



# National Textile University

## Department of Computer Science

Subject: Operating System

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Reg number:23-NTU-CS-1151

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Lab : 12

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Semester:5th

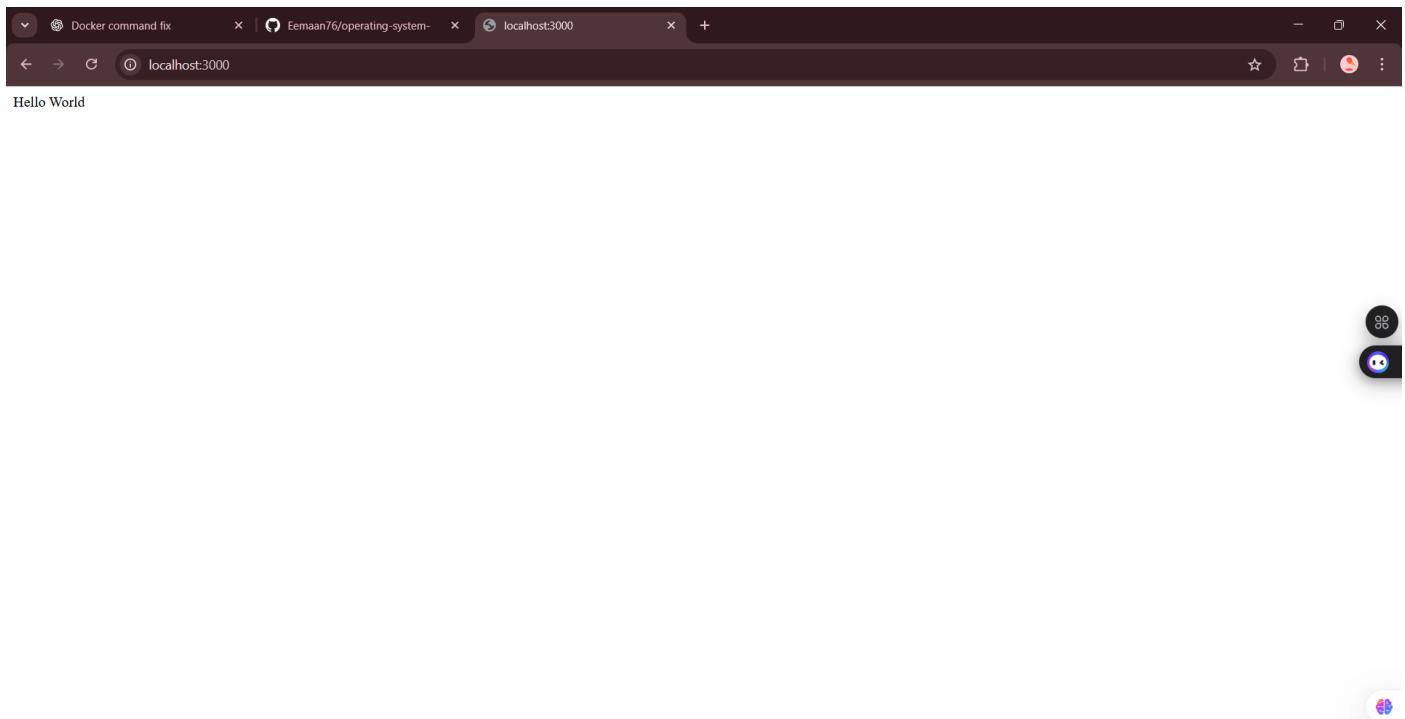
# Lab manual 12

## Task 1:

```
PS C:\WINDOWS\system32> docker run -it -v my_volume1:/home/ubuntu/my_volume1 --name test-container ubuntu:resolute-20251130 bash
root@7a9f31c994e2:/# cd home/ubuntu/ubuntu/
bash: cd: home/ubuntu/ubuntu/: No such file or directory
root@7a9f31c994e2:/# cd home/ubuntu/
root@7a9f31c994e2:/home/ubuntu# ls
my_volume1
root@7a9f31c994e2:/home/ubuntu# cd my_volume1/
root@7a9f31c994e2:/home/ubuntu/my_volume1# echo "hello world" >File.txt
root@7a9f31c994e2:/home/ubuntu/my_volume1# cat File.txt
hello world
root@7a9f31c994e2:/home/ubuntu/my_volume1#
```

```
PS C:\WINDOWS\system32> docker images
REPOSITORY      TAG          IMAGE ID      CREATED        SIZE
node            lts-alpine3.23  c921b97d4b74  33 hours ago  226MB
nginx           trixie       fb01117203ff  9 days ago   225MB
postgres         15.15-trixie  697ff7029514  10 days ago  627MB
ubuntu           resolute-20251130  901617b8bedb  2 weeks ago  133MB
ollama/ollama   latest       e8c3df6ad16  6 weeks ago  5.68GB
n8nio/n8n      latest       a17dbca282c9  6 weeks ago  1.63GB
ubuntu           latest       c35e29c94501  2 months ago 117MB
PS C:\WINDOWS\system32> docker run -it -v my_volume1:/home/ubuntu/my_volume1 --name test-container ubuntu:resolute-20251130 bash
root@7a9f31c994e2:/# cd home/ubuntu/ubuntu/
bash: cd: home/ubuntu/ubuntu/: No such file or directory
root@7a9f31c994e2:/# cd home/ubuntu/
root@7a9f31c994e2:/home/ubuntu# ls
my_volume1
root@7a9f31c994e2:/home/ubuntu# cd my_volume1/
root@7a9f31c994e2:/home/ubuntu/my_volume1# echo "hello world" >File.txt
root@7a9f31c994e2:/home/ubuntu/my_volume1# cat File.txt
hello world
root@7a9f31c994e2:/home/ubuntu/my_volume1#
PS C:\WINDOWS\system32> docker run -it -v my_volume1:/home/ubuntu/my_volume1 --name test-container ubuntu:resolute-20251
Unable to find image 'ubuntu:resolute-20251' locally
docker: Error response from daemon: failed to resolve reference "docker.io/library/ubuntu:resolute-20251": docker.io/library/ubuntu:resolute-20251: not found

Run 'docker run --help' for more information
PS C:\WINDOWS\system32> docker run -it -v my_volume1:/home/ubuntu/my_volume1 --name test-container ubuntu:resolute-20251130 bash
root@73c482f204a:/#
```

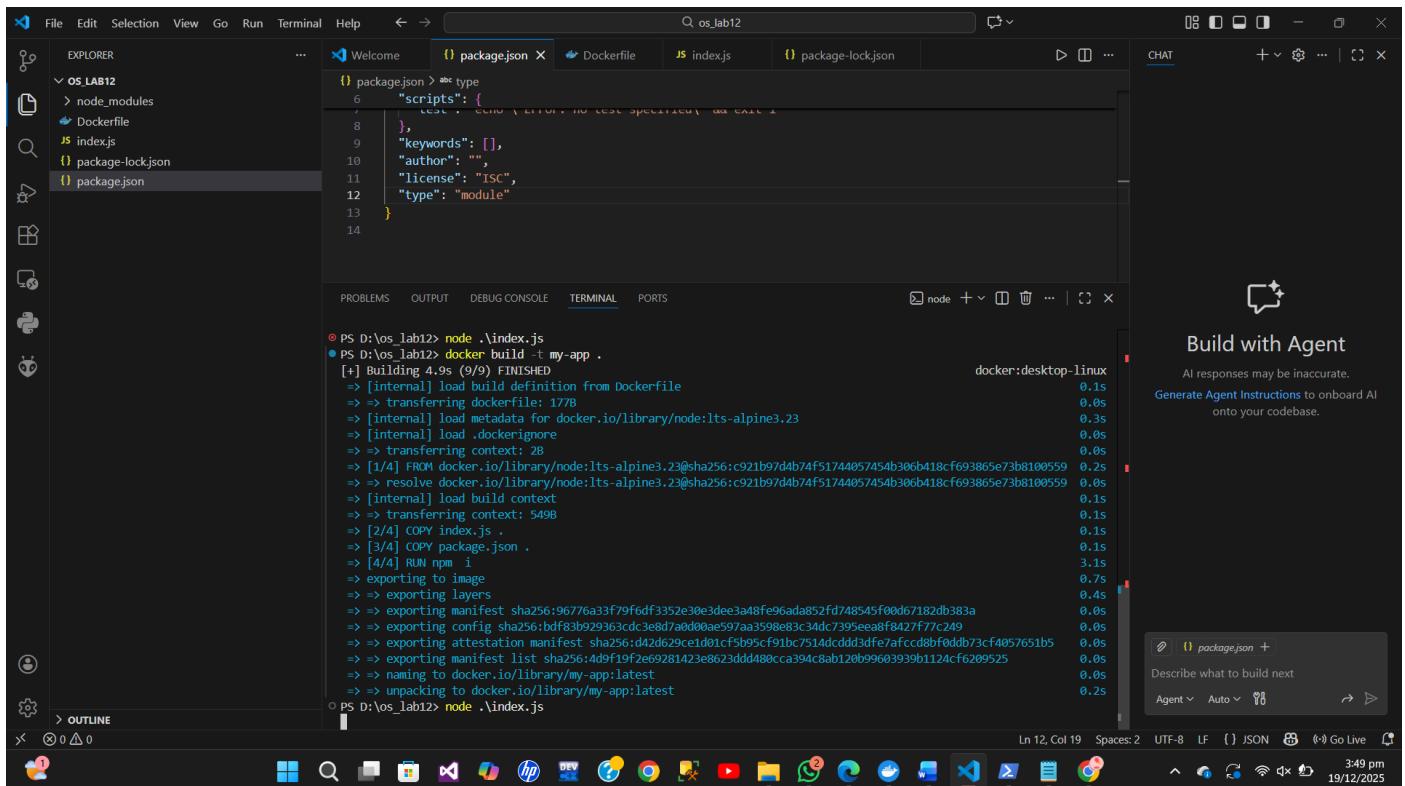


localhost:3000

Hello World



3:48 pm  
19/12/2025



```
package.json
{
  "scripts": {
    "test": "echo \"Error: no test specified\" & exit 1"
  },
  "keywords": [],
  "author": "",
  "license": "ISC",
  "type": "module"
}

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
```

```
PS D:\os_lab12> node .\index.js
● PS D:\os_lab12> docker build -t my-app .
[+] Building 4.9s (9/9) FINISHED
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 17B
=> [internal] load metadata for docker.io/library/node:lts-alpine3.23
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [1/4] FROM docker.io/library/node:lts-alpine3.23@sha256:c921b97d4b74f51744057454b306b418cf693865e73b8100559
=> => resolve docker.io/library/node:lts-alpine3.23@sha256:c921b97d4b74f51744057454b306b418cf693865e73b8100559
=> [internal] load build context
=> => transferring context: 5498
=> [2/4] COPY index.js .
=> [3/4] COPY package.json .
=> [4/4] RUN npm i
=> => exporting to image
=> => exporting layers
=> => exporting manifest sha256:96776a33f79f0df3352e30e3dee3a48fe96ada852fd748545f00d67182db383a
=> => exporting config sha256:bdff83b929363cd3e887a0d0ae597a3598e83c34dc7395ee8af842f77c249
=> => exporting attestation manifest sha256:d42d629ced01cf5b95cf91bc7514dcddd3dfe7afcddbf0fdb73cf4057651b5
=> => exporting manifest list sha256:ad9f19f2e69281423e8623dd480cca394c8ab120b99603939b1124cf6209525
=> => naming to docker.io/library/my-app:latest
=> => unpacking to docker.io/library/my-app:latest
```

AI responses may be inaccurate.  
Generate Agent Instructions to onboard AI onto your codebase.

Build with Agent

Describe what to build next

Agent Auto JSON Go Live

The screenshot shows the Docker Desktop application window. The left sidebar has 'Ask Gordon' (BETA), 'Containers', 'Images' (selected), 'Volumes', 'Kubernetes', and 'Builds'. The main area title is 'Images' with a 'Give feedback' link. It shows 'Local' and 'My Hub' tabs, with 'Local' selected. Below is a progress bar for disk usage: '98.97 MB / 8.29 GB in use' and '8 images'. A search bar, filter icon, and refresh icon are present. The table lists 8 images:

	Name	Tag	Image ID	Created	Size	Actions
<input type="checkbox"/>	nginx	trixie	fb01117203ff	9 days ago	224.94 MB	<a href="#">...</a> <a href="#">Delete</a>
<input type="checkbox"/>	postgres	15.15-trixie	697ff7029514	10 days ago	626.85 MB	<a href="#">...</a> <a href="#">Delete</a>
<input type="checkbox"/>	ubuntu	resolute-20251130	901617b8bedb	19 days ago	132.74 MB	<a href="#">...</a> <a href="#">Delete</a>
<input type="checkbox"/>	ollama/ollama	latest	e8c3d1f6ad16	1 month ago	5.68 GB	<a href="#">...</a> <a href="#">Delete</a>
<input type="checkbox"/>	n8nio/n8n	latest	a17dbca282c9	1 month ago	1.63 GB	<a href="#">...</a> <a href="#">Delete</a>
<input type="checkbox"/>	ubuntu	latest	c35e29c94501	2 months ago	117.31 MB	<a href="#">...</a> <a href="#">Delete</a>
<input type="checkbox"/>	node	lts-alpine3.23	c921b97d4b74	1 day ago	225.95 MB	<a href="#">...</a> <a href="#">Delete</a>
<input type="checkbox"/>	my-app	latest	4d9f19f2e692	2 minutes ago	229.43 MB	<a href="#">...</a> <a href="#">Delete</a>

At the bottom, it says 'Showing 8 items'. The footer shows 'Engine running', resource usage (RAM 1.01 GB, CPU 0.00%, Disk: 11.44 GB used / limit 1006.85 GB), a terminal icon, an update available icon, and the date/time (3:50 pm, 19/12/2025).

The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows a workspace named "OS LAB12" containing files: node\_modules, Dockerfile, index.js, package-lock.json, and package.json.
- Editor:** The "package.json" file is open, displaying its contents:

```
6  "scripts": {  
7    "start": "node index.js"  
8  },  
9  "keywords": [],  
10 "author": "",  
11 "license": "ISC",  
12 "type": "module"  
13 }  
14 }
```
- Terminal:** The terminal shows command-line output for running a Docker container:

```
PS D:\os_lab12> docker run -d -p 3000:3000 my-app  
9ce2479df1b29d2e35732a9f3a0bf25f52d161e8fb23597741ddb6aa2c147779  
PS D:\os_lab12>
```
- Bottom Status Bar:** Shows file paths (D:\os\_lab12\index.js), line numbers (Ln 12, Col 19), and other status information.
- Bottom Icons:** Standard Windows taskbar icons for file operations, search, and system status.

The screenshot shows the Visual Studio Code interface with a dark theme. The Explorer sidebar on the left lists files and folders: node\_modules, public, Dockerfile, index.js, package-lock.json, and package.json. The package.json file is currently selected and open in the main editor area. The code in package.json is:

```
1  {  
2   "name": "os_lab12",  
3   "version": "1.0.0",  
4   "description": "",  
5   "main": "index.js",  
6   "scripts": {  
7     "test": "echo \\"$Error: no test specified\\" && exit 1"  
8   },  
9   "keywords": [],  
10  "author": "",  
11  "license": "ISC",  
12  "type": "module"  
13 }  
14
```

The status bar at the bottom indicates the file is in JSON format, with 12 lines, 19 columns, 2 spaces, and LF line endings. The date and time shown are 19/12/2025, 3:59 pm.

The screenshot shows the Visual Studio Code interface with a dark theme. The Explorer sidebar on the left lists files and folders: node\_modules, public, Dockerfile, index.js, package-lock.json, and package.json. The index.js file is currently selected and open in the main editor area. The code in index.js is:

```
1 import express, { response } from 'express'  
2 import { request } from 'node:http'  
3 const app = express()  
4 function handler(request, response) [  
5   response.send('Hello World')  
6 ]  
7  
8 app.get('/',handler)  
9  
10 app.listen(3000)
```

The status bar at the bottom indicates the file is in JavaScript format, with 6 lines, 2 columns, 4 spaces, and CRLF line endings. The date and time shown are 19/12/2025, 3:59 pm.

File Edit Selection View Go Run Terminal Help < > os\_lab12

EXPLORER OS\_LAB12 node\_modules public Dockerfile index.js package-lock.json package.json

Dockerfile

```
1 FROM node:lts-alpine3.23
2 #copy the file
3 COPY index.js .
4 COPY package.json .
5 #install packages
6 RUN npm i
7 CMD ["node", "index.js"]
```

Build with Agent

AI responses may be inaccurate.

Generate Agent Instructions to onboard AI onto your codebase.

Snipping Tool

Screenshot copied to clipboard

Automatically saved to screenshots folder.

Mark-up and share

Ln 8, Col 1 Spaces: 4 UTF-8 CRLF Docker Go Live 400 pm 19/12/2025

## Task 2:

File Edit Selection View Go Run Terminal Help < > os\_lab12

EXPLORER OS\_LAB12 node\_modules Public Dockerfile index.js package-lock.json package.json

index.js

```
1 import express from 'express'
2
3 const app = express()
4
5 app.use(express.static('Public'))
6
7 app.listen(3000)
```

Build with Agent

AI responses may be inaccurate.

Generate Agent Instructions to onboard AI onto your codebase.

JS index.js +

Describe what to build

Ln 1, Col 15 Spaces: 4 UTF-8 CRLF JavaScript Go Live 4:38 pm 19/12/2025

The screenshot shows the Visual Studio Code interface with a dark theme. The Explorer sidebar on the left lists files and folders under the project 'OS\_LAB12'. The main editor area displays a Dockerfile with the following content:

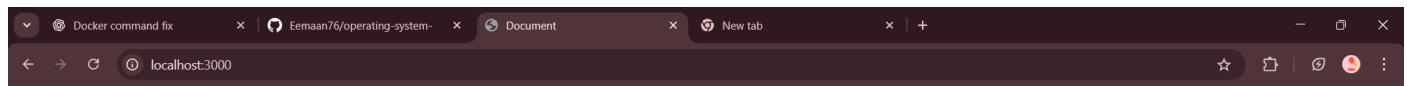
```
FROM node:lts-alpine3.23
COPY index.js .
COPY Public ./Public
COPY package.json .
RUN npm install
CMD ["node", "index.js"]
```

The status bar at the bottom indicates the file is saved ('Dockerfile'), has 11 lines and 0 columns, and was last modified at 4:37 pm on 19/12/2025.

The screenshot shows the Visual Studio Code interface with a dark theme. The Explorer sidebar on the left lists files and folders under the project 'OS\_LAB12'. The main editor area displays an index.html file with the following content:

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Document</title>
</head>
<body>
<h1>Hello World</h1>
<p>this is a sample HTML file.</p>
</body>
</html>
```

The status bar at the bottom indicates the file is saved ('index.html'), has 12 lines and 8 columns, and was last modified at 4:38 pm on 19/12/2025.



## Hello World

This is a sample HTML file.

