el mint ("degree colorus, Serial. printer; Devolos Week3 - Jenkins Selup on AWS. When you set up jenkins on an AWS ECZ instance, its like creating your own helper robot on the court. This robot can: · Watch you cade (for example, from Github). · Whenever you make charges, it automatically builds it, tests it, and can we even put it live on a server, without you doing anything manually. → Using Ec 2 (a virtual computer in AMS) gives you full control over where and how your robot (Jenkini) to apt install openidk-21-jatesy-4 > Jenkins on ER2 helps you save time and avoid mistakes by automatically building, testing, and launching your projects. 1. Open acos account and select EC2 instance. 2. Click on launch instance s waget hoter Mact. ponkins. io. 3. Select uburtu OS. 722 4. Select 'free tier' in Amaxon Machine Image (AMI). s. Select instance type t2. mirro" 7. In Network settings dick on "Edit". Change type to All traffic 8. Now click on laurch instance

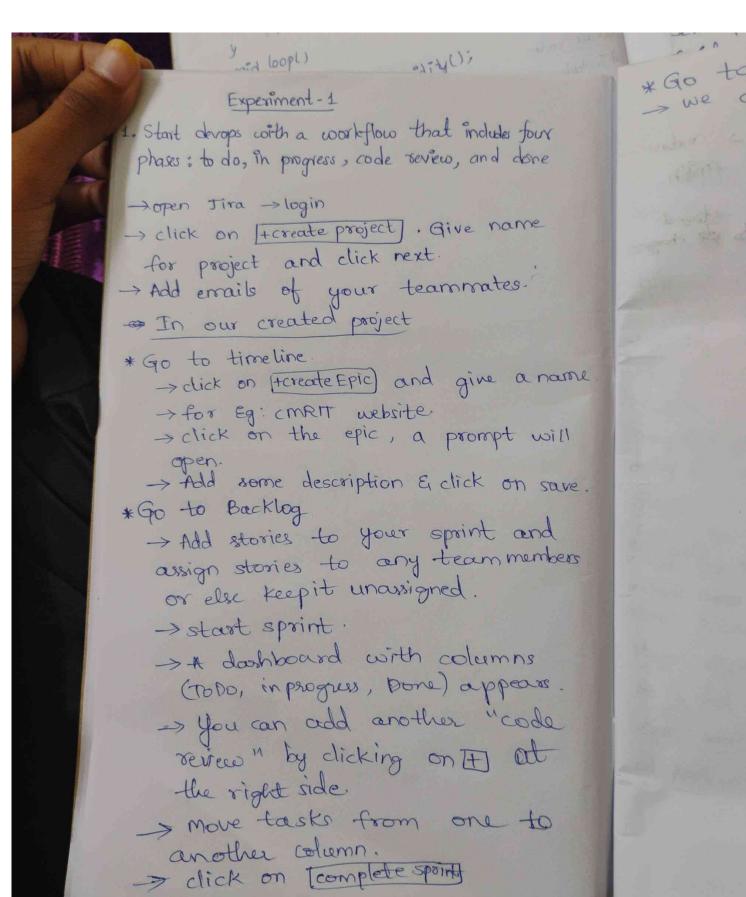
Steps:

Schal printin (" NIFF" void loop!) flood h = dht read Humidity(); (Tomperdire (); 9. Go to . per file location (i.e tay pair) and open gitbach from there) 10. After that to get ssh id goto aw account and 21 click on connect and gots SSH client and copy the the signors soft), show wow sshid command. 11. Now parte this sin it in git bash. 12. Now you need to install the jenkins. Bitterso, first you need to update the apt repository \$ sudo apt updates pos low (1/10) (1) 13. To intall java. Mod has more over lastros sudo apt install openjak-21-jakery-y. 14. To Estinished git and moven and check it suto apt-get install -y git maven. git -- version mun -- Version. 15. Copy and purte link address the sale made \$ wyet https://get.jenkins.io/war-stable/2,479.3/jenkins.war 16) To start the genkins services \$ Java -jor jenkins. was the jenkin.

13) How can we access the jenkin.

Take the public ipractives copy and parte in browser add 8080 as port number

Serial print ("Temperature:"); Serial. print(f); Serial. print ("degree colors; Humidity; "); > Now give the administrator passwood is in -> Now select the install suggested pluggin -> click on onese and continue stories o 491 - min by -> You can give all admin > click on save and finish -> Now jenkins is ready. Aluk gives you a private legifile (-pin) when you create an Eco. You rue it to denner to safely How they want tagether मार्किक प्रथम हत्यु के देव मिक समस्य वार्त मार्थ Televit of you manually logging into each arm, thinks ntins-was alamost and plotonetus ti of They probable, writes miso March , House without no mo also of no que COURSE ON TRIBORD DE

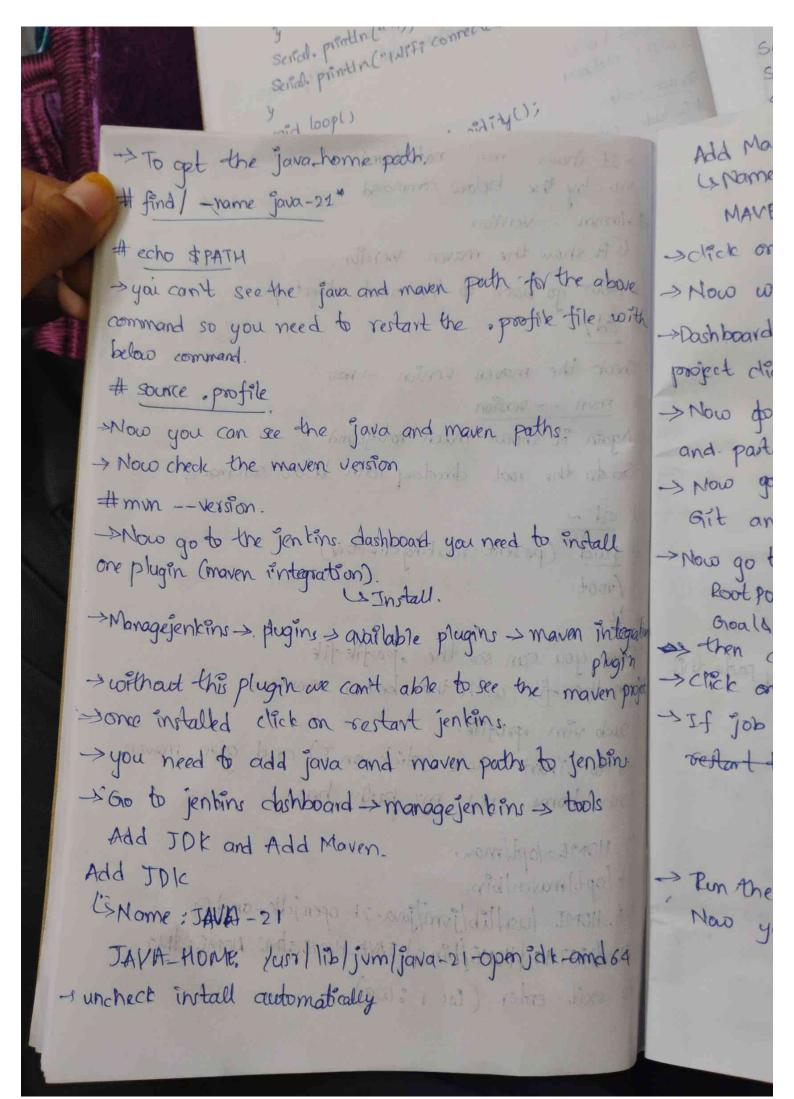


Serial-print ("Temperature:"); Serial print ( degree odeius ; Humidity : "); Sorial print(f); \* Go to surmary. - we can see the report rve a name 11 icu save. end embers

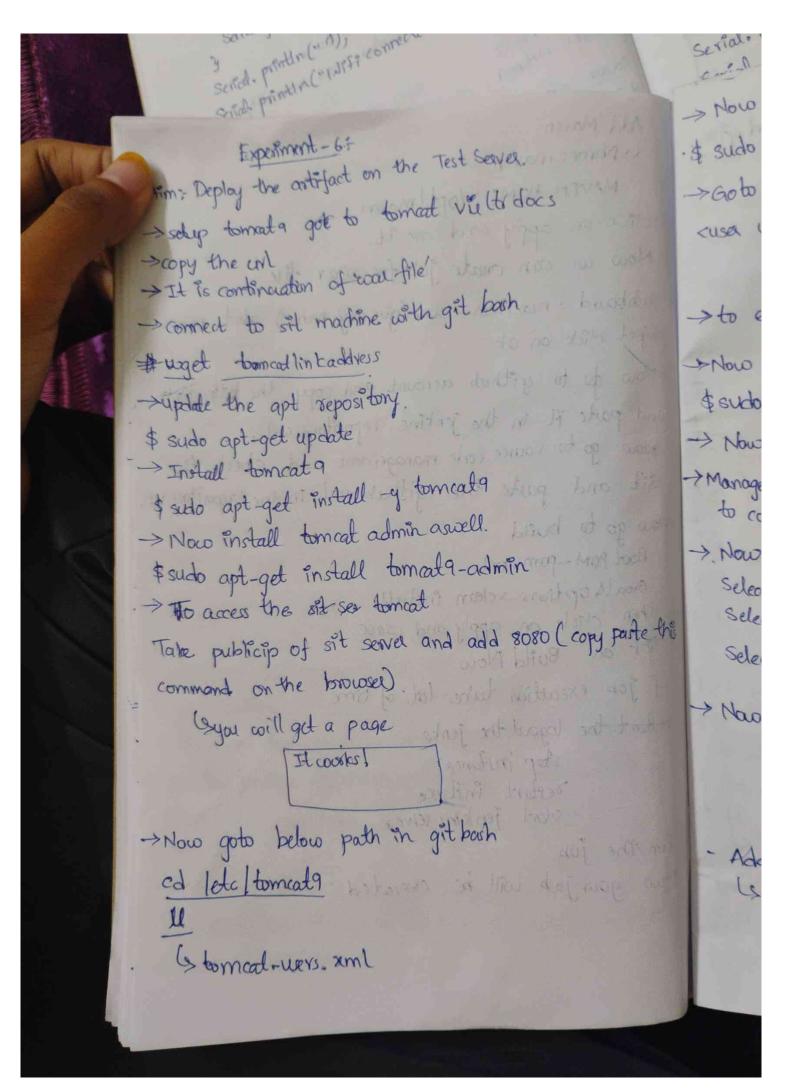
Serial. print ("degree adaius; Humidity; Sorial . print(f); (Experiment-2 Setup Eclipse for Pertips) Experiment-47 Aim: Build WAR file in Devops. Is added and I do >In Devops, building a WAR (Web Application Archive) file and using Jenkins are accord steps in automating the deployment of Java-based web applications. In simple terms -> Building a WAR file means packaging your java web app so it can sun on a server like Tomcad. -> Jentins automates this process -it builds the WAR file every time you update your code, tests it, and can even deploy it - saving time and avoiding mistakes. Steps: Follow the same steps as Jenkins setup. \* check java is install or not. \* check moven is install or note \* check justins is install and > do this in another terminal Maven abunload Go to root directory. Usine go to connect in instance sudo sued topt and many top that the next shared or to Matri it makes at both works

Serial printin ("INFF? conrected"); · Innel) >open the browser and type maken download right elect on apache-moven-3.9.9. bin.tar.gz ->copy the link. wget link address of moven show to unxip the maven xip file. +tar zvzf apache-maven-3.9.9. bin.tar.92. ( apache - maver - 3.9.9/. Rename apache-maven - 3,9,9 to maven # mv apache-maven-3.9.9 maven # cd maven. It stort, door may statiges may viet # Il south the problems been and primes - Is note do con the maven path: 1 opt maven # pwd. oh & boolings man # cd bin and rations in the pretrails foor of a # Union in designed at op still # pwd tenote doson the bin path lopt/moven/bin -> Now check the maion is install or not mvn -- version

Serial, print ( degree > It shows 'mon' not found -> so, by the below command ... of Imm -- version With show the maven Version. -> Now go back to the root directory # cd/ day of helps of board on harmon -> check the moven version -> page. # mun -- Version -> Again it shows maken not found - Go to the root directory with below command # 00 ~ # pod (present coorling directory) En plager (nown wintered on Nao you can see the profile file. ropen the file with the beloco command. # sudo vim profile. I hadron no tills believed wood -> Go to ment mode (click on I) and give moven, gava home and m2 parts here to make of a M2-HOME=lopt/maven. 1000 16/1 but 100 bhs M2=lopt/maven/bin. JAVA\_HOME=/usr/lib/juni/java-21-openjdk-and64 PATH = \$PATH : \$HOME / bin : \$TANA\_HOME : \$M2\_HOME : \$M2 -> to exit enter (Esc+: wg)



Serial. print ("degree colorus Add Maven Grame: maven. MAVENLHOME: lopt/maven. -> click on apply and save it. -> Now we can create job for war file. -> Dashboard > newstern > wor (give any name) select moven project dick on ok! > Now do to github account and copy the Into path. and parte it in the jentins repository un. -> Now go to source code management and check the Git and paste the githab url in the repository us? Mass works towned thehir world -> Now go to build Root POM - pom ambo - Planted Materia top-top obus? Goals options > clean install then click on apply and save. -> click on Build Novo -> If job execution taker lot of time restart the logard the jents apply a by line sopel stop instance (2000) restart infance start Jenkin server. they would also we -> Run the job Now your job will be executed. Phomosphology 4 link way to med !



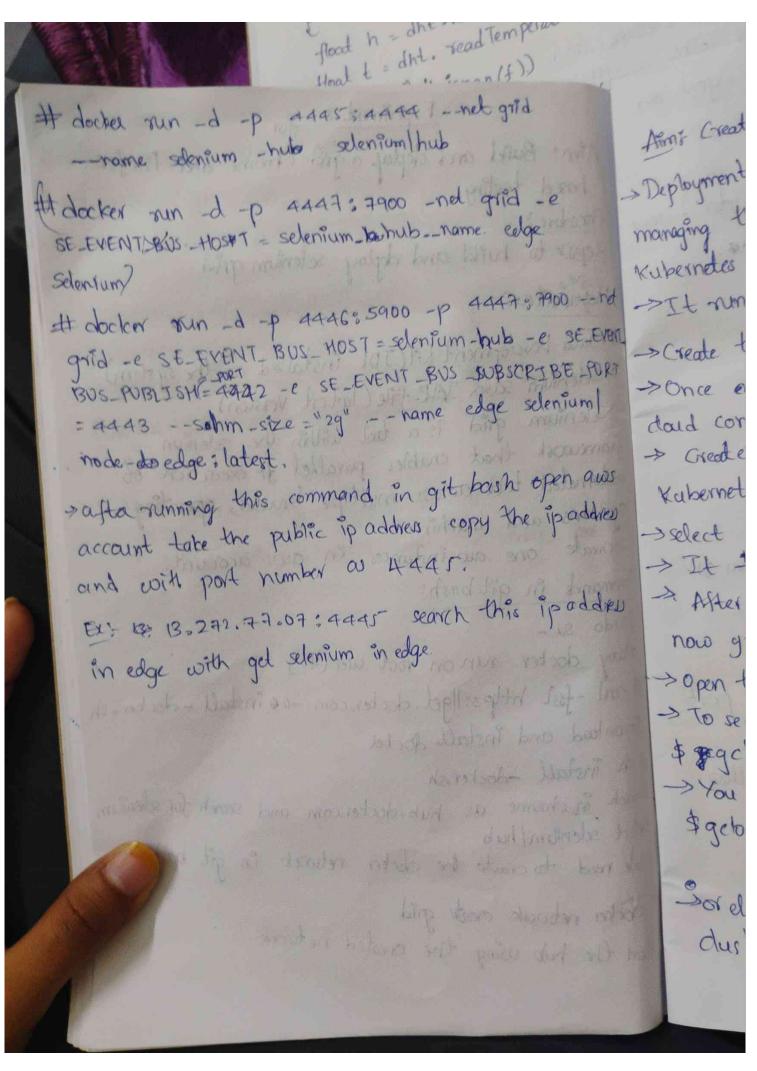
erial print ("degree adaius; Hur Serial printer, mod println ("of send to Thingspeak in); > Now we need to add user to this tomcod-uxxx.xml ·\$ sudo vim tomcat-users. reml -> Go to insert mode and add user below <use usa name = "keerthana" possioord = "keer123" voles = "manager-script, manager-status, manager-gui"/> >to exit 1:wg Now restart the tomcat service. \$ sudo service tomosta restart -> Now add one plugin in the jenkins (deploy to contained) -> Manage jentins -> plugins -> available plugins -> select deplay. to container and install it and restart -> Now goto the jenkins doshboard Select the war job Select the configure of steps. Select Prost-Build-Actions and search deploy warlear to a iste the > Now go to Post-Build-Actions 4 WAR [EAR file -> \*\*/\*, waer context puth -> sit Containers -> tomcata. - Add credentials public ip of ritser ver Suscriame - Lees Dam with 8080 port Passwoord - keer 123. Tomature - http://3.110.55, 250:8080

food to 11. read temperature (); > to check the artifact is deployed or not. > Take the sit public spaddress and post no and give the context path name. Ex: http://3.110.85.250:8080/sit and authors amound his Now I Taxo of since toward out trades and walger ) without sett in apply so a bloc and ! not it sales a regula sidalisas a aniquia a unitaria popula trates but it with the contains of broad dads entities and dop work white the secretary and dealer who is it is the Action and sent too the word of the fill of op and James 12 - 1471 13 110, 17, 1711 100

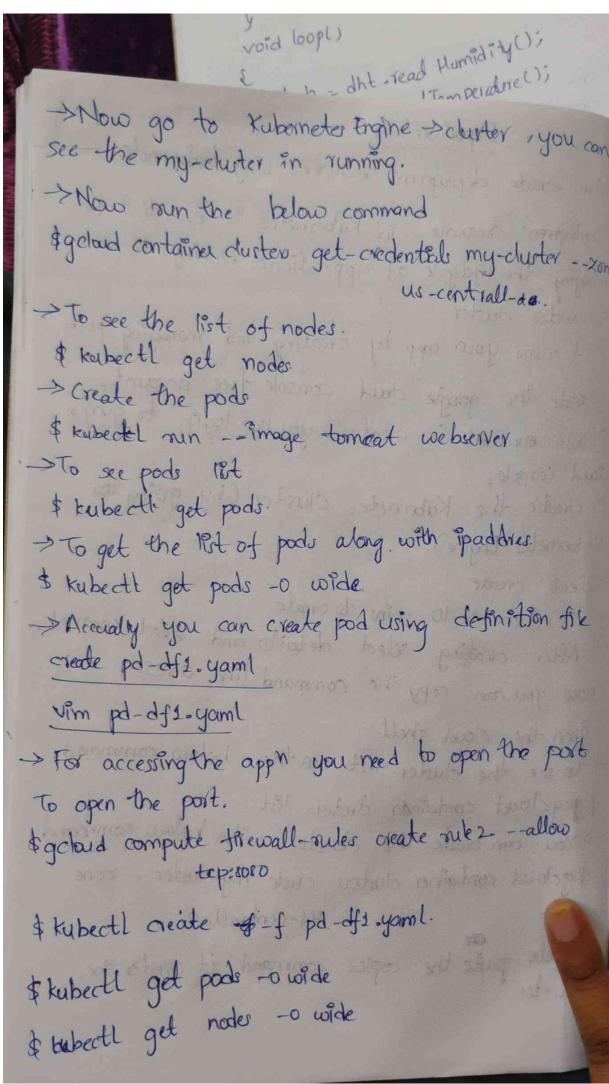
Serial print ( degree colores; Humidity: "); Sural. print(f); Humidity (); Serial-print(N); emperatre(); bar Experiment - 7 Aim? Patom automation using Jenkins Whenever you made some charges in source file jenkins t no and give Job run automatically fetch the code from github to dove server and build the war free and deployed into - Mow goto open gittouth \$ git clone https://github.com/kMahi-Repalle/practice.git 4 packel service automotically \$ of practice show hold more he all disable out CSSKC the set in behalfur 9 cd sic (main) \$ cd main \$ U 4 webapp \$ cd webapp Windex. jsp I vina index isp & git status of git add.

Egit status & git commit -m "ab" \$ git push origin mader > Now goto dashboard. Show item > war > configuration > Triggers. Select pollsom and give contrab values Adict on apply and sove the job. > Don't run the build now > Jentinsa automatically trigger the job. > Now refresh the sit server latest code changes are reflected in the sit

ad Temperature(); Serial printin ("%. send to Thingspeak: "); Serial-print(h); ((11) Experiment-8 for Aim: Build and deploy a grid Chrome and Frefox based testing. Procedure: Steps to build and deploy selenium grid. riggers. Préguésites: poll som 1. Java Development Kit (JDK installed on the system). contab value 2. Selenium sava JAR file (latest version) - Seknium grid is a tool within the selenium framework that enables parallel & execution et automated test across multiple brouses, operating systems and machines changes are > create one aux intances in aux account. Commande in git bush : \$sudo sualway docter run on root user (#) # cuil -fssl https://get.docker.com -00 install -docker-sh Download and Install docted # sh install -docker.sh Search in charme as hub docker com and search for selenium Select sclenium/hub 1. We reed to create the clocker retwork in git bash the docker network create grid Start the hub using the created network.



Serial-printin (" %. send to Thingspeak: "); d Temperadre(); Serial-print(h); n.(f)) Experiment-9 grid Atmit Create deplayment resource using Kubernetes -> Deployment serource in Kubernetes is essential for Support o managing the lifecycle of applications running in a eelge Kubernetes cluster -> It rums your app by creating and managing pods. 7 5 7900 -- nd -> Create the google dad console free account. - e SE\_EVBYT -> Once eaccount is created you can login to google CRIBE PORT sclenium daid console. -> Greate the Kubernetes Cluster Cby going to open aws Kabernetes Engine). ne ipaddrew > It take 5-10 min to create -> After creating select details and sedect connect. ipadden now you can copy the command the access. > open the cloud shell. > To see the cluster list run the below command. \$ gegeloud container dusters 19st. -> You can create the cluster with below command. \$ geboud container clusters create my-cluster -- zone us-centrall-a sor else paste the opied command it creates the duster.



Señal-printin ("%. send to Thingspea >To access the bood, take the external ip add Nini setup Gurana to Levops add the port no 8080. >open the browser paste "paddress": 8080. 102 to Under 1 -> Now you can re the jenkins. of the new the above commond in the see the (nimber) superprop of somprise) (whompo moss Jamsten flood h - dht read Homes ();

## Experiment-11

Aim: Setup Grafana for Devops.

Continuation

\$ kubectle get secret prometheus-grafara -n monitoring -o "smoinpath="f. data admin-user" | base 64 -- decode; echo > If you run the above command u can see the

Username for gratina (admin)

\$ tubect l get secret promethau-gratang -n monitoring -o Isonpath = 6 data admin-password by 1 base 64 -- decode ; echo

It you run above command a conse the password dor grafana (prom-operator)

-> PORT FORWARDING

\$ kubectl-port-forward svc/prometheus-grafana 2000:80 -n
monitoring

>click on webpreview and change port no to 3000 and click on change and preview.

-> Novo u aon see gratana.

-senter wername, password

Aim ? Se Shelm

shelm

\$ helm

bus

一分下に

-> check

. \* kubec

\$ kubec

Acc

\$ kube

> click

> Now

promos

Serial-printin ("%. send to Thingspeak: "); Serial-print(h); Brustin Experiment -12 Aim: Setup from etheus for Devops. \$ helm sepo add prometheus https://prometheus-community. github. To I helm-charts ; echo I helm sepo update & helm install prometheus prometheus-community/kube ming -0 prometheus-stack -- namespace monitoring -- create-na > This will install promethous alex marager and grafana. ode secho word for > check the prometheus pods and sentices I kubect get pads -n monitoring I kubect l get svc n monitoring Access prometheus and port forwarding 600,80 -u 3000 and \$ kubectl port-forward svc/prometheus-kube-prometheusprometheus 9090;9090 -n monitoring -> click on web preview change port to 9090 > Now you can able to see the parometheur in the browsel.

flood h - dht. read Tempe Afin : Create a docker image for any application using Docker file and push it to Docker hub. -> Docker is a containerization tool >Docker Image is combination of binaries or libraries which are necessary for software application. >> Docker container: when image is installed and comes into running condition is called container, Image soun + container → DockerHost + Machine on which docker is installed is called as docker host. > Docker client: terminal which is used to run docker commands (githash) many bas and some -> connect to a cas and create an instance. COP OPOR SHIT YMAN > open browser (get-docker.com) a you can able to see the principle in the \$ sulo sualongs docker run on nact user >> Do conload and install docker. sail -fish https://get.docker.com -o install-docker.sh It sh install-dockersh.

Vin docterfix

FROM openidk.

WORKDIR lapp

COPV . lapp.

RUN javac sample java

CMD ["java", "sample"]

rim sample java wante or copy parte calculator progress Install jake to the a transfer some to the restor Papt-get install openidk-21-jdk- -y compile and men jova program. # javac sample java. # Java semple-> create doctor image for Java application. # docker build -t make that 45 favacalacter # docker image Is -> Now push the docker image in to docker hab > so create docker hub account (hub. docker. com) Login. #doclar login -u maked har As (essername) pasword : # docker push makedhar45 | javacalculator > Now go and check in the docker hub in repository. >According the image. docter run -- name myjava -it mahædhar 45/javædhole