



# What is Docker?

- ▶ Docker is a configuration management tool that is used to automate the deployment of software in lightweight containers. These containers help applications to work efficiently in different environments.
- ▶ Docker container is a software package that has all the dependencies required to run an application.
- ▶ Note: A Docker Image is a template of instructions used to create containers.



# What is a Dockerfile?

- Docker Image:

A Docker Image is a read-only file with a bunch of instructions. When these instructions are executed, it creates a Docker container.

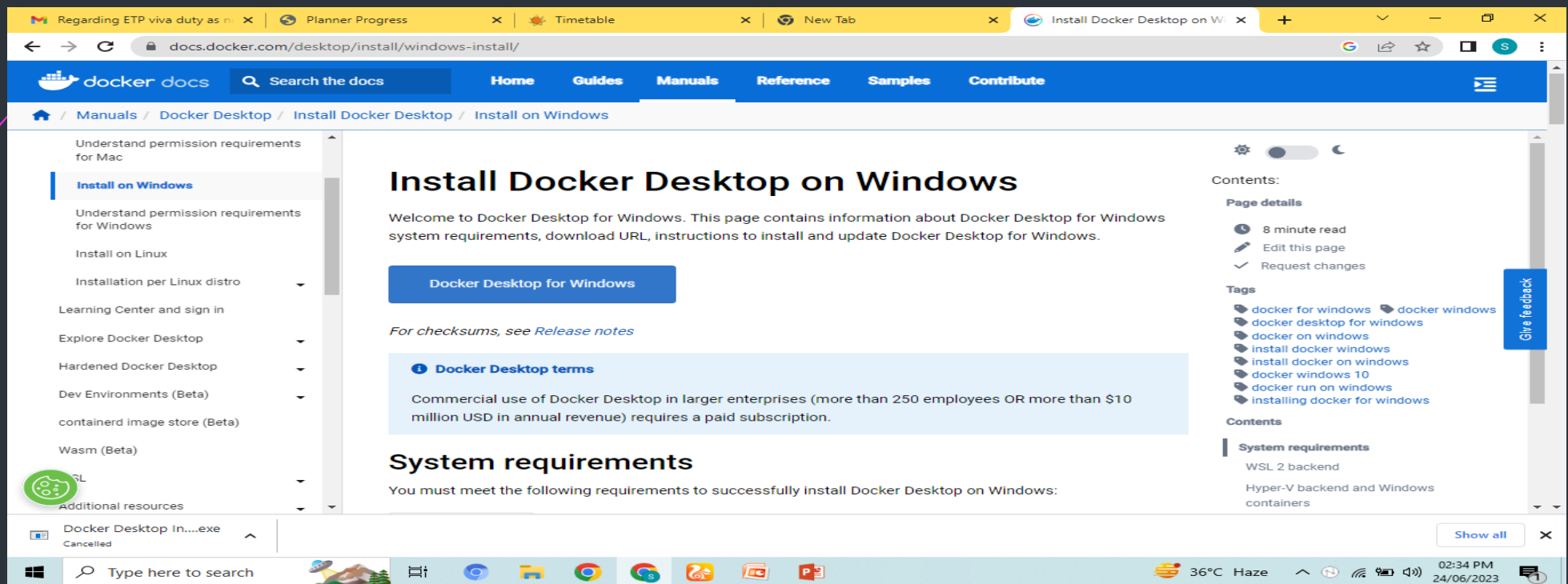
- Dockerfile:

Dockerfile is a simple text file that consists of instructions to build Docker images.

# Docker Desktop

1. Go to Google chrome:-

Download: Docker Desktop Installer.exe



The screenshot shows a web browser window with multiple tabs. The active tab is titled 'Install Docker Desktop on Windows' and shows the URL 'docs.docker.com/desktop/install/windows-install/'. The page features a blue header with navigation links: Home, Guides, Manuals, Reference, Samples, and Contribute. A sidebar on the left lists various installation guides, with 'Install on Windows' selected. The main content area is titled 'Install Docker Desktop on Windows' and includes a welcome message, a download button, and a section for system requirements. A right sidebar contains page details, tags, and a contents table of contents. The Windows taskbar at the bottom shows the search bar, task view button, and several open applications including Docker Desktop.

Regarding ETP viva duty as m | Planner Progress | Timetable | New Tab | Install Docker Desktop on Windows

docs.docker.com/desktop/install/windows-install/

docker docs Search the docs Home Guides Manuals Reference Samples Contribute

Manuals / Docker Desktop / Install Docker Desktop / Install on Windows

Understand permission requirements for Mac

**Install on Windows**

Understand permission requirements for Windows

Install on Linux

Installation per Linux distro

Learning Center and sign in

Explore Docker Desktop

Hardened Docker Desktop

Dev Environments (Beta)

containerd image store (Beta)

Wasm (Beta)

Additional resources

Docker Desktop In...exe Cancelled

## Install Docker Desktop on Windows

Welcome to Docker Desktop for Windows. This page contains information about Docker Desktop for Windows system requirements, download URL, instructions to install and update Docker Desktop for Windows.

[Docker Desktop for Windows](#)

For checksums, see [Release notes](#)

**Docker Desktop terms**

Commercial use of Docker Desktop in larger enterprises (more than 250 employees OR more than \$10 million USD in annual revenue) requires a paid subscription.

### System requirements

You must meet the following requirements to successfully install Docker Desktop on Windows:

**Contents:**

**Page details**

- 8 minute read
- Edit this page
- Request changes

**Tags**

- docker for windows
- docker desktop for windows
- docker on windows
- install docker windows
- install docker on windows
- docker windows 10
- docker run on windows
- installing docker for windows

**Contents**

- System requirements**
  - WSL 2 backend
  - Hyper-V backend and Windows containers

36°C Haze 02:34 PM 24/06/2023



# Things to be noted

- ▶ System's compatibility

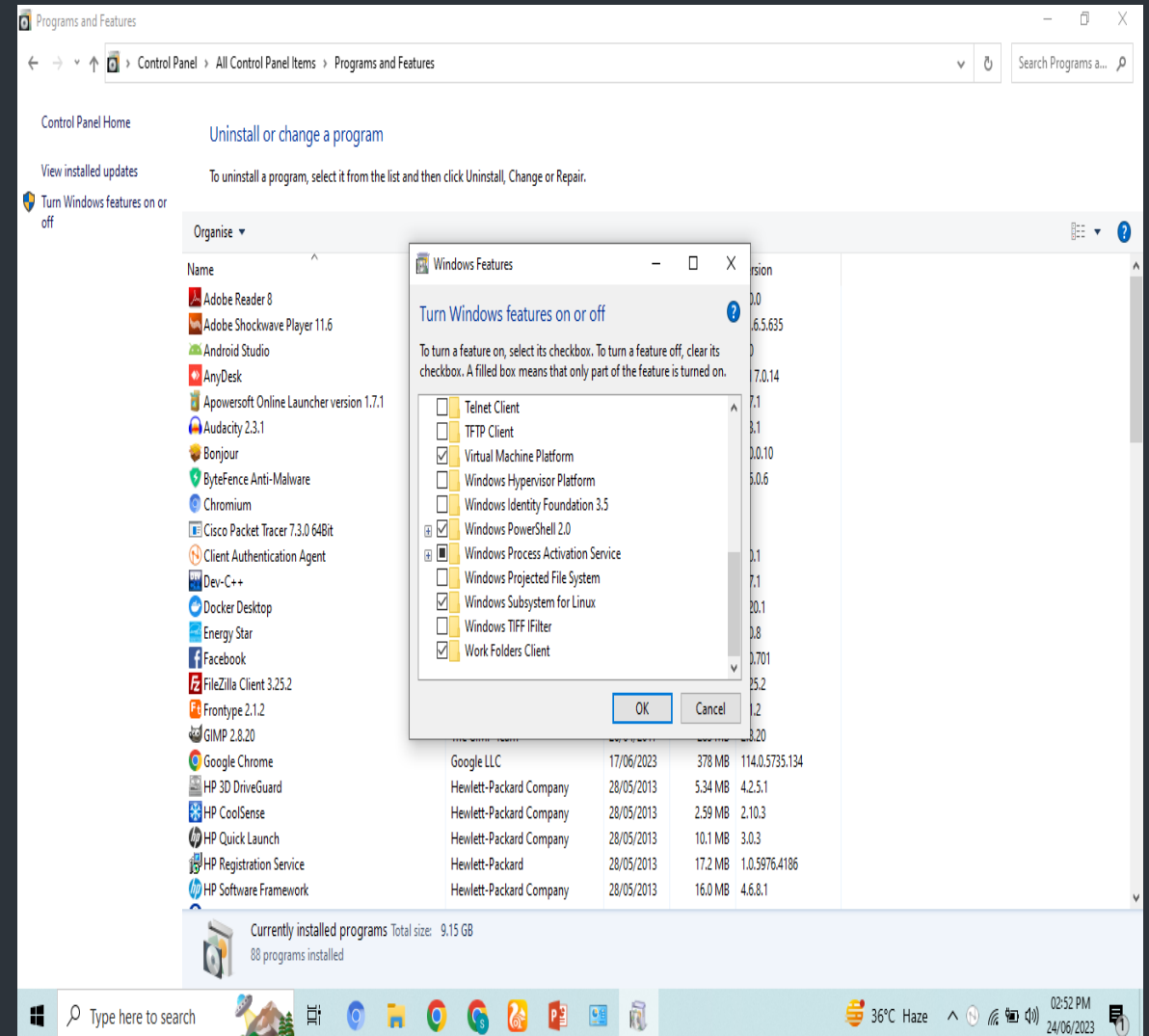
Docker Desktop runs on windows version 10 or above 10.

- ▶ Virtualization is enabled.

Virtualization is enabled by rebooting your system.

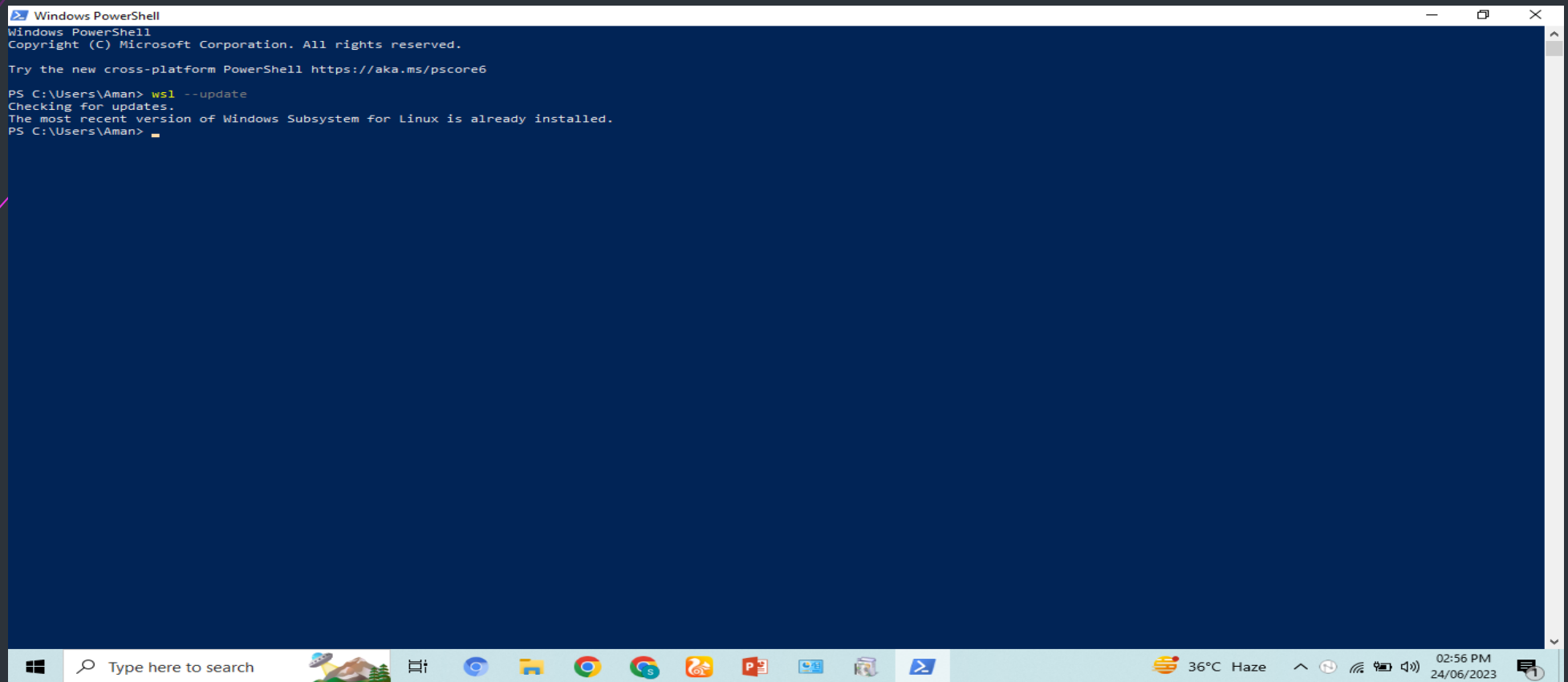
# Docker Steps on Windows:

1. Open Control Panel.
2. Open Programs and Features.
3. Click on Turn Windows features on or off.
4. Select windows sub system for Linux
5. At last click on restart system.



# Continue:

- Go to windows Power Shell and type `wsl --update`



```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

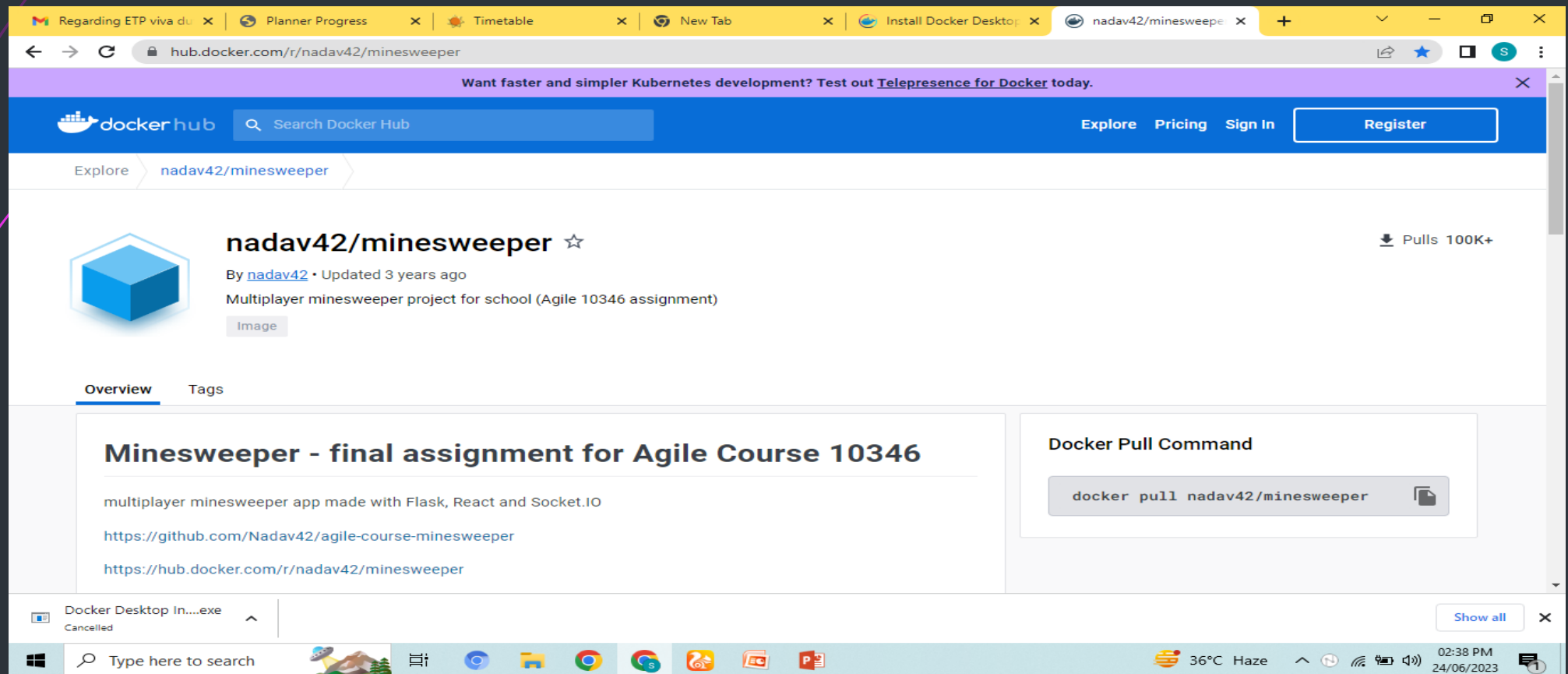
Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\Aman> wsl --update
Checking for updates.
The most recent version of Windows Subsystem for Linux is already installed.
PS C:\Users\Aman>
```

The screenshot shows a Windows PowerShell window with a dark blue background. The title bar reads "Windows PowerShell". The text inside the window shows the command `wsl --update` being entered and executed. The output indicates that the Windows Subsystem for Linux is already up to date. The Windows taskbar is visible at the bottom, showing the search bar, task view button, and several application icons. The system tray on the right shows the temperature (36°C), weather (Haze), and the date/time (02:56 PM, 24/06/2023).

# Working with Docker Containers:

- Search from Google Chrome:  
[HUB.docker.com/r/nadav42/minesweeper](https://hub.docker.com/r/nadav42/minesweeper)



The screenshot shows a web browser window with multiple tabs. The active tab is 'nadav42/minesweeper' on the Docker Hub website. The page features a purple banner at the top with a message about Kubernetes development. Below this is the Docker Hub logo and a search bar. The main content area displays the 'nadav42/minesweeper' repository, including a blue cube icon, the repository name with a star, and a description: 'Multiplayer minesweeper project for school (Agile 10346 assignment)'. It also shows 'Pulls 100K+'. The 'Overview' tab is selected, showing the title 'Minesweeper - final assignment for Agile Course 10346' and links to the GitHub repository and the Docker Hub page. A 'Docker Pull Command' box on the right contains the command 'docker pull nadav42/minesweeper'. The Windows taskbar at the bottom shows the time as 02:38 PM on 24/06/2023, with a temperature of 36°C and weather 'Haze'.


Regarding ETP viva du x | Planner Progress x | Timetable x | New Tab x | Install Docker Desktop x | nadav42/minesweeper x

hub.docker.com/r/nadav42/minesweeper

Want faster and simpler Kubernetes development? Test out [Telepresence for Docker](#) today.

docker hub Search Docker Hub Explore Pricing Sign In Register

Explore nadav42/minesweeper

 **nadav42/minesweeper** ☆ Pulls 100K+

By [nadav42](#) • Updated 3 years ago

Multiplayer minesweeper project for school (Agile 10346 assignment)

Image

Overview Tags

**Minesweeper - final assignment for Agile Course 10346**

multiplayer minesweeper app made with Flask, React and Socket.IO

<https://github.com/Nadav42/agile-course-minesweeper>

<https://hub.docker.com/r/nadav42/minesweeper>

Docker Pull Command

```
docker pull nadav42/minesweeper
```

Docker Desktop In...exe Canceled

Type here to search

36°C Haze 02:38 PM 24/06/2023

# Docker Pull Command

- Copy “docker pull nadav42/minesweeper” from Docker Hub and paste it on command prompt.

```
Command Prompt
Microsoft Windows [Version 10.0.19045.3086]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Aman>start /w "" "Docker Desktop Installer.exe" install
The system cannot find the file Docker Desktop Installer.exe.

C:\Users\Aman>docker pull nadav42/minesweeper
Using default tag: latest
latest: Pulling from nadav42/minesweeper
921b31ab772b: Pull complete
1a0c422ed526: Pull complete
ec0818a7bbe4: Pull complete
b53197ee35ff: Pull complete
8b25717b4dbf: Pull complete
abc2fe865c23: Pull complete
08c85f3c5768: Pull complete
ecbbf0e495ee: Pull complete
14bd1ed9eca5: Pull complete
39215280da4c: Pull complete
29404bc2b7a0: Pull complete
70dd0753877a: Pull complete
Digest: sha256:2f6fa3c0564968ec9cfc54b1e274a246b51f39259103fbc951ffc166a7effea7
Status: Downloaded newer image for nadav42/minesweeper:latest
docker.io/nadav42/minesweeper:latest

What's Next?
View summary of image vulnerabilities and recommendations → docker scout quickview nadav42/minesweeper

C:\Users\Aman>
```



# Continue:

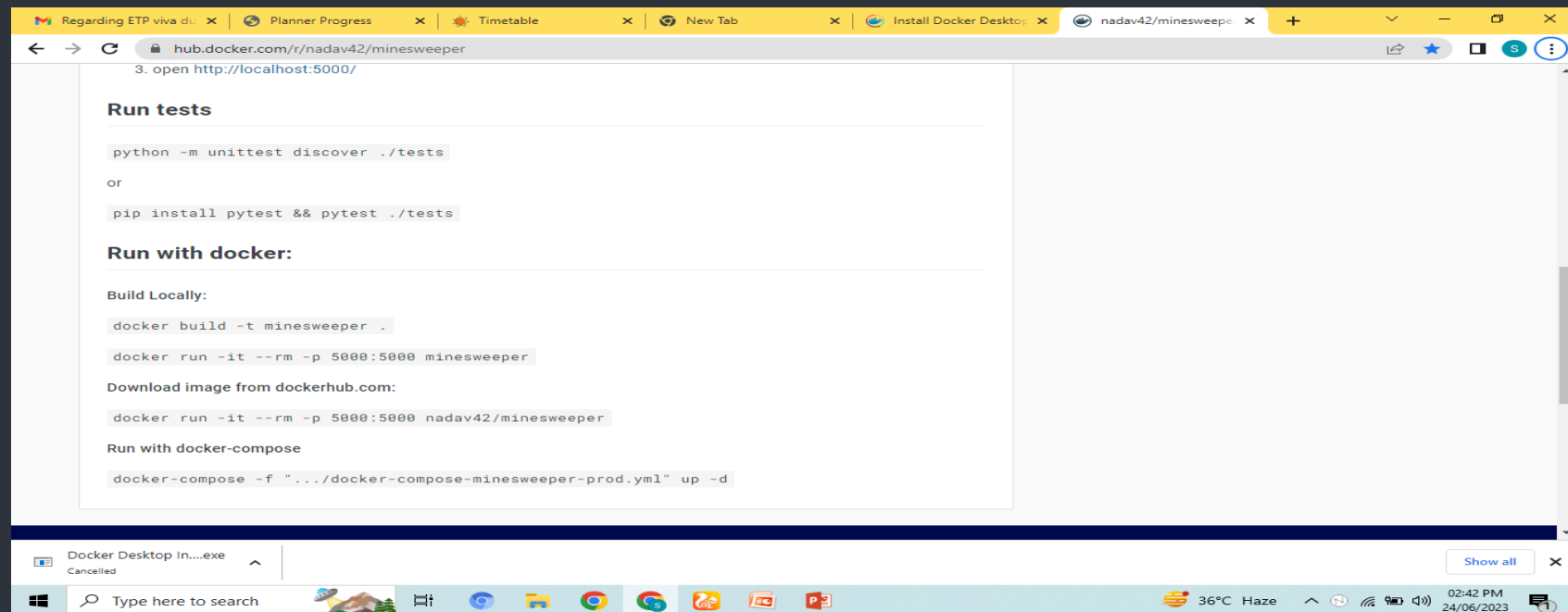
- ▶ Then go to Run with Docker and copied the below mentioned commands.

- ▶ Build Locally:

```
docker build -t minesweeper.
```

- ▶ Download image from dockerhub.com:

```
docker run -it --rm -p 5000:5000 nadav42/minesweeper
```



# Continue :

- Paste these commands on command prompt
- After running build and download Docker image.

```
Command Prompt - docker run -it --rm -p 5000:5000 nadav42/minesweeper
70dd0753877a: Pull complete
Digest: sha256:2f6fa3c0564968ec9cfc54b1e274a246b51f39259103fbc951ffc166a7effea7
Status: Downloaded newer image for nadav42/minesweeper:latest
docker.io/nadav42/minesweeper:latest

What's Next?
  View summary of image vulnerabilities and recommendations → docker scout quickview nadav42/minesweeper

C:\Users\Aman>docker build -t minesweeper
ERROR: "docker buildx build" requires exactly 1 argument.
See 'docker buildx build --help'.

Usage:  docker buildx build [OPTIONS] PATH | URL | -

Start a build

C:\Users\Aman>docker run -it --rm -p 5000:5000 nadav42/minesweeper
SCRIPT_PATH=/app
SESSION_TYPE=filesystem
changed flask static folder to: /react/build/static

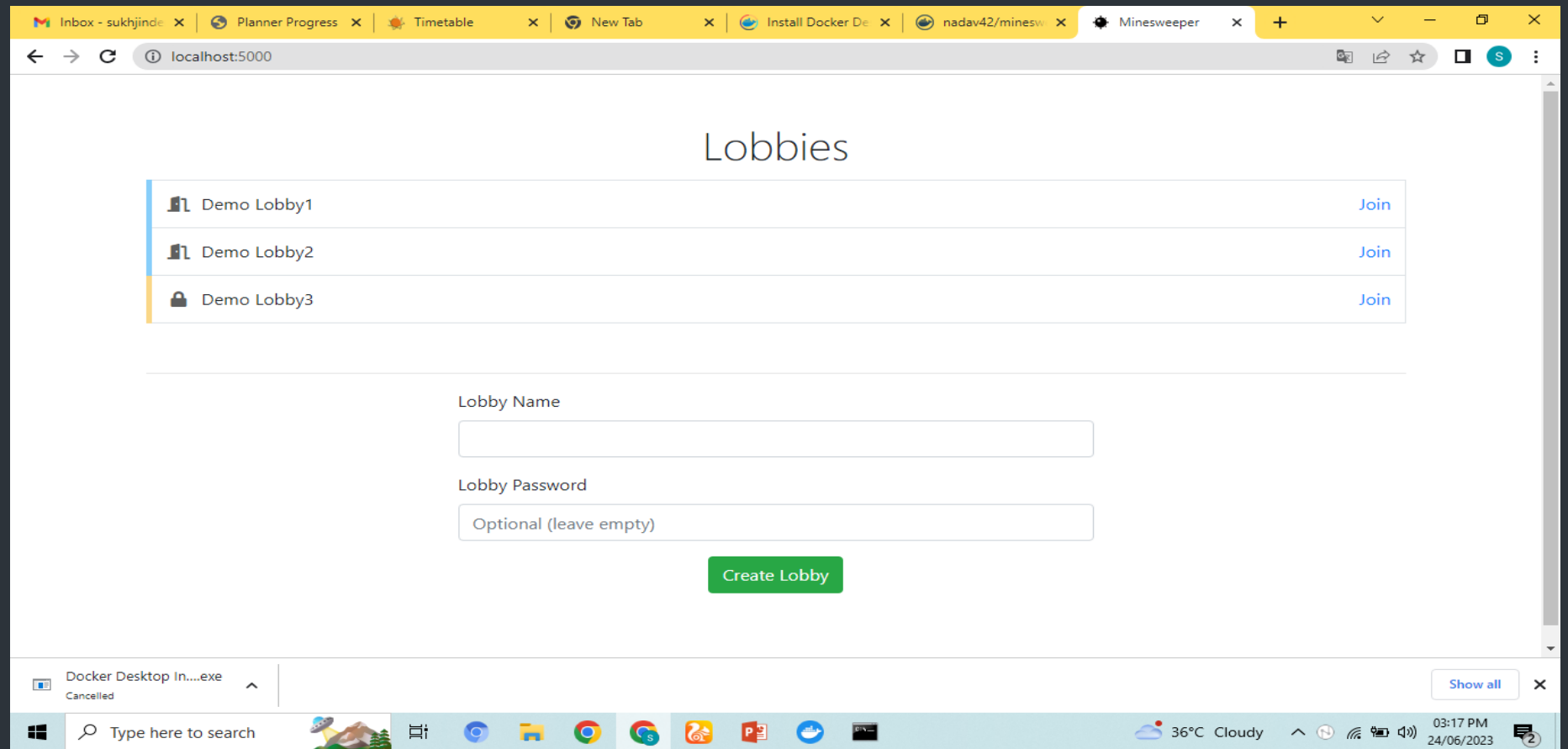
placed 10 mines on board

placed 10 mines on board

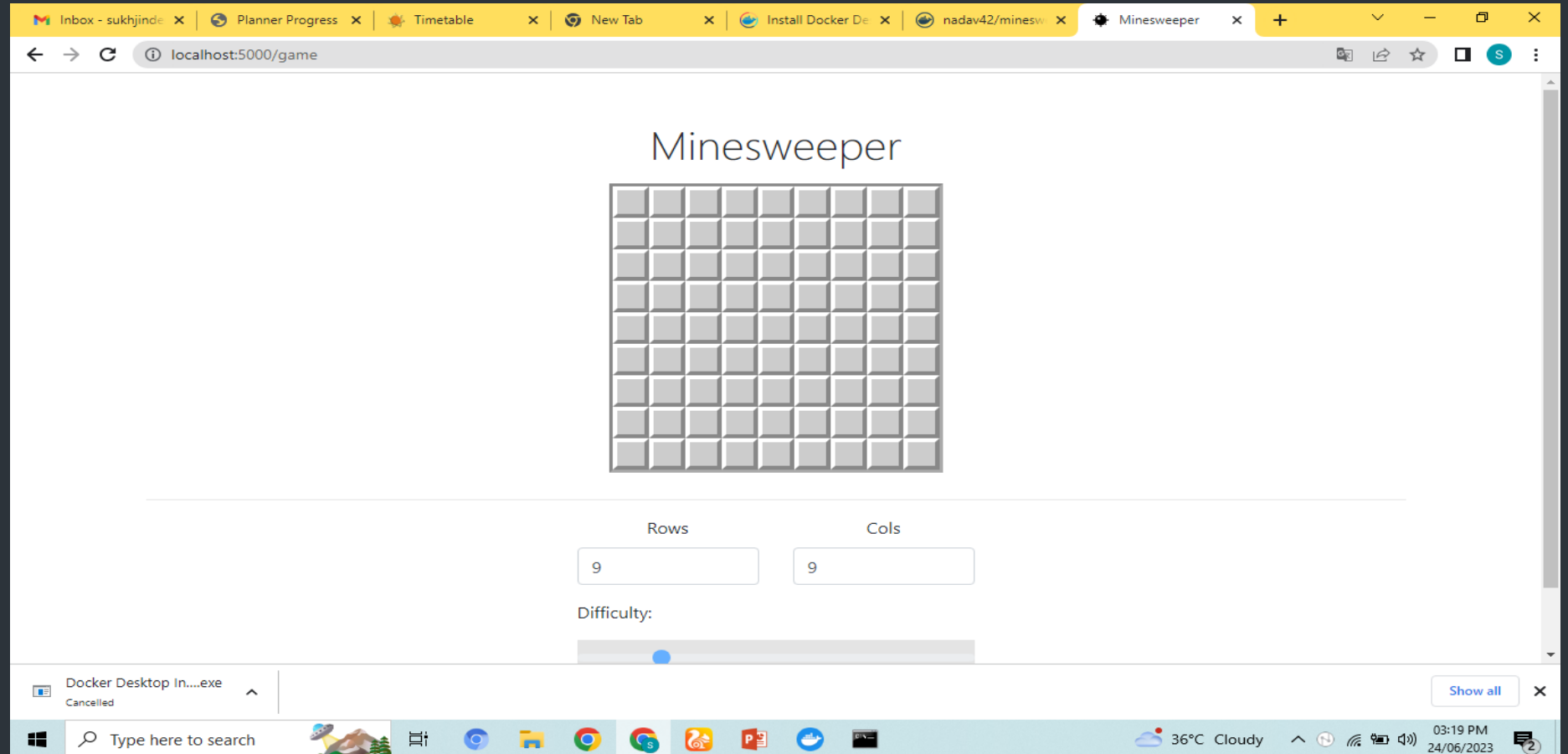
placed 10 mines on board
```

# Results:

- Go to chrome and then type Localhost:5000 in search bar.



# Result of Minesweeper game on localhost:



# Stop the game:

- ▶ Type ctrl+c on command prompt.

```
cmd Command Prompt
docker.io/nadav42/minesweeper:latest

What's Next?
  View summary of image vulnerabilities and recommendations → docker scout quickview nadav42/minesweeper

C:\Users\Aman>docker build -t minesweeper
ERROR: "docker buildx build" requires exactly 1 argument.
See 'docker buildx build --help'.

Usage:  docker buildx build [OPTIONS] PATH | URL | -

Start a build

C:\Users\Aman>docker run -it --rm -p 5000:5000 nadav42/minesweeper
SCRIPT_PATH=/app
SESSION_TYPE=filesystem
changed flask static folder to: /react/build/static

placed 10 mines on board

placed 10 mines on board

placed 10 mines on board

56ad70b5578c4423839585e67df7508e joined socket room eccbc87e4b5ce2fe28308fd9f2a7baf3
game over! you lose
^C
C:\Users\Aman>
```

# Working on Docker Desktop:

➤ Search on Docker's Desktop: Minesweeper.

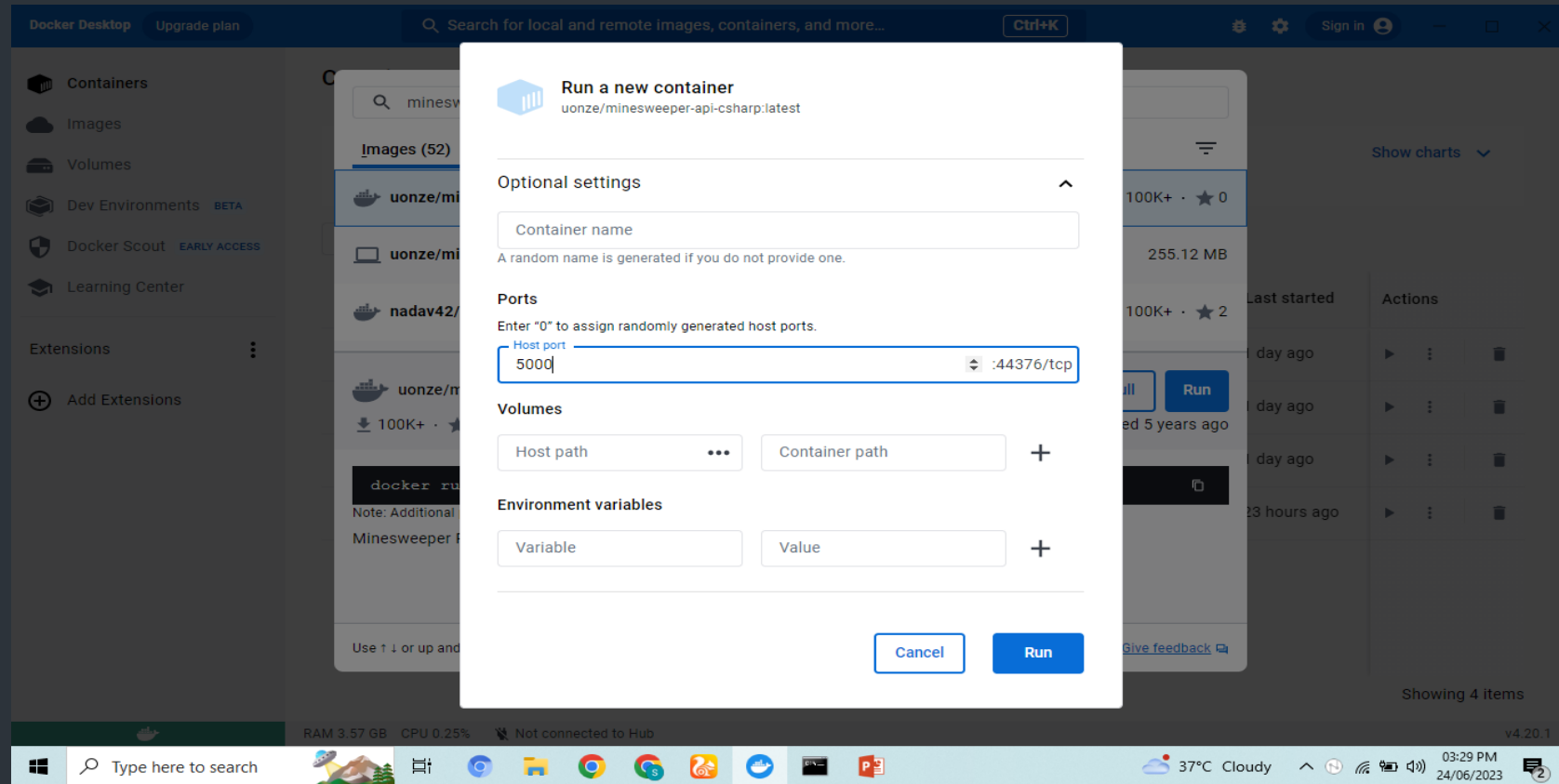
The screenshot shows the Docker Desktop application window. The top bar includes the 'Docker Desktop' logo, an 'Upgrade plan' button, a search bar with the text 'Search for local and remote images, containers, and more...', and a 'Ctrl+K' button. The left sidebar contains navigation options: Containers, Images, Volumes, Dev Environments (marked BETA), Docker Scout (marked EARLY ACCESS), Learning Center, Extensions, and Add Extensions. The main panel displays search results for 'minesweeper'. The search bar at the top of the results panel shows 'minesweeper'. Below it, tabs indicate 'Images (51)', 'Containers (3)', 'Volumes (0)', and 'Extensions (0)'. The results list includes:

- uonze/minesweeper-api-csharp**: 100K+ downloads, 0 stars.
- nadav42/minesweeper**: 100K+ downloads, 2 stars.
- nadav42/minesweeper:latest**: 213.89 MB.
- uonze/minesweeper-api-csharp**: 100K+ downloads, 0 stars, with a 'View on Hub' link and 'Updated 5 years ago'.

Below the list, a terminal snippet shows the command: `docker pull uonze/minesweeper-api-csharp`, followed by the text 'Minesweeper Rest API in C#'. At the bottom of the results panel, there is a navigation tip: 'Use ↑ ↓ or up and down arrow keys to navigate between results' and a 'Next tip' link. A 'Give feedback' link is also present. The bottom status bar shows system information: RAM 3.77 GB, CPU 4.39%, and 'Not connected to Hub'. The Windows taskbar at the very bottom shows the search bar, task view, and various application icons, along with system tray information: 36°C Cloudy, 03:24 PM, 24/06/2023, and 2 notifications.

# Continue:

- Click on Run and in optional settings, type host port i.e. 5000.



# Results:

➤ Shown on Docker Desktop.

The screenshot displays the Docker Desktop application window. The left sidebar contains navigation options: Containers, Images, Volumes, Dev Environments (marked BETA), Docker Scout (marked EARLY ACCESS), and Learning Center. Below these is an Extensions section with an 'Add Extensions' button. The main panel shows details for a container named 'frosty\_booth', which is running the image 'nadav42/minesweeper:latest' with ID 'b9f967dd0a79'. The 'Logs' tab is selected, showing a list of log entries. The status bar at the bottom indicates 'RAM 3.62 GB', 'CPU 0.25%', and 'Not connected to Hub'. The Windows taskbar is visible at the very bottom with the search bar and several application icons.

**Docker Desktop** Upgrade plan Search for local and remote images, containers, and more... Ctrl+K Sign in

**Containers**

- Images
- Volumes
- Dev Environments BETA
- Docker Scout EARLY ACCESS
- Learning Center

Extensions  
Add Extensions

**frosty\_booth**  
nadav42/minesweeper:latest  
b9f967dd0a79

**STATUS**  
Running (2 seconds ago)

Logs Inspect Terminal Files Stats

Timestamp	Time	Log Message
2023-06-24	15:35:03	SCRIPT_PATH=/app
2023-06-24	15:35:08	SESSION_TYPE=filesystem
2023-06-24	15:35:08	changed flask static folder to: /react/build/static
2023-06-24	15:35:09	placed 10 mines on board
2023-06-24	15:35:09	
2023-06-24	15:35:09	placed 10 mines on board
2023-06-24	15:35:09	
2023-06-24	15:35:09	placed 10 mines on board
2023-06-24	15:35:09	
2023-06-24	15:35:09	placed 10 mines on board
2023-06-24	15:35:09	

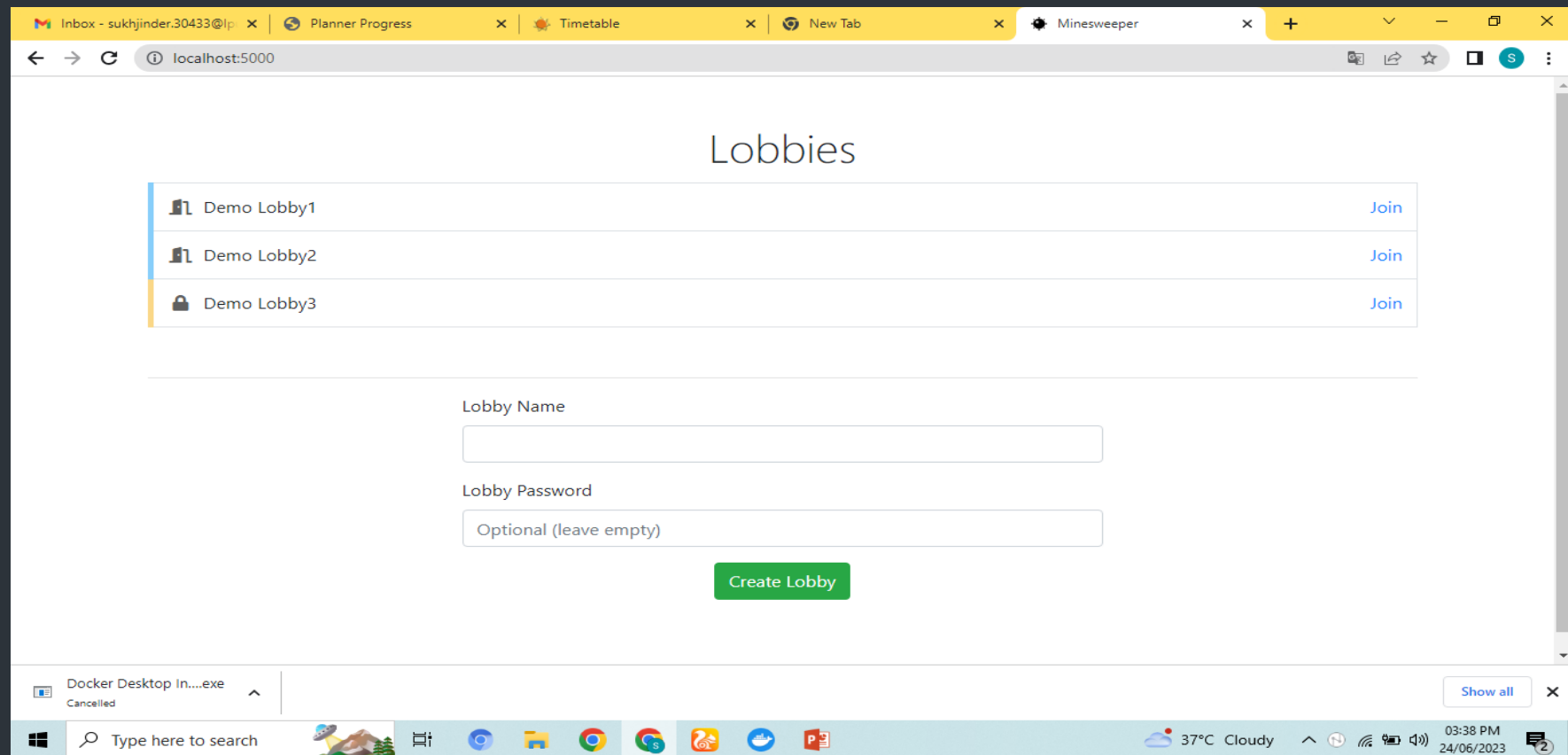
RAM 3.62 GB CPU 0.25% Not connected to Hub

37°C Cloudy 03:35 PM 24/06/2023



# Result of Minesweeper game

➤ on localhost:5000



# Docker Hub:

- Go to docker hub official site and search for Python Image.

The screenshot shows a web browser window with the Docker Hub search results for 'python'. The browser's address bar shows 'hub.docker.com/search?q=python'. The Docker Hub header is blue with the logo and a search bar containing 'python'. Navigation links for 'Explore', 'Pricing', 'Sign In', and 'Register' are on the right. A purple banner at the top promotes 'Telepresence for Docker'. On the left, there are filter sections: 'Products' (Images, Extensions, Plugins), 'Trusted Content' (Docker Official Image, Verified Publisher, Sponsored OSS), 'Operating Systems' (Linux, Windows), and 'Architectures' (ARM, ARM 64). The main content area shows '1 - 25 of 10,000 results for python.' and a 'Best Match' dropdown. Two results are visible: 'python' (DOCKER OFFICIAL IMAGE) and 'pypy' (DOCKER OFFICIAL IMAGE). Each result includes the logo, name, 'Updated 4 hours ago', a description, supported architectures, and a pull count with a line graph. The 'python' result has 8,739,476 pulls and the 'pypy' result has 31,032 pulls. A 'Show all' button is at the bottom right. The Windows taskbar at the bottom shows the search bar, task view, and several application icons, along with system status like '38°C Mostly cloudy' and the time '04:12 PM 24/06/2023'.

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docker hub python

Explore Pricing Sign In Register

Filters

1 - 25 of 10,000 results for python. Best Match

Products

- ☐ Images
- ☐ Extensions
- ☐ Plugins

Trusted Content

- ☐ Docker Official Image
- ☐ Verified Publisher
- ☐ Sponsored OSS

Operating Systems

- ☐ Linux
- ☐ Windows

Architectures

- ☐ ARM
- ☐ ARM 64

python DOCKER OFFICIAL IMAGE · 1B+ · 8.8K

Updated 4 hours ago

Python is an interpreted, interactive, object-oriented, open-source programming language.

Linux Windows IBM Z mips64le x86-64 ARM ARM 64 386 PowerPC 64 LE

Pulls: 8,739,476 Last week

[Learn more](#)

pypy DOCKER OFFICIAL IMAGE · 10M+ · 370

Updated 4 hours ago

PyPy is a fast, compliant alternative implementation of the Python language.

Linux Windows PowerPC 64 LE ARM x86-64 ARM 64 386 IBM Z

Pulls: 31,032 Last week

[Learn more](#)

Docker Desktop In...exe Cancelled

Show all

Type here to search

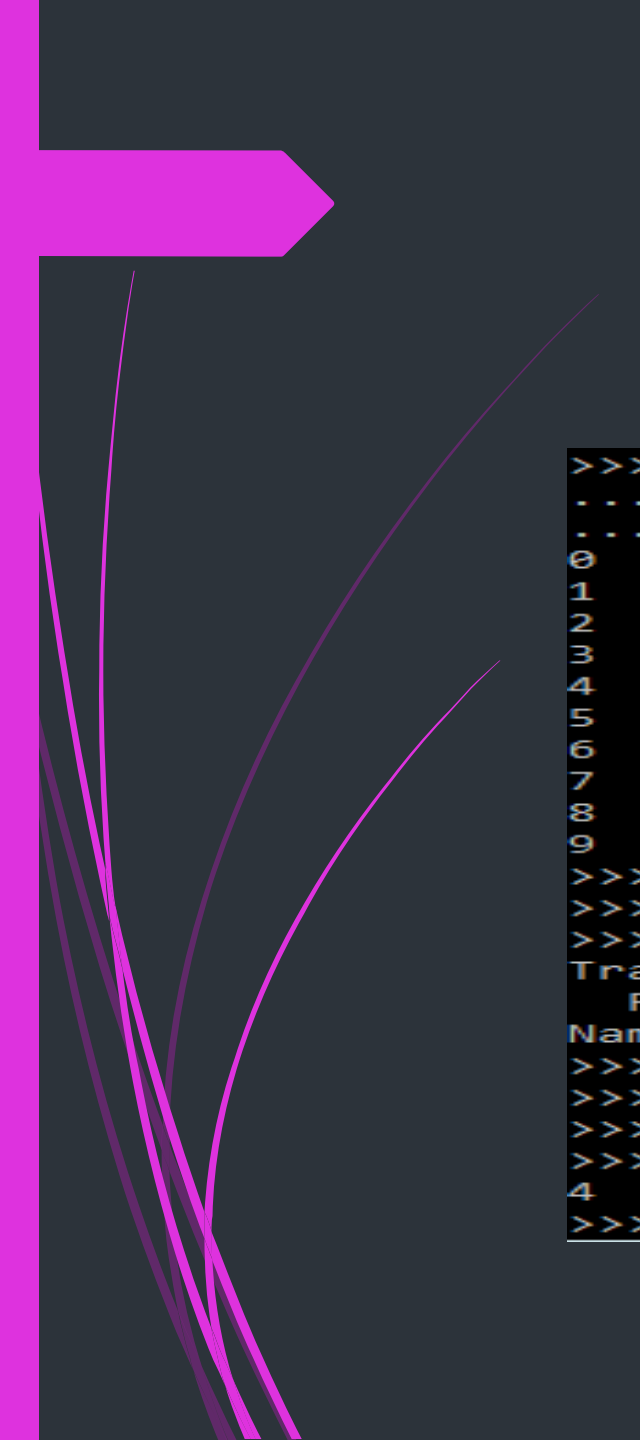
38°C Mostly cloudy 04:12 PM 24/06/2023

# Continue:

- Copy the command “Docker pull python” and Docker run -it python from docker hub and run it on command prompt.

```
Command Prompt - docker run -it python
C:\Users\Aman>docker pull python
Using default tag: latest
latest: Pulling from library/python
Digest: sha256:fe68f3194a1a6df058901085495abca83d8841415101366c3a4c66f06f39760a
Status: Image is up to date for python:latest
docker.io/library/python:latest

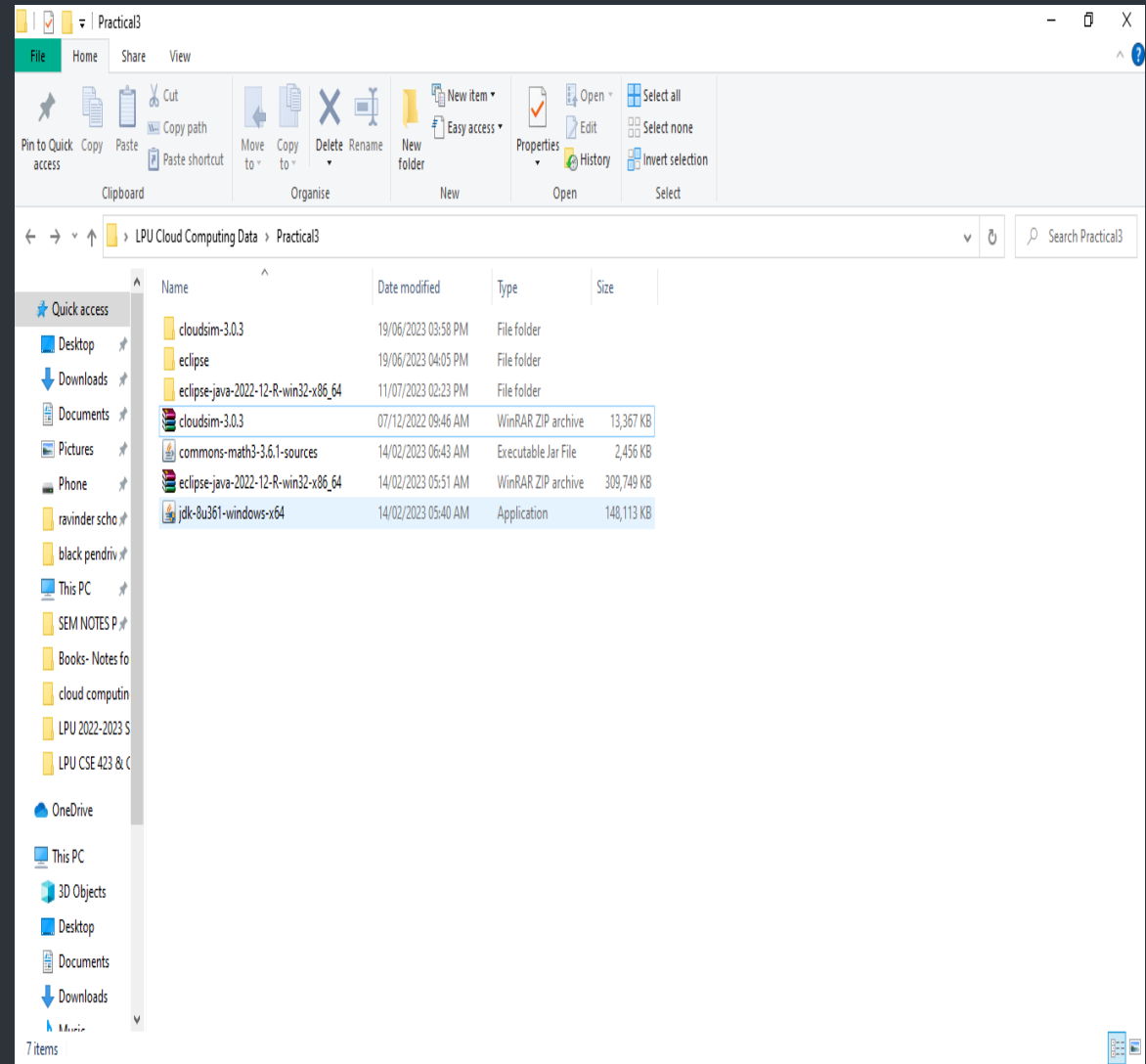
C:\Users\Aman>docker run -it python
Python 3.11.4 (main, Jun 14 2023, 18:15:32) [GCC 12.2.0] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>> a=6
>>> b=9
>>> c=a+b
>>> print(C)
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>
NameError: name 'C' is not defined. Did you mean: 'c'?
>>> print(c)
15
>>> for i in range(10):
...     print(i)
...
0
1
2
3
4
5
6
7
8
9
```



```
>>> for i in range(10):  
...     print(i)  
...  
0  
1  
2  
3  
4  
5  
6  
7  
8  
9  
>>> a=10  
>>> b=20  
>>> print(maximum(a,b))  
Traceback (most recent call last):  
  File "<stdin>", line 1, in <module>  
NameError: name 'maximum' is not defined  
>>> a=2  
>>> b=4  
>>> maximum = max(a,b)  
>>> print(maximum)  
4  
>>>
```

# CloudSim

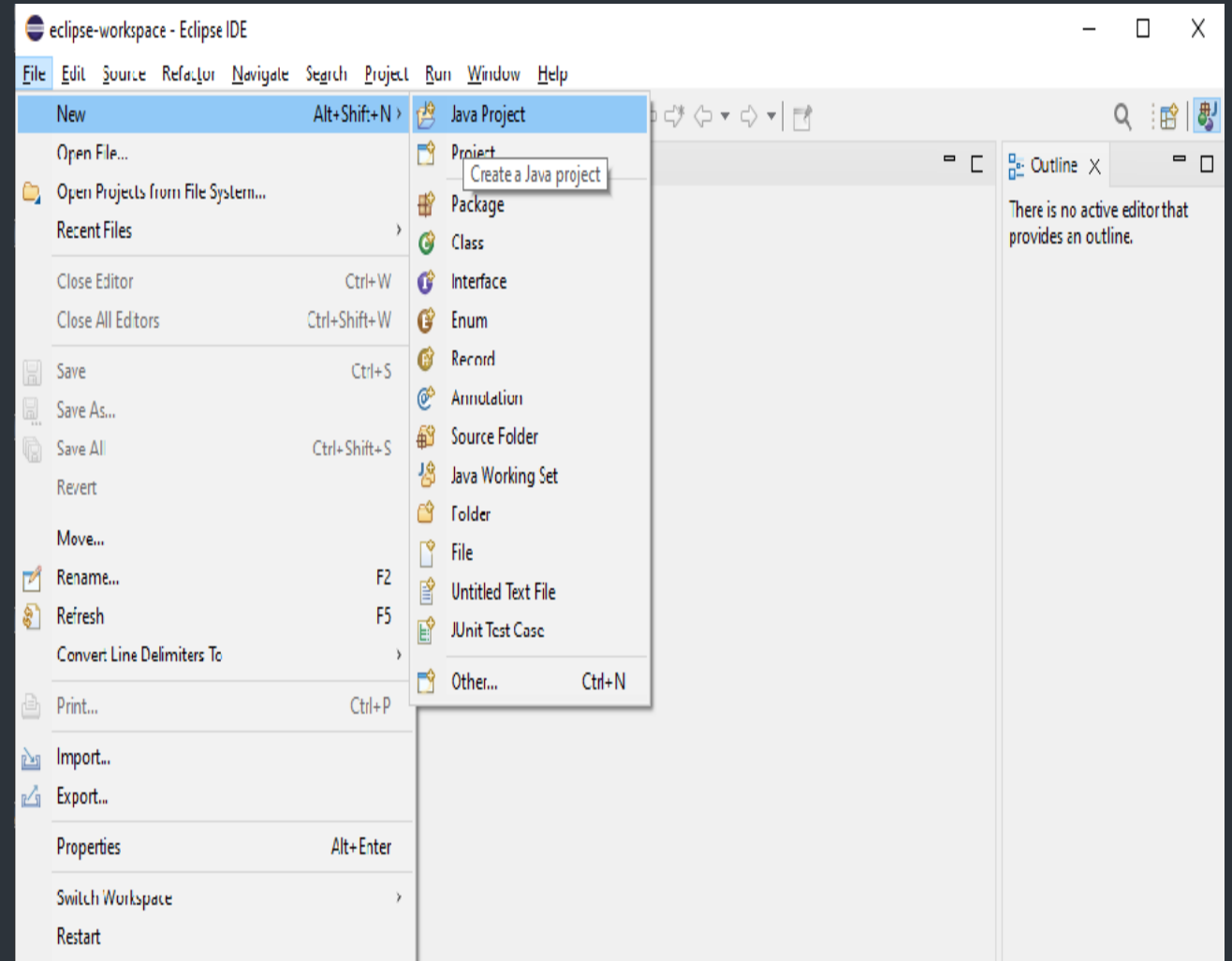
- Extract CloudSim 3.0.3
- Install Eclipse IDE
- Install JDK



# Launch Cloudsim

➤ Open Eclipse IDE

1. File
2. New
3. Java Project



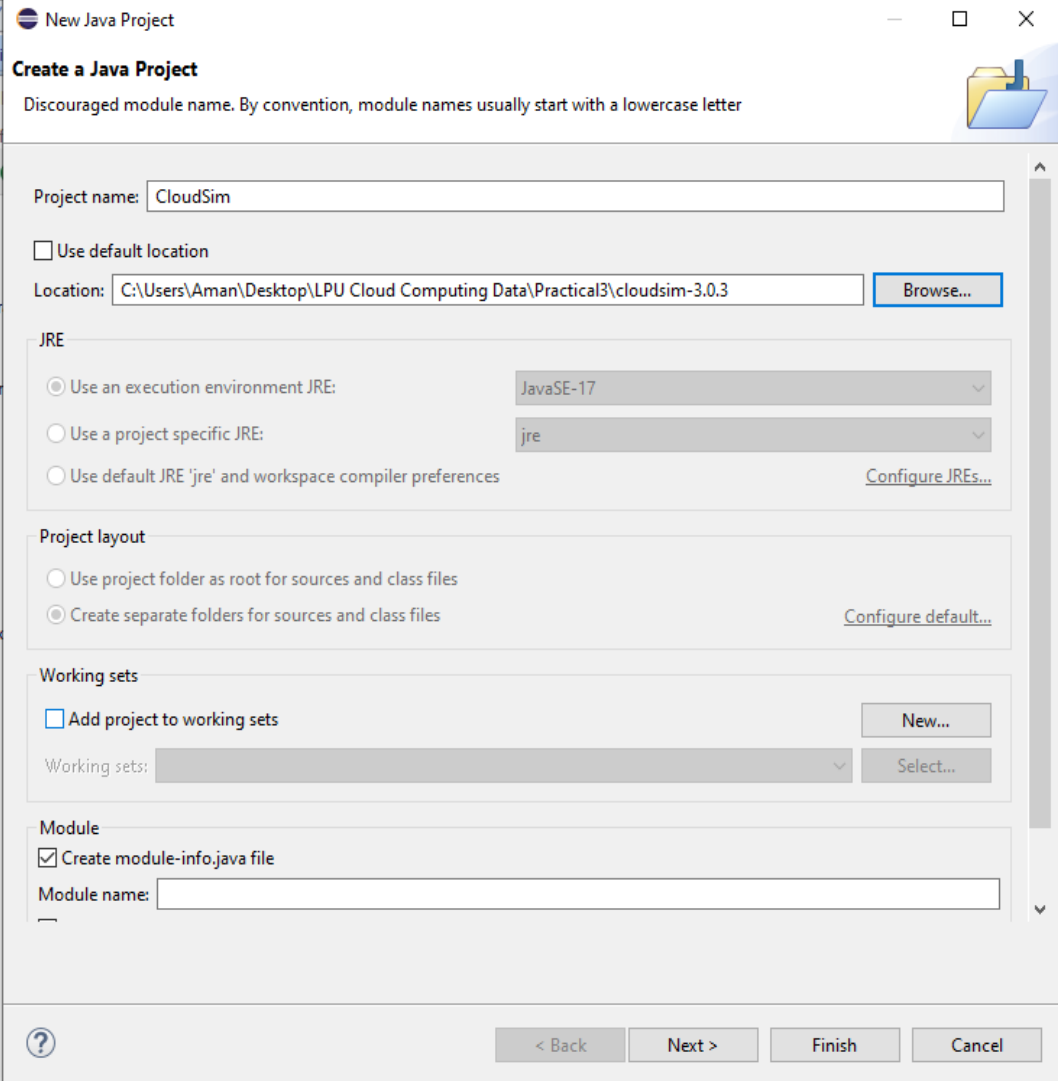
# Continue:

4. Project Name: Cloudsim

Use Default Location (choose untick )

5. Go to browse and add CloudSim 3.0.3

6. Next



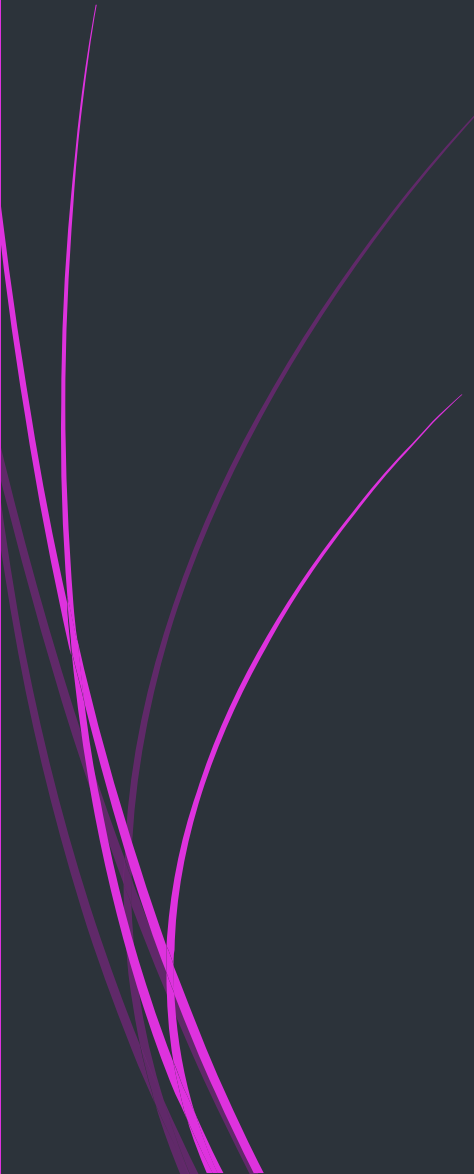
The screenshot shows the 'New Java Project' dialog box in the Eclipse IDE. The title bar reads 'New Java Project'. Below the title bar, there is a section 'Create a Java Project' with a note: 'Discouraged module name. By convention, module names usually start with a lowercase letter'. The dialog is divided into several sections:

- Project name:** A text field containing 'CloudSim'.
- Use default location:** An unchecked checkbox.
- Location:** A text field containing 'C:\Users\Aman\Desktop\LPU Cloud Computing Data\Practical3\cloudsim-3.0.3' and a 'Browse...' button.
- JRE:** A section with three radio buttons:
  - ☒ Use an execution environment JRE: A dropdown menu showing 'JavaSE-17'.
  - ☐ Use a project specific JRE: A dropdown menu showing 'jre'.
  - ☐ Use default JRE 'jre' and workspace compiler preferences.A 'Configure JREs...' link is visible to the right.
- Project layout:** A section with two radio buttons:
  - ☐ Use project folder as root for sources and class files.
  - ☒ Create separate folders for sources and class files.A 'Configure default...' link is visible to the right.
- Working sets:** A section with an unchecked checkbox 'Add project to working sets' and a 'New...' button. Below it, a 'Working sets:' dropdown menu and a 'Select...' button.
- Module:** A section with a checked checkbox 'Create module-info.java file' and a 'Module name:' text field.

At the bottom of the dialog, there is a help icon (?) and four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'.



# Continue

- 
7. Libraries
  8. Add External Jars
  9. Select Common maths
  10. Finish