**Integrating Docker and Git with Jenkins**

To create a Jenkins freestyle project that integrates with Docker and Git and deploys your HTML project to an Nginx server on your operating system, you can follow these steps:

1. Write an html program for moving a triangle using u r keys ‘main.html’ and save it in a new folder in your local system

<!DOCTYPE html>

<head>

<style>

body {

display: flex;

justify-content: center;

align-items: center;

height: 100vh;

margin: 0;

}

#triangle {

width: 0;

height: 0;

border-left: 50px solid transparent;

border-right: 50px solid transparent;

border-bottom: 87px solid red; /\* You can change the color and dimensions as needed \*/

position: absolute;

}

</style>

<title>Triangle Movement</title>

</head>

<body>

<div id="triangle"></div>

<script>

// JavaScript for moving the triangle

const triangle = document.getElementById('triangle');

let posX = 0;

let posY = 0;

function moveTriangle() {

triangle.style.left = posX + 'px';

triangle.style.top = posY + 'px';

}

document.addEventListener('keydown', (event) => {

const step = 10;

switch (event.key) {

case 'ArrowUp':

posY -= step;

break;

case 'ArrowDown':

posY += step;

break;

case 'ArrowLeft':

posX -= step;

break;

case 'ArrowRight':

posX += step;

break;

}

moveTriangle();

});

moveTriangle(); // Initial positioning

</script>

</body>

</html>

1. Create a Docker file in your same folder using visual studios and save it with the name Dockerfile with all files extension(**Note: Don’t save it with the extension of dockerfile since it might create problem during creating a docker image** )

FROM nginx

COPY main.html /usr/share/nginx/html/main.html

EXPOSE 80

1. Push your code into GitHub repository which will act as SCM in Jenkins server
2. Download and install nginx server in your system and make all necessary configurations.

1. Create a folder ‘htmldocs’ in your nginx filesystem. This will serve as the root directory for your nginx html project . Say the path to the root is ‘C:\Users\user\Desktop\.....\nginx-1.24.0\htmldocs’
2. In your Jenkins server:

a. Create a freestyle project, give name to it and click ok

b. You can assign description (Optional)

c. In SCM, provide your GitHub Repository URL and click on add repository (**Note: If your repository is private then provide your GitHub credentials under it**)

d. Go to Build steps, choose Execute windows batch command

There it acts like your command prompt so it will help you in connecting with docker

e. Type these docker commands inside execute windows batch command

REM Docker build command

docker build -t triangle-movement .

REM Docker run command

docker run -d -p 2003:80 USERNAME/triangle-movement

REM Docker login (replace USERNAME and PASSWORD with your Docker Hub credentials)

docker login -u USERNAME -p PASSWORD

REM Push the Docker image to Docker Hub

docker push USERNAME/triangle-movement

**(Note: REM acts like a comment in cmd)**

**f.**  Click on apply and build it.

1. Once the freestyle project gets build u can open in your docker desktop In your local system to see your container running.
2. There you can click on the port number to deploy your project in the nginx server.
3. You can verify by opening Docker Hub and check for the repository which y=u created.
4. If you want to pull the image again and want to deploy in nginx server then you can just go to the created freestyle project there you can click configure,

there you can change the commands under execute windows batch

command:

REM Docker pull command from the repository

docker pull USERNAME/triangle-movement:latest

REM Docker run command

docker run -d -p 2003:80 USERNAME/triangle-movement

REM Docker login (replace USERNAME and PASSWORD with your DockerHub

credentials)

docker login -u USERNAME -p PASSWORD