

The screenshot shows the Docker Playground interface with a different tab selected: 'Our Application'. The URL is 'ip172-18-0-14-clasuv6fml8g009gehig-80.direct.labs.play-with-docker.com/tutorial/our-application/'. The page title is 'Our Application'. On the left, there's a sidebar with a 'Docker 101' menu:

- Tutorial ^
- Getting Started
- Our Application
- Updating our App
- Sharing our App
- Persisting our DB
- Using Bind Mounts
- Multi-Container Apps
- Using Docker Compose
- Image Building Best Practices
- What Next?
- PWD Tips

The main content area is titled 'Getting our App into PWD'. It contains instructions for running the application:

- Download the zip and upload it to Play with Docker. As a tip, you can drag and drop the zip (or any other file) on to the terminal in PWD.
- In the PWD terminal, extract the zip file.
- Change your current working directory into the new 'app' folder.
- In this directory, you should see a simple Node-based application.

Below these instructions are two terminal windows showing command outputs:

```
unzip app.zip
```

```
cd app/
```

```
ls
package.json  spec          src           yarn.lock
```

The screenshot shows a Windows desktop environment with two browser windows open, both displaying Docker session management interfaces.

Top Browser Window:

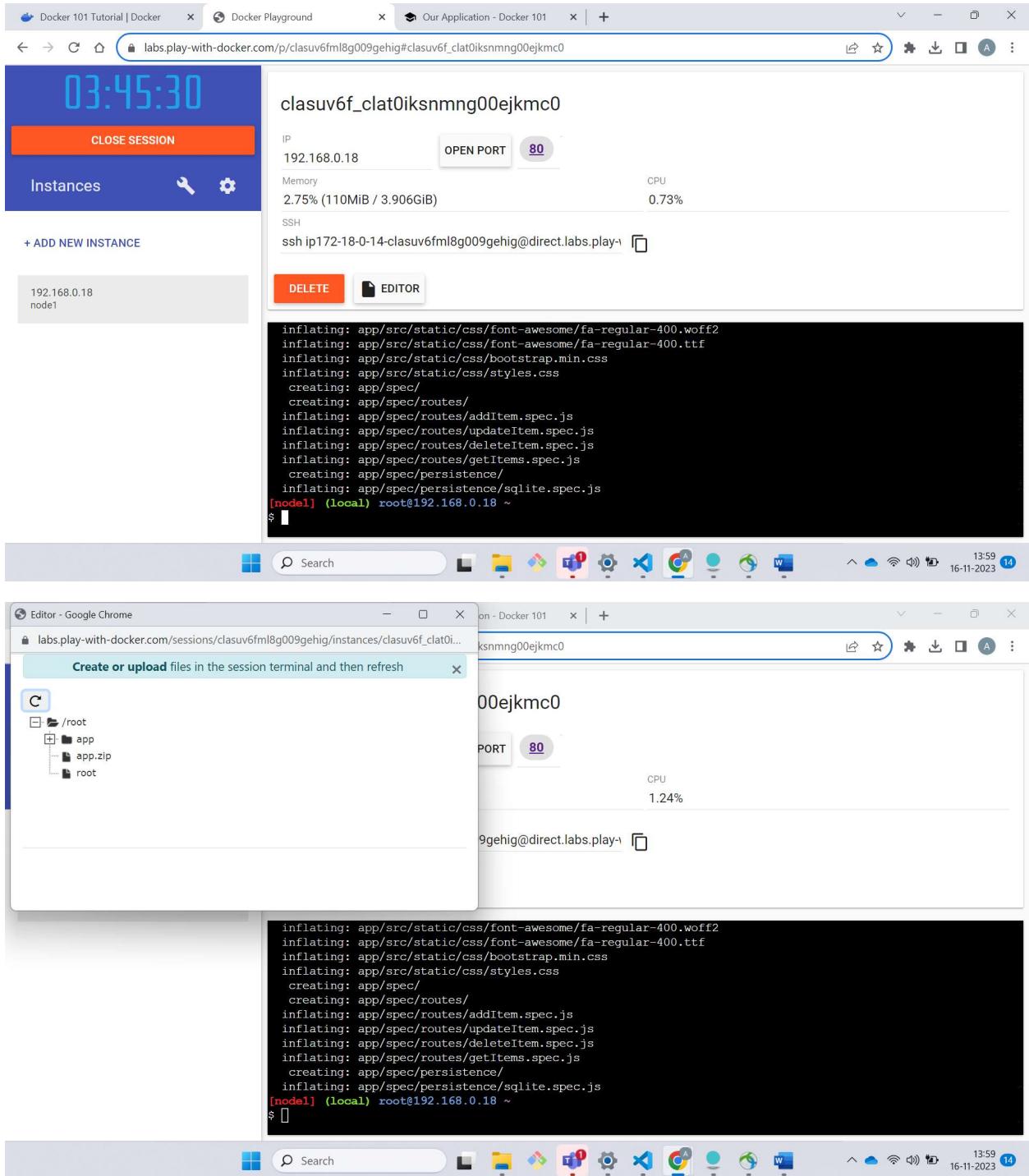
- Title Bar:** Editor - Google Chrome
- Address Bar:** labs.play-with-docker.com/sessions/clasuv6fml8g009gehig/instances/clasuv6f_clat0i...ksnmng00ejkmc0
- Content Area:** Shows a file tree under '/root' containing 'app.zip' and 'root'. A terminal session is open with the following command history:

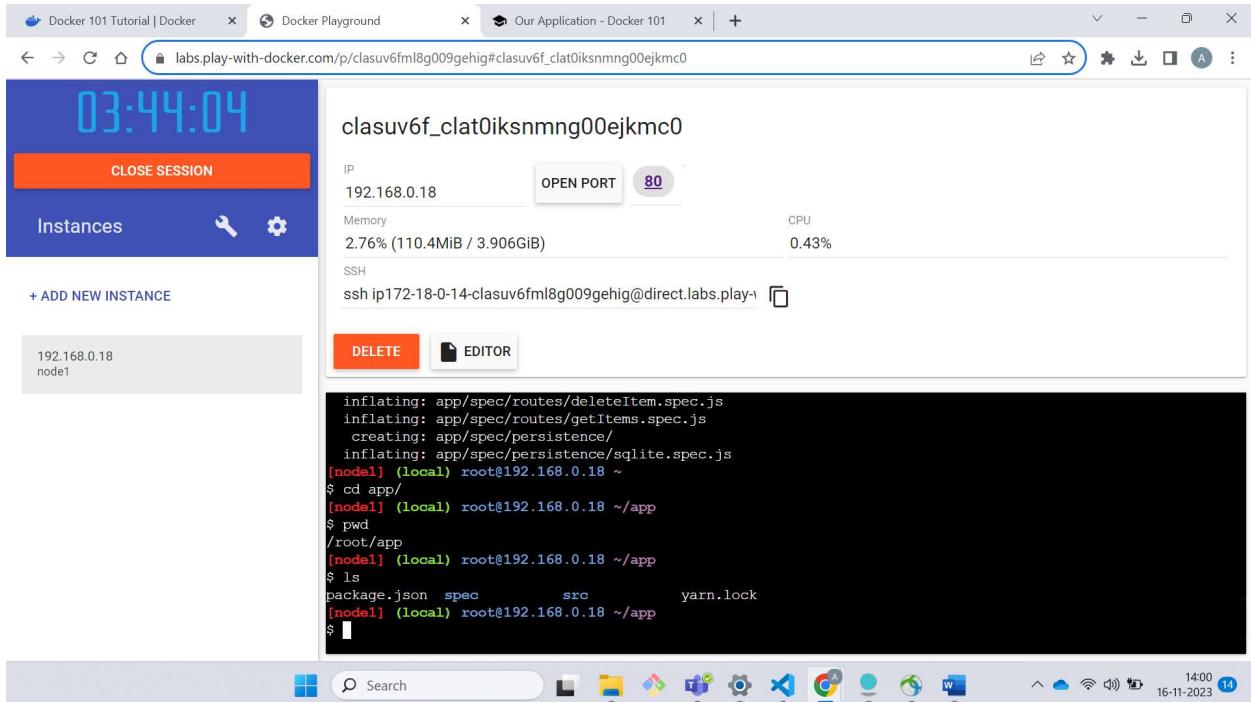
```
Unable to find image 'docker/getting-started:pwd' locally
pwd: Pulling from docker/getting-started
89d9c30cid48: Pull complete
24f1c4f0b2f4: Pull complete
16542569a10d: Pull complete
08396939143d: Pull complete
Digest: sha256:9156d395e7e41498d5348e95513d61fc7929db720393448306c5d7263d7f2696
Status: Downloaded newer image for docker/getting-started:pwd
e8d64e94b689929ee7f6ad01d0dd897f47ec66cf286ece61d3ccbfe743946ec7d
[node1] (local) root@192.168.0.18 ~
$ pwd
/root
[node1] (local) root@192.168.0.18 ~
$
```
- Session Summary:** PORT 80, CPU 0.56%
- Bottom Terminal Session:** Shows a terminal session on node1 with the same command history as above.

Bottom Browser Window:

- Title Bar:** Docker 101 Tutorial | Docker
- Address Bar:** labs.play-with-docker.com/p/clasuv6fml8g009gehig#clasuv6f_clat0ioksnmng00ejkmc0
- Content Area:** Shows a session summary for 'clasuv6f_clat0ioksnmng00ejkmc0':
 - IP: 192.168.0.18
 - OPEN PORT: 80
 - Memory: 2.76% (110.3MiB / 3.906GiB)
 - CPU: 0.44%
- Terminal Session:** Shows a terminal session on node1 with the following command history:

```
[node1] (local) root@192.168.0.18 ~
$ pwd
/root
[node1] (local) root@192.168.0.18 ~
$ unzip app.zip
Archive: app.zip
  creating: app/
    inflating: app/package.json
    inflating: app/yarn.lock
  creating: app/src/
  creating: app/src/routes/
    inflating: app/src/routes/updateItem.js
    inflating: app/src/routes/getItems.js
    inflating: app/src/routes/addItem.js
```





The screenshot shows a Docker tutorial page. At the top, there are three tabs: "Docker 101 Tutorial | Docker", "Docker Playground", and "Our Application - Docker 101". The active tab is "Our Application - Docker 101". Below the tabs is a browser address bar with the URL "ip172-18-0-14-clasuv6fml8g009gehig-80.direct.labs.play-with-docker.com/tutorial/our-application/". The main content area has a blue header with the text "Our Application". On the left, there is a sidebar with a "dockersamples/101-tutorial" repository card (322 Stars · 218 Forks) and a "Table of contents" section with links to "Getting our App into PWD", "Building the App's Container Image", "Starting an App Container", and "Recap". The main content area contains the following text and code snippets:

Docker 101
Tutorial ^
Getting Started
Our Application
Updating our App
Sharing our App
Persisting our DB
Using Bind Mounts
Multi-Container Apps
Using Docker Compose
Image Building Best Practices
What Next?
PWD Tips

based script of instructions that is used to create a container image. If you've created Dockerfiles before, you might see a few flaws in the Dockerfile below. But, don't worry! We'll go over them.

1. Create a file named Dockerfile with the following contents.

```
FROM node:10-alpine
WORKDIR /app
COPY . .
RUN yarn install --production
CMD ["node", "/app/src/index.js"]
```

2. Build the container image using the `docker build` command.

```
docker build -t docker-101 .
```

This command used the Dockerfile to build a new container image. You might have noticed that a lot of "layers" were downloaded. This is because we instructed the builder that we wanted to start from the `node:10-alpine` image. But, since we didn't have that on our machine, that image needed to be downloaded.

After that, we copied in our application and used `yarn` to install our application's dependencies. The `CMD` directive specifies the default command to run when starting a container from this image.

The screenshot shows a web browser window with three tabs: "Docker 101 Tutorial | Docker", "Docker Playground", and "Our Application - Docker 101". The active tab is "Our Application - Docker 101". The URL in the address bar is https://labs.play-with-docker.com/p/clasuv6fml8g009gehig#clasuv6f_clat0iksnmng00ejkmc0.
The main interface displays a digital clock at 03:35:11. On the left, there's a sidebar with "CLOSE SESSION", "Instances" (listing "192.168.0.18 node1"), and "+ ADD NEW INSTANCE".
On the right, detailed information about the container is shown:

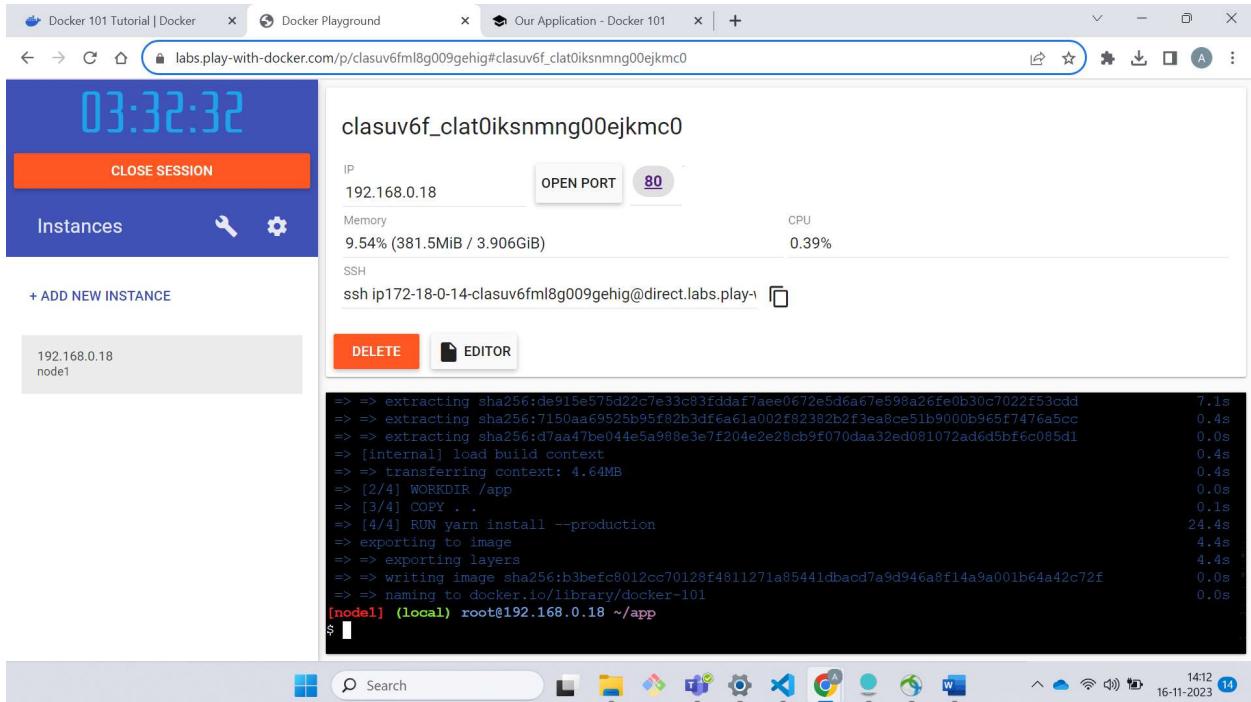
- IP:** 192.168.0.18
- OPEN PORT:** 80
- Memory:** 2.77% (110.8MiB / 3.906GiB)
- CPU:** 0.45%

A terminal window shows the following command history:

```
[node1] (local) root@192.168.0.18 ~/app
$ apt-get install nano
bash: apt-get: command not found
[node1] (local) root@192.168.0.18 ~/app
$ vim Dockerfile
[node1] (local) root@192.168.0.18 ~/app
$ cat Dockerfile
FROM node:10-alpine
WORKDIR /app
COPY . .
RUN yarn install --production
CMD ["node", "/app/sorce/index.js"]
[node1] (local) root@192.168.0.18 ~/app
$
```

This screenshot shows a second session in the same web-based Docker playground interface. The URL in the address bar is https://labs.play-with-docker.com/p/clasuv6fml8g009gehig#clasuv6f_clat0iksnmng00ejkmc0.
The interface is identical to the first one, with a digital clock at 03:32:43, a sidebar for managing instances, and detailed container information on the right.
The terminal window shows the command history for building a Docker image:

```
CMD ["node", "/app/sorce/index.js"]
[node1] (local) root@192.168.0.18 ~/app
$ docker build -t docker-101 .
[+] Building 38.3s (9/9) FINISHED
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 145B
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [internal] load metadata for docker.io/library/node:10-alpine
=> [1/4] FROM docker.io/library/node:10-alpine@sha256:dc98dac24efd4254f75976c40bce46944697a110d06ce7
=> => resolve docker.io/library/node:10-alpine@sha256:dc98dac24efd4254f75976c40bce46944697a110d06ce7
=> => sha256:02767d92553e465bf51e0bd661074f2e70bd575c4a69a0d610aa6e78fd20a9bf
=> => sha256:aa67ba258e1877ed6ec455a7f4cc69e25cf0f0b027af6f3c63a8eca2c8a440c
=> => sha256:ddad3d7c1e96adf9153f8921a7c9790f880a390163df453be1566e9ef0d546e0
```



The screenshot shows a Windows taskbar at the bottom with various icons. Above it is a browser window with three tabs: 'Docker 101 Tutorial | Docker', 'Docker Playground', and 'Our Application - Docker 101'. The active tab is 'Our Application - Docker 101' with the URL 'ip172-18-0-14-clasuv6fml8g009gehig-80.direct.labs.play-with-docker.com/tutorial/our-application/'. The main content area is titled 'Starting an App Container' and belongs to the 'dockersamples/101-tutorial' repository (322 Stars · 218 Forks). The page has a sidebar on the left with 'Docker 101' navigation links: Tutorial, Getting Started, Our Application, Updating our App, Sharing our App, Persisting our DB, Using Bind Mounts, Multi-Container Apps, Using Docker Compose, Image Building Best Practices, What Next?, and PWD Tips. The main content area has a 'Table of contents' sidebar with links to 'Getting our App into PWD', 'Building the App's Container Image', 'Starting an App Container', and 'Recap'. The main content includes steps for running the application using the 'docker run' command, adding items to a todo list, and marking items as complete. A terminal window shows the command 'docker run -dp 3000:3000 docker-101'.

Now that we have an image, let's run the application! To do so, we will use the `docker run` command (remember that from earlier?).

1. Start your container using the `docker run` command:

```
docker run -dp 3000:3000 docker-101
```

Remember the `-d` and `-p` flags? We're running the new container in "detached" mode (in the background) and creating a mapping between the host's port 3000 to the container's port 3000.

2. Open the application by clicking on the "3000" badge at the top of the PWD interface. Once open, you should have an empty todo list!

3. Go ahead and add an item or two and see that it works as you expect. You can mark items as complete and remove items.

Docker 101 Tutorial | Docker

Docker Playground

Our Application - Docker 101

labs.play-with-docker.com/p/clasuv6fml8g009gehig#clasuv6f_clatij4snmng00ejkol0

03:11:51

CLOSE SESSION

Instances

+ ADD NEW INSTANCE

192.168.0.18 node1

IP: 192.168.0.18 OPEN PORT: 3000 80

Memory: 9.89% (395.5MiB / 3.906GiB) CPU: 0.55%

SSH: ssh ip172-18-0-14-clasuv6fml8g009gehig@direct.labs.play-with-docker.com

DELETE EDITOR

```
=> --> naming to docker.io/library/docker-101
[node1] (local) root@192.168.0.18 ~/app
$ docker run -dp 3000:3000 docker-101
e1470f4f6f9fb312fe38fe2bd0880a6ee062ff441170acfce3079f16cae96a0
[node1] (local) root@192.168.0.18 ~/app
$ docker ps
CONTAINER ID IMAGE NAMES COMMAND CREATED STATUS PORTS
e1470f4f6f9f docker-101 "docker-entrypoint.s..." 7 seconds ago Up 6 seconds 0.0.0.0:3000->3000/tcp
1fd52c001d8d docker/getting-started:pwd "nginx -g 'daemon off;'" 4 minutes ago Up 4 minutes 0.0.0.0:80->80/tcp
[node1] (local) root@192.168.0.18 ~/app
$
```

Docker 101 Tutorial | Docker

Docker Playground

Todo App

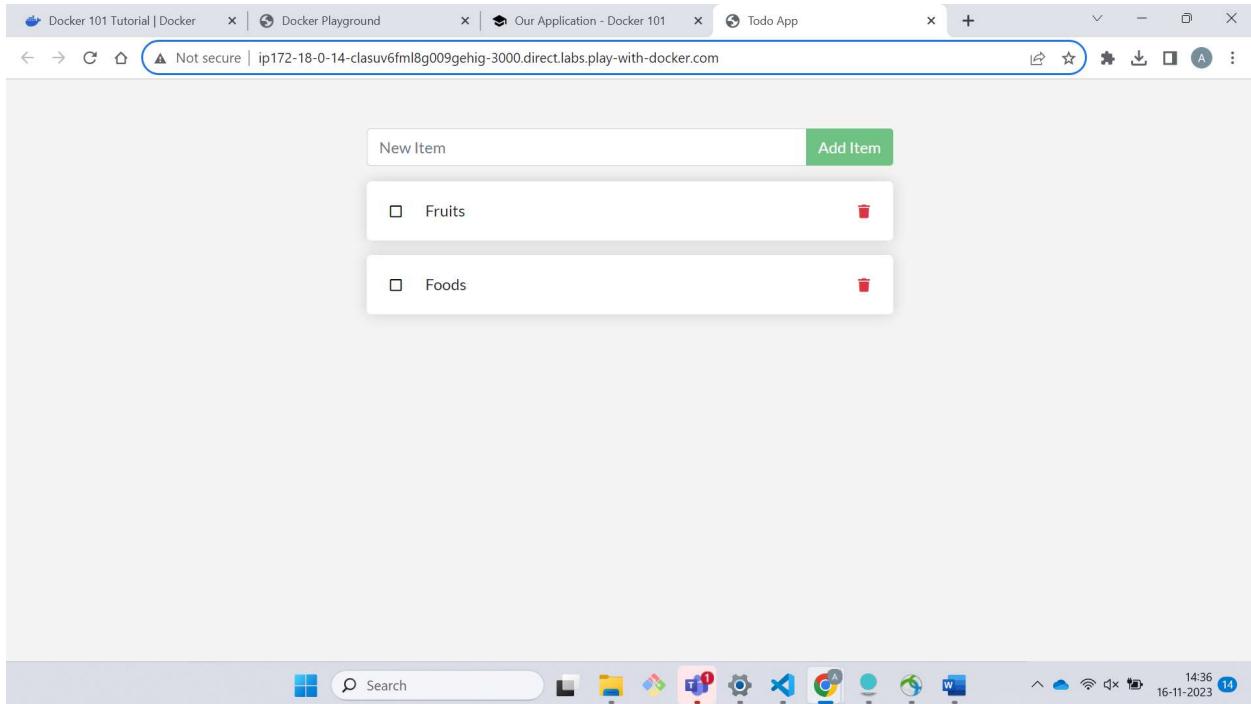
Our Application - Docker 101

Not secure | ip172-18-0-14-clasuv6fml8g009gehig-3000.direct.labs.play-with-docker.com

New Item

Add Item

No items yet! Add one above!



Docker 101 Tutorial | Docker Docker Playground Updating our App - Docker 101 Todo App

Not secure | ip172-18-0-14-clasuv6fml8g009gehig-80.direct.labs.play-with-docker.com/tutorial/updating-our-app/

Updating our App

Docker 101

Tutorial ^

- Getting Started
- Our Application
- Updating our App**
- Sharing our App
- Persisting our DB
- Using Bind Mounts
- Multi-Container Apps
- Using Docker Compose
- Image Building Best Practices
- What Next?
- PWD Tips

Updating our Source Code

1. In the `~/app/src/static/js/app.js` file, update line 56 to use the new empty text. ([Editing files in PWD tips here](#))

```
<p className="text-center">No items yet! Add one above!</p>
<p className="text-center">You have no todo items yet! Add one above!</p>
```

2. Let's build our updated version of the image, using the same command we used before.

```
docker build -t docker-101 .
```

3. Let's start a new container using the updated code.

```
docker run -dp 3000:3000 docker-101
```

Uh oh! You probably saw an error like this (the IDs will be different):

```
docker: Error response from daemon: driver failed programming external connectivity (bb242b2ca4d67eba76e79474fb36bb5125708ebdabd7f45c8eaf16caaabde9dd): Bind for 0.0.0.0.
```

Table of contents

- Updating our Source Code
- Replacing our Old Container
- Recap

14:36 16-11-2023

Editor - Google Chrome
 labs.play-with-docker.com/sessions/clasuv6fml8g009gehig/instances/clasuv6f_clatij4snmng00ejkol0/editor

Create or upload files in the session terminal and then refresh

```

  C
  /root
    app
      Dockerfile
      package.json
    spec
    src
      index.js
      persistence
      routes
      static
        css
        index.html
      js
        app.js
        babel.min.js
        react-bootstrap.js
        react-dom.production.min.js
        react.production.min.js
    yarn.lock
  app.zip

```

app.js

Save Reload

```

  42 const onItemRemoval = React.useCallback(
  43   item => {
  44     const index = items.findIndex(i => i.id === item.id);
  45     setItems([...items.slice(0, index), ...items.slice(index + 1)]);
  46   },
  47   [items],
  48 );
  49
  50 if (items === null) return 'Loading...';
  51
  52 return (
  53   <React.Fragment>
  54     <AddItemForm onNewItem={onNewItem} />
  55     {items.length === 0 && (
  56       <p className="text-center">you have no todo items yet! Add one above!</p>
  57     )}
  58     {items.map(item => (
  59       <ItemDisplay
  60         item={item}
  61         key={item.id}
  62         onItemUpdate={onItemUpdate}
  63         onItemRemoval={onItemRemoval}
  64       />
  65     )));
  66   )
  67 );
  68 }
  69
  70 function AddItemForm({ onNewItem }) {
  71   const { Form, InputGroup, Button } = ReactBootstrap;
  72
  73   const [newItem, setNewItem] = React.useState('');
  74   const [submitting, setSubmitting] = React.useState(false);
  75
  76   const submitViewItem = e => {
  77     e.preventDefault();
  
```

14:40 16-11-2023

Docker 101 Tutorial | Docker x Docker Playground x Updating our App - Docker 101 x Todo App x | +

labs.play-with-docker.com/p/clasuv6fml8g009gehig#clasuv6f_clatij4snmng00ejkol0

02:52:20

CLOSE SESSION

Instances

+ ADD NEW INSTANCE

192.168.0.18 node1

IP: 192.168.0.18 OPEN PORT: 3000 80

Memory: 10.57% (422.8MiB / 3.906GiB) CPU: 0.23%

SSH: ssh ip172-18-0-14-clasuv6fml8g009gehig@direct.labs.play-with-docker.com

DELETE EDITOR

```

80->80/tcp      fervent_tharp
[node1] (local) root@192.168.0.18 ~/app
$ ls
Dockerfile  package.json  spec          src          yarn.lock
[node1] (local) root@192.168.0.18 ~/app
$ docker build -t docker-101 .
bash: $: command not found
[node1] (local) root@192.168.0.18 ~/app
$ docker build -t docker-101 .
[+] Building 30.7s (9/9) FINISHED
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 143B

```

14:52 16-11-2023

Docker 101 Tutorial | Docker Docker Playground Updating our App - Docker 101 Todo App

labs.play-with-docker.com/p/clasuv6fml8g009gehig#clasuv6f_clatij4snmng00ejkol0

02:51:59

CLOSE SESSION

Instances

+ ADD NEW INSTANCE

192.168.0.18
node1

IP: 192.168.0.18 OPEN PORT: 3000 80

Memory: 10.57% (422.9MiB / 3.906GiB) CPU: 0.37%

SSH: ssh ip172-18-0-14-clasuv6fml8g009gehig@direct.labs.play-with-docker.com

```
=> => transferring dockerfile: 143B
=> [internal] load metadata for docker.io/library/node:10-alpine          0.0s
=> [1/4] FROM docker.io/library/node:10-alpine@sha256:dc98dac24efd4254f75976c40bce46944697a110d06ce7 0.0s
=> [internal] load build context                                         0.0s
=> => transferring context: 8.01kB                                       0.0s
=> CACHED [2/4] WORKDIR /app                                           0.0s
=> [3/4] COPY . .                                                 0.1s
=> [4/4] RUN yarn install --production                                25.3s
=> exporting to image                                                 4.8s
=> => exporting layers                                              4.8s
=> => writing image sha256:dbe81234f5835dalc7ae6b1fd7302bd0f20bd84608174ced2ba7a3b99bb30120 0.0s
=> => naming to docker.io/library/docker-101                           0.0s
[node1] (local) root@192.168.0.18 ~app
$
```

Docker 101 Tutorial | Docker Docker Playground Updating our App - Docker 101 Todo App

labs.play-with-docker.com/p/clasuv6fml8g009gehig#clasuv6f_clatij4snmng00ejkol0

02:51:28

CLOSE SESSION

Instances

+ ADD NEW INSTANCE

192.168.0.18
node1

IP: 192.168.0.18 OPEN PORT: 3000 80

Memory: 10.57% (422.7MiB / 3.906GiB) CPU: 0.49%

SSH: ssh ip172-18-0-14-clasuv6fml8g009gehig@direct.labs.play-with-docker.com

```
=> [3/4] COPY . .
=> [4/4] RUN yarn install --production                                0.1s
=> exporting to image                                                 25.3s
=> => exporting layers                                              4.8s
=> => writing image sha256:dbe81234f5835dalc7ae6b1fd7302bd0f20bd84608174ced2ba7a3b99bb30120 4.8s
=> => naming to docker.io/library/docker-101                           0.0s
=> => writing image sha256:0f62c8202e51e0b0dedda43bc86287ff7490cf427cce39241121152d36b34dc09 0.0s
[node1] (local) root@192.168.0.18 ~app
$ docker run -dp 3000:3000 docker-101
0f62c8202e51e0b0dedda43bc86287ff7490cf427cce39241121152d36b34dc09
docker: Error response from daemon: driver failed programming external connectivity on endpoint eager_greider (e2cea41054eadd0ee3ef556a92d73466d144172938efbf8dc98c80b45ca5162): Bind for 0.0.0.0:3000 failed: port is already allocated.
[node1] (local) root@192.168.0.18 ~app
$
```

The screenshot shows a Microsoft Edge browser window with five tabs open:

- Docker 101 Tutorial | Docker
- Docker Playground
- Updating our App - Docker 101
- Todo App
- (Blank tab)

The main content area displays the "Updating our App" section from the Docker 101 Tutorial. The title is "Replacing our Old Container". The text explains the steps to remove an old container:

- Get the ID of the container by using the `docker ps` command.
- Use the `docker stop` command to stop the container.
- Once the container has stopped, you can remove it by using the `docker rm` command.
- Now, start your updated app.
- Open the app and you should see your updated help text!

Code snippets for each step are shown in code blocks:

- `docker ps`
- `# Swap out <the-container-id> with the ID from docker ps
docker stop <the-container-id>`
- `docker rm <the-container-id>`
- `docker run -dp 3000:3000 docker-101`

The screenshot shows a Microsoft Edge browser window with five tabs open, identical to the first one:

The main content area displays the "Updating our App" section from the Docker 101 Tutorial. The title is "Replacing our Old Container". The text explains the steps to remove an old container:

- Get the ID of the container by using the `docker ps` command.
- Use the `docker stop` command to stop the container.
- Once the container has stopped, you can remove it by using the `docker rm` command.
- Now, start your updated app.
- Open the app and you should see your updated help text!

Code snippets for each step are shown in code blocks:

- `docker ps`
- `# Swap out <the-container-id> with the ID from docker ps
docker stop <the-container-id>`
- `docker rm <the-container-id>`
- `docker run -dp 3000:3000 docker-101`

Below the browser window, a taskbar is visible with various icons and system status.

Docker 101 Tutorial | Docker Docker Playground Updating our App - Docker 101 Todo App

labs.play-with-docker.com/p/clasuv6fml8g009gehig#clasuv6f_clatij4snmng00ejkol0

02:46:41

CLOSE SESSION

Instances

+ ADD NEW INSTANCE

192.168.0.18 node1

IP: 192.168.0.18 OPEN PORT: 80

Memory: 9.08% (363.3MiB / 3.906GiB) CPU: 0.06%

SSH: ssh ip172-18-0-14-clasuv6fml8g009gehig@direct.labs.play-with-docker.com

```
0.0.0.0:80->80/tcp fervent_tharp
[node1] (local) root@192.168.0.18 ~/app
$ docker rm e14
e14
[node1] (local) root@192.168.0.18 ~/app
$ docker ps -a
CONTAINER ID IMAGE NAMES COMMAND CREATED STATUS PORTS
0f62c8202e51 docker-101 docker-101 "docker-entrypoint.s..." 4 minutes ago Created
1fd52c001d8d docker/getting-started:pwd eager_greider 0:80->80/tcp fervent_tharp
[node1] (local) root@192.168.0.18 ~/app
$
```

Docker 101 Tutorial | Docker Docker Playground Todo App Updating our App - Docker 101 Todo App

Not secure | ip172-18-0-14-clasuv6fml8g009gehig-3000.direct.labs.play-with-docker.com

New Item Add Item

You have no todo items yet! Add one above!

Search

14:58 16-11-2023

Docker 101 Tutorial | Docker Playround | Sharing our App | Docker | Todo App | Todo App | + | - | X

Not secure | ip172-18-0-14-clasuv6fml8g009gehig-80.direct.labs.play-with-docker.com/tutorial/sharing-our-app/

Sharing our App

Create a Repo

To push an image, we first need to create a repo on Docker Hub.

1. Go to [Docker Hub](#) and log in if you need to.
2. Click the **Create Repository** button.
3. For the repo name, use `101-todo-app`. Make sure the Visibility is **Public**.
4. Click the **Create** button!

If you look on the right-side of the page, you'll see a section named **Docker commands**. This gives an example command that you will need to run to push to this repo.

Docker commands

Public View

To push a new tag to this repository,

```
docker push dockersamples/101-todo-app:tagname
```

Docker 101 Tutorial | Docker Playround | Sharing our App | anurag04a/101-todo-app | Todo App | Todo App | + | - | X

hub.docker.com/repository/docker/anurag04a/101-todo-app/general

anurag04a / 101-todo-app / General

General Tags Builds Collaborators Webhooks Settings

Add a short description for this repository **Update**

The short description is used to index your content on Docker Hub and in search engines. It's visible to users in search results.

anurag04a / 101-todo-app

Description

This repository does not have a description

Last pushed: a few seconds ago

Docker commands

To push a new tag to this repository:

```
docker push anurag04a/101-todo-app:tagname
```

Tags

This repository is empty. Push some images to it to see them appear here.

Automated Builds

Manually pushing images to Hub? Connect your account to GitHub or Bitbucket to automatically build and tag new images whenever your

The screenshot shows a web browser window with multiple tabs open. The active tab is titled "Sharing our App" and displays a Docker tutorial. The page content includes a sidebar with "Docker 101" navigation links and a main area titled "Pushing our Image". It contains numbered steps, code snippets, and explanatory text. A "Table of contents" sidebar on the right lists several sections.

Docker 101

- Tutorial ^
- Getting Started
- Our Application
- Updating our App
- Sharing our App**
- Persisting our DB
- Using Bind Mounts
- Multi-Container Apps
- Using Docker Compose
- Image Building Best Practices
- What Next?
- PWD Tips

Pushing our Image

- Back in your PWD instance, try running the command. You should get an error that looks something like this:

```
$ docker push dockersamples/101-todo-app
The push refers to repository [docker.io/dockersamples/101-todo-app]
An image does not exist locally with the tag: dockersamples/101-todo-app
```

Why did it fail? The push command was looking for an image named dockersamples/101-todo-app, but didn't find one. If you run `docker image ls`, you won't see one either.
- To fix this, we need to "tag" our image, which basically means give it another name.
- Login to the Docker Hub using the command `docker login -u YOUR-USER-NAME`.
- Use the `docker tag` command to give the `docker-101` image a new name. Be sure to swap out `YOUR-USER-NAME` with your Docker ID.

```
docker tag docker-101 YOUR-USER-NAME/101-todo-app
```
- Now try your push command again. If you're copying the value from Docker Hub, you can drop the `tagname` portion, as we didn't add a tag to the image name.

The screenshot shows a web browser window displaying a Docker session interface. The top bar shows the URL as `labs.play-with-docker.com/p/clasuv6fm18g009gehig#clasuv6f_clatij4snmng00ejkol0`. The interface includes a clock, session controls, and a terminal window. The terminal window shows a series of commands being run, including Docker login, tagging, and pushing an image to Docker Hub.

02:25:48

CLOSE SESSION

Instances

+ ADD NEW INSTANCE

192.168.0.18
node1

IP: 192.168.0.18 | OPEN PORT: 3000 | 80

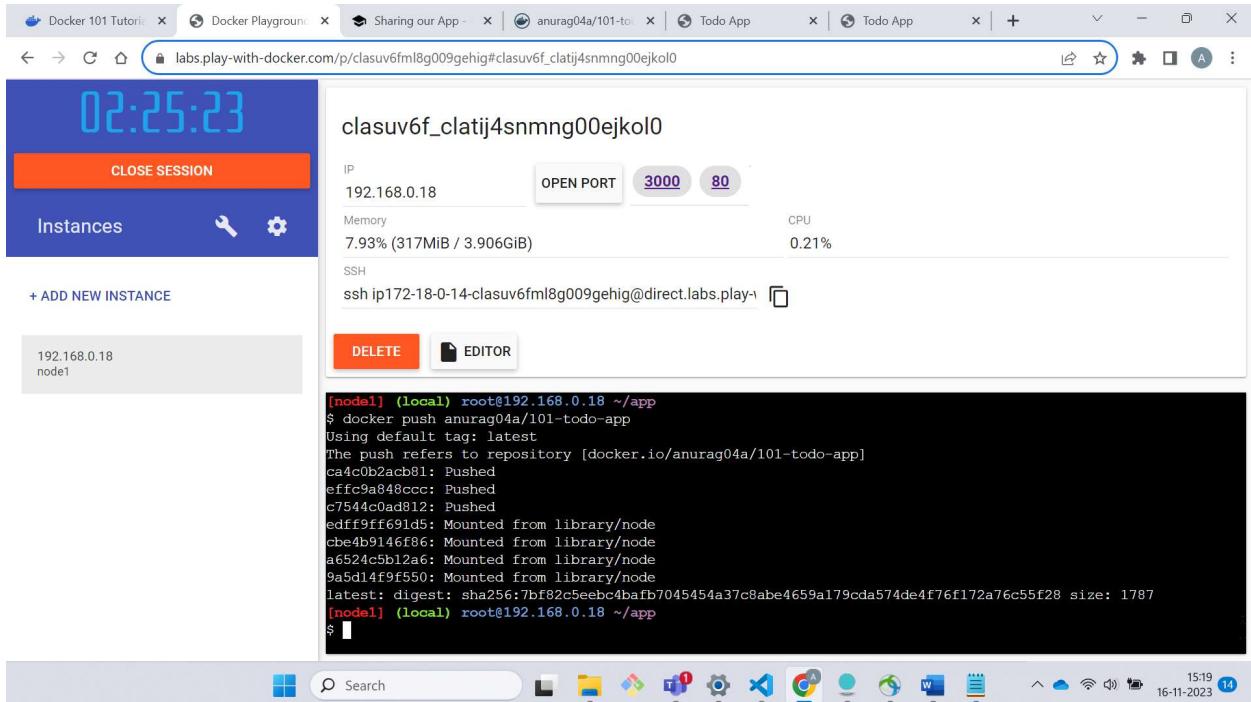
Memory: 8.03% (321.1MiB / 3.906GiB) | CPU: 3.73%

SSH: ssh ip172-18-0-14-clasuv6fm18g009gehig@direct.labs.play- □

DELETE EDITOR

```
[node1] (local) root@192.168.0.18 ~/app
$ docker login -u anurag04a
Password:
WARNING! Your password will be stored unencrypted in /root/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

Login Succeeded
[node1] (local) root@192.168.0.18 ~/app
$ docker tag docker-101 anurag04a/101-todo-app
[node1] (local) root@192.168.0.18 ~/app
$ docker push anurag04a/101-todo-app
Using default tag: latest
The push refers to repository [docker.io/anurag04a/101-todo-app]
```



The screenshot shows a browser window with the URL 'Not secure | ip172-18-0-14-clasuv6fm18g009gehig-80.direct.labs.play-with-docker.com/tutorial/sharing-our-app/'. The page title is 'Sharing our App' and it is part of the 'Docker 101' series. On the left, there's a sidebar with a 'Docker 101' navigation menu. The main content area contains a section titled 'Running our Image on a New Instance' with the following text:

Now that our image has been built and pushed into a registry, let's try running our app on a brand new instance that has never seen this container!

Below this, there are three numbered steps:

1. Back in PWD, click on **Add New Instance** to create a new instance.
2. In the new instance, start your freshly pushed app.

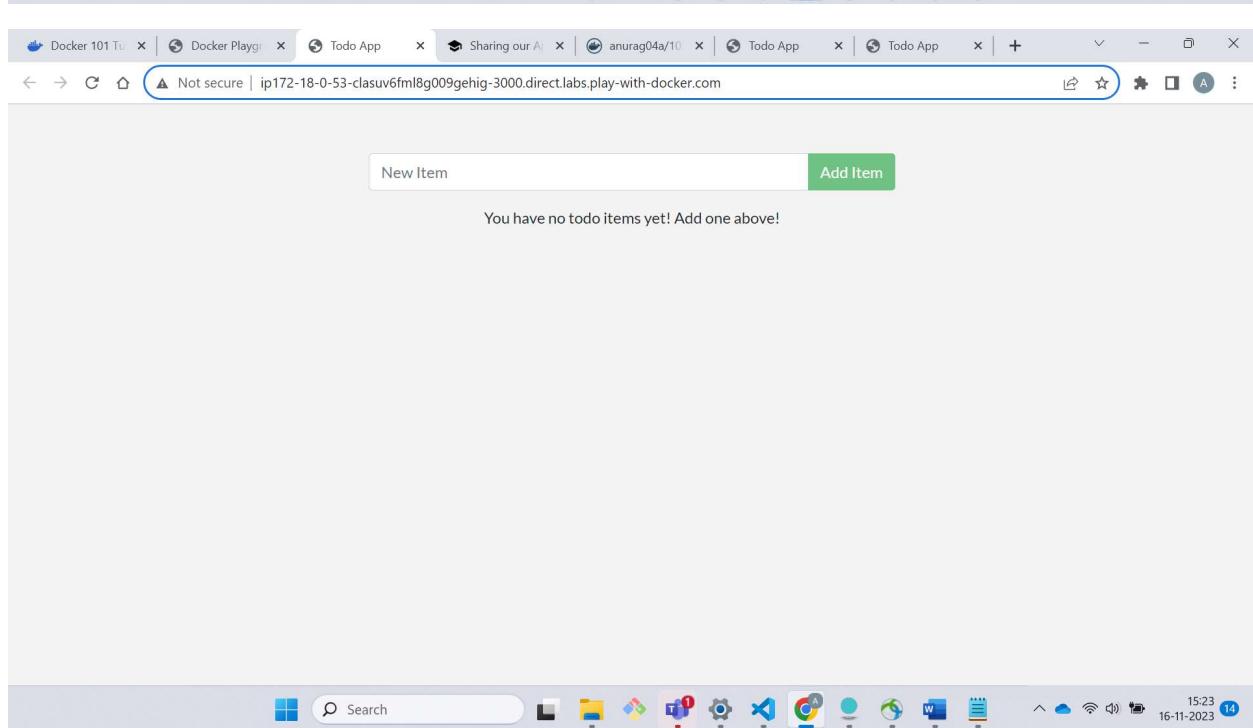
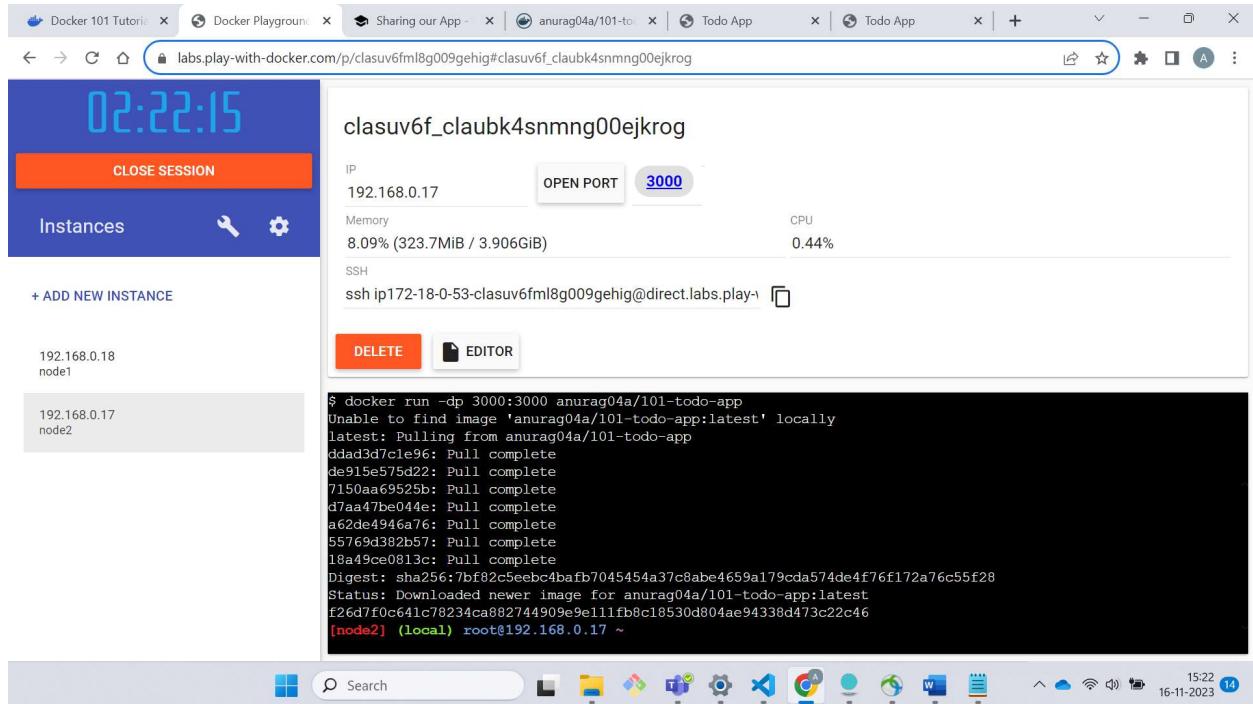
A terminal window shows the command: `docker run -dp 3000:3000 YOUR-USER-NAME/101-todo-app`. The next step says:

You should see the image get pulled down and eventually start up!

3. Click on the 3000 badge when it comes up and you should see the app with your modifications! Hooray!

Recap

In this section, we learned how to share our images by pushing them to a registry. We then went to a brand new instance and were able to run the freshly pushed image. This is quite common in CI pipelines, where the pipeline will create the image and push it to a registry and then the



The screenshot shows a web browser window with multiple tabs open. The active tab is titled "Persisting our DB" from "dockersamples/101-tutorial". The page content discusses persisting data in a Docker container. It includes a code snippet for generating random numbers:

```
run -d ubuntu bash -c "shuf -i 1-10000 -n 1 -o /data.txt && tail -f /dev/null"
```

Text on the page explains that this command starts a bash shell in a container, generates a random number, writes it to /data.txt, and then tails the file to keep the container running.

Below this, another code snippet is shown:

```
docker exec <container-id> cat /data.txt
```

The text indicates that executing this command inside a container will show a random number.

Further down, another code snippet is shown:

```
docker run -it ubuntu ls /
```

The text notes that there is no /data.txt file in the container's root directory.

The screenshot shows a web-based Docker management interface. At the top, it displays the IP address 192.168.0.17 and port 3000. Below this, it shows memory usage (10.87% / 434.8MiB / 3.906GiB) and CPU usage (82.03%).

The interface lists two instances: "node1" and "node2".

A terminal window at the bottom shows the following log output:

```
18a49ce0813c: Pull complete
Digest: sha256:7bf82c5eebc4bafb7045454a37c8abe4659a179cda574de4f76f172a76c55f28
Status: Downloaded newer image for anurag04a/101-todo-app:latest
f26df10c641c78234ca882744909e9e11fb8c18530d804ae94338d473c22c46
[node2] (local) root@192.168.0.17 ~
$ docker run -d ubuntu bash -c "shuf -i 1-10000 -n 1 -o /data.txt && tail -f /dev/null"
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
aece8493d397: Pull complete
Digest: sha256:2b7412e6465c3fc5bb21d3e6f1917c167358449fecac8176c6e496e5clf05f
Status: Downloaded newer image for ubuntu:latest
2802f138edfa8d2ad6fc08ca4a3a4d76ebd76c001095c4209a633589b692301
[node2] (local) root@192.168.0.17 ~
$
```

The screenshot shows a web-based Docker session interface. At the top, there are several browser tabs. The active tab is titled "clasuv6f_claubk4snmng00ejkrog". The main interface has a header with a digital clock (02:15:16), a "CLOSE SESSION" button, and a "DELETE" button. Below this is a section for "Instances" with two entries: "192.168.0.18 node1" and "192.168.0.17 node2". A "MEMORY" section shows usage for both nodes. An "SSH" section contains a terminal window with the following log:

```
f26d7f0c641c78234ca882744909e9e11fb8c18530d804ae94338d473c22c46
[node2] (local) root@192.168.0.17 ~
$ docker run -d ubuntu bash -c "shuf -i 1-10000 -n 1 > /data.txt && tail -f /dev/null"
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
aecd8493d397: Pull complete
Digest: sha256:2b7412e6465c3c7fc5bb21d3e6f1917c167358449fecac8176c6e496e5c1f05f
Status: Downloaded newer image for ubuntu:latest
2802f138edfa8d2ad6fc08ca44a3a4d76ebd76c001095c4209a633589b692301
[node2] (local) root@192.168.0.17 ~
$ docker exec 2802 cat /data.txt
2993
[node2] (local) root@192.168.0.17 ~
$
```

This screenshot shows the same web-based Docker session interface as the previous one, but with a different terminal command. The terminal window now displays:

```
hungry_albattani
f26d7f0c641c anurag04a/101-todo-app "docker-entrypoint.s..." 10 minutes ago Up 10 minutes
0.0.0.0:3000->3000/tcp mystifying_leakey
[node2] (local) root@192.168.0.17 ~
$ docker rm -f 2802
2802
[node2] (local) root@192.168.0.17 ~
$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS
f26d7f0c641c anurag04a/101-todo-app "docker-entrypoint.s..." 12 minutes ago Up 12 minutes 0.0.0.0:3000->3000/tcp mystifying_leakey
[node2] (local) root@192.168.0.17 ~
$
```

Docker 101 Tutorial | Docker Playround | Persisting our DB | anurag04a/101-todo | Todo App | Todo App | + | - | X

Not secure | ip172-18-0-14-clasuv6fm18g009gehig-80.direct.labs.play-with-docker.com/tutorial/persisting-our-data/

Persisting our DB

Correct data is provided.

Docker 101

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- Sharing our App
- Persisting our DB**
- Using Bind Mounts
- Multi-Container Apps
- Using Docker Compose
- Image Building Best Practices
- What Next?
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1. Create a volume by using the `docker volume create` command.

```
docker volume create todo-db
```

2. Start the todo container, but add the `-v` flag to specify a volume mount. We will use the named volume and mount it to `/etc/todos`, which will capture all files created at the path.

```
docker run -dp 3000:3000 -v todo-db:/etc/todos docker-101
```

3. Once the container starts up, open the app and add a few items to your todo list.



Docker 101 Tutorial | Docker Playround | Persisting our DB | anurag04a/101-todo | Todo App | Todo App | + | - | X

Not secure | ip172-18-0-14-clasuv6fm18g009gehig-80.direct.labs.play-with-docker.com/tutorial/persisting-our-data/

Persisting our DB

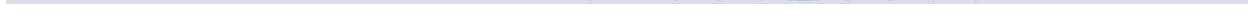
Correct data is provided.

Docker 101

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3. Once the container starts up, open the app and add a few items to your todo list.



02:08:50

CLOSE SESSION

Instances

+ ADD NEW INSTANCE

IP: 192.168.0.17 OPEN PORT: 3000

Memory: 10.22% (409MiB / 3.906GiB) CPU: 0.19%

SSH: ssh ip172-18-0-53-clasuv6fml8g009gehig@direct.labs.play-with-docker.com

[node2] (local) root@192.168.0.17 ~
\$ docker rm -f 2802
2802
[node2] (local) root@192.168.0.17 ~
\$ docker ps
CONTAINER ID IMAGE NAMES
f26d7f0c641c anurag04a/101-todo-app "docker-entrypoint.s..." 12 minutes ago Up 12 minutes 0.0.0.0:3000->3000/tcp mystifying_leaky
[node2] (local) root@192.168.0.17 ~
\$ docker volume create todo-db
todo-db
[node2] (local) root@192.168.0.17 ~
\$

02:04:55

CLOSE SESSION

Instances

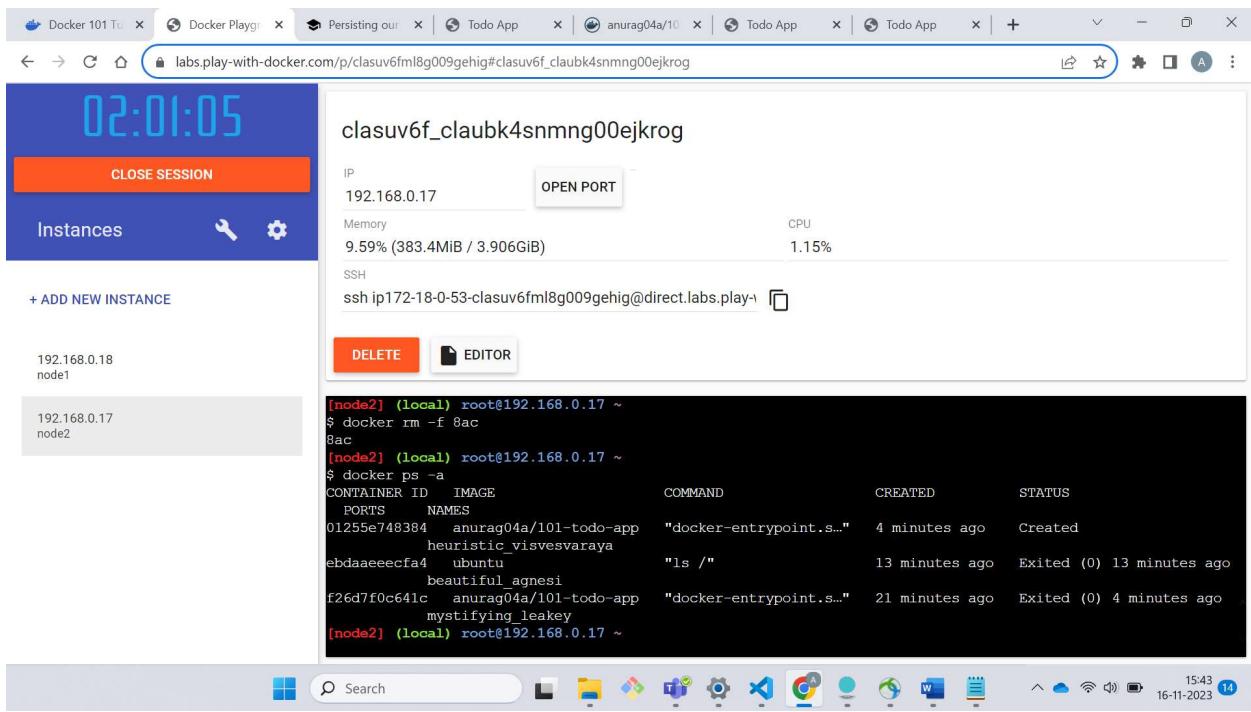
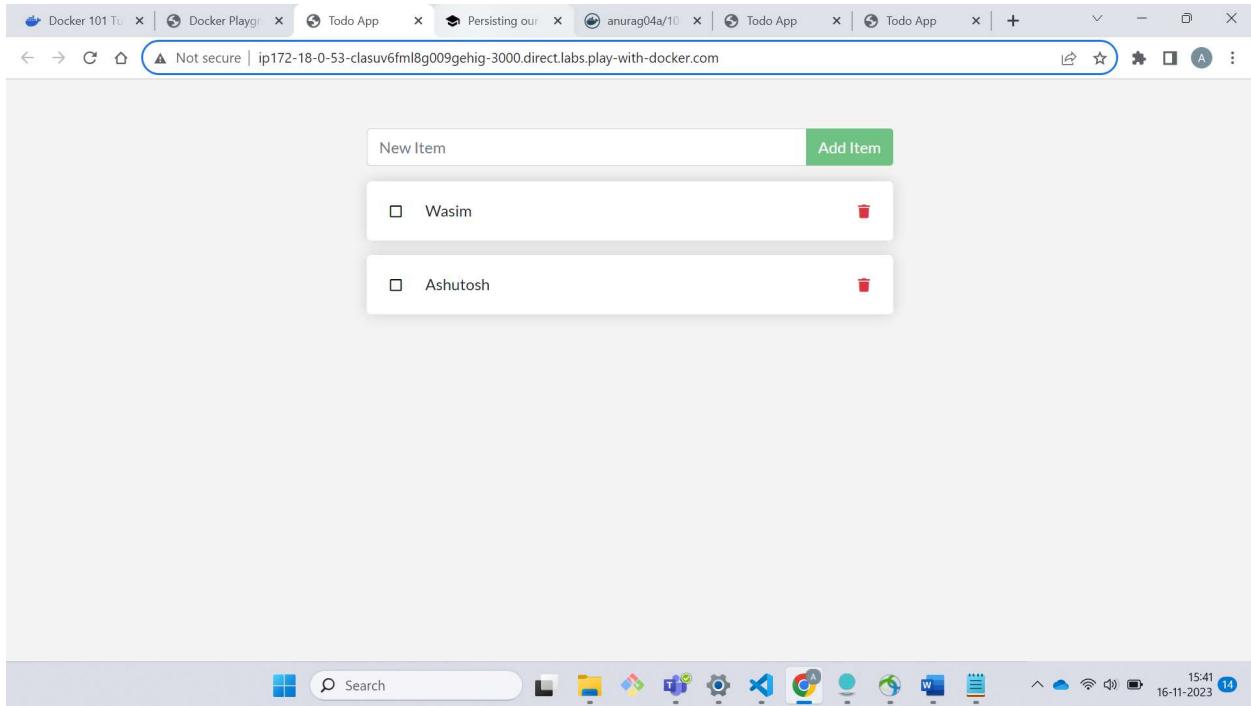
+ ADD NEW INSTANCE

IP: 192.168.0.17 OPEN PORT: 3000

Memory: 10.16% (406.4MiB / 3.906GiB) CPU: 15.11%

SSH: ssh ip172-18-0-53-clasuv6fml8g009gehig@direct.labs.play-with-docker.com

[node2] (local) root@192.168.0.17 ~
\$ docker run -dp 3000:3000 -v todo-dp:/etc/todos anurag04a/101-todo-app
01255e748384a81210b42300b35d383d857c2db77e92f713f12d36f956e4363e
docker: Error response from daemon: driver failed programming external connectivity on endpoint heuristic_vivesvaraya (232e9af21052876f2598ac8a1a03e9d02d0383389d898163a4d500639e5f6c4): Bind for 0.0.0.0:3000 failed: port is already allocated.
[node2] (local) root@192.168.0.17 ~
\$ docker container stop f26
f26
[node2] (local) root@192.168.0.17 ~
\$ docker run -dp 3000:3000 -v todo-dp:/etc/todos anurag04a/101-todo-app
8ac74cddd477a28f7fe7bfbd1d7dccfa7083224fe5b9286dc8e0fafb8e2eff
[node2] (local) root@192.168.0.17 ~
\$

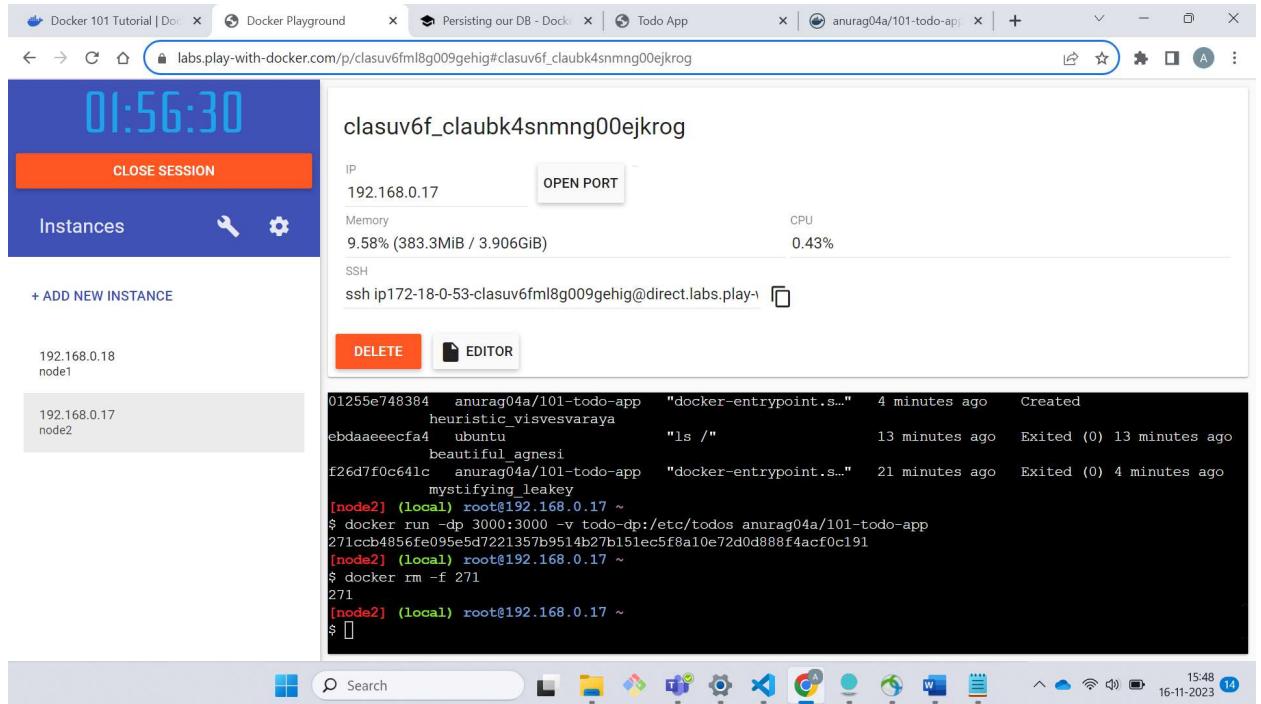


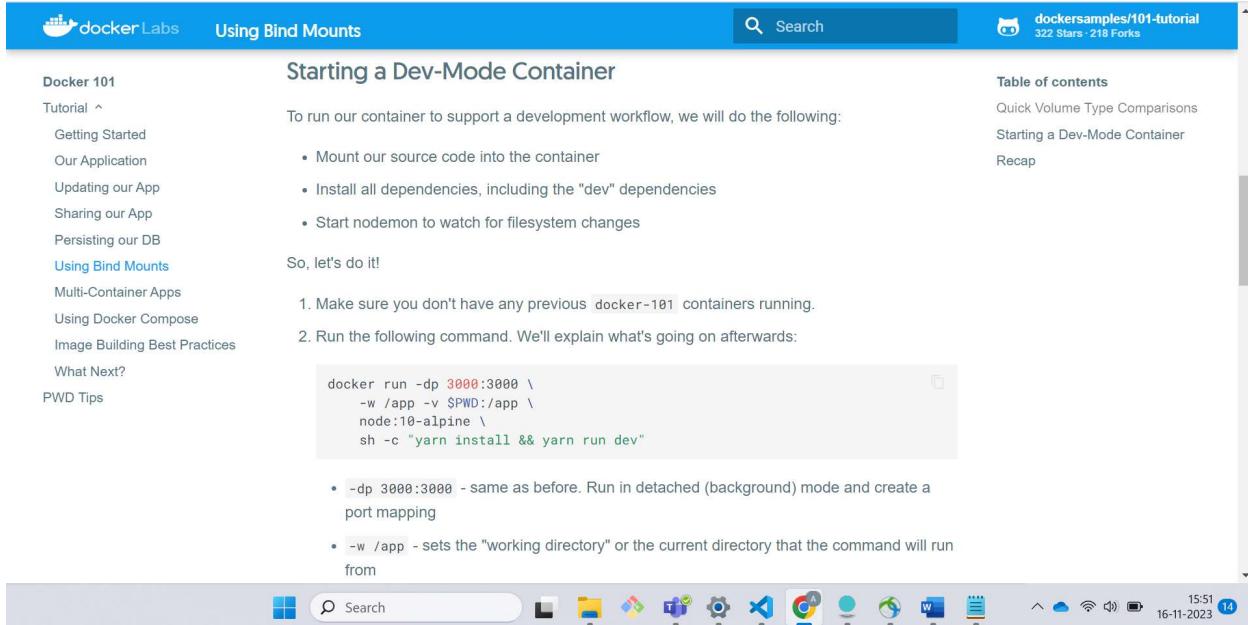
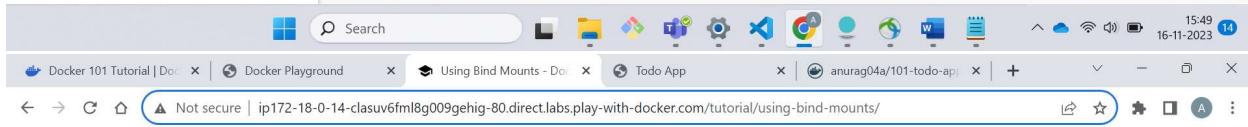
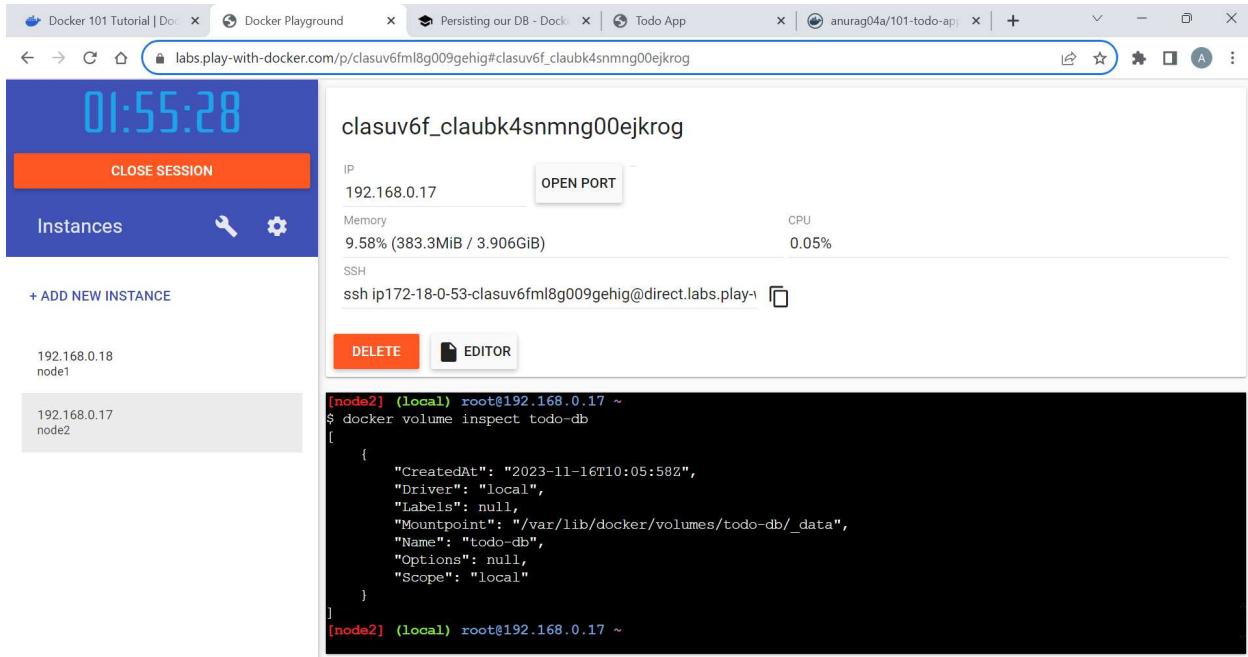
The screenshot shows a web browser window with multiple tabs open. The active tab displays a session for a Docker container named 'clasuv6f_claubk4snmng00ejkrog'. The interface includes a timer at the top left (02:00:00), a 'CLOSE SESSION' button, and a sidebar with 'Instances' and '+ ADD NEW INSTANCE' buttons. The main area shows container details: IP 192.168.0.17, OPEN PORT 3000, Memory usage (10.18% / 407.3MiB / 3.906GiB), and CPU usage (16.09%). Below this is an SSH terminal window showing a shell session with the command \$ docker ps -a.

```
$ docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS
01255e748384 anurag04a/101-todo-app "docker-entrypoint.s..." 4 minutes ago Created
ebdaaeecfa4 ubuntu "ls /" 13 minutes ago Exited (0) 13 minutes ago
f26d7f0c641c anurag04a/101-todo-app "docker-entrypoint.s..." 21 minutes ago Exited (0) 4 minutes ago
mystifying_leakey
[node2] (local) root@192.168.0.17 ~
$ docker run -dp 3000:3000 -v todo-dp:/etc/todos anurag04a/101-todo-app
271ccb4856fe095e5d7221357b9514b27b151ec5f8a10e72dd0d888f4acf0c191
[node2] (local) root@192.168.0.17 ~
$
```

The screenshot shows a web browser window displaying a list of items from a todo application. The title bar indicates the URL is ip172-18-0-53-clasuv6fm18g009gehig-3000.direct.labs.play-with-docker.com. The page has a header with 'New Item' and a 'Add Item' button. Below this is a table with two rows, each containing a checkbox, a name ('Wasim' and 'Ashutosh'), and a delete icon.

	New Item	Add Item
<input type="checkbox"/>	Wasim	
<input type="checkbox"/>	Ashutosh	





Docker 101 Tutorial | Do... | Docker Playground | Using Bind Mounts - Do... | Todo App | anurag04a/101-todo-ap... | +

Not secure | ip172-18-0-14-clasuv6fm8g009gehig-80.direct.labs.play-with-docker.com/tutorial/using-bind-mounts/

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Docker 101

Tutorial ^

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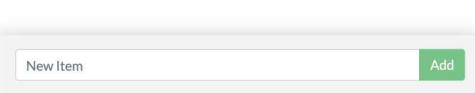
What Next?

PWD Tips

4. Now, let's make a change to the app. In the `src/static/js/app.js` file, let's change the "Add Item" button to simply say "Add". This change will be on line 109.

```
- {submitting ? 'Adding...' : 'Add Item'}  
+ {submitting ? 'Adding...' : 'Add'}
```

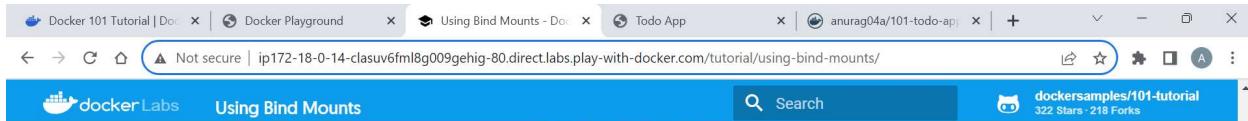
5. Simply refresh the page (or open it) and you should see the change reflected in the browser almost immediately. It might take a few seconds for the Node server to restart, so if you get an error, just try refreshing after a few seconds.



6. Feel free to make any other changes you'd like to make. When you're done, stop the container and build your new image using `docker build -t docker-101 .`

Using bind mounts is very common for local development setups. The advantage is that the dev machine doesn't need to have all of the build tools and environments installed. With a single `docker run` command, the dev environment is pulled and ready to go. We'll talk about Docker

15:54 16-11-2023



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5. Simply refresh the page (or open it) and you should see the change reflected in the browser almost immediately. It might take a few seconds for the Node server to restart, so if you get an error, just try refreshing after a few seconds.

New Item

Add

No items yet! Add one above!

6. Feel free to make any other changes you'd like to make. When you're done, stop the container and build your new image using `docker build -t docker-101 .`

Using bind mounts is very common for local development setups. The advantage is that the dev machine doesn't need to have all of the build tools and environments installed. With a single `docker run` command, the dev environment is pulled and ready to go. We'll talk about Docker Compose in a future step, as this will help simplify our commands (we're already getting a lot of flags).

Recap

