




rayyan9477/todo-backend	about 1 hour ago		Public	Inactive
rayyan9477/todo-frontend	about 1 hour ago		Public	Inactive
rayyan9477/my-node-app	about 1 hour ago		Public	Inactive

```
(Reading database ... 70096 files and directories currently installed.)
Preparing to unpack .../nodejs_16.20.2-1nodesource1_amd64.deb ...
Unpacking nodejs (16.20.2-1nodesource1) ...
Setting up nodejs (16.20.2-1nodesource1) ...
Processing triggers for man-db (2.9.1-1) ...
• @Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477 (main) $ node -v
v20.19.0
• @Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477 (main) $ npm -v
10.8.2
• @Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477 (main) $ git clone https://github.com/zahedersani/SCD-SP25-NodeApp
Cloning into 'SCD-SP25-NodeApp'...
remote: Enumerating objects: 9, done.
remote: Counting objects: 100% (9/9), done.
remote: Compressing objects: 100% (8/8), done.
remote: Total 9 (delta 0), reused 9 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (9/9), done.
• @Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477 (main) $ cd SCD-SP25-NodeApp
• @Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477/SCD-SP25-NodeApp (main) $ npm install

added 66 packages, and audited 67 packages in 4s

14 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities
npm notice
npm notice New major version of npm available! 10.8.2 -> 11.3.0
npm notice Changelog: https://github.com/npm/cli/releases/tag/v11.3.0
npm notice To update run: npm install -g npm@11.3.0
npm notice
• @Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477/SCD-SP25-NodeApp (main) $ npm start
```

```
@Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477 (main) $ sudo apt update
L https://deb.nodesource.com/setup_16.x | sudo -E bash -
Get:1 https://packages.microsoft.com/repos/microsoft-ubuntu-focal-prod focal InRelease [3632 B]
Get:2 https://dl.yarnpkg.com/debian stable InRelease [17.1 kB]
Get:3 https://packages.microsoft.com/repos/microsoft-ubuntu-focal-prod focal/main all Packages [2938 B]
Get:4 https://packages.microsoft.com/repos/microsoft-ubuntu-focal-prod focal/main amd64 Packages [348 kB]
Get:5 https://dl.yarnpkg.com/debian stable/main all Packages [11.8 kB]
Get:6 https://dl.yarnpkg.com/debian stable/main amd64 Packages [11.8 kB]
Get:7 http://security.ubuntu.com/ubuntu focal-security InRelease [128 kB]
Get:8 https://repo.anaconda.com/pkgs/misc/debrepo/conda stable InRelease [3961 B]
Get:9 https://repo.anaconda.com/pkgs/misc/debrepo/conda stable/main amd64 Packages [4557 B]
Get:10 http://archive.ubuntu.com/ubuntu focal InRelease [265 kB]
Get:12 http://security.ubuntu.com/ubuntu focal-security/restricted amd64 Packages [4604 kB]
Get:11 https://packagecloud.io/github/git-lfs/ubuntu focal InRelease [29.1 kB]
Get:13 http://archive.ubuntu.com/ubuntu focal-updates InRelease [128 kB]
Get:14 http://archive.ubuntu.com/ubuntu focal-backports InRelease [128 kB]
Get:15 http://archive.ubuntu.com/ubuntu focal/multiverse amd64 Packages [177 kB]
Get:16 http://archive.ubuntu.com/ubuntu focal/universe amd64 Packages [11.3 MB]
Get:18 http://security.ubuntu.com/ubuntu focal-security/universe amd64 Packages [1308 kB]
Get:19 http://security.ubuntu.com/ubuntu focal-security/multiverse amd64 Packages [33.2 kB]
Get:20 http://security.ubuntu.com/ubuntu focal-security/main amd64 Packages [4354 kB]
Get:17 https://packagecloud.io/github/git-lfs/ubuntu focal/main amd64 Packages [4064 B]
Get:21 http://archive.ubuntu.com/ubuntu focal/main amd64 Packages [1275 kB]
Get:22 http://archive.ubuntu.com/ubuntu focal/restricted amd64 Packages [33.4 kB]
Get:23 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages [4841 kB]
Get:24 http://archive.ubuntu.com/ubuntu focal-updates/multiverse amd64 Packages [36.8 kB]
Get:25 http://archive.ubuntu.com/ubuntu focal-updates/universe amd64 Packages [1605 kB]
Get:26 http://archive.ubuntu.com/ubuntu focal-updates/restricted amd64 Packages [4808 kB]
Get:27 http://archive.ubuntu.com/ubuntu focal-backports/main amd64 Packages [55.2 kB]
Get:28 http://archive.ubuntu.com/ubuntu focal-backports/universe amd64 Packages [28.6 kB]
```

```
Reading package lists... Done
Building dependency tree
Reading state information... Done
51 packages can be upgraded. Run 'apt list --upgradable' to see them.
● @Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477 (main) $ sudo apt install -y curl
Reading package lists... Done
Building dependency tree
Reading state information... Done
curl is already the newest version (7.68.0-1ubuntu2.25).
0 upgraded, 0 newly installed, 0 to remove and 51 not upgraded.
● @Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477 (main) $ curl -fsSL https://deb.nodesource
.com/setup_16.x | sudo -E bash -

=====
=====

DEPRECATION WARNING

Node.js 16.x is no longer actively supported!

You will not receive security or critical stability updates for this version.

You should migrate to a supported version of Node.js as soon as possible.
Use the installation script that corresponds to the version of Node.js you
wish to install. e.g.

* https://deb.nodesource.com/setup_16.x – Node.js 16 "Gallium" (deprecated)
* https://deb.nodesource.com/setup_18.x – Node.js 18 "Hydrogen" (Maintenance)
* https://deb.nodesource.com/setup_19.x – Node.js 19 "Nineteen" (deprecated)
* https://deb.nodesource.com/setup_20.x – Node.js 20 LTS "Iron" (recommended)
* https://deb.nodesource.com/setup_21.x – Node.js 21 "Iron" (current)
```

Please see <https://github.com/nodejs/Release> for details about which version may be appropriate for you.

The **NodeSource** Node.js distributions repository contains information both about supported versions of Node.js and supported Linux distributions. To learn more about usage, see the repository:

<https://github.com/nodesource/distributions>

=====  
=====  
Continuing in 10 seconds ...

025-04-25 18:17:01 - Installing pre-requisites

it:1 <https://dl.yarnpkg.com/debian> stable InRelease

it:2 <https://packages.microsoft.com/repos/microsoft-ubuntu-focal-prod> focal InRelease

it:3 <https://repo.anaconda.com/pkg/misc/debrepo/conda> stable InRelease

it:5 <http://archive.ubuntu.com/ubuntu> focal InRelease

it:4 <https://packagecloud.io/github/git-lfs/ubuntu> focal InRelease

it:6 <http://archive.ubuntu.com/ubuntu> focal-updates InRelease

it:7 <http://archive.ubuntu.com/ubuntu> focal-backports InRelease

it:8 <http://security.ubuntu.com/ubuntu> focal-security InRelease

Reading package lists... Done

Reading package lists... Done

Building dependency tree

Reading state information... Done

ca-certificates is already the newest version (20240203~20.04.1).

curl is already the newest version (7.68.0-1ubuntu2.25).

libapt-transport-https is already the newest version (2.0.10).

The following additional packages will be installed:

dirmngr gnupg-l10n gnupg-utils gpg gpg-agent gpg-wks-client gpg-wks-server gpgconf gpgsm  
gpgv

Suggested packages:

```
Unpacking gpgsm (2.2.19-3ubuntu2.4) over (2.2.19-3ubuntu2.2) ...
Preparing to unpack .../10-gpgv_2.2.19-3ubuntu2.4_amd64.deb ...
Unpacking gpgv (2.2.19-3ubuntu2.4) over (2.2.19-3ubuntu2.2) ...
Setting up gpgv (2.2.19-3ubuntu2.4) ...
Setting up gnupg-l10n (2.2.19-3ubuntu2.4) ...
Setting up gpgconf (2.2.19-3ubuntu2.4) ...
Setting up gpg (2.2.19-3ubuntu2.4) ...
Setting up gnupg-utils (2.2.19-3ubuntu2.4) ...
Setting up gpg-agent (2.2.19-3ubuntu2.4) ...
Setting up gpgsm (2.2.19-3ubuntu2.4) ...
Setting up dirmngr (2.2.19-3ubuntu2.4) ...
Setting up gpg-wks-server (2.2.19-3ubuntu2.4) ...
Setting up gpg-wks-client (2.2.19-3ubuntu2.4) ...
Setting up gnupg (2.2.19-3ubuntu2.4) ...
Processing triggers for man-db (2.9.1-1) ...
Hit:1 https://dl.yarnpkg.com/debian stable InRelease
Hit:2 https://packages.microsoft.com/repos/microsoft-ubuntu-focal-prod focal InRelease
Get:3 https://deb.nodesource.com/node_16.x nodistro InRelease [12.1 kB]
Hit:4 https://repo.anaconda.com/pkg/misc/debrepo/conda stable InRelease
Get:5 https://deb.nodesource.com/node_16.x nodistro/main amd64 Packages [7253 B]
Hit:6 http://security.ubuntu.com/ubuntu focal-security InRelease
Hit:7 http://archive.ubuntu.com/ubuntu focal InRelease
Hit:8 http://archive.ubuntu.com/ubuntu focal-updates InRelease
Hit:9 http://archive.ubuntu.com/ubuntu focal-backports InRelease
Hit:10 https://packagecloud.io/github/git-lfs/ubuntu focal InRelease
Fetched 19.4 kB in 2s (12.3 kB/s)
Reading package lists... Done
2025-04-25 18:17:16 - Repository configured successfully. To install Node.js, run: apt-get install nodejs -y
@Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477 (main) $ sudo apt install -y nodejs
```

```
@Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477 (feature/enhancements) $ docker login --u
sername rayyan9477
Password:
WARNING! Your password will be stored unencrypted in /home/codespace/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credential-stores

Login Succeeded
@Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477 (feature/enhancements) $ docker push rayy
an9477/my-node-app:latest
The push refers to repository [docker.io/rayyan9477/my-node-app]
c5a900c8b782: Pushed
009a817d4652: Pushed
2be50ba987a9: Pushed
15558797deb9: Pushed
be322b479aee: Pushed
d41bcd3a037b: Pushed
fe0d845e767b: Pushed
f25ec1d93a58: Pushed
794ce8b1b516: Pushed
3220beed9b06: Pushed
684f82921421: Pushed
9af5f53e8f62: Pushed
latest: digest: sha256:aad93ab3be91f8846508e8d0f35d6d05b73d2f9e86cd1c333eee5acf0bba53ee size
: 2839
@Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477 (feature/enhancem
@Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477 (feature/enhancem
@Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477 (feature/enhancements) $ █
```

fluffy-trout-66vxgjj79g9fxv69-80.app.github.dev

# Todo List

ADD

No tasks found

```

@Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477 (feature/containerization) $ cd /workspaces/todo-mern-app-Rayyan9477/backend
d && docker build -t todo-backend . && docker run -d --name backend -p 5000:5000 todo-backend
[+] Building 2.0s (11/11) FINISHED
=> [internal] load build definition from Dockerfile 0.0s
=> => transferring dockerfile: 156B 0.0s
=> [internal] load metadata for docker.io/library/node:18-alpine 1.4s
=> [auth] library/node:pull token for registry-1.docker.io 0.0s
=> [internal] load .dockerignore 0.0s
=> => transferring context: 2B 0.0s
=> [1/5] FROM docker.io/library/node:18-alpine@sha256:8d6421d663b4c28fd3ebc498332f24 0.0s
=> [internal] load build context 0.4s
=> => transferring context: 139.57kB 0.4s
=> CACHED [2/5] WORKDIR /app 0.0s
=> CACHED [3/5] COPY package*.json ./ 0.0s
=> CACHED [4/5] RUN npm install 0.0s
=> CACHED [5/5] COPY . . 0.0s
=> exporting to image 0.0s
=> => exporting layers 0.0s
=> => writing image sha256:75ccb6a5659cc74a514fe9d96dbce7fb733fd94389a9c66674403765 0.0s
=> => naming to docker.io/library/todo-backend 0.0s
37fd1523455ae129e3712629603d281d1fd8fd9b91972a76c8cfec58baec6ef5
@Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477/backend (feature/containerization) $ docker ps -a
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS
37fd1523455a   todo-backend   "docker-entrypoint.s..." 31 seconds ago Up 30 seconds 0.0.0.0:5000->5000
cf308ab85bfd   mern-frontend:latest "/docker-entrypoint.s..." 3 minutes ago Up 3 minutes 0.0.0.0:80->80/tcp
3180b2156f9b   mongo:latest   "docker-entrypoint.s..." 3 minutes ago Up 3 minutes 0.0.0.0:27017->27017/tcp
ccd8e8632cdd   my-node-app    "docker-entrypoint.s..." 30 hours ago   Exited (255) 28 hours ago 0.0.0.0:3000->3000/tcp
nifty_grothendieck

=> [1/5] FROM docker.io/library/node:18-alpine@sha256:8d6421d663b4c28fd3ebc498332f249011d118945588d0a35cb9bc4b8ca09d9e 0.0s
=> [internal] load build context 0.1s
=> => transferring context: 140.99kB 0.1s
=> CACHED [2/5] WORKDIR /app 0.0s
=> CACHED [3/5] COPY package*.json ./ 0.0s
=> CACHED [4/5] RUN npm install 0.0s
=> [5/5] COPY . . 1.4s
=> exporting to image 0.7s
=> => exporting layers 0.7s
=> => writing image sha256:77b1f4b17da9bcff3671e9fd732a26ecb0c85b8fd16e34e0ec5475ab477fa8d8 0.0s
=> => naming to docker.io/library/todo-backend 0.0s
e5398dec31eb690ca8753278112e69ac33831711dde3324ba8548c12d1bc53fb
@Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477/backend (feature/containerization) $ docker logs backend
> todo_backend@1.0.0 start
> nodemon server.js

[nodemon] 3.1.4
[nodemon] to restart at any time, enter `rs`
[nodemon] watching path(s): *.*
[nodemon] watching extensions: js,mjs,cjs,json
[nodemon] starting `node server.js`
Server listening on port: 5000

```



```

@Rayyan9477 → /workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS
61099fbb0f70   todo-frontend  "/docker-entrypoint....  39 seconds ago Up 38 seconds  0.0.0.0:80->80/tcp, :::80->80/tcp
c652112f6539   todo-backend  "docker-entrypoint.s....  About a minute ago Up About a minute  0.0.0.0:5000->5000/tcp, :::5000->5000/tcp
dbc38202c8fb   mongo:latest  "docker-entrypoint.s....  About a minute ago Up About a minute  0.0.0.0:27017->27017/tcp, :::27017->27017/tcp
@Rayyan9477 → /workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ docker logs backend

> todo_backend@1.0.0 start
> nodemon server.js

[nodemon] 3.1.4
[nodemon] to restart at any time, enter `rs`
[nodemon] watching path(s): *.*
[nodemon] watching extensions: js,mjs,cjs,json
[nodemon] starting `node server.js`
Server listening on port: 5000
MongoDB connected

```

```

@Rayyan9477 → /workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ docker login
Authenticating with existing credentials...
WARNING! Your password will be stored unencrypted in /home/codespace/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credential-stores

Login Succeeded
@Rayyan9477 → /workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ docker push rayyan9477/todo-frontend:latest
The push refers to repository [docker.io/rayyan9477/todo-frontend]
cf986aa61267: Pushed
0c365f3cfae3: Pushed
0d853d50b128: Mounted from library/nginx
947e805a4ac7: Mounted from library/nginx
811a4dbbf4a5: Mounted from library/nginx
b8d7d1d22634: Mounted from library/nginx
e244aa659f61: Mounted from library/nginx
c56f134d3805: Mounted from library/nginx
d71eae0084c1: Mounted from library/nginx
08000c18d16d: Mounted from library/nginx
latest: digest: sha256:6302c5f59beb5276df993356c8091514c5f209a8f6ca520fe468938d9bda1d30 size: 2406
@Rayyan9477 → /workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ docker push rayyan9477/todo-backend:latest
The push refers to repository [docker.io/rayyan9477/todo-backend]
5698fef055b6: Pushed
ceba19084320: Pushed
63c3e543b90b: Pushed
d297cc5ed8b3: Pushed
82140d9a70a7: Mounted from library/node
f3b40b0cdb1c: Mounted from library/node
0b1f26057bd0: Mounted from library/node
08000c18d16d: Mounted from rayyan9477/todo-frontend
latest: digest: sha256:6086ab1eb6887cbe9deab265df215344f3bff57a13d184b2879afda433e8cf9e size: 1995

```

```

@Rayyan9477 → /workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ docker network create --driver bridge mern-network
6c74e7093530dd53fe514b09e43b4b64a7632b1613e92dd52e7eba6888736093
@Rayyan9477 → /workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ docker volume create mongodb_data
mongodb_data

```

```
@Rayyan9477 → /workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ docker stop mongodb backend frontend
|| true && docker rm mongodb backend frontend || true
mongodb
backend
frontend
mongodb
backend
frontend
@Rayyan9477 → /workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ docker run -d --name mongodb \
> --network mern-network \
> -v mongodb_data:/data/db \
> mongo:latest
44aa5fe8e0acbd1fb9163d6d5e3699faced6f1dc76e9a52d7b143bcf1a56c8e1
@Rayyan9477 → /workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ docker run -d --name backend \
> --network mern-network \
> -e MONGODB_URI=mongodb://mongodb:27017/todos \
> -e PORT=5000 \
> rayyan9477/todo-backend:latest
892e6dd267c2a601c74b259ba5e65a447c60113cf6f366bd0a470a77dfc0935b
@Rayyan9477 → /workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ docker run -d --name frontend \
> --network mern-network \
> -p 80:80 \
> rayyan9477/todo-frontend:latest
609bf6cf00de298caf63acad90c051c7d01927652c31a4a0df34aee94a701d4
@Rayyan9477 → /workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ docker network inspect mern-network
[
  {
    "Name": "mern-network",
    "Id": "6c74e7093530dd53fe514b09e43b4b64a7632b1613e92dd52e7eba6888736093",
    "Created": "2025-05-01T15:18:08.931234114Z",
    "Scope": "local",
    "Driver": "bridge",
```

```
  ],
  "Internal": false,
  "Attachable": false,
  "Ingress": false,
  "ConfigFrom": {
    "Network": ""
  },
  "ConfigOnly": false,
  "Containers": {
    "44aa5fe8e0acbd1fb9163d6d5e3699faced6f1dc76e9a52d7b143bcf1a56c8e1": {
      "Name": "mongodb",
      "EndpointID": "8b351f122e6250e6a6e57309f0cb4acfa75cdd8f555d274b4db18a457a50b66d",
      "MacAddress": "02:42:ac:13:00:02",
      "IPv4Address": "172.19.0.2/16",
      "IPv6Address": ""
    },
    "609bf6cf00de298caf63acad90c051c7d01927652c31a4a0df34aee94a701d4": {
      "Name": "frontend",
      "EndpointID": "df07e93043127b6507254c148cc659bc800155608e6d09ce0aefa668327234d5",
      "MacAddress": "02:42:ac:13:00:04",
      "IPv4Address": "172.19.0.4/16",
      "IPv6Address": ""
    },
    "892e6dd267c2a601c74b259ba5e65a447c60113cf6f366bd0a470a77dfc0935b": {
      "Name": "backend",
      "EndpointID": "c558695bfe9bbff1548fa5b75874f58875db3e3975d7be10364973638e066000",
      "MacAddress": "02:42:ac:13:00:03",
      "IPv4Address": "172.19.0.3/16",
      "IPv6Address": ""
    }
  },
  "Options": {},
  "Labels": {}
}
```

```
@Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ docker run --rm --network mern-network k alpine ping -c 2 mongodb
Unable to find image 'alpine:latest' locally
latest: Pulling from library/alpine
f18232174bc9: Already exists
Digest: sha256:a8560b36e8b8210634f77d9f7f9efd7ffa463e380b75e2e74aff4511df3ef88c
Status: Downloaded newer image for alpine:latest
PING mongodb (172.19.0.2): 56 data bytes
64 bytes from 172.19.0.2: seq=0 ttl=64 time=0.230 ms
64 bytes from 172.19.0.2: seq=1 ttl=64 time=0.079 ms
```

```
--- mongodb ping statistics ---
2 packets transmitted, 2 packets received, 0% packet loss
round-trip min/avg/max = 0.079/0.154/0.230 ms
```

```
@Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ docker run --rm --network mern-network k alpine ping -c 2 backend
PING backend (172.19.0.3): 56 data bytes
64 bytes from 172.19.0.3: seq=0 ttl=64 time=0.290 ms
64 bytes from 172.19.0.3: seq=1 ttl=64 time=0.083 ms
```

```
--- backend ping statistics ---
2 packets transmitted, 2 packets received, 0% packet loss
round-trip min/avg/max = 0.083/0.186/0.290 ms
```

```
@Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ docker run --rm --network mern-network k alpine ping -c 2 frontend
PING frontend (172.19.0.4): 56 data bytes
64 bytes from 172.19.0.4: seq=0 ttl=64 time=0.129 ms
64 bytes from 172.19.0.4: seq=1 ttl=64 time=0.084 ms
```

```
--- frontend ping statistics ---
2 packets transmitted, 2 packets received, 0% packet loss
round-trip min/avg/max = 0.084/0.106/0.129 ms
```

```
@Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ docker stop mongodb backend frontend
mongodb
backend
frontend
```

```
@Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ docker rm mongodb backend frontend
mongodb
backend
frontend
```

```
@Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ docker run -d --name mongodb \
> --network mern-network \
> -v mongodb_data:/data/db \
> mongo:latest
ea6b171c4d5c992eb141d942f414835ce49b74cb4ac19b89a0b4be986a4257fc
```

```
@Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ docker run -d --name backend \
> --network mern-network \
> -e MONGODB_URI=mongodb://mongodb:27017/todos \
> -e PORT=5000 \
> rayyan9477/todo-backend:latest
3bd083c8a7ed92ba6cf3e883f48c68236427edbd1ef2375a4ca80fe1ef86229a
```

```
@Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ docker run -d --name frontend \
> --network mern-network \
> -p 80:80 \
> rayyan9477/todo-frontend:latest
89c4b82f9a6d1836fc2b6f076876e2861c130dfaa3b7a515b32274d59ed362b1
```

```
@Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ docker system prune -a --force
Deleted Containers:
ccd8e8632cddc93440feb504f5d4db93c0775e7be2434e0232830769c4d8d1d9

Deleted Networks:
mern-network
todo-app-network

Deleted Images:
untagged: mern-backend:latest
deleted: sha256:75ccb6a5659cc74a514fe9d96fdbce7fb733fd94389a9c66674403765fbed55d
untagged: mern-frontend:latest
untagged: todo-frontend:latest
untagged: rayyan9477/todo-frontend:latest
untagged: rayyan9477/todo-frontend@sha256:6302c5f59beb5276df993356c8091514c5f209a8f6ca520fe468938d9bda1d30
deleted: sha256:ea65899f58c0da1a3880ec6c52f7b8d259a46b1bbf02bf7c3d6f22b237a3fc1f
untagged: mongo:latest
untagged: mongo@sha256:cc62438c8ef61ce02f89b4f7c026e735df4580e8cd8857980d12e0eae73bf044
deleted: sha256:6595a4d1b15f4ce3db496c23d969d56fb82e10577b1e4deea5c8e64a829944f1
deleted: sha256:6835786bf554511865ec0e9072305ab224bca1a36bbccba82e1921dbfa0cd8c7
deleted: sha256:b22544ad00e36a4a401d57ee288353800e31df14d8bc9931f907e838068515ec
deleted: sha256:d76de4506279cf7f113eca902b6dbf9c966d5763e3a65314d3fc15d912dd39ed
deleted: sha256:6c26bfa0ac0bbe18beed37e636bcb18ab6dac3f086abeb94665171fe90abb604
deleted: sha256:60f22d0c1416049e15b67b523a80f19a9ba59a508d8e81d86213141f5d7221a6
deleted: sha256:1b419d868492ff3a634e022197e864510b4fe56410202450df4295584727e982
deleted: sha256:695d7c5bc3d57caa096ac3966ceaa623e612fd23a748aa17c7d2c86a0f6c6030
deleted: sha256:3abdd8a5e7a8909e1509f1d36dcc8b85a0f95c68a69e6d86c6e9e3c1059d44b3
untagged: todo-backend:latest
untagged: rayyan9477/todo-backend:latest
untagged: rayyan9477/todo-backend@sha256:6086ab1eb6887cbe9deab265df215344f3bff57a13d184b2879afda433e8cf9e
deleted: sha256:77b1f4b17da9bcff3671e9fd732a26ecb0c85b8fd16e34e0ec5475ab477fa8d8
untagged: alpine:latest
```

Total reclaimed space: 2.143GB

```
@Rayyan9477 →/workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ cat > docker-compose.yml << 'EOL'
> version: '3.8'
>
> services:
>   mongodb:
>     image: mongo:latest
>     container_name: mongodb
>     restart: always
>     volumes:
>       - mongodb_data:/data/db
>     networks:
>       - backend-network
>
>   backend:
>     build: ./backend
>     container_name: backend
>     restart: always
>     environment:
>       - MONGODB_URI=mongodb://mongodb:27017/todos
>       - PORT=5000
>     depends_on:
>       - mongodb
>     networks:
>       - frontend-network
>       - backend-network
>
>   frontend:
>     build: ./frontend
>     container_name: frontend
>     restart: always
>     ports:
>       - "3000:3000"
```

```

@Rayyan9477 → /workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ docker-compose up --build -d
WARN[0000] /workspaces/todo-mern-app-Rayyan9477/frontend/docker-compose.yml: the attribute `version` is obsolete, it will be
ignored, please remove it to avoid potential confusion
[+] Running 9/9
✓ mongodb Pulled 29.3
s
✓ 2726e237d1a3 Pull complete 3.6
s
✓ 4113c9f6bc12 Pull complete 5.6
s
✓ 6bd25e6544db Pull complete 8.1
s
✓ 114959114e76 Pull complete 8.4
s
✓ 74e29de52e16 Pull complete 8.4
s
✓ a7aa415a3894 Pull complete 8.5
s
✓ b4c1b5279c53 Pull complete 24.6
s
✓ 2d3498acb5d9 Pull complete 24.6
s
Compose can now delegate builds to bake for better performance.
To do so, set COMPOSE_BAKE=true.
[+] Building 0.0s (0/0) docker:default
t

```

```

@Rayyan9477 → /workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ cat > .env << 'EOL'
> MONGODB_URI=mongodb://mongodb:27017/todos
> PORT=5000
> EOL
@Rayyan9477 → /workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ docker-compose up --build -d
WARN[0000] /workspaces/todo-mern-app-Rayyan9477/frontend/docker-compose.yml: the attribute `version` is obsolete, it will be
ignored, please remove it to avoid potential confusion
Compose can now delegate builds to bake for better performance.
To do so, set COMPOSE_BAKE=true.
[+] Building 0.0s (0/0) docker:default
unable to prepare context: path "/workspaces/todo-mern-app-Rayyan9477/frontend/backend" not found
@Rayyan9477 → /workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ ls -la frontend/
ls: cannot access 'frontend/': No such file or directory
@Rayyan9477 → /workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ pwd && ls -la
/workspaces/todo-mern-app-Rayyan9477/frontend
total 784
drwxrwxrwx+ 5 codespace root 4096 May 1 15:28 .
drwxrwxrwx+ 6 codespace root 4096 May 1 14:54 ..
-rw-rw-rw- 1 codespace codespace 52 May 1 15:35 .env
-rw-rw-rw- 1 codespace codespace 542 May 1 14:58 Dockerfile
-rw-rw-rw- 1 codespace root 3359 Apr 25 16:31 README.md
-rw-rw-rw- 1 codespace codespace 765 May 1 15:35 docker-compose.yml
drwxrwxrwx+ 890 codespace codespace 36864 May 1 14:55 node_modules
-rw-rw-rw- 1 codespace codespace 721785 May 1 14:56 package-lock.json
-rw-rw-rw- 1 codespace codespace 933 May 1 14:56 package.json
drwxrwxrwx+ 2 codespace codespace 4096 May 1 14:54 public
drwxrwxrwx+ 2 codespace root 4096 May 1 14:56 src
@Rayyan9477 → /workspaces/todo-mern-app-Rayyan9477/frontend (feature/containerization) $ cd /workspaces/todo-mern-app-Rayyan
9477/ && pwd
/workspaces/todo-mern-app-Rayyan9477
@Rayyan9477 → /workspaces/todo-mern-app-Rayyan9477 (feature/containerization) $ cd /workspaces/todo-mern-app-Rayyan9477/ &&
cat > docker-compose.yml << 'EOL'
> version: '3.8'
>

```

```
@Rayyan9477 → /workspaces/todo-mern-app-Rayyan9477 (feature/containerization) $ cd /workspaces/todo-mern-app-Rayyan9477/ &&
cat > .env << 'EOL'
> MONGODB_URI=mongodb://mongodb:27017/todos
> PORT=5000
> EOL
@Rayyan9477 → /workspaces/todo-mern-app-Rayyan9477 (feature/containerization) $ cd /workspaces/todo-mern-app-Rayyan9477/ &&
docker-compose up --build -d
WARN[0000] /workspaces/todo-mern-app-Rayyan9477/docker-compose.yml: the attribute `version` is obsolete, it will be ignored,
please remove it to avoid potential confusion
Compose can now delegate builds to bake for better performance.
To do so, set COMPOSE_BAKE=true.
[+] Building 146.0s (26/26) FINISHED
=> [backend internal] load build definition from Dockerfile
=> [backend internal] load metadata for docker.io/library/node:18-alpine
=> [backend auth] library/node:pull token for registry-1.docker.io
=> [backend internal] load .dockerignore
=> [frontend internal] load build definition from Dockerfile
=> [frontend build 1/6] FROM docker.io/library/node:18-alpine@sha256:8d6421d663b4c28fd3ebc498332f249011d118945588d0a
=> resolve docker.io/library/node:18-alpine@sha256:8d6421d663b4c28fd3ebc498332f249011d118945588d0a35cb9bc4b8ca09d
=> sha256:8d6421d663b4c28fd3ebc498332f249011d118945588d0a35cb9bc4b8ca09d0e 7.67kB / 7.67kB
=> sha256:929b04d7c782f04f615cf785488fed452b6569f87c73ff666ad553a7554f0006 1.72kB / 1.72kB
=> sha256:ee77c6cd7c1886ecc802da6c6edef3a8ec1ea27d1fb96162bf03dd3710839b8da 6.18kB / 6.18kB
=> sha256:f18232174bc91741fdf3da96d85011092101a032a93a388b79e99e69c2d5c870 3.64MB / 3.64MB
=> sha256:dd71dde834b5c203d162902e6b8994cb2309ae049a0eabc4efea161b2b5a3d0e 40.01MB / 40.01MB
=> sha256:1e5a4c89cee5c0826c540ab06d4b6b491c96eda01837f430bd47f0d26702d6e3 1.26MB / 1.26MB
=> extracting sha256:f18232174bc91741fdf3da96d85011092101a032a93a388b79e99e69c2d5c870
=> sha256:25ff2da83641908f65c3a74d80409d6b1b62ccfaab220b9ea70b80df5a2e0549 446B / 446B
=> extracting sha256:dd71dde834b5c203d162902e6b8994cb2309ae049a0eabc4efea161b2b5a3d0e
=> extracting sha256:1e5a4c89cee5c0826c540ab06d4b6b491c96eda01837f430bd47f0d26702d6e3
=> extracting sha256:25ff2da83641908f65c3a74d80409d6b1b62ccfaab220b9ea70b80df5a2e0549
=> [backend internal] load build context
=> transferring context: 13.22MB
```

```
[+] Running 8/8
✔ backend Built 0.0s
✔ frontend Built 0.0s
✔ Network todo-mern-app-rayyan9477_backend-network Created 0.1s
✔ Network todo-mern-app-rayyan9477_frontend-network Created 0.1s
✔ Volume "todo-mern-app-rayyan9477_mongodb_data" Created 0.0s
✔ Container mongodb Started 0.5s
✔ Container backend Started 0.8s
✔ Container frontend Started 1.2s
@Rayyan9477 → /workspaces/todo-mern-app-Rayyan9477 (feature/containerization) $ cd /workspaces/todo-mern-app-Rayyan9477/ &&
docker-compose ps
WARN[0000] /workspaces/todo-mern-app-Rayyan9477/docker-compose.yml: the attribute `version` is obsolete, it will be ignored,
please remove it to avoid potential confusion

```

NAME	IMAGE	COMMAND	SERVICE	CREATED	STATUS	PORTS
backend	todo-mern-app-rayyan9477-backend	"docker-entrypoint.s..."	backend	4 seconds ago	Up 3 seconds	5000/tcp
frontend	todo-mern-app-rayyan9477-frontend	"/docker-entrypoint..."	frontend	4 seconds ago	Up 3 seconds	0.0.0.0:80
->80/tcp, [::]:80->80/tcp						
mongodb	mongo:latest	"docker-entrypoint.s..."	mongodb	4 seconds ago	Up 4 seconds	27017/tcp

```
@Rayyan9477 → /workspaces/todo-mern-app-Rayyan9477 (feature/containerization) $ cd /workspaces/todo-mern-app-Rayyan9477/ &&
docker-compose ps
WARN[0000] /workspaces/todo-mern-app-Rayyan9477/docker-compose.yml: the attribute `version` is obsolete, it will be ignored,
please remove it to avoid potential confusion

```

NAME	IMAGE	COMMAND	SERVICE	CREATED	STATUS	PORTS
backend	todo-mern-app-rayyan9477-backend	"docker-entrypoint.s..."	backend	26 seconds ago	Up 25 seconds	5000/tcp
frontend	todo-mern-app-rayyan9477-frontend	"/docker-entrypoint..."	frontend	26 seconds ago	Up 24 seconds	0.0.0.0:
80->80/tcp, [::]:80->80/tcp						
mongodb	mongo:latest	"docker-entrypoint.s..."	mongodb	26 seconds ago	Up 25 seconds	27017/tc

```
p
@Rayyan9477 → /workspaces/todo-mern-app-Rayyan9477 (feature/containerization) $ docker ps -a

```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS
01ec0cfcedbe	todo-mern-app-rayyan9477-frontend	"/docker-entrypoint..."	49 seconds ago	Up 48 seconds	0.0.0.0:80->80/
tcp, :::80->80/tcp	frontend				
c7913abbb746	todo-mern-app-rayyan9477-backend	"docker-entrypoint.s..."	49 seconds ago	Up 48 seconds	5000/tcp



```

@Rayyan9477 → /workspaces/todo-mern-app-Rayyan9477 (feature/containerization) $ docker-compose logs
WARN[0000] /workspaces/todo-mern-app-Rayyan9477/docker-compose.yml: the attribute `version` is obsolete, it will be ignored,
please remove it to avoid potential confusion
backend | > todo_backend@1.0.0 start
backend | > nodemon server.js
backend |
backend | [nodemon] 3.1.4
backend | [nodemon] to restart at any time, enter `rs`
backend | [nodemon] watching path(s): *.*
backend | [nodemon] watching extensions: js,mjs,cjs,json
backend | [nodemon] starting `node server.js`
backend | Server listening on port: 5000
backend | MongoDB connected
frontend | /docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
mongodb | {"t":{"$date":"2025-05-01T15:41:32.543+00:00"},"s":"I", "c":"CONTROL", "id":23285, "ctx":"main","msg":"Autom
atically disabling TLS 1.0, to force-enable TLS 1.0 specify --sslDisabledProtocols 'none'"}
mongodb | {"t":{"$date":"2025-05-01T15:41:32.545+00:00"},"s":"I", "c":"CONTROL", "id":5945603, "ctx":"main","msg":"Multi
threading initialized"}
mongodb | {"t":{"$date":"2025-05-01T15:41:32.565+00:00"},"s":"I", "c":"NETWORK", "id":4648601, "ctx":"main","msg":"Impli
cit TCP FastOpen unavailable. If TCP FastOpen is required, set at least one of the related parameters","attr":{"relatedParam
eters":["tcpFastOpenServer","tcpFastOpenClient","tcpFastOpenQueueSize"]}}
mongodb | {"t":{"$date":"2025-05-01T15:41:32.568+00:00"},"s":"I", "c":"NETWORK", "id":4915701, "ctx":"main","msg":"Initi
alized wire specification","attr":{"spec":{"incomingExternalClient":{"minWireVersion":0,"maxWireVersion":25},"incomingIntern
alClient":{"minWireVersion":0,"maxWireVersion":25},"outgoing":{"minWireVersion":6,"maxWireVersion":25},"isInternalClient":tr
ue}}}}
mongodb | {"t":{"$date":"2025-05-01T15:41:32.569+00:00"},"s":"I", "c":"TENANT_M", "id":7091600, "ctx":"main","msg":"Start
ing TenantMigrationAccessBlockerRegistry"}
mongodb | {"t":{"$date":"2025-05-01T15:41:32.569+00:00"},"s":"I", "c":"CONTROL", "id":4615611, "ctx":"initandlisten","ms
g":"MongoDB starting","attr":{"pid":1,"port":27017,"dbPath":"/data/db","architecture":"64-bit","host":"ed026b5a3a36"}}
mongodb | {"t":{"$date":"2025-05-01T15:41:32.569+00:00"},"s":"I", "c":"CONTROL", "id":23403, "ctx":"initandlisten","ms

=> => writing image sha256:c7c6d6fe9a6b64b1f698762a3567b12e83fccfc22b73f54312893cd4e9737145 0.0s
=> => naming to docker.io/library/todo-mern-app-rayyan9477-backend 0.0s
=> [backend] resolving provenance for metadata file 0.0s
=> [frontend internal] load build definition from Dockerfile 0.0s
=> => transferring dockerfile: 581B 0.0s
=> WARN: FromAsCasing: 'as' and 'FROM' keywords' casing do not match (line 1) 0.0s
=> [frontend internal] load metadata for docker.io/library/nginx:alpine 1.2s
=> [frontend auth] library/nginx:pull token for registry-1.docker.io 0.0s
=> [frontend internal] load .dockerignore 0.0s
=> => transferring context: 2B 0.0s
=> [frontend stage-1 1/3] FROM docker.io/library/nginx:alpine@sha256:65645c7bb6a0661892a8b03b89d0743208a18dd2f3f17a5 0.0s
=> [frontend internal] load build context 7.0s
=> => transferring context: 3.87MB 6.8s
=> CACHED [frontend build 3/6] COPY package*.json ./ 0.0s
=> CACHED [frontend build 4/6] RUN npm install 0.0s
=> CACHED [frontend build 5/6] COPY . . 0.0s
=> CACHED [frontend build 6/6] RUN npm run build 0.0s
=> CACHED [frontend stage-1 2/3] COPY --from=build /app/build /usr/share/nginx/html 0.0s
=> CACHED [frontend stage-1 3/3] RUN echo 'server { listen 80; location / { root /usr/share/nginx/html; 0.0s
=> [frontend] exporting to image 0.0s
=> => exporting layers 0.0s
=> => writing image sha256:058989f5ecd6d829dc8e26d1c9867ca0e7f5070c1100deef6a838cd430acc574 0.0s
=> => naming to docker.io/library/todo-mern-app-rayyan9477-frontend 0.0s
=> [frontend] resolving provenance for metadata file 0.0s
[+] Running 5/5
✓ backend Built 0.0s
✓ frontend Built 0.0s
✓ Container mongodb Running 0.0s
✓ Container backend Running 0.0s
✓ Container frontend Running 0.0s

```