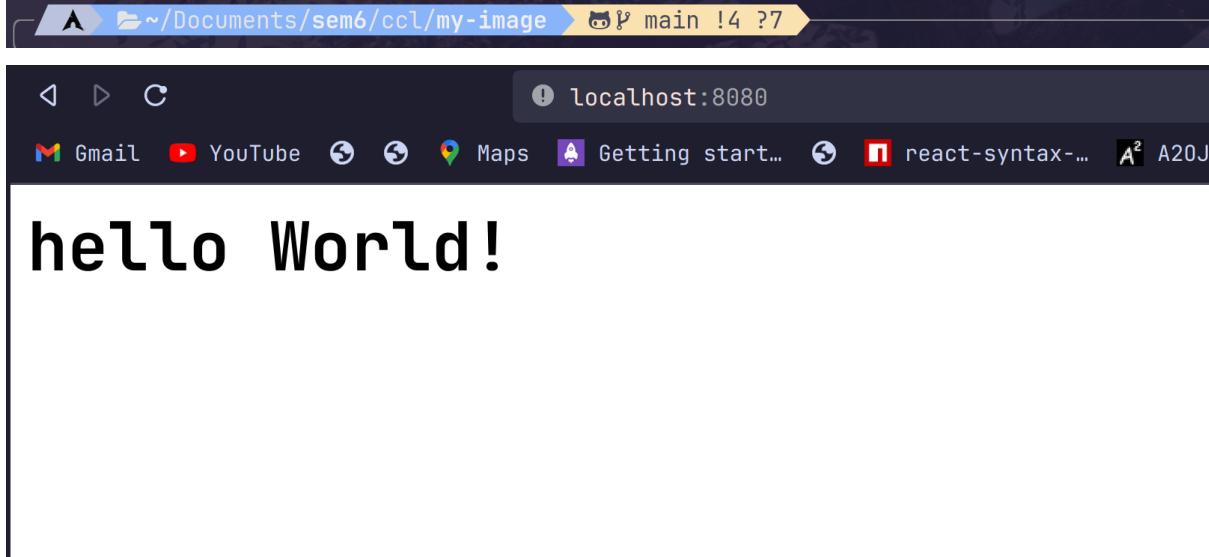
NORMAL

index.html

main + 1

LSP Bot

```
cannot connect to the Docker daemon at unix:///var/run/docker.sock: dial unix /var/run/docker.sock: connect: permission denied
) sudo systemctl restart docker
[sudo] password for piush:
) docker image build -t nginx-with-html -f Dockerfile .
DEPRECATE: The legacy builder is deprecated and will be removed in a future release.
    Install the buildx component to build images with BuildKit:
        https://docs.docker.com/go/buildx/
Sending build context to Docker daemon 3.072kB
Step 1/3 : FROM nginx:latest
--> 904b8cb13b93
Step 2/3 : WORKDIR /usr/share/nginx/html
--> Running in d899c3869866
Removing intermediate container d899c3869866
--> 2fe4af671090
Step 3/3 : COPY index.html index.html
--> 251b9f38d422
Successfully built 251b9f38d422
Successfully tagged nginx-with-html:latest
) docker run -d -p 8080:80 nginx-with-html
66aca4176eed166dde82477f33ad90092a85bc45e4cf47feba8392363bbf4c1c
```



#SQL CONTAINER IN DOCKER

```
> docker run --name piush -d -p 3306:3306 -e MYSQL_ROOT_PASSWORD=1234 mysql:latest
947af2885b45388e3d74ec4e05f722b4367685dc4a445031a66984b1123fdc39
> docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
947af2885b45 mysql:latest "docker-entrypoint.s..." 7 seconds ago Up 6 seconds 0.0.0.0:3306→3306/tcp, 33060/tcp piush
66aca4176eed nginx-with-html "/docker-entrypoint..." 13 minutes ago Up 13 minutes 0.0.0.0:8080→80/tcp pensive_albattani
> docker exec -it piush /bin/bash
bash-4.4# mysql -u root -p1234
mysql: [Warning] Using a password on the command line interface can be insecure.
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.32 MySQL Community Server - GPL

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owners.

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

mysql> 
```

```
mysql> CREATE DATABASE dummy;
Query OK, 1 row affected (0.02 sec)

mysql> SHOW DATABASE;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'DATABASE' at line 1
mysql> SHOW DATABASES;
+-----+
| Database      |
+-----+
| dummy         |
| information_schema |
| mysql          |
| performance_schema |
| sys            |
+-----+
5 rows in set (0.01 sec)
```

```
mysql> USE dummy;
Database changed
mysql> CREATE TABLE book (
    →   id INT NOT NULL AUTO_INCREMENT,
    →   title VARCHAR(255) NOT NULL,
    →   author VARCHAR(255) NOT NULL,
    →   year_published INT,
    →   PRIMARY KEY (id)
    → );
Query OK, 0 rows affected (0.08 sec)

mysql> INSERT INTO book (title, author, year_published)
    → VALUES ('To Kill a Mockingbird', 'Harper Lee', 1960),
    →          ('1984', 'George Orwell', 1949);
Query OK, 2 rows affected (0.02 sec)
Records: 2  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM book
    → ;
+----+-----+-----+-----+
| id | title           | author         | year_published |
+----+-----+-----+-----+
| 1  | To Kill a Mockingbird | Harper Lee     | 1960           |
| 2  | 1984              | George Orwell  | 1949           |
+----+-----+-----+-----+
2 rows in set (0.00 sec)
```