

# Report for Mini Project 2: Building Microservices

Jigeesha Sanjeev Jain

## Installing MongoDB:

```
jigeeshajainms@instance-1:~$ sudo apt-key adv --keyserver hkp://keyserver.ubuntu.com:80 --recv 9DA31620334BD75D9DCB49F368818C72E52529D4
Executing: /tmp/apt-key-gpghome.9jTAnMxJXK/gpg.1.sh --keyserver hkp://keyserver.ubuntu.com:80 --recv 9DA31620334BD75D9DCB49F368818C72E52529D4
gpg: key 68818C72E52529D4: public key "MongoDB 4.0 Release Signing Key <packaging@mongodb.com>" imported
gpg: Total number processed: 1
gpg:           imported: 1
jigeeshajainms@instance-1:~$ sudo add-apt-repository 'deb [arch=amd64] https://repo.mongodb.org/apt/ubuntu bionic/mongodb-org/4.0 multiverse'
Hit:1 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic InRelease
Get:2 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic-updates InRelease [88.7 kB]
Get:3 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic-backports InRelease [74.6 kB]
Ign:4 https://repo.mongodb.org/apt/ubuntu bionic/mongodb-org/4.0 InRelease
Get:5 https://repo.mongodb.org/apt/ubuntu bionic/mongodb-org/4.0 Release [2989 B]
Get:6 https://repo.mongodb.org/apt/ubuntu bionic/mongodb-org/4.0 Release.gpg [801 B]
Get:7 https://us-central1.gce.archive.ubuntu.com/ubuntu bionic/universe amd64 Packages [8570 kB]
Get:8 http://security.ubuntu.com/ubuntu bionic-security InRelease [88.7 kB]
Get:9 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic/universe Translation-en [4941 kB]
Get:10 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic/multiverse amd64 Packages [151 kB]
Get:11 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic/multiverse Translation-en [108 kB]
Get:12 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic-updates/main amd64 Packages [2543 kB]
Get:13 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic-updates/main Translation-en [476 kB]
Get:14 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic-updates/restricted amd64 Packages [733 kB]
Get:15 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic-updates/restricted Translation-en [101 kB]
Get:16 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 Packages [1806 kB]
Get:17 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic-updates/universe Translation-en [391 kB]
Get:18 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic-updates/multiverse amd64 Packages [24.8 kB]
Get:19 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic-updates/multiverse Translation-en [6012 B]
Get:20 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic-backports/main amd64 Packages [10.8 kB]
Get:21 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic-backports/main Translation-en [5016 B]
Get:22 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic-backports/universe amd64 Packages [11.6 kB]
Get:23 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic-backports/universe Translation-en [5864 B]
Get:24 https://repo.mongodb.org/apt/ubuntu bionic/mongodb-org/4.0/multiverse amd64 Packages [18.4 kB]
Get:25 http://security.ubuntu.com/ubuntu bionic-security/main amd64 Packages [2173 kB]
Get:26 http://security.ubuntu.com/ubuntu bionic-security/main Translation-en [381 kB]
Get:27 http://security.ubuntu.com/ubuntu bionic-security/restricted amd64 Packages [690 kB]
Get:28 http://security.ubuntu.com/ubuntu bionic-security/restricted Translation-en [94.1 kB]
Get:29 http://security.ubuntu.com/ubuntu bionic-security/universe amd64 Packages [1188 kB]
Get:30 http://security.ubuntu.com/ubuntu bionic-security/universe Translation-en [273 kB]
Get:31 http://security.ubuntu.com/ubuntu bionic-security/multiverse amd64 Packages [17.6 kB]
Get:32 http://security.ubuntu.com/ubuntu bionic-security/multiverse Translation-en [3660 B]
Fetched 25.0 MB in 5s (4899 kB/s)
Reading package lists... Done
```

Sudo MKdir

```

done.
Setting up mongodb-org (4.0.28) ...
Processing triggers for man-db (2.8.3-2ubuntu0.1) ...
ligersha@laimms:~/instance-1:$ sudo mkdir /data
ligersha@laimms:~/instance-1:$ sudo mkdir /data/db
ligersha@laimms:~/instance-1:$ sudo mongod --bind_ip=0.0.0.0
2022-04-19T19:35:40.177+0000 I CONTROL [main] Automatically disabling TLS 1.0, to force-enable TLS 1.0 specify --sslDisabledProtocols 'none'
2022-04-19T19:35:40.194+0000 I CONTROL [initandlisten] MongoDB starting : pid=3989 port=27017 dbpath=/data/db 64-bit host=instance-1
2022-04-19T19:35:40.194+0000 I CONTROL [initandlisten] db version v4.0.28
2022-04-19T19:35:40.194+0000 I CONTROL [initandlisten] git version: af1ddc1adcfca83cc19571cb3faba26eeddac92
2022-04-19T19:35:40.194+0000 I CONTROL [initandlisten] OpenSSL version: OpenSSL 1.1.1 11 Sep 2018
2022-04-19T19:35:40.194+0000 I CONTROL [initandlisten] allocator: tcmalloc
2022-04-19T19:35:40.194+0000 I CONTROL [initandlisten] modules: none
2022-04-19T19:35:40.194+0000 I CONTROL [initandlisten] build environment:
2022-04-19T19:35:40.194+0000 I CONTROL [initandlisten] distmod: ubuntu1804
2022-04-19T19:35:40.194+0000 I CONTROL [initandlisten] distarch: x86_64
2022-04-19T19:35:40.194+0000 I CONTROL [initandlisten] target_arch: x86_64
2022-04-19T19:35:40.195+0000 I CONTROL [initandlisten] options: { net: { bindIp: "0.0.0.0" } }
2022-04-19T19:35:40.200+0000 I STORAGE [initandlisten]
2022-04-19T19:35:40.200+0000 I STORAGE [initandlisten] ** WARNING: Using the XFS filesystem is strongly recommended with the WiredTiger storage engine
2022-04-19T19:35:40.200+0000 I STORAGE [initandlisten] See http://dochub.mongodb.org/core/prodnotes-filesystem
2022-04-19T19:35:40.200+0000 I STORAGE [initandlisten] wiredtiger_open config: create,cache_size=1452M,cache_overflow=(file_max=0M),session_max=20000,eviction=(threads_min=4,threads_max=4096),statistics_log=(enabled,interval=100000),statistics_log_file=(log,enabled=true,path=journal),compressor=snappy,file_manager=(close_idle_time=100000),statistics_log=(wait=0),verbose=(recovery_progress),
2022-04-19T19:35:40.200+0000 I STORAGE [initandlisten] log=(enabled,old=true,archive=true,path=journal,compressor=snappy),file_manager=(close_idle_time=100000),statistics_log=(wait=0),verbose=(recovery_progress),
2022-04-19T19:35:40.200+0000 I RECOVERY [initandlisten] WiredTiger message [1650396940:879607](3989:0xf0093adc40), txn-recover: Set global recovery timestamp: 0
2022-04-19T19:35:40.200+0000 I STORAGE [initandlisten] Starting to check the table logging settings for existing WiredTiger tables
2022-04-19T19:35:40.200+0000 I CONTROL [initandlisten]
2022-04-19T19:35:40.200+0000 I CONTROL [initandlisten] ** WARNING: Access control is not enabled for the database.
2022-04-19T19:35:40.200+0000 I CONTROL [initandlisten] ** WARNING: Read and write access to data and configuration is unrestricted.
2022-04-19T19:35:40.200+0000 I CONTROL [initandlisten] ** WARNING: You are running this process as the root user, which is not recommended.
2022-04-19T19:35:40.200+0000 I CONTROL [initandlisten]
2022-04-19T19:35:40.200+0000 I STORAGE [initandlisten] createCollection: admin.system.version with provided UUID: c6a323e7-3cc5-4d33-a75f-44f6c87622da
2022-04-19T19:35:40.200+0000 I COMMAND [initandlisten] setting featureCompatibilityVersion to 4.0
2022-04-19T19:35:40.200+0000 I STORAGE [initandlisten] Finished adjusting the table logging settings for existing WiredTiger tables
2022-04-19T19:35:40.200+0000 I STORAGE [initandlisten] createCollection: local.startup_log with generated UUID: 763ff9eb-ea64-45cf-a846-edbedd0b3ae8
2022-04-19T19:35:40.200+0000 I FTDC [initandlisten] Initializing full-time diagnostic data capture with directory '/data/db/diagnostic.data'
2022-04-19T19:35:40.200+0000 I NETWORK [initandlisten] waiting for connections on port 27017
2022-04-19T19:35:40.200+0000 I CONTROL [LogicalSessionCacheReap] Sessions collection is not set up; waiting until next sessions reap interval: config.system.sessions does not exist
2022-04-19T19:35:41.026+0000 I STORAGE [LogicalSessionCacheRefresh] createCollection: config.system.sessions with generated UUID: 56775203-1170-4ff3-9ab3-28bc485a0bd7
2022-04-19T19:35:41.026+0000 I INDEX [LogicalSessionCacheRefresh] build index on: config.system.sessions properties: { v: 2, key: { lastUse: 1 }, name: "lsidTTLIndex", ns: "config.sys" }
"maxExpireAfterSeconds": 1800
2022-04-19T19:35:41.027+0000 I INDEX [LogicalSessionCacheRefresh] building index using bulk method; build may temporarily use up to 500 megabytes of RAM
2022-04-19T19:35:41.028+0000 I INDEX [LogicalSessionCacheRefresh] build index done. scanned 0 total records. 0 secs

```

```

libnmmar
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
  mongodb-org-mongos mongodb-org-server mongodb-org-shell mongodb-org-tools
The following NEW packages will be installed:
  mongodb-org-mongod mongodb-org-mongos mongodb-org-server mongodb-org-shell mongodb-org-tools
0 upgraded, 5 newly installed, 0 to remove and 14 not upgraded.
Need to get 73.8 MB of archives.
After this operation, 269 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 https://repo.mongodb.org/apt/ubuntu bionic/mongodb-org/4.0/multiverse amd64 mongodb-org-shell amd64 4.0.28 [9970 kB]
Get:2 https://repo.mongodb.org/apt/ubuntu bionic/mongodb-org/4.0/multiverse amd64 mongodb-org-server amd64 4.0.28 [16.1 kB]
Get:3 https://repo.mongodb.org/apt/ubuntu bionic/mongodb-org/4.0/multiverse amd64 mongodb-org-mongos amd64 4.0.28 [9177 kB]
Get:4 https://repo.mongodb.org/apt/ubuntu bionic/mongodb-org/4.0/multiverse amd64 mongodb-org-tools amd64 4.0.28 [38.5 kB]
Get:5 https://repo.mongodb.org/apt/ubuntu bionic/mongodb-org/4.0/multiverse amd64 mongodb-org amd64 4.0.28 [3524 B]
Fetched 73.8 MB in 1s (52.2 MB/s)
Selecting previously unselected package mongodb-org-shell.
(Reading database ... 65722 files and directories currently installed.)
Preparing to unpack .../mongodb-org-shell_4.0.28_amd64.deb ...
Unpacking mongodb-org-shell (4.0.28) ...
Selecting previously unselected package mongodb-org-server.
Preparing to unpack .../mongodb-org-server_4.0.28_amd64.deb ...
Unpacking mongodb-org-server (4.0.28) ...
Selecting previously unselected package mongodb-org-mongos.
Preparing to unpack .../mongodb-org-mongos_4.0.28_amd64.deb ...
Unpacking mongodb-org-mongos (4.0.28) ...
Selecting previously unselected package mongodb-org-tools.
Preparing to unpack .../mongodb-org-tools_4.0.28_amd64.deb ...
Unpacking mongodb-org-tools (4.0.28) ...
Selecting previously unselected package mongodb-org.
Preparing to unpack .../mongodb-org_4.0.28_amd64.deb ...
Unpacking mongodb-org (4.0.28) ...
Setting up mongodb-org-shell (4.0.28) ...
Setting up mongodb-org-mongos (4.0.28) ...
Setting up mongodb-org-tools (4.0.28) ...
Setting up mongodb-org-server (4.0.28) ...
Adding system user `mongodb` (UID 112) ...
Adding new user `mongodb` (UID 112) with group `nogroup` ...
Not creating home directory `/home/mongodb'.
Adding group `mongodb` (GID 116) ...
Done.
Adding user `mongodb` to group `mongodb` ...
Adding user mongodb to group mongodb

```

```
jigeesha@instance-1:~$ sudo mongod --bind_ip=0.0.0.0
2022-04-20T16:02:07.977+0000 I CONTROL [main] Automatically disabling TLS 1.0, to force-enable TLS 1.0 specify --sslDisabledProtocols 'none'
2022-04-20T16:02:07.986+0000 I CONTROL [initandlisten] MongoDB starting : pid=13691 port=27017 dbpath=/data/db 64-bit host=instance-1
2022-04-20T16:02:07.987+0000 I CONTROL [initandlisten] db version v4.0.28
2022-04-20T16:02:07.987+0000 I CONTROL [initandlisten] git version: af1a9dc12adcf832cc19571cb3faba26eeddac92
2022-04-20T16:02:07.987+0000 I CONTROL [initandlisten] OpenSSL version: OpenSSL 1.1.1  11 Sep 2018
2022-04-20T16:02:07.987+0000 I CONTROL [initandlisten] allocator: tcmalloc
2022-04-20T16:02:07.987+0000 I CONTROL [initandlisten] modules: none
2022-04-20T16:02:07.987+0000 I CONTROL [initandlisten] build environment:
2022-04-20T16:02:07.987+0000 I CONTROL [initandlisten]   distmod: ubuntu1804
2022-04-20T16:02:07.987+0000 I CONTROL [initandlisten]   distarch: x86_64
2022-04-20T16:02:07.987+0000 I CONTROL [initandlisten]   target arch: x86_64
2022-04-20T16:02:07.987+0000 I CONTROL [initandlisten] options: { net: { bindip: "0.0.0.0" } }
2022-04-20T16:02:07.993+0000 I STORAGE [initandlisten] Detected data files in /data/db created by the 'wiredTiger' storage engine, so setting the active storage engine to 'wiredTiger'.
2022-04-20T16:02:07.993+0000 I STORAGE [initandlisten]
2022-04-20T16:02:07.993+0000 I STORAGE [initandlisten] ** WARNING: Using the XFS filesystem is strongly recommended with the WiredTiger storage engine
2022-04-20T16:02:07.993+0000 I STORAGE [initandlisten] See http://dochub.mongodb.org/core/prodnotes-filesystem
2022-04-20T16:02:07.993+0000 I STORAGE [initandlisten] wiredtiger_open config: create,cache_size=1452M,cache_overflow(file_max=0M),session_max=20000,eviction=(threads_min=4,threads_max=4),config_base=false,statistics=(fast),log=(enabled=true,archive=true,path=journal,compressor=snappy),file_manager=(close idle time=100000),statistics_log=(wait=0),verbose=(recovery_progress),
2022-04-20T16:02:08.800+0000 I STORAGE [initandlisten] WiredTiger message [13691:0x7f74a59a6a40], tnx-recover: Main recovery loop: starting at 1/25472 to 2/256
2022-04-20T16:02:08.898+0000 I STORAGE [initandlisten] WiredTiger message [1650470528:899634] [13691:0x7f74a59a6a40], tnx-recover: Recovering log 1 through 2
2022-04-20T16:02:08.899+0000 I STORAGE [initandlisten] WiredTiger message [1650470528:959138] [13691:0x7f74a59a6a40], tnx-recover: Recovering log 2 through 2
2022-04-20T16:02:09.000+0000 I STORAGE [initandlisten] WiredTiger message [1650470529:6549] [13691:0x7f74a59a6a40], tnx-recover: Set global recovery timestamp: 0
2022-04-20T16:02:09.000+0000 I REINDEX [initandlisten] Starting to check the table logging settings for existing WiredTiger tables
2022-04-20T16:02:09.028+0000 I CONTROL [initandlisten] ** WARNING: Access control is not enabled for the database.
2022-04-20T16:02:09.028+0000 I CONTROL [initandlisten]   ** Read and write access to data and configuration is unrestricted.
2022-04-20T16:02:09.028+0000 I CONTROL [initandlisten] ** WARNING: You are running this process as the root user, which is not recommended.
2022-04-20T16:02:09.028+0000 I CONTROL [initandlisten]
2022-04-20T16:02:09.042+0000 I STORAGE [initandlisten] Finished adjusting the table logging settings for existing WiredTiger tables
2022-04-20T16:02:09.045+0000 I FTDC [initandlisten] Initializing full-time diagnostic data capture with directory '/data/db/diagnostic.data'
2022-04-20T16:02:09.050+0000 I NETWORK [initandlisten] waiting for connections on port 27017
```

```
jigeesha@jainms@instance-1:~$ mongo --eval 'db.runCommand({ connectionStatus: 1 })'
MongoDB shell version v4.0.28
connecting to: mongodb://127.0.0.1:27017/?gssapiServiceName=mongodb
Implicit session: session { "id" : UUID("5a3c2a00-b224-46d0-9420-4cf130baa023") }
MongoDB server version: 4.0.28
{
    "authInfo" : {
        "authenticatedUsers" : [ ],
        "authenticatedUserRoles" : [ ]
    },
    "ok" : 1
}
jigeesha@jainms@instance-1:~$
```

```
jigeesha@jainms@instance-1:~$ mongo
MongoDB shell version v4.0.28
connecting to: mongodb://127.0.0.1:27017/?gssapiServiceName=mongodb
Implicit session: session { "id" : UUID("38392226-f30-4a01-a748-a77a71e2829b") }
MongoDB server version: 4.0.28
Welcome to the MongoDB shell.
For interactive help, type "help".
For more comprehensive documentation, see
    http://docs.mongodb.org/
Questions? Try the support group
    http://groups.google.com/group/mongodb-user
Server has startup warnings:
2022-04-19T19:35:40.200+0000 I STORAGE [initandlisten]
2022-04-19T19:35:40.200+0000 I STORAGE [initandlisten] ** WARNING: Using the XFS filesystem is strongly recommended with the WiredTiger storage engine
2022-04-19T19:35:40.919+0000 I CONTROL [initandlisten] **           See http://dochub.mongodb.org/core/prodnotes-filesystem
2022-04-19T19:35:40.919+0000 I CONTROL [initandlisten] ** WARNING: Access control is not enabled for the database.
2022-04-19T19:35:40.919+0000 I CONTROL [initandlisten]   ** Read and write access to data and configuration is unrestricted.
2022-04-19T19:35:40.919+0000 I CONTROL [initandlisten] ** WARNING: You are running this process as the root user, which is not recommended.
2022-04-19T19:35:40.919+0000 I CONTROL [initandlisten]
---
Enable MongoDB's free cloud-based monitoring service, which will then receive and display
metrics about your deployment (disk utilization, CPU, operation statistics, etc).

The monitoring data will be available on a MongoDB website with a unique URL accessible to you
and anyone you share the URL with. MongoDB may use this information to make product
improvements and to suggest MongoDB products and deployment options to you.

To enable free monitoring, run the following command: db.enableFreeMonitoring()
To permanently disable this reminder, run the following command: db.disableFreeMonitoring()
---
```

## Task: 4.2 Web Server Installation:

```
jigeesha:jainms@instance-1:~/myproject$ python3 -m venv venv
The virtual environment was not created successfully because ensurepip is not
available. On Debian/Ubuntu systems, you need to install the python3-venv
package using the following command.

    apt-get install python3-venv

You may need to use sudo with that command. After installing the python3-venv
package, recreate your virtual environment.

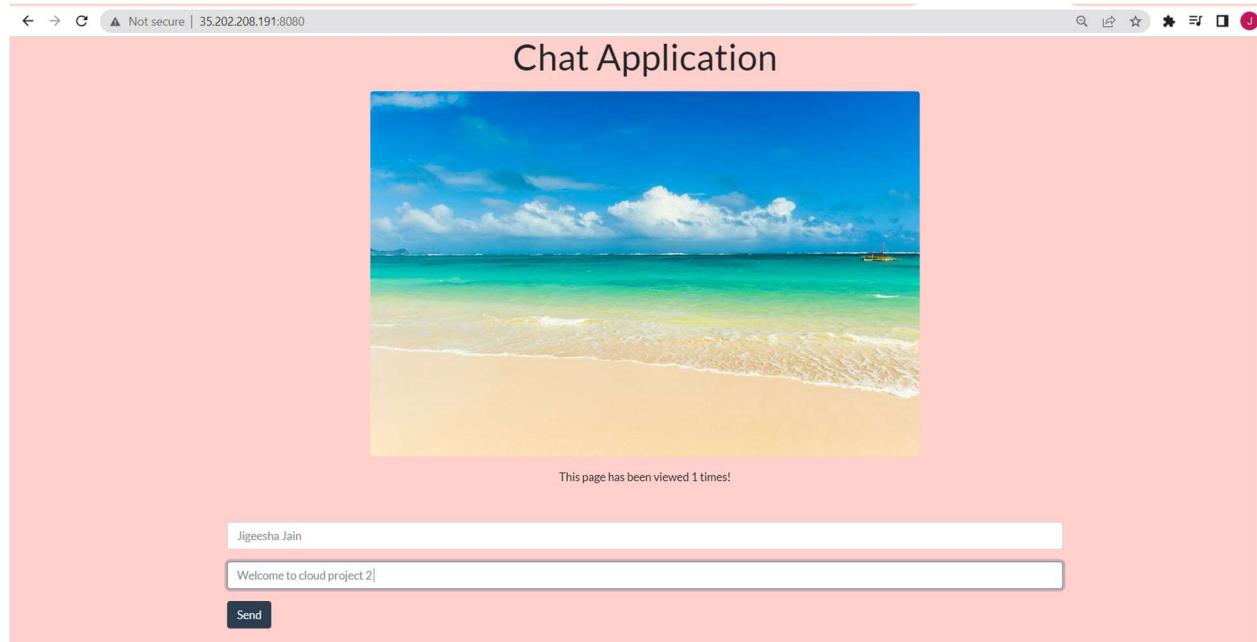
Failing command: ['/home/jigeesha:jainms/myproject/venv/bin/python3', '-Im', 'ensurepip', '--upgrade', '--default-pip']

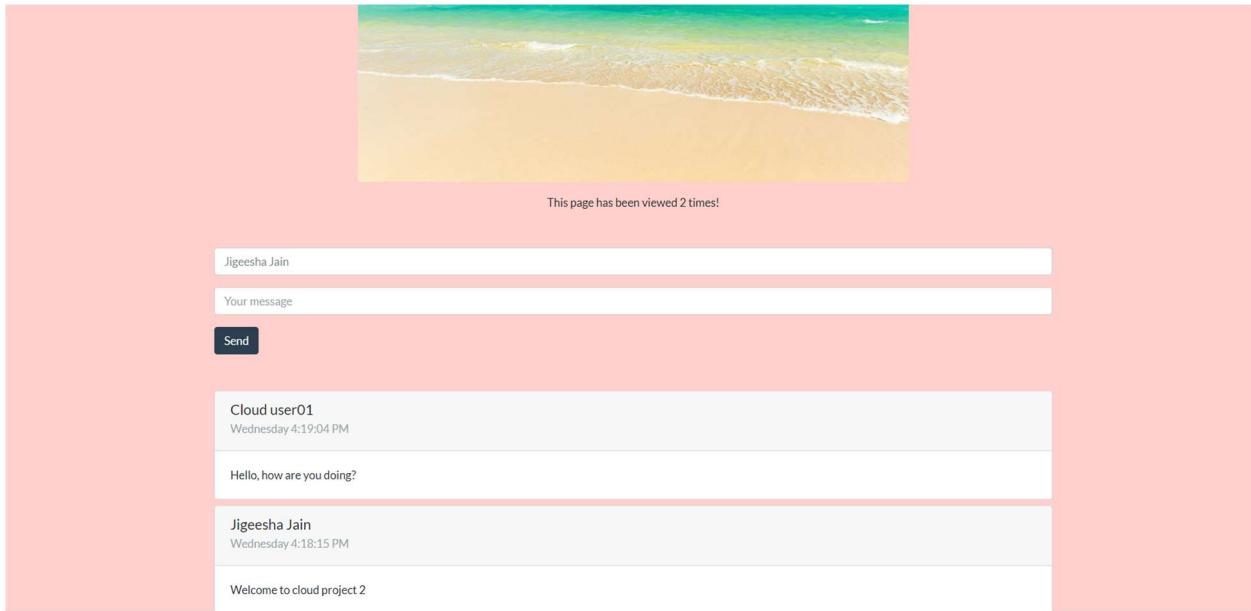
jigeesha:jainms@instance-1:~/myproject$ sudo apt-get install python3-venv
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following package was automatically installed and is no longer required:
  libnuma1
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
  python-pip-whl python3-distutils python3-lib2to3 python3.6-venv
The following NEW packages will be installed:
  python-pip-whl python3-distutils python3-lib2to3 python3-venv python3.6-venv
0 upgraded, 5 newly installed, 0 to remove and 14 not upgraded.
Need to get 1882 kB of archives.
After this operation, 5044 kB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 python-pip-whl all 9.0.1-2.3~ubuntul.18.04.5 [1653 kB]
Get:2 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic-updates/main amd64 python3-lib2to3 all 3.6.9-1~18.04 [77.4 kB]
Get:3 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic-updates/main amd64 python3-distutils all 3.6.9-1~18.04 [144 kB]
Get:4 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 python3.6-venv amd64 3.6.9-1~18.04ubuntul.7 [6184 B]
Get:5 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 python3-venv amd64 3.6.7-1~18.04 [1208 B]
Fetched 1882 kB in 0s (7947 kB/s)
Selecting previously unselected package python-pip-whl.
(Reading database ... 65771 files and directories currently installed.)
Preparing to unpack .../python-pip-whl_9.0.1-2.3~ubuntul.18.04.5_all.deb ...
Unpacking python-pip-whl (9.0.1-2.3~ubuntul.18.04.5) ...
Selecting previously unselected package python3-lib2to3.
Preparing to unpack .../python3-lib2to3_3.6.9-1~18.04_all.deb ...
Unpacking python3-lib2to3 (3.6.9-1~18.04) ...
Selecting previously unselected package python3-distutils.
Preparing to unpack .../python3-distutils_3.6.9-1~18.04_all.deb ...
Unpacking python3-distutils (3.6.9-1~18.04) ...
Selecting previously unselected package python3.6-venv.
Preparing to unpack .../python3.6-venv_3.6.9-1~18.04ubuntul.7_amd64.deb
```

```
jigeesha:jainms@instance-1:~/miniproject2$ pip3 install -r requirements.txt
Collecting better-profanity==0.5.0 (from -r requirements.txt (line 1))
  Using cached https://files.pythonhosted.org/packages/df/b7/257ebae47c5abefaa358b41a100a01f894abdd6cef9f0110365fff
246f73/better_profanity-0.5.0-py3-none-any.whl
Collecting Click==7.0 (from -r requirements.txt (line 2))
  Using cached https://files.pythonhosted.org/packages/fa/37/45185cb5abbc30d7257104c434fe0b07e5a195a6847506c074527a
a599ec/Click-7.0-py2.py3-none-any.whl
Collecting dnspython==1.16.0 (from -r requirements.txt (line 3))
  Using cached https://files.pythonhosted.org/packages/ec/d3/3aa0e7213ef72b8585747aa0e271a9523e713813b9a20177ebe1e9
39deb0/dnspython-1.16.0-py2.py3-none-any.whl
Collecting eventlet==0.31.0 (from -r requirements.txt (line 4))
  Using cached https://files.pythonhosted.org/packages/2f/75/c9c27956f0fb9c40b18bc686227e6df64a40484b78cc7f62fee9a7
203ecf/eventlet-0.31.0-py2.py3-none-any.whl
Collecting Flask==1.1.1 (from -r requirements.txt (line 5))
  Using cached https://files.pythonhosted.org/packages/9b/93/628509b8d5dc749656a9641f4caf13540e2cdec85276964ff8f43b
bb1d3b/Flask-1.1.1-py2.py3-none-any.whl
Collecting Flask-SocketIO==4.2.1 (from -r requirements.txt (line 6))
  Using cached https://files.pythonhosted.org/packages/66/44/edc4715af85671b943c18ac8345d0207972284a0cd630126ff5251
faa08b/Flask_SocketIO-4.2.1-py2.py3-none-any.whl
Collecting Flask-SQLAlchemy==2.4.1 (from -r requirements.txt (line 7))
  Using cached https://files.pythonhosted.org/packages/1e/65/226d95466c75e34e291a76890ed0e27af2e46ab913002847856f11
d4d59d/Flask_SQLAlchemy-2.4.1-py2.py3-none-any.whl
Collecting Flask-WTF==0.14.2 (from -r requirements.txt (line 8))
  Using cached https://files.pythonhosted.org/packages/60/3a/58c629472d10539ae5167dc7c1fecfa95dd7d0b7864623931e3776
438a24/Flask_WTF-0.14.2-py2.py3-none-any.whl
Collecting greenlet==0.4.15 (from -r requirements.txt (line 9))
  Using cached https://files.pythonhosted.org/packages/bf/45/142141aa47e01a5779f0fa5a53b81f8379ce8f2b1cd13df7d2f1d7
51ae42/greenlet-0.4.15-cp36-cp36m-manylinux1_x86_64.whl
Collecting itsdangerous==1.1.0 (from -r requirements.txt (line 10))
  Using cached https://files.pythonhosted.org/packages/76/ae/44b03b253d6fadef317f32c24d100b3b35c2239807046a4c953c7b8
9fa49e/itsdangerous-1.1.0-py2.py3-none-any.whl
Collecting Jinja2==2.11.3 (from -r requirements.txt (line 11))
  Using cached https://files.pythonhosted.org/packages/7e/c2/1eece8c95ddbc9b1aeb64f5783a9e07a286de42191b7204d67b749
6ddf35/Jinja2-2.11.3-py2.py3-none-any.whl
Collecting MarkupSafe==1.1.1 (from -r requirements.txt (line 12))
  Using cached https://files.pythonhosted.org/packages/b2/5f/23e0023be6bb885d00ffbefad2942bc51a620328ee910f64abe5a8
d18dd1/MarkupSafe-1.1.1-cp36-cp36m-manylinux1_x86_64.whl
Collecting monotonic==1.5 (from -r requirements.txt (line 13))
  Using cached https://files.pythonhosted.org/packages/ac/aa/063eca6a416f397bd99552c534c6d11d57f58f2e94c14780f3bbf8
18c4cf/monotonic-1.5-py2.py3-none-any.whl
Collecting python-engineio==3.10.0 (from -r requirements.txt (line 14))
  Using cached https://files.pythonhosted.org/packages/9b/fb/843f043988306d12f27ae62a82ce26edc7513580e5e089b4911326
879f7e/python_engineio-3.10.0-py2.py3-none-any.whl
Collecting python-socketio==4.4.0 (from -r requirements.txt (line 15))
  Using cached https://files.pythonhosted.org/packages/11/e0/71c90fbfc534108d0869ff5f92c16e4bc9b1347439b9022e815c03
ff4193/python_socketio-4.4.0-py2.py3-none-any.whl
Collecting six==1.13.0 (from -r requirements.txt (line 16))
```

```
Successfully installed Click-7.0 Flask-1.1.1 Flask-SQLAlchemy-2.4.1 Flask-SocketIO-4.2.1 Flask-WTF-0.14.2 Jinja2-2.11.3 MarkupSafe-1.1.1 SQLAlchemy-1.3.11 WTForms-2.2.1 Werkzeug-0.16.0 better-profanity-0.5.0 dnspython-1.16.0 eventlet-0.31.0 flask-mongoengine-1.0.0 greenlet-0.4.15 itsdangerous-1.1.0 mongoengine-0.24.1 monotonic-1.5 pymongo-4.1.1 python-engineio-3.10.0 python-socketio-4.4.0 six-1.13.0
jigeesha@jainsms:~/miniproject2$ python3 run.py
 * Restarting with stat
 * Debugger is active!
 * Debugger PIN: 193-600-508
(14287) wsgi starting up on http://0.0.0.0:8080
```

```
jigeesha@jainsms:~/miniproject2$ python3 run.py
 * Restarting with stat
 * Debugger is active!
 * Debugger PIN: 193-600-508
(14287) wsgi starting up on http://0.0.0.0:8080
(14287) accepted ('145.47.235.70', 49717)
(14287) accepted ('145.47.235.70', 49718)
45.47.235.70 - - [20/Apr/2022 16:17:09] "GET / HTTP/1.1" 200 1553 0.011361
45.47.235.70 - - [20/Apr/2022 16:17:09] "GET /static/js/socket.io.min.js HTTP/1.1" 200 69660 0.001014
(14287) accepted ('145.47.235.70', 49724)
(14287) accepted ('145.47.235.70', 49723)
(14287) accepted ('145.47.235.70', 49725)
(14287) accepted ('145.47.235.70', 49722)
45.47.235.70 - - [20/Apr/2022 16:17:09] "GET /static/js/bootstrap.min.js HTTP/1.1" 200 60358 0.001252
45.47.235.70 - - [20/Apr/2022 16:17:09] "GET /static/js/jquery-3.4.1.slim.min.js HTTP/1.1" 200 71383 0.000957
45.47.235.70 - - [20/Apr/2022 16:17:09] "GET /static/js/popper.min.js HTTP/1.1" 200 21603 0.000759
45.47.235.70 - - [20/Apr/2022 16:17:09] "GET /static/js/webchat.js HTTP/1.1" 200 2066 0.000719
45.47.235.70 - - [20/Apr/2022 16:17:09] "GET /static/css/bootstrap.min.css HTTP/1.1" 200 184465 0.095859
45.47.235.70 - - [20/Apr/2022 16:17:09] "GET /static/media/default.jpg HTTP/1.1" 200 45129 0.001105
45.47.235.70 - - [20/Apr/2022 16:17:10] "GET /socket.io/?EIO=3&transport=polling&t=017msw3 HTTP/1.1" 200 349 0.000740
45.47.235.70 - - [20/Apr/2022 16:17:10] "GET /favicon.ico HTTP/1.1" 404 365 0.000906
45.47.235.70 - - [20/Apr/2022 16:17:10] "POST /socket.io/?EIO=3&transport=polling&t=017msx2asid=36cd57c2d04153a1275c6822128552 HTTP/1.1" 200 224 0.003750
(14287) accepted ('145.47.235.70', 49726)
(14287) accepted ('145.47.235.70', 49763)
(14287) accepted ('145.47.235.70', 49762)
45.47.235.70 - - [20/Apr/2022 16:17:10] "GET /socket.io/?EIO=3&transport=polling&t=017msx3asid=36cd6d57c2d04153a1275c6822128552 HTTP/1.1" 200 225 0.004528
45.47.235.70 - - [20/Apr/2022 16:17:10] "GET /socket.io/?EIO=3&transport=polling&t=017msxv&sid=36cd6d57c2d04153a1275c6822128552 HTTP/1.1" 200 183 0.037373
(14287) accepted ('145.47.235.70', 49764)
(14287) accepted ('145.47.235.70', 49765)
(14287) accepted ('145.47.235.70', 49766)
45.47.235.70 - - [20/Apr/2022 16:18:38] "GET /static/js/popper.min.js HTTP/1.1" 200 21603 0.001141
45.47.235.70 - - [20/Apr/2022 16:18:38] "GET /static/js/bootstrap.min.js HTTP/1.1" 200 60358 0.000988
45.47.235.70 - - [20/Apr/2022 16:18:38] "GET /static/js/jquery-3.4.1.slim.min.js HTTP/1.1" 200 71383 0.000832
45.47.235.70 - - [20/Apr/2022 16:18:38] "GET /static/js/webchat.js HTTP/1.1" 200 2066 0.000732
45.47.235.70 - - [20/Apr/2022 16:18:38] "GET /static/css/bootstrap.min.css HTTP/1.1" 200 184465 0.088526
45.47.235.70 - - [20/Apr/2022 16:18:38] "GET /static/media/default.jpg HTTP/1.1" 200 45129 0.001081
45.47.235.70 - - [20/Apr/2022 16:18:39] "GET /socket.io/?EIO=3&transport=polling&t=017nch8 HTTP/1.1" 200 349 0.000453
45.47.235.70 - - [20/Apr/2022 16:18:39] "POST /socket.io/?EIO=3&transport=polling&t=017nChysid=3c20a76318c7460d9b707921baef48ee HTTP/1.1" 200 224 0.003639
45.47.235.70 - - [20/Apr/2022 16:18:39] "GET /socket.io/?EIO=3&transport=polling&t=017nChy..0&sid=3c20a76318c7460d9b707921baef48ee HTTP/1.1" 200 225 0.000159
(14287) accepted ('145.47.235.70', 49771)
45.47.235.70 - - [20/Apr/2022 16:18:39] "GET /favicon.ico HTTP/1.1" 404 365 0.000758
45.47.235.70 - - [20/Apr/2022 16:18:39] "GET /socket.io/?EIO=3&transport=polling&t=017nCil&sid=3c20a76318c7460d9b707921baef48ee HTTP/1.1" 200 183 0.038719
```





## 5 Task 2: Containerization

Installing docker :

- `FROM` creates a layer from the `ubuntu:18.04` Docker image.
- `COPY` adds files from your Docker client's current directory.
- `RUN` builds your application with `make`.
- `CMD` specifies what command to run within the container.

```

--2>> This operation will use 10 MB of additional disk space.
Do you want to continue? [y/n] Y
Get:1 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic/universe amd64 pigz amd64 2.4-1 [57.4 kB]
Get:2 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic/main amd64 bridge-utils amd64 1.5-15ubuntul [30.1 kB]
Get:3 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 runc amd64 1.0.1-0ubuntu2~18.0
4.1 [4155 kB]
Get:4 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 containerd amd64 1.5.5-0ubuntu
3~18.04.2 [33.0 MB]
Get:5 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 docker.io amd64 20.10.7-0ubunt
u5~18.04.3 [36.9 MB]
Get:6 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic/main amd64 ubuntu-fan all 0.12.10 [34.7 kB]
Fetched 74.2 MB in 2s (36.3 MB/s)
Preconfiguring packages ...
Selecting previously unselected package pigz.
(Reading database ... 107944 files and directories currently installed.)
Preparing to unpack .../0-pigz_2.4-1_amd64.deb ...
Unpacking pigz (2.4-1) ...
Selecting previously unselected package bridge-utils.
Preparing to unpack .../1-bridge-utils_1.5-15ubuntul_amd64.deb ...
Unpacking bridge-utils (1.5-15ubuntul) ...
Selecting previously unselected package runc.
Preparing to unpack .../2-runc_1.0.1-0ubuntu2~18.04.1_amd64.deb ...
Unpacking runc (1.0.1-0ubuntu2~18.04.1) ...
Selecting previously unselected package containerd.
Preparing to unpack .../3-containerd_1.5.5-0ubuntu3~18.04.2_amd64.deb ...
Unpacking containerd (1.5.5-0ubuntu3~18.04.2) ...
Selecting previously unselected package docker.io.
Preparing to unpack .../4-docker.io_20.10.7-0ubuntu5~18.04.3_amd64.deb ...
Unpacking docker.io (20.10.7-0ubuntu5~18.04.3) ...
Selecting previously unselected package ubuntu-fan.
Preparing to unpack .../5-ubuntu-fan_0.12.10_all.deb ...
Unpacking ubuntu-fan (0.12.10) ...
Setting up runc (1.0.1-0ubuntu2~18.04.1) ...
Setting up containerd (1.5.5-0ubuntu3~18.04.2) ...
Created symlink /etc/systemd/system/multi-user.target.wants/containerd.service → /lib/systemd/system/containerd.service.
Setting up bridge-utils (1.5-15ubuntul) ...
Setting up ubuntu-fan (0.12.10) ...
Created symlink /etc/systemd/system/multi-user.target.wants/ubuntu-fan.service → /lib/systemd/system/ubuntu-fan.service.
Setting up pigz (2.4-1) ...
Setting up docker.io (20.10.7-0ubuntu5~18.04.3) ...
Adding group 'docker' (GID 117) ...
Done.
Created symlink /etc/systemd/system/multi-user.target.wants/docker.service → /lib/systemd/system/docker.service.
Created symlink /etc/systemd/system/sockets.target.wants/docker.socket → /lib/systemd/system/docker.socket.
Processing triggers for systemd (237-3ubuntul0.53) ...
Processing triggers for man-db (2.8.3-2ubuntu0.1) ...
Processing triggers for ureadahead (0.100.0-21) ...

```

```

jigeeshajainms@instance-1:~$ git clone https://github.com/huiliu1111/miniproject2-container
Cloning into 'miniproject2-container'...
remote: Enumerating objects: 41, done.
remote: Counting objects: 100% (41/41), done.
remote: Compressing objects: 100% (38/38), done.
remote: Total 41 (delta 0), reused 41 (delta 0), pack-reused 0
Unpacking objects: 100% (41/41), done.
jigeeshajainms@instance-1:~$ 

```

## Empty Docker file:

```

Created symlink /etc/systemd/system/multi-user.target.wants/docker.service → /lib/systemd/system/docker.service.
Created symlink /etc/systemd/system/sockets.target.wants/docker.socket → /lib/systemd/system/docker.socket.
Processing triggers for systemd (237-3ubuntul0.53) ...
Processing triggers for man-db (2.8.3-2ubuntu0.1) ...
Processing triggers for ureadahead (0.100.0-21) ...
jigeeshajainms@instance-1:~$ git clone https://github.com/huiliu1111/miniproject2-container
Cloning into 'miniproject2-container'...
remote: Enumerating objects: 41, done.
remote: Counting objects: 100% (41/41), done.
remote: Compressing objects: 100% (38/38), done.
remote: Total 41 (delta 0), reused 41 (delta 0), pack-reused 0
Unpacking objects: 100% (41/41), done.
jigeeshajainms@instance-1:~$ cd miniproject2-container/mongodb
jigeeshajainms@instance-1:~/miniproject2-container/mongodb$ ls
Dockerfile Makefile
jigeeshajainms@instance-1:~/miniproject2-container/mongodb$ 

```

```

Universal Time is now: Thu Apr 21 23:26:54 UTC 2022.
Run 'dpkg-reconfigure tzdata' if you wish to change it.

Use of uninitialized value $val in substitution ($/) at /usr/share/perl5/Debconf/Format/822.pm line 83, <GEN6> line 4.
Use of uninitialized value $val in concatenation (. or string at /usr/share/perl5/Debconf/Format/822.pm line 84, <GEN6> line 4.
Setting up librtmp1:amd64 (2.4+20151223.giftfa8646d.1-1) ...
Setting up libkrb5support0:amd64 (1.16-2ubuntu0.2) ...
Setting up mongod-org-mongos (4.0.28) ...
Setting up krb5-locales (1.16-2ubuntu0.2) ...
Setting up publicsuffix (20180223_190-1) ...
Setting up libkeyutils1:amd64 (1.1.9-9.2ubuntu2.1) ...
Setting up libmng-org-mng (4.0.28) ...
Setting up liblrcrypt0:amd64 (1.16-2ubuntu0.2) ...
Setting up libkrb5-3:amd64 (1.16-2ubuntu0.2) ...
Setting up libxkbui-kbfs2:amd64 (1.16-2ubuntu0.2) ...
Setting up libcurl4:amd64 (7.58.0-2ubuntu3.16) ...
Setting up mongodb-org-server (4.0.28) ...
Adding system user `mongodb` (UID 102) ...
Adding new user `mongodb` with group `nogroup` ...
Not creating home directory `/home/mongodb` ...
Adding group `mongodb` (GID 103) ...
Done.
Adding user `mongod` to group `mongodb` ...
Adding user mongodb to group mongodb
Done.
/var/lib/dpkg/info/mongodb-org-server.postinst: 44: /var/lib/dpkg/info/mongodb-org-server.postinst: systemctl: not found
Setting up mongodb-org (4.0.28) ...
Processing triggers for libc-bin (2.27-3ubuntu1.5) ...
Removing intermediate container 14cd6aa95efb
--> albl1a07cf8
Step 9/12 : RUN mkdir /data
--> Running in 5236e312c45a
Removing intermediate container 5236e312c45a
--> 027003bc9490
Step 10/12 : RUN mkdir /data/db
--> Running in 3786c44a4322
Removing intermediate container 3786c44a4322
--> 8e7856a6a888
Step 11/12 : EXPOSE 27017
--> Running in aa8a13b71b79
Removing intermediate container aa8a13b71b79
--> 48a2df846ee8
Step 12/12 : ENTRYPOINT ["mongod", "--bind_ip=0.0.0.0"]
--> Running in e0f06d30bf33a
Removing intermediate container 777cfb9ee6dd
--> e0f06d30bf33a
Successfully built e0f06d30bf33a
Successfully tagged mongodb:v1

```

```

ligeeshajainms@instance-1:~/miniproject2-container/mongodb$ sudo docker image list
REPOSITORY TAG IMAGE ID CREATED SIZE
mongodb v1 ef06d30bf33a About a minute ago 477MB
ubuntu 18.04 fdf0753c97a9 28 minutes ago 63.2MB
ligeeshajainms@instance-1:~/miniproject2-container/mongodb$ 

```

```

ligeeshajainms@instance-1:~/miniproject2-container/mongodb$ sudo make run
docker run -it -p27017:27017 -v /home/jigeeshajainms/miniproject2-container:/mongodb:/data/db:/data/db mongo:vb1
2022-04-21T23:28:45.868+0000 I CONTROL [main] Automatically disabling TLS 1.0, to force-enable TLS 1.0 specify --sslDisabledProtocols 'none'
2022-04-21T23:28:45.874+0000 I CONTROL [initandlisten] MongoDB starting : pid=1 port=27017 dbpath=/data/db 64-bit host=e62f28ce0ec5
2022-04-21T23:28:45.874+0000 I CONTROL [initandlisten] db version v4.0.28
2022-04-21T23:28:45.874+0000 I CONTROL [initandlisten] git version: af1a9dc12adef83cc19571cb3faba26eedac92
2022-04-21T23:28:45.874+0000 I CONTROL [initandlisten] options: { net: { bindip: "0.0.0.0" } }
2022-04-21T23:28:45.874+0000 I STORAGE [initandlisten] ** WARNING: Using the XFS filesystem is strongly recommended with the WiredTiger storage engine
2022-04-21T23:28:45.879+0000 I STORAGE [initandlisten] See http://dochub.mongodb.org/cors/products/filesystem
2022-04-21T23:28:45.880+0000 I STORAGE [initandlisten] wiredtiger_open config: create,cache_size=1452M,cache_overflow=(file_max=0M),session_max=20000,eviction=(threads_min=4,threads_max=4),config_base=false,statistics=(fast),log=(enabled=true,archive=true,path=journal,compressor=snappy),file_manager=(close_idle_time=100000),statistics_log=(wait=0),verbose=(recovery_progress),
2022-04-21T23:28:46.514+0000 I STORAGE [initandlisten] WiredTiger message [1650583726:514251][1:0x7f006120ea40], txn-recover: Set global recovery timestamp: 0
2022-04-21T23:28:46.542+0000 I RECOVERY [initandlisten] WiredTiger recoveryTimestamp: Ts: Timestamp(0, 0)
2022-04-21T23:28:46.546+0000 I CONTROL [initandlisten] Starting to check the table logging settings for existing WiredTiger tables
2022-04-21T23:28:46.549+0000 I CONTROL [initandlisten] ** WARNING: Access control is not enabled for the database.
2022-04-21T23:28:46.549+0000 I CONTROL [initandlisten] ** Read and write access to data and configuration is unrestricted.
2022-04-21T23:28:46.549+0000 I CONTROL [initandlisten] ** WARNING: You are running this process as the root user, which is not recommended.
2022-04-21T23:28:46.549+0000 I STORAGE [initandlisten] createCollection admin.system.version with provided UUID: 005fbbd0-71d4-403d-a5bf-abf6b92010fc
2022-04-21T23:28:46.550+0000 I STORAGE [initandlisten] setting featureCompatibilityVersion to 4.0
2022-04-21T23:28:46.550+0000 I STORAGE [initandlisten] finished adjusting the table logging settings for existing WiredTiger tables
2022-04-21T23:28:46.579+0000 I NETWORK [initandlisten] createCollection local.startup_log with generated UUID: 84ce5261-5a9-4e6b-aa9140993806
2022-04-21T23:28:46.583+0000 I LOGICALSESSIONCACHE [LogicalSessionCacheRefresh] initialized full-time logical session capture with directory /data/db/diagnostic.data
2022-04-21T23:28:46.583+0000 I CONTROL [LogicalSessionCacheRefresh] Sessions collection has been set up, waiting until next sessions rep interval: config.system.sessions does not exist
2022-04-21T23:28:46.583+0000 I NETWORK [initandlisten] waiting for connections on port 27017
2022-04-21T23:28:46.583+0000 I STORAGE [LogicalSessionCacheRefresh] createCollection: config.system.sessions with generated UUID: b8ff2865e-0cf7-4255-a4b0-44e3d2cb39
2022-04-21T23:28:46.604+0000 I INDEX [LogicalSessionCacheRefresh] build index on: config.system.sessions properties: { v: 28, key: { lastUse: 1 }, name: "lsidTTIndex", ns: "config.system.sessions", expireAfterSeconds: 1800 }
2022-04-21T23:28:46.606+0000 I INDEX [LogicalSessionCacheRefresh] building index using bulk method; build may temporarily use up to 500 megabytes of RAM
2022-04-21T23:28:46.606+0000 I INDEX [LogicalSessionCacheRefresh] build index done. scanned 0 total records. 0 secs

```

```

Successfully installed Click-7.0 Flask-1.1.1 Flask-SQLAlchemy-2.4.1 Flask-SocketIO-4.2.1 Flask-WTF-0.14.2 Jinja2-2.11.3 MarkupSafe-1.1.1 SQLAlchemy-1.3.11 WTForms-2.2.1 Werkzeug-0.16.0 better-profiler-0.5.0 dnspython-1.16.0 eventlet-0.31.0 flask-mongoengine-1.0.0 greenlet-0.4.15 itsdangerous-1.1.0 mongoengine-0.24.1 monotonic-1.5 pymongo-4.1.1 python-engineio-3.10.0 python-socketio-4.4.0 six-1.13.0
Removing intermediate container e0737bdfe9b9
--> 4b50a3bdc93
Step 10/10 : ENTRYPOINT ["python3", "/web/run.py"]
--> Running in 3b071906969c
Removing intermediate container 3b071906969c
--> e4fef28df5d
Successfully built e4fef28df5d
Successfully tagged flaskweb:v1
ligeeshajainms@instance-1:~/miniproject2-container/webserver$ 

```

```
jigeesha@jainms:~/instance-1:/miniproject2-container/mongodb$ sudo docker image list
REPOSITORY TAG IMAGE ID CREATED SIZE
flaskweb v1 e4feef28df5d 12 minutes ago 518MB
mongodb v1 ef06430bf33a 20 minutes ago 477MB
ubuntu 18.04 fdf0753c97a9 47 minutes ago 63.2MB
jigeesha@jainms:~/instance-1:/miniproject2-container/mongodb$ sudo make run
docker run -it -p=27017:27017 -v /home/jigeesha/jainms/miniproject2-container/mongodb:/data/db:/data/db mongo:vb1
2022-04-21T23:48:04.643+0000 I CONTROL [main] Command line: mongod --port 27017 --dbpath /data/db --logpath /data/db/mongod.log --logappend --loglevel 1.0 --noSSLDisabledProtocols 'none'
2022-04-21T23:48:04.643+0000 I CONTROL [initandlisten] MongoDB starting at pid 1 port 27017 dbpath=/data/db 64-bit host=35a0b285538
2022-04-21T23:48:04.644+0000 I CONTROL [initandlisten] db version v4.0.28
2022-04-21T23:48:04.644+0000 I CONTROL [initandlisten] git version: af1a9dc12adcf8a83cc19571ch3fab26e6ddac92
2022-04-21T23:48:04.644+0000 I CONTROL [initandlisten] OpenSSL version: openSSL 1.1.1 11 Sep 2018
2022-04-21T23:48:04.644+0000 I CONTROL [initandlisten] allocator: tcmalloc
2022-04-21T23:48:04.644+0000 I CONTROL [initandlisten] modules: none
2022-04-21T23:48:04.644+0000 I CONTROL [initandlisten] build environment:
2022-04-21T23:48:04.644+0000 I CONTROL [initandlisten] distmod: ubuntu1804
2022-04-21T23:48:04.644+0000 I CONTROL [initandlisten] distarch: x86_64
2022-04-21T23:48:04.644+0000 I CONTROL [initandlisten] options: { net: { bindip: "0.0.0.0" } }
2022-04-21T23:48:04.644+0000 I STORAGE [initandlisten] Detected data files in /data/db created by the 'wiredTiger' storage engine, so setting the active storage engine to 'wiredTiger'.
2022-04-21T23:48:04.648+0000 I STORAGE [initandlisten]
2022-04-21T23:48:04.648+0000 I STORAGE [initandlisten] ** WARNING: Using the XFS filesystem is strongly recommended with the WiredTiger storage engine
2022-04-21T23:48:04.648+0000 I STORAGE [initandlisten] See http://dochub.mongodb.org/core/prodnotes-filesystem
2022-04-21T23:48:04.648+0000 I STORAGE [initandlisten] wiredtiger_open config: create,cache_size=14532M,cache_overflow(file_max=0),session_max=20000,eviction=(threads_min=4,threads_max=4),config_hints=falsetruncate_on_close=false,statistics=(fast),transaction_clock_type=cpu,statistics_log_period=1000,statistics_log_size=100000,statistics_update_period=1000,txns_recover=0,verbose=(recovery_progress),
2022-04-21T23:48:05.693+0000 I STORAGE [initandlisten] WiredTiger message [1650584885:693970] [1:0x7fa27f9c8a40], txn-recover: Main recovery loop: starting at 1/22526 to 2/256
2022-04-21T23:48:05.793+0000 I STORAGE [initandlisten] WiredTiger message [1650584885:793482] [1:0x7fa27f9c8a40], txn-recover: Recovering log 1 through 2
2022-04-21T23:48:05.856+0000 I STORAGE [initandlisten] WiredTiger message [1650584885:856705] [1:0x7fa27f9c8a40], txn-recover: Recovering log 2 through 2
2022-04-21T23:48:05.905+0000 I STORAGE [initandlisten] WiredTiger message [1650584885:905939] [1:0x7fa27f9c8a40], txn-recover: Set global recovery timestamp: 0
2022-04-21T23:48:05.924+0000 I RECOVERY [initandlisten] WiredTiger recoveryv1timestamp: Ts Timestamp(0, 0)
2022-04-21T23:48:05.926+0000 I STORAGE [initandlisten] Starting to check the table logging settings for existing WiredTiger tables
2022-04-21T23:48:05.926+0000 I CONTROL [initandlisten]
2022-04-21T23:48:05.932+0000 I CONTROL [initandlisten] ** WARNING: Access control is not enabled for the database.
2022-04-21T23:48:05.932+0000 I CONTROL [initandlisten] Read and write access to data and configuration is unrestricted.
2022-04-21T23:48:05.932+0000 I CONTROL [initandlisten] ** WARNING: You are running this process as the root user, which is not recommended.
2022-04-21T23:48:05.953+0000 I STORAGE [initandlisten] Finished adjusting the table logging settings for existing WiredTiger tables
2022-04-21T23:48:05.958+0000 I FTDC [initandlisten] Initializing full-time diagnostic data capture with directory '/data/db/diagnostic.data'
2022-04-21T23:48:05.960+0000 I NETWORK [initandlisten] waiting for connections port 27017
```

```
jigeesha@jainms:~/instance-1:/miniproject2-container/webserver$ sudo make run
docker run -it -p=8080:8080 flaskweb:v1
* Restarting with stat
* Debugger is active!
* Debugger PIN: 617-709-219
(14) wsgi starting up on http://0.0.0.0:8080
```

## 6: Orchestration:

```
jigeesha@jainms:~/instance-1:~$ minikube start --driver=docker
😊 minikube v1.25.2 on Ubuntu 18.04 (amd64)
⚡️ Using the docker driver based on user configuration

👉 Exiting due to PROVIDER_DOCKER_NEWRGP: "docker version --format "-" exit status 1: Got permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Get http://127.0.0.1:2375/v1.24/version: dial unix /var/run/docker.sock: connect: permission denied
💡 Suggestion: Add your user to the 'docker' group: 'sudo usermod -aG docker $USER && newgrp docker'
📘 Documentation: https://docs.docker.com/engine/install/linux-postinstall/

jigeesha@jainms:~/instance-1:~$ sudo usermod -aG docker $USER && newgrp docker
jigeesha@jainms:~/instance-1:~$ minikube start --driver=docker
😊 minikube v1.25.2 on Ubuntu 18.04 (amd64)
⚡️ Using the docker driver based on user configuration
👍 Starting control plane node minikube in cluster minikube
Pulling base image ...
⬇️ Downloading Kubernetes v1.23.3 preload ...
> preloaded-images-k8s-v17-v1...: 505.68 MiB / 505.68 MiB 100.00% 198.98 M
> gcr.io/k8s-minikube/kicbase: 379.06 MiB / 379.06 MiB 100.00% 45.15 MiB p
Creating docker container (CPUs=2, Memory=2200MB) ...
Preparing Kubernetes v1.23.3 on Docker 20.10.12 ...
▪ kubelet.housekeeping-interval=5m
▪ Generating certificates and keys ...
▪ Booting up control plane ...
▪ Configuring RBAC rules ...
Verifying Kubernetes components...
▪ Using image gcr.io/k8s-minikube/storage-provisioner:v5
Enabled addons: default-storageclass, storage-provisioner
kubectl not found. If you need it, try: 'minikube kubectl -- get pods -A'
Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
jigeesha@jainms:~/instance-1:~$ minikube start
minikube v1.25.2 on Ubuntu 18.04 (amd64)
⚡️ Using the docker driver based on existing profile
👍 Starting control plane node minikube in cluster minikube
Pulling base image ...
Updating the running docker "minikube" container ...
Preparing Kubernetes v1.23.3 on Docker 20.10.12 ...
▪ kubelet.housekeeping-interval=5m
Verifying Kubernetes components...
▪ Using image gcr.io/k8s-minikube/storage-provisioner:v5
Enabled addons: storage-provisioner, default-storageclass
kubectl not found. If you need it, try: 'minikube kubectl -- get pods -A'
Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
jigeesha@jainms:~/instance-1:~$
```

```
jigeeshajainms@instance-1:~/miniproject2-minikube$ kubectl get deployment
NAME           READY   UP-TO-DATE   AVAILABLE   AGE
mongodb-deployment   1/1     1          1          4h26m
webserver-deployment 0/3     3          0          4h52m
```

```
jigeeshajainms@instance-1:~/miniproject2-minikube$ kubectl get all
NAME                           READY   STATUS    RESTARTS   AGE
pod/mongodb-deployment-5c5db45fcb-cg6p2   1/1     Running   0          4h27m
pod/webserver-deployment-65d49d58b5-dtpdh   0/1     ImagePullBackOff   0          4h53m
pod/webserver-deployment-65d49d58b5-slwh2   0/1     ImagePullBackOff   0          4h53m
pod/webserver-deployment-65d49d58b5-wzf94   0/1     ImagePullBackOff   0          4h53m

NAME            TYPE        CLUSTER-IP      EXTERNAL-IP      PORT(S)      AGE
service/kubernetes   ClusterIP   10.96.0.1      <none>        443/TCP      21h
service/mongo-service   ClusterIP   10.109.7.150    <none>        27017/TCP     5h17m

NAME           READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/mongodb-deployment   1/1     1          1          4h27m
deployment.apps/webserver-deployment 0/3     3          0          4h53m

NAME           DESIRED   CURRENT   READY   AGE
replicaset.apps/mongodb-deployment-5c5db45fcb   1         1         1         4h27m
replicaset.apps/webserver-deployment-65d49d58b5   3         3         0         4h53m
```

```
jigeeshajainms@instance-1:~$ kubectl get all
NAME                           READY   STATUS    RESTARTS   AGE
pod/mongodb-deployment-5c5db45fcb-qjksh   0/1     ImagePullBackOff   0          23m

NAME            TYPE        CLUSTER-IP      EXTERNAL-IP      PORT(S)      AGE
service/kubernetes   ClusterIP   10.96.0.1      <none>        443/TCP      16h

NAME           READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/mongodb-deployment   0/1     1          0          23m

NAME           DESIRED   CURRENT   READY   AGE
replicaset.apps/mongodb-deployment-5c5db45fcb   1         1         0         23m
jigeeshajainms@instance-1:~$
```

```
jigeeshajainms@instance-1:~/miniproject2-minikube$ kubectl get service
NAME            TYPE        CLUSTER-IP      EXTERNAL-IP      PORT(S)      AGE
kubernetes   ClusterIP   10.96.0.1      <none>        443/TCP      21h
mongo-service   ClusterIP   10.109.7.150    <none>        27017/TCP     5h19m
```

```

  Downloading https://files.pythonhosted.org/packages/f8/70/b8446e7c3bba35b363edfb79a60b97b1b5d6076528ac1d5065e9d75
  3e994/mongoengine-0.24.1-py3-none-any.whl (108kB)
Collecting pymongo<5.0,>=3.4 (from mongoengine->0.20->flask_mongoengine->-r /web/requirements.txt (line 20))
  Downloading https://files.pythonhosted.org/packages/10/3b/46541b4ee3000019b8ef5b1847292ddc77f492c162bc4d49c424db7
  fc97a/pymongo-4.1.1-cp36-cp36m-manylinux1_x86_64.whl (464kB)
Building wheels for collected packages: SQLAlchemy
  Running setup.py bdist_wheel for SQLAlchemy: started
  Running setup.py bdist_wheel for SQLAlchemy: finished with status 'done'
  Stored in directory: /root/.cache/pip/wheels/a3/67/7d/6c41104ala08ff1a25e260d3edec3ac19203141diaaa2f0975
Successfully built SQLAlchemy
Installing collected packages: better-profanity, Click, dnspython, six, greenlet, eventlet, MarkupSafe, Jinja2, Werkzeug, itsdangerous, Flask, python-engineio, python-socketio, Flask-SocketIO, SQLAlchemy, Flask-SQLAlchemy, WTForms, Flask-WTF, monotonic, pymongo, mongoengine, flask-mongoengine
  Found existing installation: six 1.11.0
    Not uninstalling six at /usr/lib/python3/dist-packages, outside environment /usr
Successfully installed Click-7.0 Flask-1.1.1 Flask-SQLAlchemy-2.4.1 Flask-SocketIO-4.2.1 Flask-WTF-0.14.2 Jinja2-2.11.3 MarkupSafe-1.1.1 WTForms-2.2.1 Werkzeug-0.16.0 better-profanity-0.5.0 dnspython-1.16.0 eventlet-0.31.0 flask-mongoengine-1.0.0 greenlet-0.4.15 itsdangerous-1.1.0 mongoengine-0.24.1 monotonic-1.5 pymongo-4.1.1 python-engineio-3.10.0 python-socketio-4.4.0 six-1.13.0
Removing intermediate container ae0273bede83
--> 79dc960a99c8
Step 10/10 : ENTRYPOINT ["python3", "/web/run.py"]
--> Running in becddac0561d
Removing intermediate container becddac0561d
--> 7e2457384ece
Successfully built 7e2457384ece
Successfully tagged flaskweb:v1
jigeeshajainms@instance-1:~/miniproject2-container/webserver$ docker image list
REPOSITORY          TAG      IMAGE ID      CREATED     SIZE
flaskweb            v1       7e2457384ece   15 seconds ago  518MB
mongodb             v1       2bf6090b3bfb   14 minutes ago  477MB
ubuntu              18.04   fdf0753c97a9   4 days ago   63.2MB
k8s.gcr.io/kube-apiserver  v1.23.3  f40be0088a3   3 months ago  135MB
k8s.gcr.io/kube-proxy        v1.23.3  9b7cc9982109  3 months ago  112MB
k8s.gcr.io/kube-scheduler   v1.23.3  99a3486be4f2   3 months ago  53.5MB
k8s.gcr.io/kube-controller-manager  v1.23.3  b07520cd7ab7   3 months ago  125MB
k8s.gcr.io/etcfd          3.5.1-0  25f8cf53da61   5 months ago  293MB
k8s.gcr.io/coredns         v1.8.6   a4ca41631cc7   6 months ago  46.8MB
k8s.gcr.io/pause           3.6      6270bb6505e12  8 months ago  683kB
kubernetesui/dashboard    v2.3.1   e1482a24335a  10 months ago  220MB
kubernetesui/metrics-scrapers  v1.0.7   7801cffc6d5c0  10 months ago  34.4MB
gcr.io/k8s-minikube/storage-provisioner  v5      6e38f40d628d  13 months ago  31.5MB
jigeeshajainms@instance-1:~/miniproject2-container/webserver$ 

```

```

jigeeshajainms@instance-1:~/miniproject2-minikube$ kubectl apply -f webserver-deploy.yaml
deployment.apps/webserver-deployment created
jigeeshajainms@instance-1:~/miniproject2-minikube$ 

```

```

jigeeshajainms@instance-1:~/miniproject2-minikube$ kubectl get deployment
NAME                  READY   UP-TO-DATE   AVAILABLE   AGE
mongodb-deployment   1/1     1           1           4h36m
webserver-deployment 3/3     3           3           5h2m
jigeeshajainms@instance-1:~/miniproject2-minikube$ 

```

```

jigeeshajainms@instance-1:~/miniproject2-minikube$ kubectl apply -f serviceWEB.yaml
service/web-service created
jigeeshajainms@instance-1:~/miniproject2-minikube$ kubectl get services
NAME           TYPE      CLUSTER-IP      EXTERNAL-IP      PORT(S)        AGE
kubernetes     ClusterIP  10.96.0.1      <none>          443/TCP       22h
mongo-service  ClusterIP  10.109.7.150  <none>          27017/TCP     5h29m
web-service    NodePort   10.106.46.119  <none>          8080:30100/TCP 15s
jigeeshajainms@instance-1:~/miniproject2-minikube$ 

```

```

jigeeshajainms@instance-1:~/miniproject2-minikube$ sudo docker ps
CONTAINER ID   IMAGE          COMMAND           CREATED          STATUS          PORTS
NAMES
5026f8402afb  gcr.io/k8s-minikube/kicbase:v0.30  "/usr/local/bin/entr..."  22 hours ago   Up 31 minutes  127.0.0.1:49157->22/tcp, 127.0.0.1:49156->2376/tcp, 127.0.0.1:49155->5000/tcp, 127.0.0.1:49154->8443/tcp, 127.0.0.1:49153->32443/tcp  minikube
jigeeshajainms@instance-1:~/miniproject2-minikube$ 

```

```
root@minikube:~/minikube$ sudo docker exec -it 5026f8402afb bash
bash: ipconfig: command not found
root@minikube:~/minikube ip
bash: minikube: command not found
root@minikube:~/# exit
ligneesha@linsm9:~$ ip
ligneesha@linsm9:~$ minikube ip
Reading package lists... Done
E: Could not open lock file /var/lib/apt/lists/lock - open (13: Permission denied)
E: Unable to lock directory /var/lib/apt/lists/
W: Problem unlinking the file /var/cache/apt/pkgscache.bin - RemoveCaches (13: Permission denied)
W: Problem unlinking the file /var/cache/apt/srcpkgscache-bin - RemoveCaches (13: Permission denied)
ligneesha@linsm9:~$ apt update
Reading package lists... Done
Building dependency tree
Reading state information... Done
63 packages can be upgraded. Run 'apt list --upgradable' to see them.
root@minikube:~/# apt install net-tools
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  net-tools
0 upgraded, 1 newly installed, 0 to remove and 63 not upgraded.
Need to get 196 kB of archives.
After this operation, 864 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu focal/main amd64 net-tools amd64 1.60+git20180626.aebd88e-1 [196 kB]
Fetched 196 kB in 1s (289 kB/s)
debconf: delaying package configuration, since apt-utils is not installed
Selecting previously unselected package net-tools.
(Reading database ... 10549 files and directories currently installed.)
Preparing to unpack .../net-tools_1.60+git20180626.aebd88e-1ubuntu1_amd64.deb ...
Unpacking net-tools (1.60+git20180626.aebd88e-1ubuntu1) ...
Setting up net-tools (1.60+git20180626.aebd88e-1ubuntu1) ...
root@minikube:~/# apt install wget
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  wget
0 upgraded, 1 newly installed, 0 to remove and 63 not upgraded.
Need to get 348 kB of archives.
After this operation, 1012 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 wget amd64 1.20.3-1ubuntu2 [348 kB]
Fetched 348 kB in 1s (489 kB/s)
debconf: delaying package configuration, since apt-utils is not installed
```

```
Get:1 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 wget amd64 1.20.3-1ubuntu2 [348 kB]
Fetched 348 kB in 1s (489 kB/s)
debconf: delaying package configuration, since apt-utils is not installed
Selecting previously unselected package wget.
(Reading database ... 10598 files and directories currently installed.)
Preparing to unpack .../wget_1.20.3-1ubuntu2_amd64.deb ...
Unpacking wget (1:20.3-1ubuntu2) ...
Setting up wget (1:20.3-1ubuntu2) ...
root@minikube:~# wget 192.168.49.2:30100
--2022-04-26 01:21:43-- http://192.168.49.2:30100/
Connecting to 192.168.49.2:30100... connected.
HTTP request sent, awaiting response... 200 OK
Length: 1411 (1.4K) [text/html]
Saving to: 'index.html'

index.html                                              100%[=====]   1.38K --.-KB/s    in 0s

2022-04-26 01:21:43 (139 kB/s) - 'index.html' saved [1411/1411]

root@minikube:~#
```

