

COMMUNITY ANNOUNCEMENT PORTAL

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Sai Kiran



COMMUNITY ANNOUNCEMENT PORTAL

TODAY'S AGENDA

- Problem statement
- Project Objectives
- Technology
- Features
- Multi Development Environment
- Problem With Single Development Environment
- Tools
- Infrastructure as Code
- CI/CD Pipeline
- Future Developments

PROBLEM STATEMENT

- To provide communication, integration, automation, and close cooperation among all the people needed to plan, develop, test, deploy, release, and maintain a Solution.
- Application for making Announcements within a team & organization to stay updated.



PROJECT OBJECTIVES

- Collaboration
- Speed
- Innovation
- Customer Satisfaction
- Agility
- Quality and Reliability
- Costs Reduction
- Automation

Technical Benefits

- Continuous software delivery
- Less complexity to manage
- Faster resolution of problems

Cultural Benefits

- Happier, more productive teams
- Higher employee engagement
- Greater professional development opportunities

Business Benefits

- Faster delivery of features
- More stable operating environments
- Improved communication and collaboration
- More time to innovate (rather than fix/maintain)

Community Announcement Portal Technology

Front-End :

- HTML / CSS
- Bootstrap

Back-End:

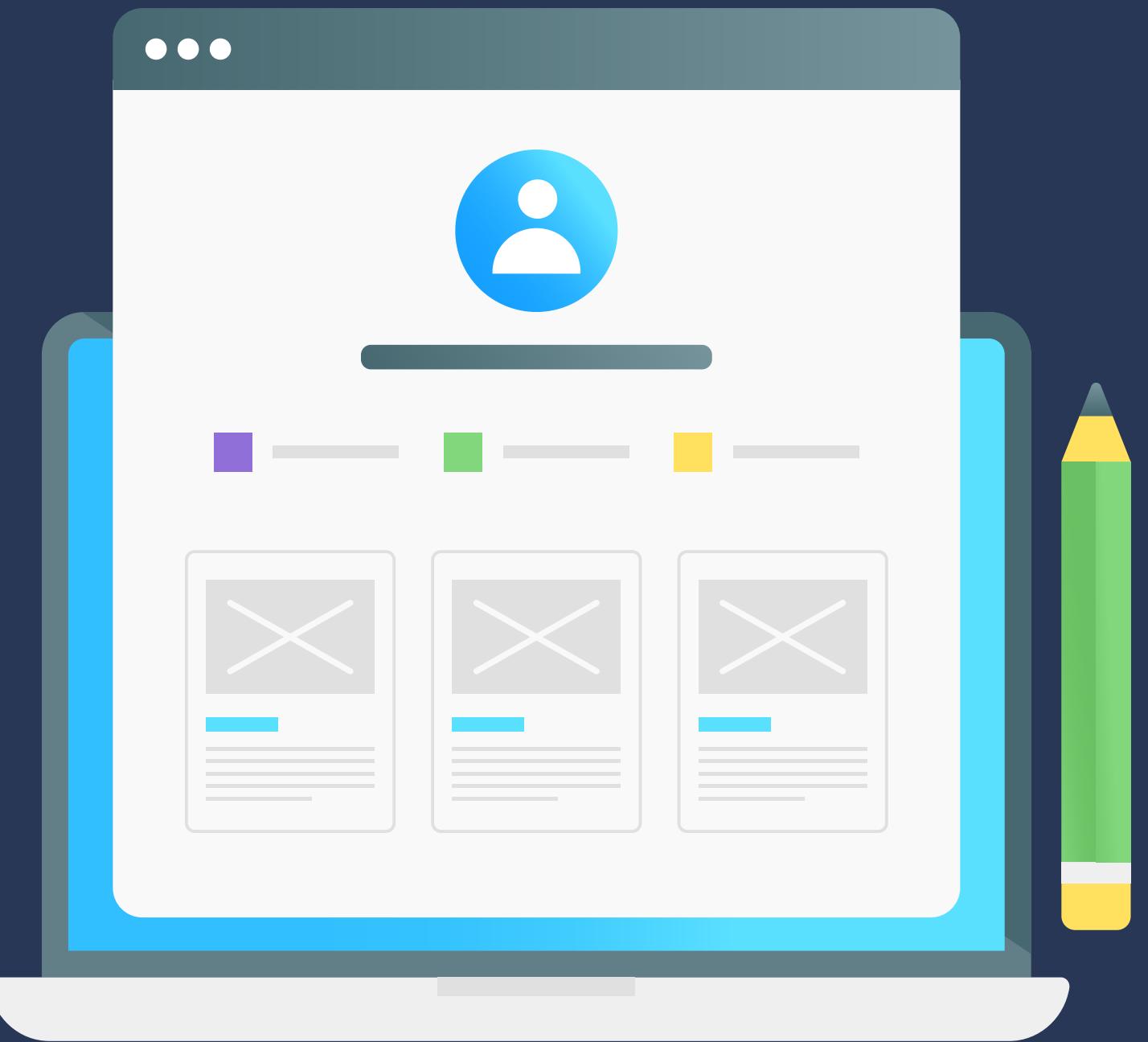
- Java

DataBase:

- MySQL



Community Announcement Portal Features



Registration

- First Name
- Last Name
- Email
- Password

Login

- Email
- Password

Announcement

- Create
- Edit
- Delete
- Hide

View Announcement

- All Users
- Individuals Users
- All Announcements
- Individuals Announcements

Multi Development Environment

01

DEVELOPMENT

www.dev.domain.com

- This is the environment that's on your computer.
- Here is where you'll do all of your code updates.
- It's where all of your commits and branches live along with those of your co-workers.

02

STAGING

www.stag.domain.com

- The staging environment is as similar to the production environment as it can be.
- All of the hardcore testings happens here.
- find and fix any issues that come up too.
- Give a demo of how things work and look to clients .

03

PRODUCTION

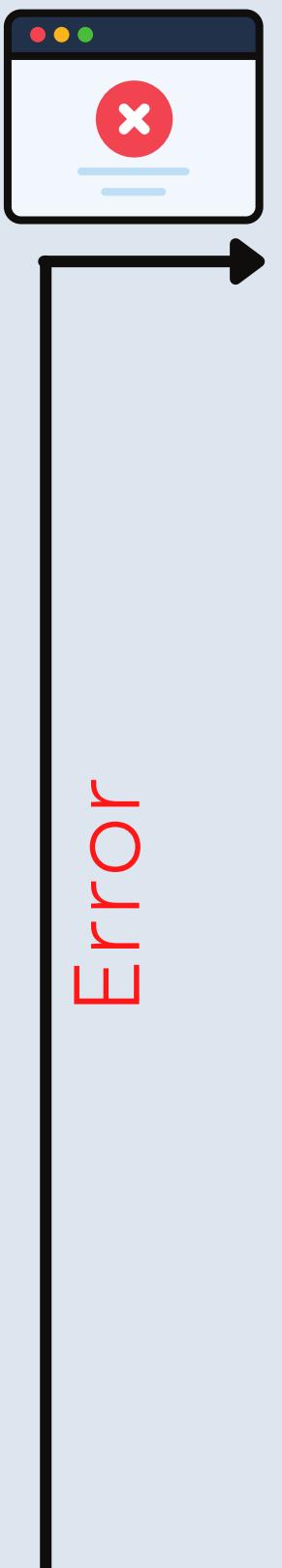
www.domain.com

- Every time we talk about making your project live, this is the environment we are talking about.
- The production environment is where users access the final code after all of the updates and testing
- Of all the environments, this one is the most important.

Problem With Single Development Environment

- Developers makes daily so many commits if any one of the commites have error in the code makes the application down.
- Half build features will be visible to customers.
- Competitors Knows what we are building.
- Time Consuming
- Waste of Human Resources
- Complex & Inefficient

www.domain.com



Pull



github

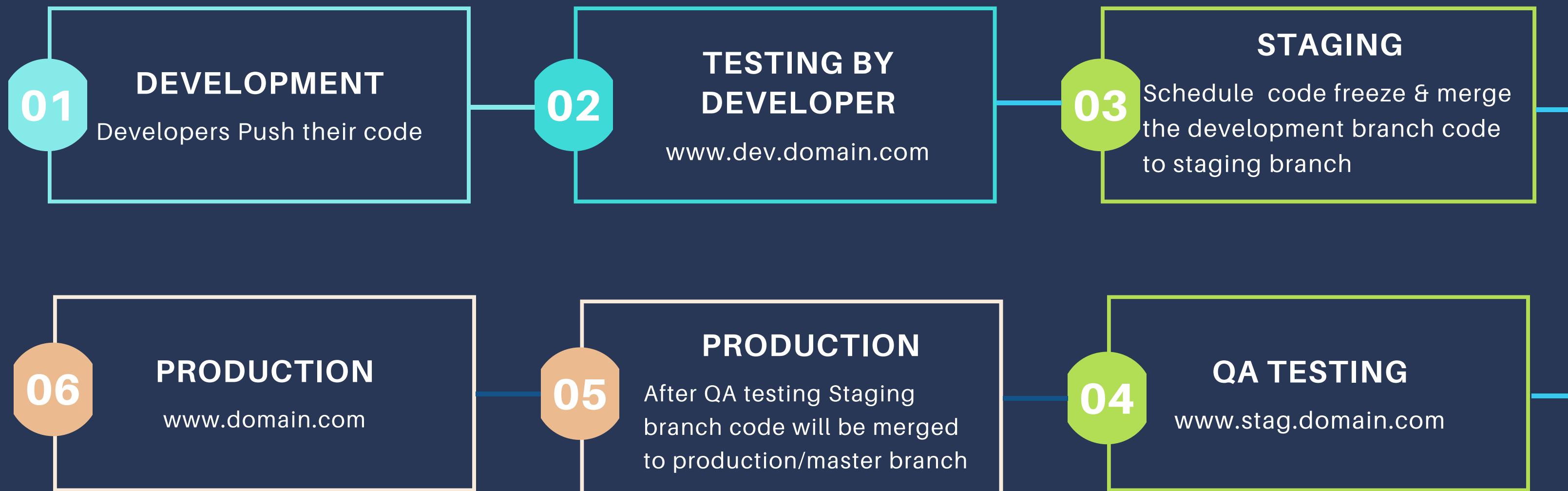
Push



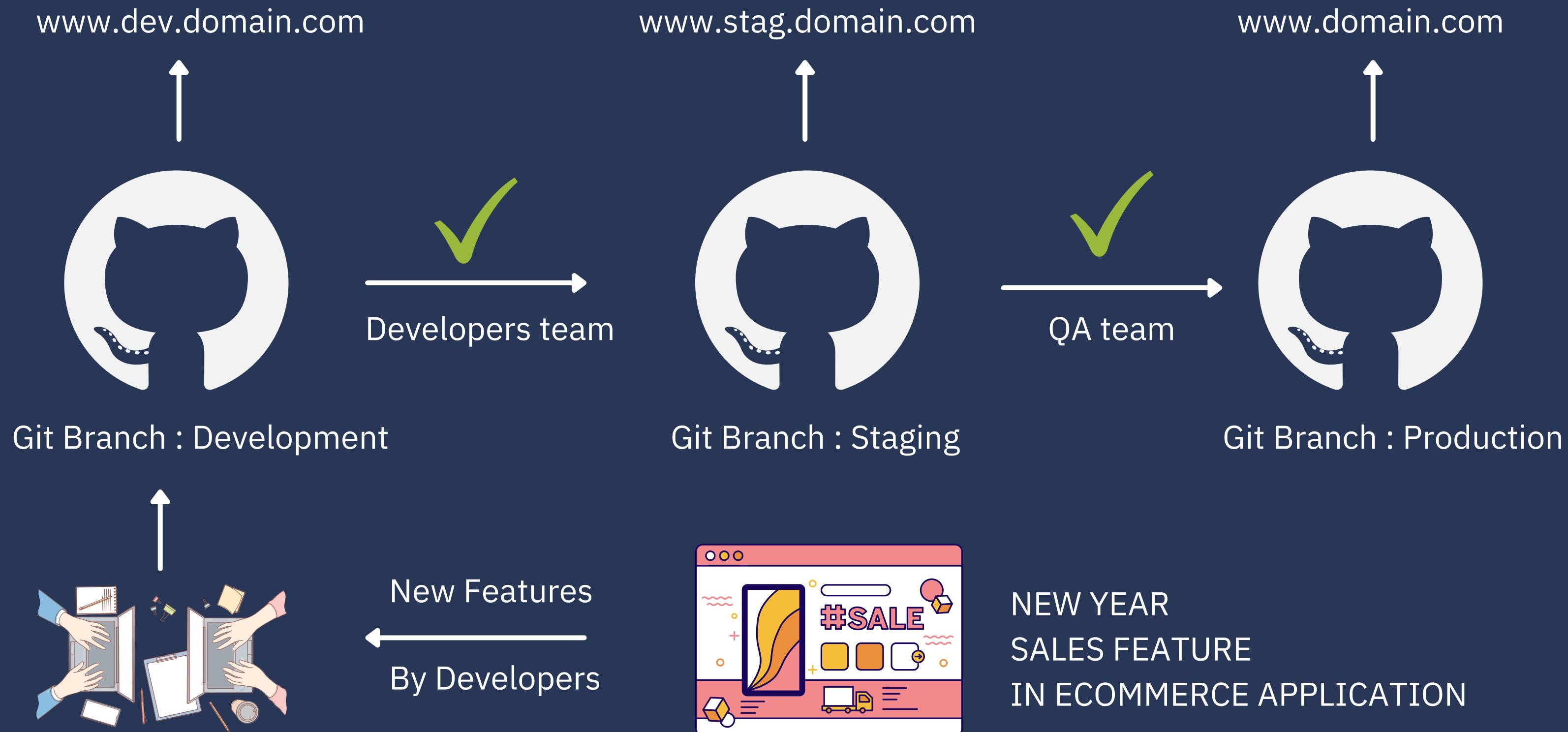
Developer Code

Error

How Multi Deployment Environment works



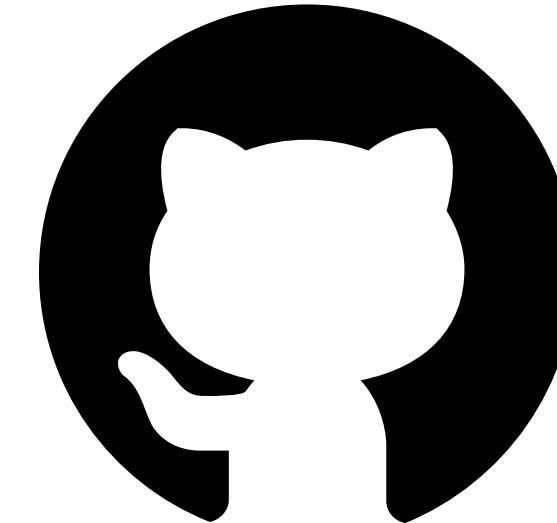
Multi Deployment Environment Example



DevOps Tools

GitHub

- open-source code hosting platform for version control and collaboration.



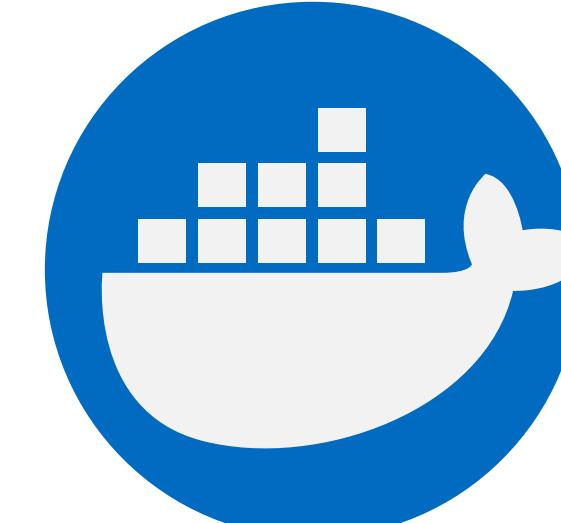
Github

Jenkins

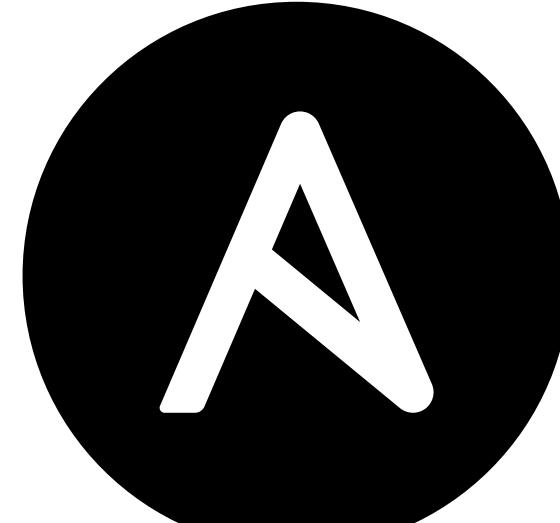
- open-source automation tool is written in Java with plugins built for Continuous Integration purposes.



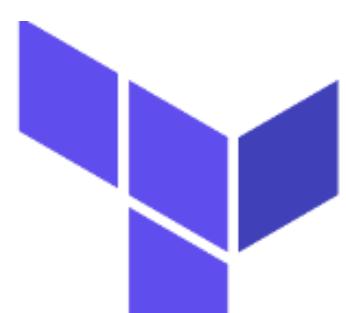
Jenkins



Docker



Ansible



HashiCorp
Terraform

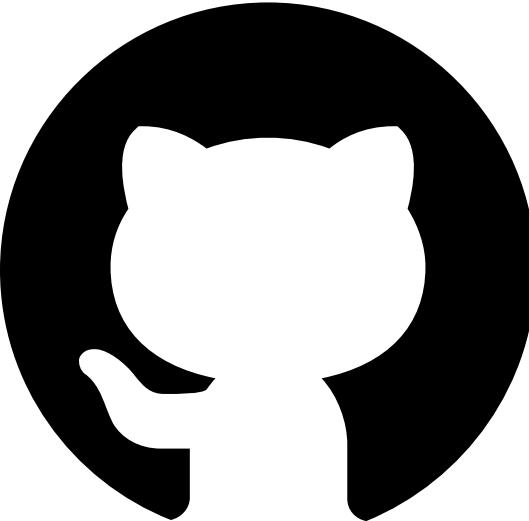


kubernetes

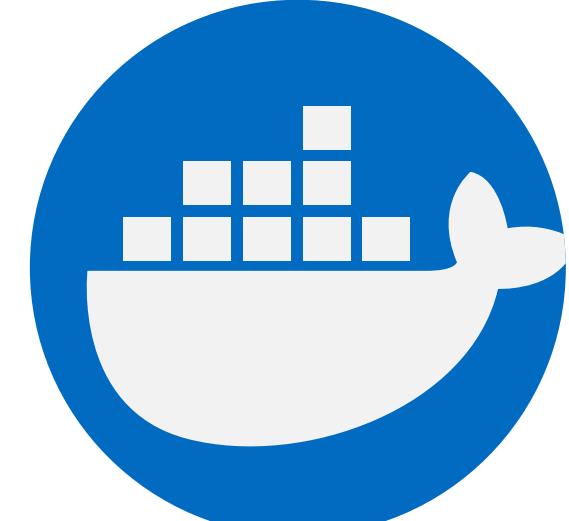
DevOps Tools

Maven

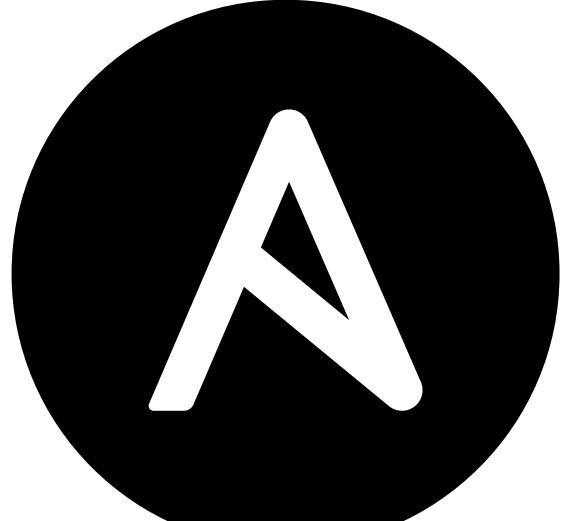
- Maven is a build automation tool used primarily for Java projects.
- Maven dynamically downloads Java libraries and Maven plugins .



Github



Docker



Ansible

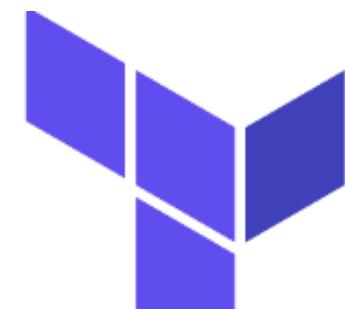


Jenkins



Ansible

- Ansible is an open-source software provisioning, configuration management, and application-deployment tool enabling infrastructure as code.

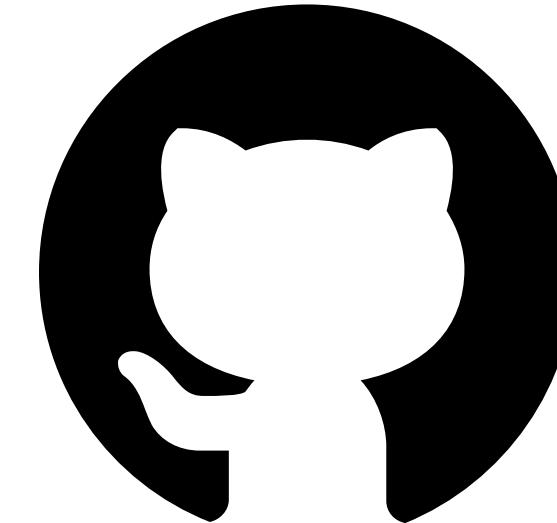


kubernetes

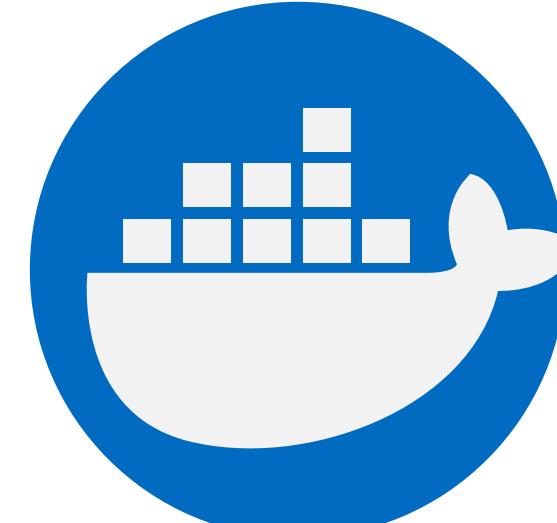
DevOps Tools

Docker

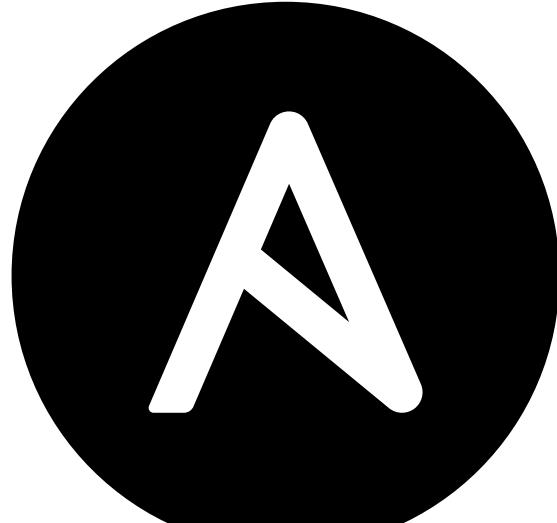
- Docker is an open platform for developing, shipping, and running applications.
- Docker enables you to separate your applications from your infrastructure so you can deliver software quickly.
- shipping, testing, and deploying code quickly, we can significantly reduce the delay between writing code and running it in production.



Github



Docker



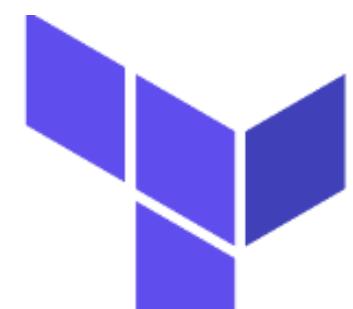
Ansible



Jenkins



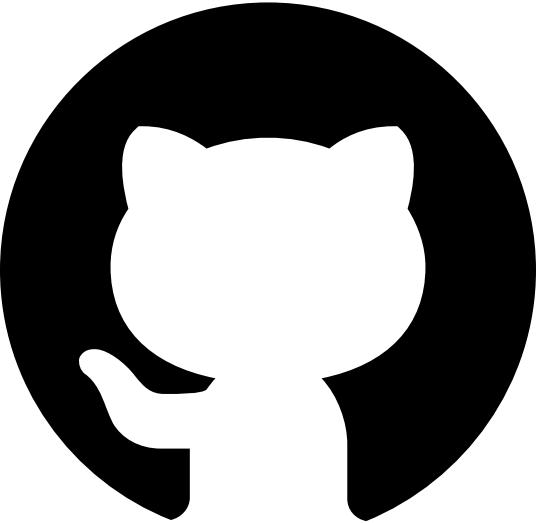
kubernetes



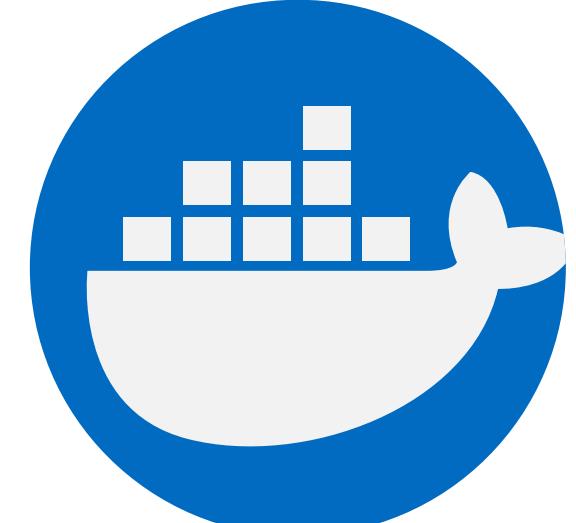
DevOps Tools

Kubernetes

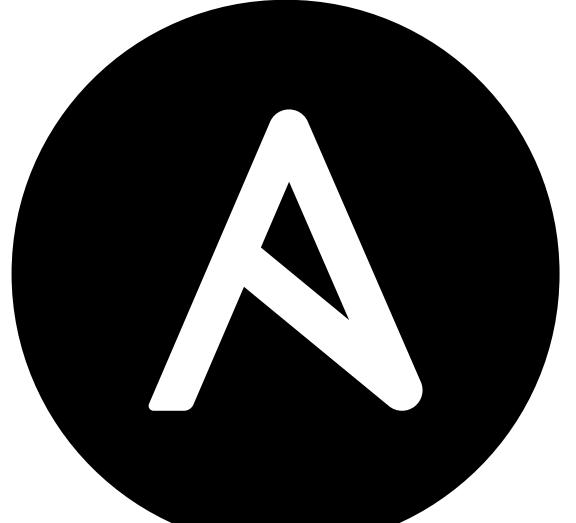
- Kubernetes is an open-source container-orchestration system for automating computer application deployment, scaling, and management.



Github



Docker



Ansible

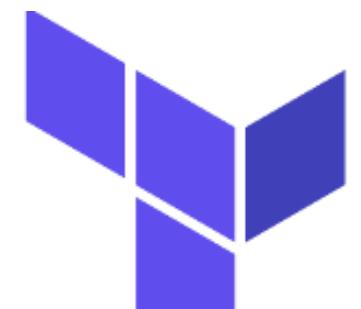


Jenkins



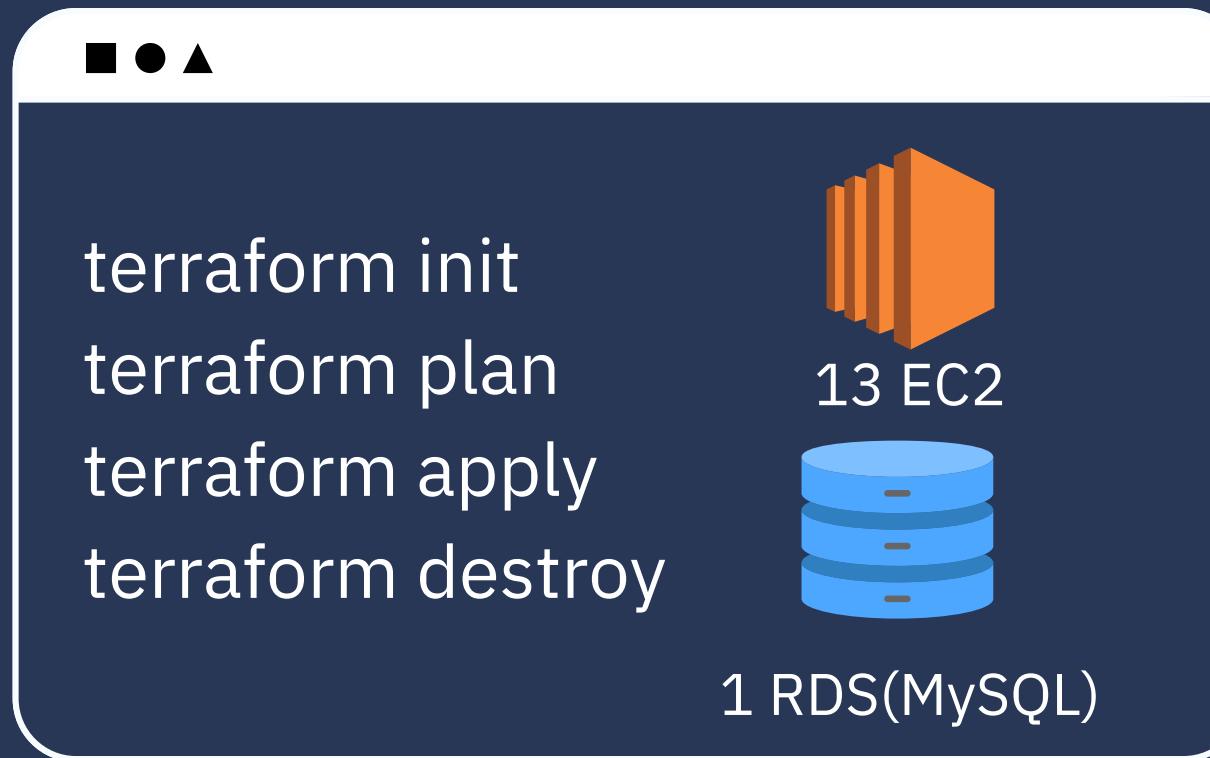
Terraform

- Terraform is an infrastructure as code (IaC) tool that allows you to build, change, and version infrastructure safely and efficiently.



kubernetes

Terraform for creating resources



Infrastructure Configuration

OS. : Centos
AMI. : ami-026f33d38b6410e30
TYPE. : t2.micro
Storage : 8 GB
Machine :kubernetes

- K8Master1Node1
- K8Master1Node2
- K8Master2Node1
- K8Master2Node2
- K8Master3Node1
- K8Master3Node2

OS. : Centos
AMI. : ami- 026f33d38b6410e30
TYPE. : t2.medium
Storage : 30 GB
Machine :kubernetes

- K8Master1
- k8Master2
- k8Master3

OS. : Ubuntu
AMI. : ami-0567e0d2b4b2169ae
TYPE. : t2.medium
Storage : 8 GB
Machine :jenkins

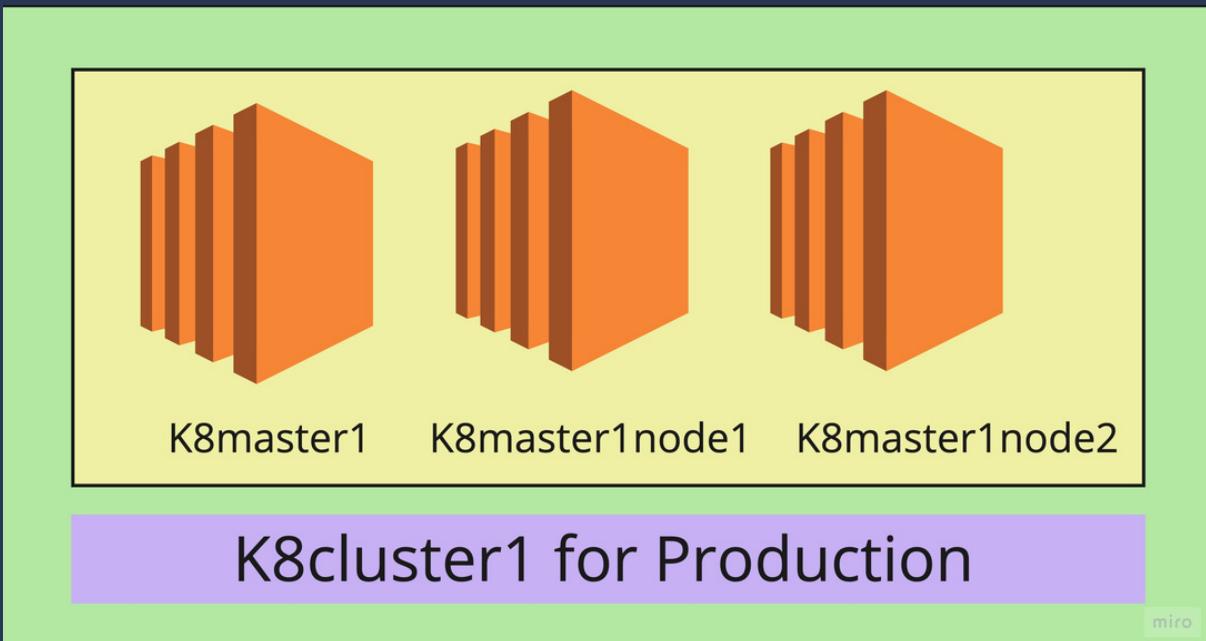
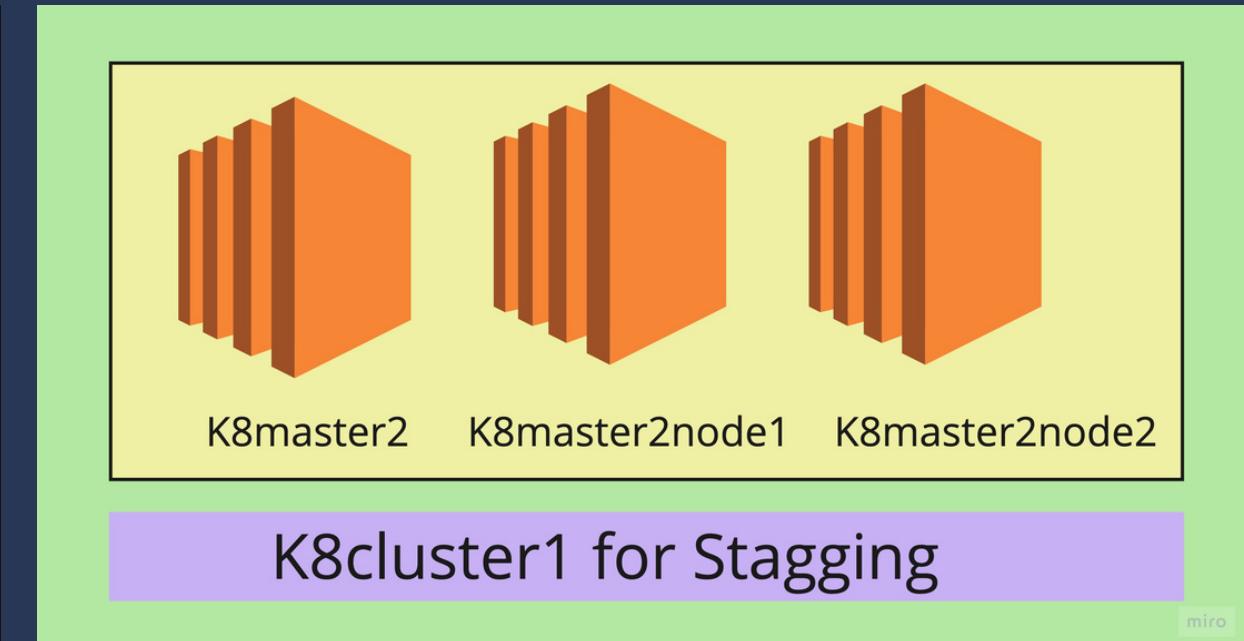
- Production
- Staging
- Development

OS. : Ubuntu
AMI. : ami-026f33d38b6410e30
TYPE. : t2.micro
Storage : 8 GB
Machine :db server

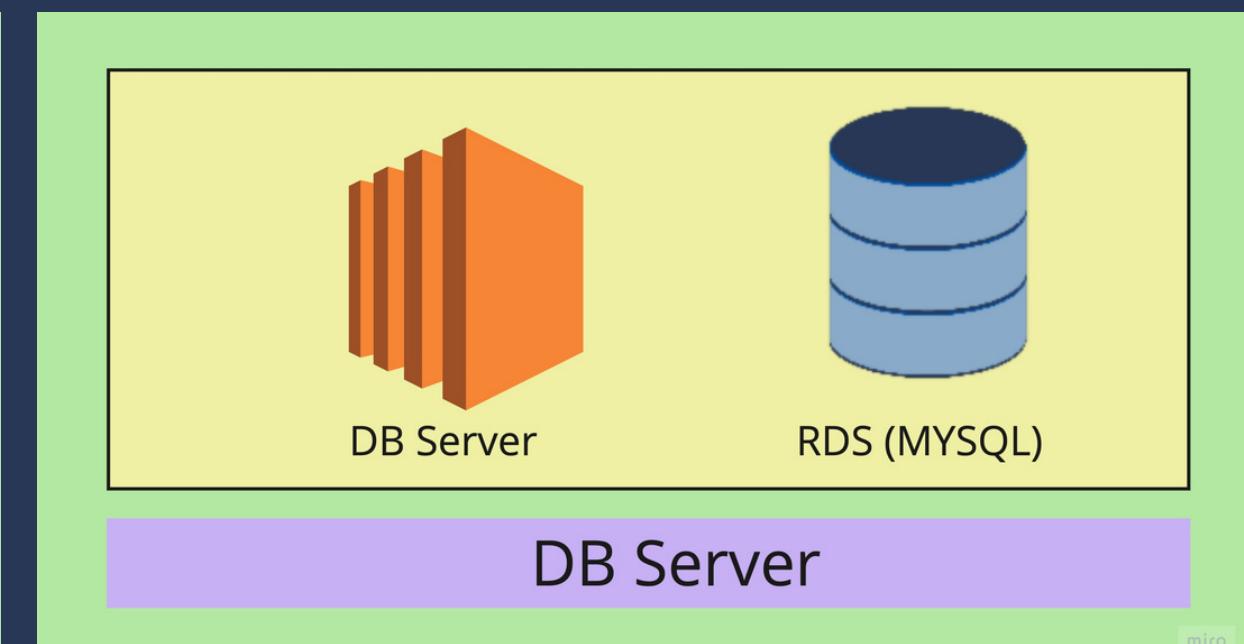
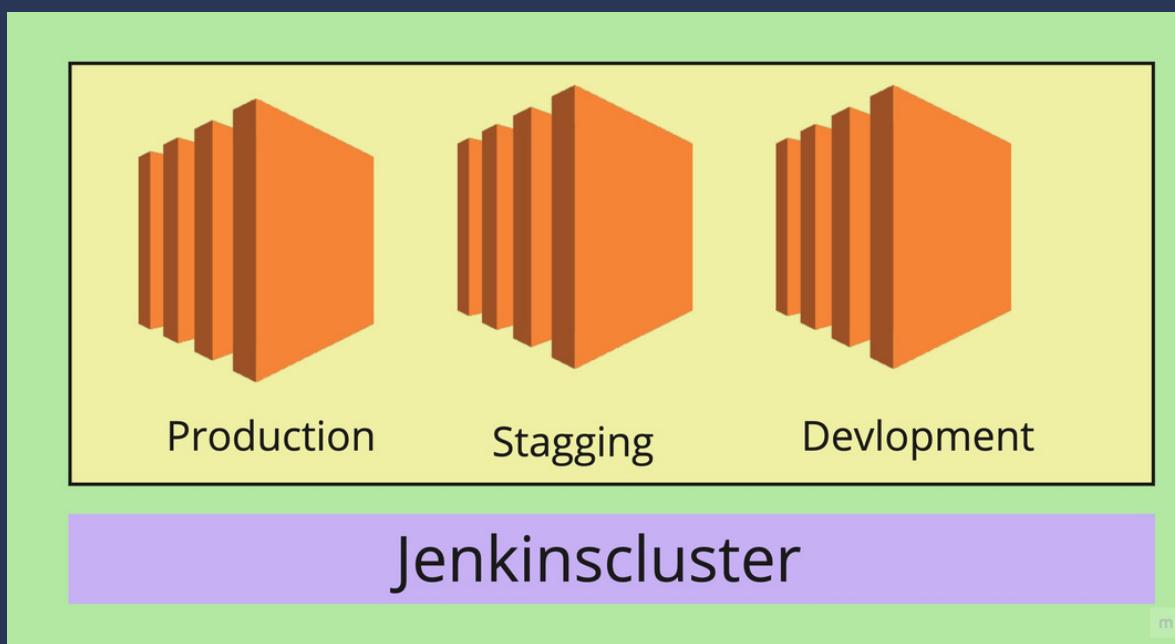
- DB Server

Infrastructure & Clusters

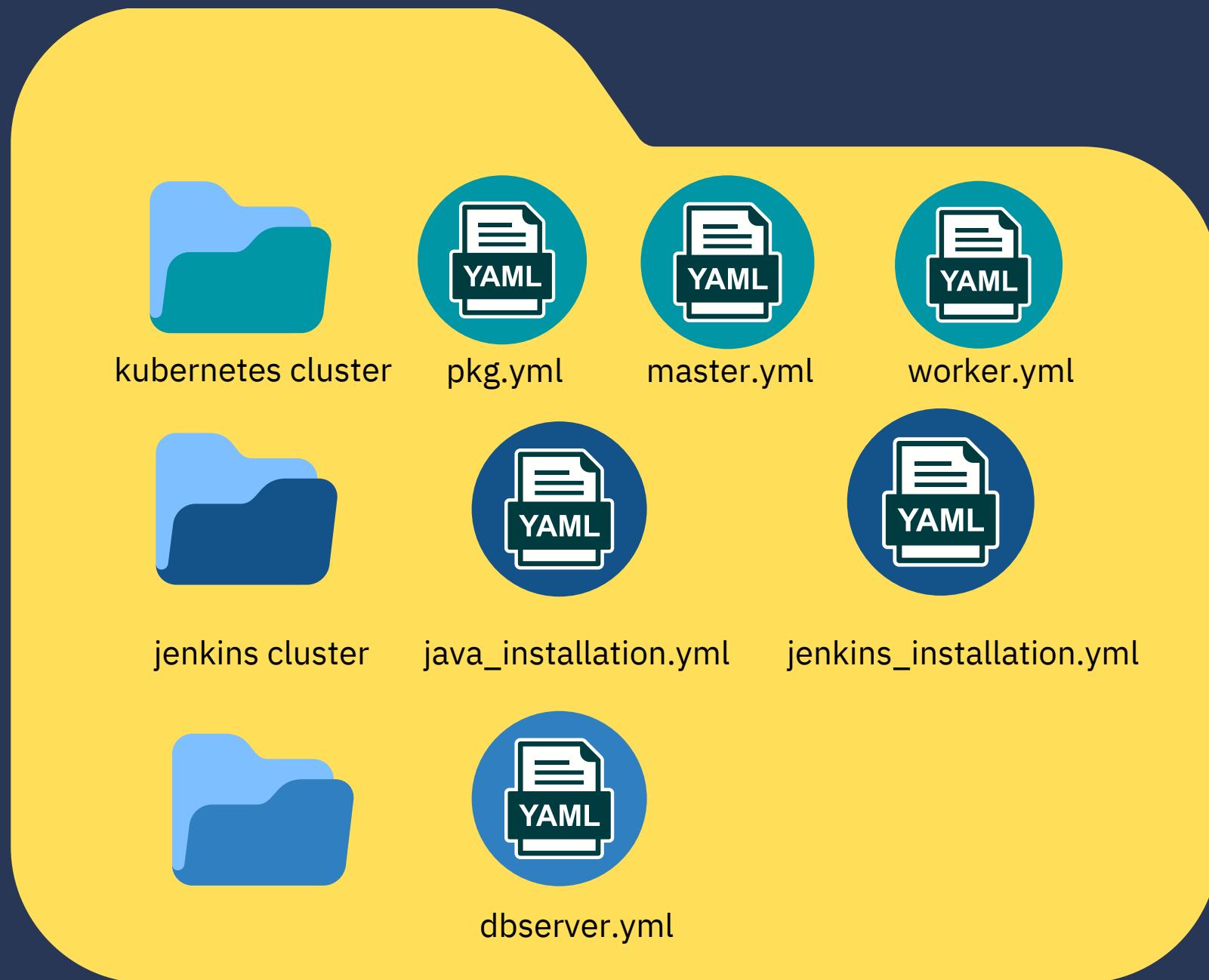
KUBERNETES



JENKINS



Ansible for Installing & Starting Services



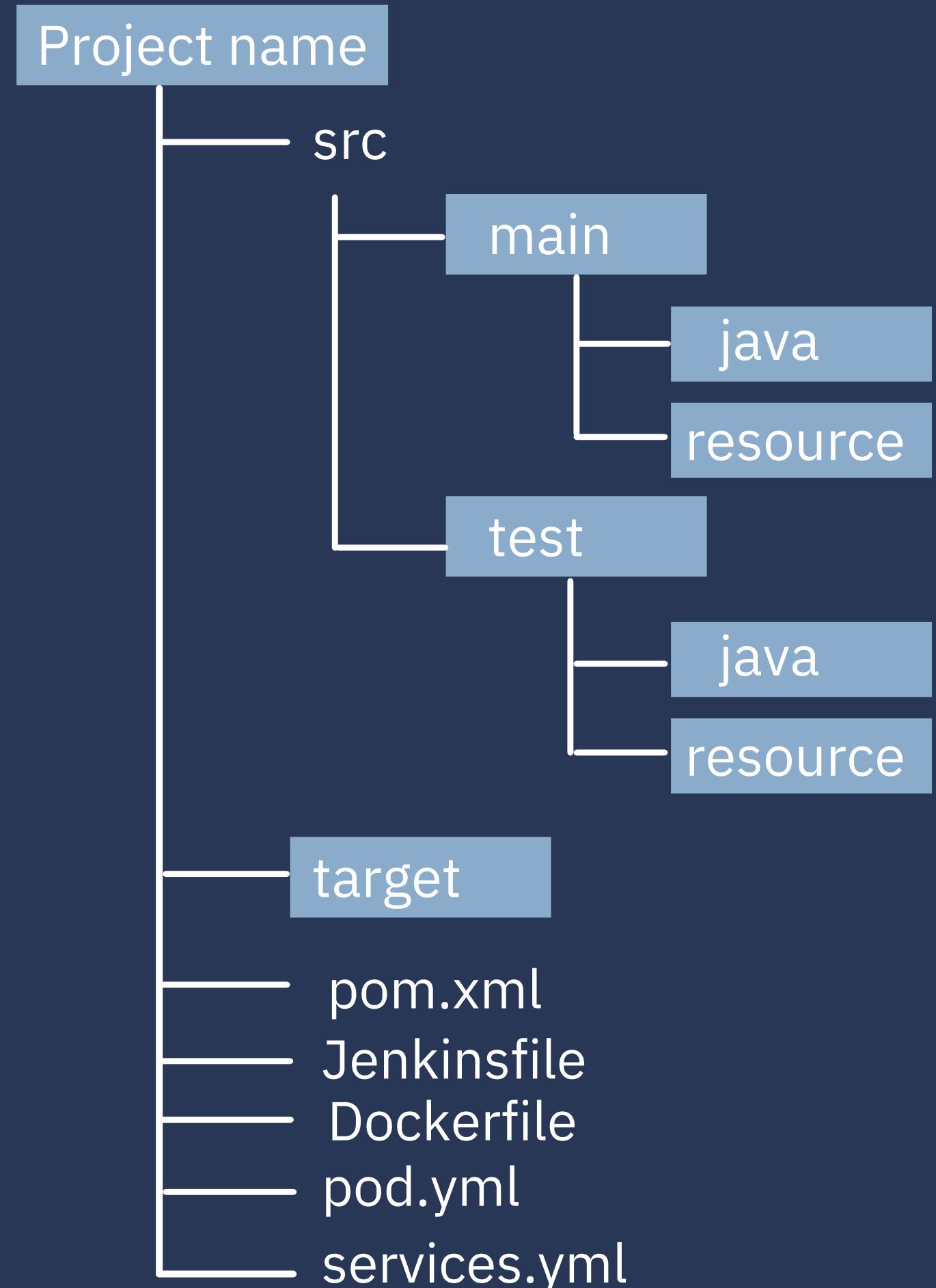
pkg.yml Packages: <ul style="list-style-type: none">• docker• kubeadm• kubectl• kubelet	master.yml Command: <ul style="list-style-type: none">• kubeadm init To generate token	worker.yml Command: <ul style="list-style-type: none">• kubeadm join To establish connections b/w master node
java_installation.yml Packages: <ul style="list-style-type: none">• java	jenkins_installation.yml Packages: <ul style="list-style-type: none">• jenkins	dbserver.yml Packages: <ul style="list-style-type: none">• mysql

Repositories Structure

Java Based Maven Project Structure & GitHub

Git Branches

- Master / Production
www.domain.com
- Staging
www.stag.domain.com
- Development
www.dev.domain.com



pod.yml

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: announcement-deployment
spec:
  replicas: 2
  strategy:
    type: Recreate
  selector:
    matchLabels:
      app: announce-app
  template:
    metadata:
      labels:
        app: announce-app
        env: prod
    spec:
      containers:
        - name: my-deployment-container
          image: rakesh1019/javahome:tagVersion
```

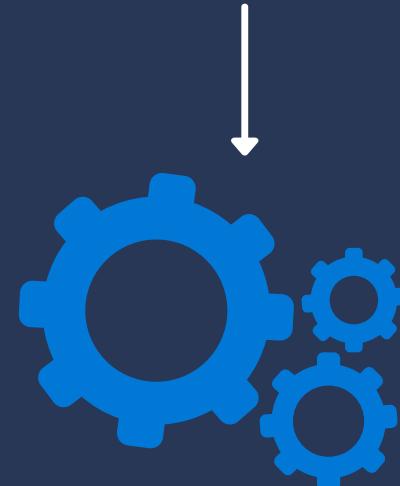
services.yml

```
apiVersion: v1
kind: Service
metadata:
  name: announcement-prod
spec:
  type: NodePort
  selector:
    app: announce-app
    env: prod
  ports:
    - nodePort: 32412
      protocol: TCP
      port: 8080
      targetPort: 8080
```

DOCKER & KUBERNETES

Dockerfile

```
FROM tomcat:8.5.47-jdk8-openjdk  
COPY /target/myweb.war /usr/local/tomcat/webapps  
EXPOSE 8080  
CMD ["catalina.sh","run"]
```



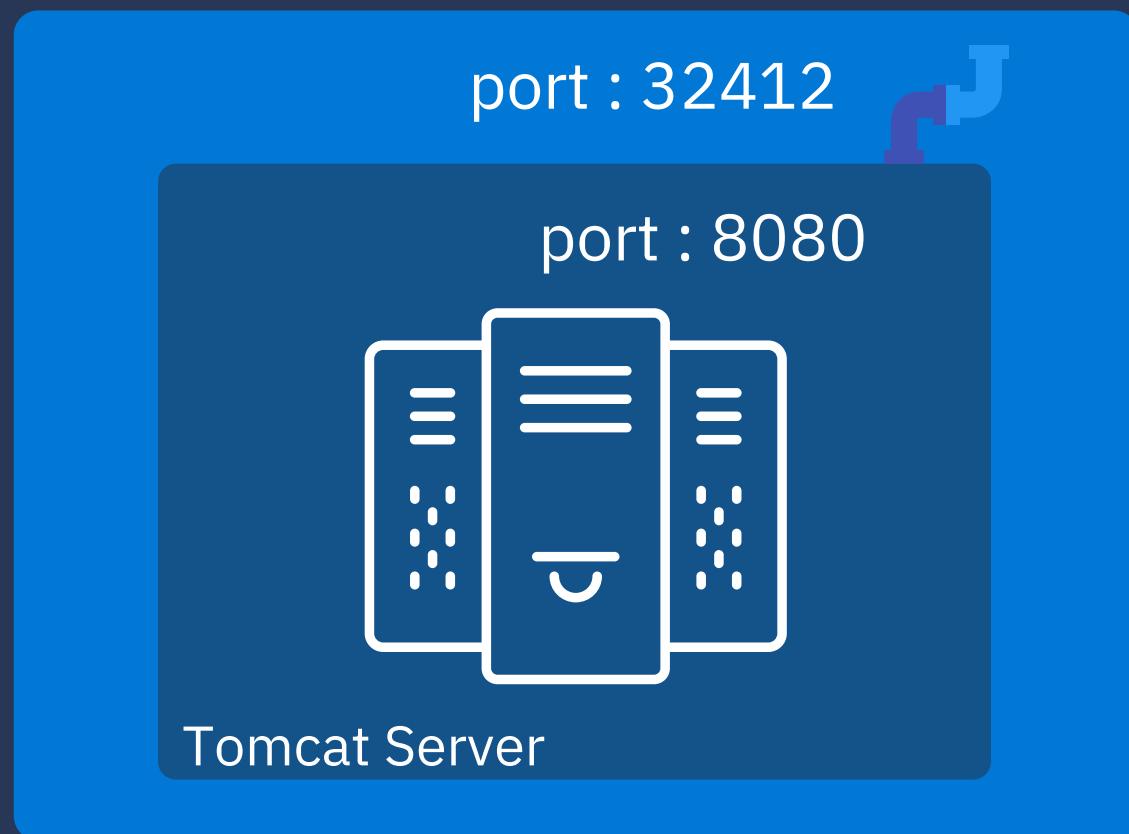
Docker Image Build

Push
→



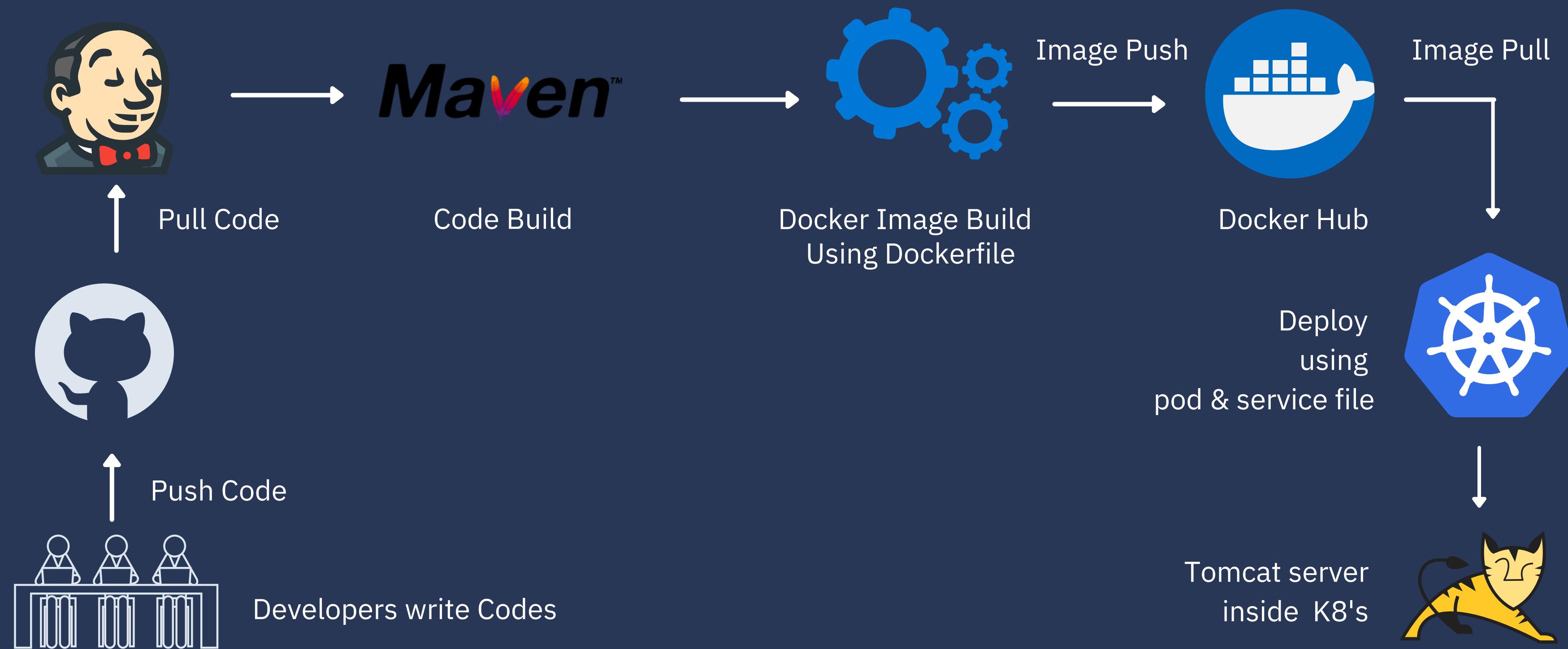
Docker Hub

Pull
→



Kubernetes

CI /CD PIPELINE (Jenkinsfile)



Jenkins Multi Branch Pipeline



Community_Announcement_Portal

Branches (3)					
S	W	Name ↓	Last Success	Last Failure	Last Duration
✓	⌚	development	1 day 4 hr - Community-Announcement-Portal-#7	1 day 22 hr - Community-Announcement-Portal-#1	31 sec
✓	⌚	master	1 day 4 hr - Community-Announcement-Portal-#6	1 day 22 hr - Community-Announcement-Portal-#1	29 sec
✓	⌚	staging	1 day 4 hr - Community-Announcement-Portal-#6	1 day 22 hr - Community-Announcement-Portal-#1	28 sec

Icon: S M L Icon legend Atom feed for all Atom feed for failures Atom feed for just latest builds

Jenkins CI / CD

Multi Branch Pipeline (Development)

Stage View

www.dev.domian.com

The screenshot shows the Jenkins Pipeline development stage view for the 'Community_Announcement_Portal' project. The left sidebar includes links for Up, Status, Changes, Build Now, View Configuration, Full Stage View, and Pipeline Syntax. The main area displays the 'Pipeline development' section with the full project name 'Community_Announcement_Portal/development'. It features a 'Recent Changes' section with a pencil icon and a 'Stage View' section with a table showing average stage times and individual build details.

Declarative: Checkout SCM	Declarative: Tool Install	Git Checkout	Maven Build	Build Docker Image	DockerHub Push Image	Deploying tomcat on k8s
659ms	71ms	500ms	6s	1s	19s	1s
600ms	59ms	455ms	5s	1s	20s	1s
642ms	59ms	480ms	5s	1s	17s	1s
609ms	71ms	488ms	5s	1s	19s	1s
649ms	64ms	510ms	9s	1s	21s	1s

Average stage times:
(Average full run time: ~31s)

Community-Announcement-Portal-#7	Dec 18 15:35	No Changes
Community-Announcement-Portal-#7	Dec 18 15:35	No Changes
Community-Announcement-Portal-#6	Dec 18 09:47	No Changes
Community-Announcement-Portal-#5	Dec 18 09:25	No Changes
Community-Announcement-Portal-#4	Dec 18 09:22	No Changes

Development Environment Application

www.dev.domian.com

13.126.37.186:32412/myweb

Developers test their code here & learn how its looks & works in production Environment

Community Announcement Portal

Home Register Login

COMMUNITY ANNOUNCEMENT PORTAL IS A WEB BASED ANNOUNCEMENT PORTAL FOR BROADCASTING MESSAGES.

2021-12-15
Kubernetes Cluster & Jenkins created successfully using ansible. Very Good Team.
PROFESSOR FACULTY

2021-12-10
its working!!!!
ADMIN ADMIN

2021-12-06
SWAYAM - National Program on Technology Enhanced Learning (NPTEL), a joint initiative of seven premier IITs and IISc Bangalore seeks registration for around 500+
professor faculty

User list

- Rakesh kumar
- loop 1019
- sai kiran
- Rakesh Kumar Singh
- maam maam
- kaif n
- admin admin
- Raheela Nadaf
- professor faculty

Jenkins CI / CD

Multi Branch Pipeline

(Staging)

Stage View

www.stag.domian.com

The screenshot shows the Jenkins Pipeline Staging view for the project 'Community_Announcement_Portal/staging'. The left sidebar includes links for Up, Status, Changes, Build Now, View Configuration, Full Stage View, and Pipeline Syntax. The main area displays the 'Pipeline staging' section with the full project name 'Community_Announcement_Portal/staging'. Below it is the 'Recent Changes' section. The 'Stage View' section shows average stage times and a detailed table of build stages for four recent builds. The table columns are: Declarative: Checkout SCM, Declarative: Tool Install, Git Checkout, Maven Build, Build Docker Image, DockerHub Push Image, and Deploying tomcat on k8s.

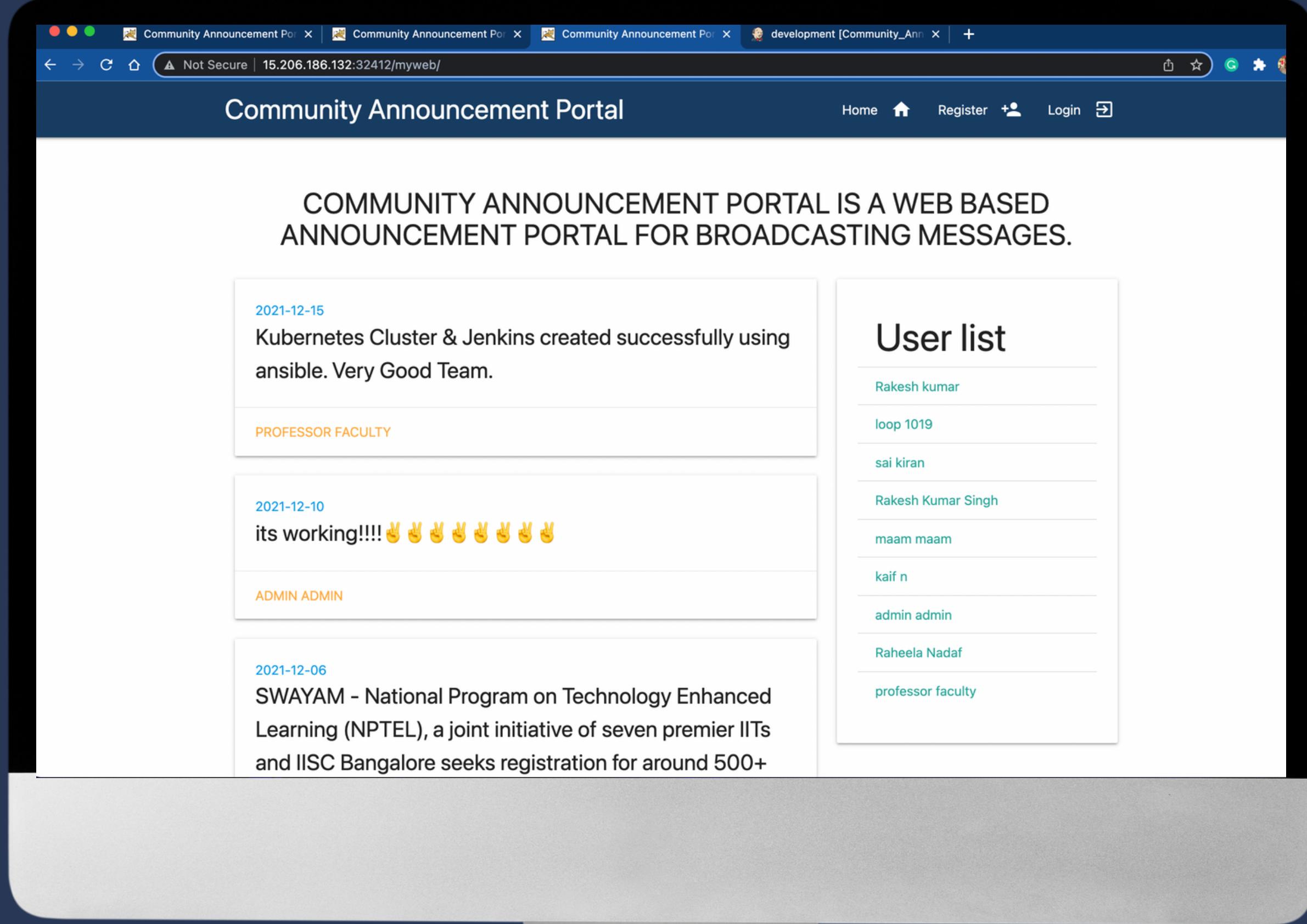
Declarative: Checkout SCM	Declarative: Tool Install	Git Checkout	Maven Build	Build Docker Image	DockerHub Push Image	Deploying tomcat on k8s
792ms	70ms	543ms	6s	1s	19s	1s
600ms	57ms	457ms	4s	1s	17s	1s
627ms	65ms	472ms	5s	1s	20s	1s
612ms	74ms	473ms	5s	1s	17s	1s
820ms	59ms	505ms	9s	2s	21s	2s

Staging Environment Application

www.stag.domian.com

15.206.186.132:32412/myweb


QA team test
developers code here
& when all the bugs
are removed then
code will be merged
to production



The screenshot shows a web browser window displaying the "Community Announcement Portal". The title bar indicates the URL is "Not Secure | 15.206.186.132:32412/myweb/". The page header includes links for "Home", "Register", and "Login". The main content area features a heading: "COMMUNITY ANNOUNCEMENT PORTAL IS A WEB BASED ANNOUNCEMENT PORTAL FOR BROADCASTING MESSAGES." Below this, there are three announcement cards:

- 2021-12-15**
Kubernetes Cluster & Jenkins created successfully using ansible. Very Good Team.
PROFESSOR FACULTY
- 2021-12-10**
its working!!!!
ADMIN ADMIN
- 2021-12-06**
SWAYAM - National Program on Technology Enhanced Learning (NPTEL), a joint initiative of seven premier IITs and IISc Bangalore seeks registration for around 500+

To the right of the announcements is a "User list" sidebar containing a table with the following data:

User
Rakesh kumar
loop 1019
sai kiran
Rakesh Kumar Singh
maam maam
kaif n
admin admin
Raheela Nadaf
professor faculty

Jenkins CI / CD

Multi Branch Pipeline (Master / Production)

Stage View

www.domian.com

The screenshot shows the Jenkins Pipeline master stage view. On the left, a sidebar menu includes options like Up, Status, Changes, Build Now (which is selected), View Configuration, Full Stage View, and Pipeline Syntax. Below this is a 'Build History' section with a search bar and a list of recent builds:

- Community-Announcement-Portal-#8 (Dec 19, 20:28, 1 commit)
- Community-Announcement-Portal-#7 (Dec 19, 20:25, 4 commits)
- Community-Announcement-Portal-#6 (Dec 18, 15:41, No Changes)
- Community-Announcement-Portal-#5 (Dec 18, 09:55, No Changes)
- Community-Announcement-Portal-#4 (Dec 18, 09:55, No Changes)
- Community-Announcement-Portal-#3 (Dec 18, 09:55, No Changes)
- Community-Announcement-Portal-#2 (Dec 18, 09:55, No Changes)
- Community-Announcement-Portal-#1 (Dec 18, 09:55, No Changes)

The main area displays the 'Stage View' with a table showing average stage times for various stages across different builds. The columns are:

	Declarative: Checkout SCM	Declarative: Tool Install	Git Checkout	Maven Build	Build Docker Image	DockerHub Push Image	Deploying tomcat on k8s
Average stage times: (Average full run time: ~39s)	744ms	76ms	508ms	5s	1s	17s	1s
Community-Announcement-Portal-#8	628ms	74ms	544ms	5s	1s	17s	1s
Community-Announcement-Portal-#7	952ms	125ms	663ms	6s	1s	17s	2s
Community-Announcement-Portal-#6	603ms	57ms	462ms	4s	1s	18s	1s
Community-Announcement-Portal-#5	605ms	60ms	455ms	4s	1s	18s	1s

Production Environment Application

www.domian.com

13.233.199.52:32412/myweb

This environment will be available for public to use. before code reaching here its goes form dev & stag environment to ensure that all feature is bug free & efficient.

The screenshot shows a web browser window titled "Community Announcement Portal". The URL in the address bar is "Not Secure | 13.233.199.52:32412/myweb/". The page content includes a header with "Community Announcement Portal" and navigation links for "Home", "Register", and "Login". Below the header, a main section displays a message: "COMMUNITY ANNOUNCEMENT PORTAL IS A WEB BASED ANNOUNCEMENT PORTAL FOR BROADCASTING MESSAGES.". Three announcement cards are listed:

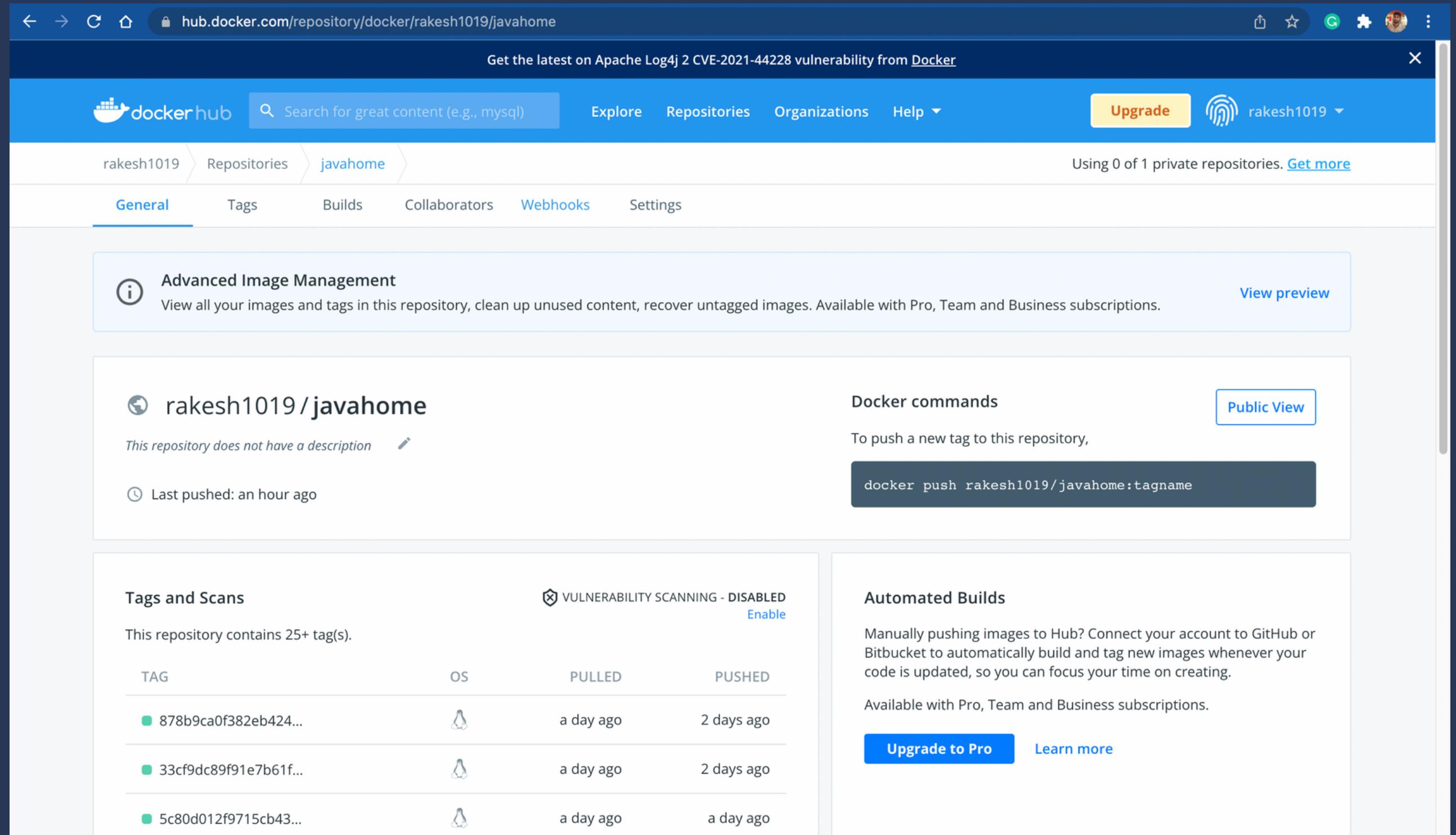
- 2021-12-15**
Kubernetes Cluster & Jenkins created successfully using ansible. Very Good Team.
PROFESSOR FACULTY
- 2021-12-10**
its working!!!!✌️✌️✌️✌️✌️✌️✌️
ADMIN ADMIN
- 2021-12-06**
SWAYAM - National Program on Technology Enhanced Learning (NPTEL), a joint initiative of seven premier IITs and IISc Bangalore seeks registration for around 500+

To the right, a "User list" sidebar shows a scrollable list of names:

- Rakesh kumar
- loop 1019
- sai kiran
- Rakesh Kumar Singh
- maam maam
- kaif n
- admin admin
- Raheela Nadaf
- professor faculty

Docker Hub

Image screenshots



The screenshot shows the Docker Hub interface for the repository `rakesh1019/javahome`. The top navigation bar includes links for Explore, Repositories, Organizations, Help, Upgrade, and a user profile for `rakesh1019`. A banner at the top right informs users about the Apache Log4j 2 CVE-2021-44228 vulnerability.

The main content area displays the repository details for `rakesh1019 / javahome`. It shows a message indicating the repository does not have a description and was last pushed an hour ago. A Docker command box provides the syntax for pushing a new tag:

```
docker push rakesh1019/javahome:tagname
```

The `Tags and Scans` section lists 25+ tags, showing their OS, pull date, and push date. The `VULNERABILITY SCANNING` status is disabled. The `Automated Builds` section explains how to connect GitHub or Bitbucket for automatic builds.

TAG	OS	PULLED	PUSHED
878b9ca0f382eb424...	🐧	a day ago	2 days ago
33cf9dc89f91e7b61f...	🐧	a day ago	2 days ago
5c80d012f9715cb43...	🐧	a day ago	a day ago

Terraform Execution Screenshots

The screenshot shows the AWS EC2 Instances page with 11 running instances listed. The instances are categorized under 'Instances' and include various names like 'db', 'KubernetesNo...', 'KubernetesMa...', etc. Each instance row contains columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, and Purchase method. A search bar and filters are at the top, and a modal for selecting an instance is open at the bottom.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Purchase method
db	i-0f1e29ab440358865	Running	t2.micro	2/2 checks passed	No alarms	ap-south-1a	On Demand
KubernetesNo...	i-0c654e2a67f54a9eb	Running	t2.micro	2/2 checks passed	No alarms	ap-south-1b	On Demand
KubernetesNo...	i-0a0b3ebc7b5763d65	Running	t2.micro	2/2 checks passed	No alarms	ap-south-1b	On Demand
KubernetesMa...	i-05149261bbef031a9	Running	t2.medium	2/2 checks passed	No alarms	ap-south-1b	On Demand
KubernetesNo...	i-04f8f3f475b083586	Running	t2.micro	2/2 checks passed	No alarms	ap-south-1b	On Demand
KubernetesNo...	i-02f3de94d106cc95c	Running	t2.micro	2/2 checks passed	No alarms	ap-south-1b	On Demand
KubernetesMa...	i-01125f0585f609092	Running	t2.medium	2/2 checks passed	No alarms	ap-south-1b	On Demand
KubernetesNo...	i-0fdc913d7d9b290a1	Running	t2.micro	2/2 checks passed	No alarms	ap-south-1b	On Demand
KubernetesMa...	i-0274db3e99ac9d1e9	Running	t2.medium	2/2 checks passed	No alarms	ap-south-1b	On Demand
KubernetesNo...	i-0ebe0dce4d41fe943	Running	t2.micro	2/2 checks passed	No alarms	ap-south-1b	On Demand

```
Terraform will perform the actions described above.  
Only 'yes' will be accepted to approve.  
  
Enter a value: yes  
  
aws_instance.k8Master[0]: Creating...  
aws_instance.JenkinsMaster[2]: Creating...  
aws_instance.JenkinsMaster[1]: Creating...  
aws_instance.k8[1]: Creating...  
aws_instance.dbserver[0]: Creating...  
aws_db_instance.default: Creating...  
aws_instance.JenkinsMaster[0]: Creating...  
aws_instance.k8[2]: Creating...  
aws_instance.k8Master[1]: Creating...  
aws_instance.k8Master[2]: Creating...  
aws_instance.k8Master[0]: Still creating... [10s elapsed]  
aws_instance.dbserver[0]: Still creating... [10s elapsed]  
aws_instance.JenkinsMaster[2]: Still creating... [10s elapsed]  
aws_instance.JenkinsMaster[1]: Still creating... [10s elapsed]  
aws_instance.k8[1]: Still creating... [10s elapsed]  
aws_db_instance.default: Still creating... [10s elapsed]  
aws_instance.JenkinsMaster[0]: Still creating... [10s elapsed]  
aws_instance.k8[2]: Still creating... [10s elapsed]  
aws_instance.k8Master[1]: Still creating... [10s elapsed]  
aws_instance.k8Master[2]: Still creating... [10s elapsed]  
  
aws_instance.k8Master[2]: Creation complete after 1m3s [id=i-05149261bbef031a9]  
aws_instance.k8[4]: Creation complete after 33s [id=i-04f8f3f475b083586]  
aws_instance.k8[3]: Creation complete after 33s [id=i-0a0b3ebc7b5763d65]  
aws_db_instance.default: Still creating... [1m10s elapsed]  
aws_instance.k8[5]: Still creating... [50s elapsed]  
aws_instance.k8[0]: Still creating... [50s elapsed]  
aws_instance.k8[5]: Creation complete after 53s [id=i-02f3de94d106cc95c]  
aws_instance.k8[0]: Creation complete after 53s [id=i-0ebe0dce4d41fe943]  
aws_db_instance.default: Still creating... [1m20s elapsed]  
aws_db_instance.default: Still creating... [1m30s elapsed]  
aws_db_instance.default: Still creating... [1m40s elapsed]  
aws_db_instance.default: Still creating... [1m50s elapsed]  
aws_db_instance.default: Still creating... [2m0s elapsed]  
aws_db_instance.default: Still creating... [2m10s elapsed]  
aws_db_instance.default: Still creating... [2m20s elapsed]  
aws_db_instance.default: Still creating... [2m30s elapsed]  
aws_db_instance.default: Still creating... [2m40s elapsed]  
aws_db_instance.default: Still creating... [2m50s elapsed]  
aws_db_instance.default: Still creating... [3m0s elapsed]  
aws_db_instance.default: Still creating... [3m10s elapsed]  
aws_db_instance.default: Still creating... [3m20s elapsed]  
aws_db_instance.default: Still creating... [3m30s elapsed]  
aws_db_instance.default: Creation complete after 3m36s [id=terraform-2021121705522573400000001]  
  
Apply complete! Resources: 14 added, 0 changed, 0 destroyed.
```

Meet - erk-aquid-tqc Instances | EC2 Manager SERVERS WITH IP - Google Sheets

docs.google.com/spreadsheets/d/1nK0sFfhYGc73LPS-m4pK83m2a2prNO9qm6KbZIG9mBU/edit#gid=0

File Edit View Insert Format Data Tools Help Last edit was 9 minutes ago

SERVERS WITH IP

NAMES OF THE SERVER	IP ADDRESS	PUBLIC DNS FOR CONNCTION
KUBERNETES CLUSTERS		
KUBERNETES CLUSTER1		
Master 1	15.206.89.156	ssh -i "Global.pem" centos@ec2-15-206-89-156.ap-south-1.compute.amazonaws.com
Node 1	15.207.14.100	ssh -i "Global.pem" centos@ec2-15-207-14-100.ap-south-1.compute.amazonaws.com
Node 2	3.110.218.89	ssh -i "Global.pem" centos@ec2-3-110-218-89.ap-south-1.compute.amazonaws.com
KUBERNETES CLUSTER2		
Master 2	13.232.231.229	ssh -i "Global.pem" centos@ec2-13-232-231-229.ap-south-1.compute.amazonaws.com
Node 1	13.234.31.109	ssh -i "Global.pem" centos@ec2-13-234-31-109.ap-south-1.compute.amazonaws.com
Node 2	52.66.242.16	ssh -i "Global.pem" centos@ec2-52-66-242-16.ap-south-1.compute.amazonaws.com
KUBERNETES CLUSTER3		
Master 3	3.111.34.225	ssh -i "Global.pem" centos@ec2-3-111-34-225.ap-south-1.compute.amazonaws.com
Node 1	13.233.199.77	ssh -i "Global.pem" centos@ec2-13-233-199-77.ap-south-1.compute.amazonaws.com
Node 2	13.126.241.226	ssh -i "Global.pem" centos@ec2-13-126-241-226.ap-south-1.compute.amazonaws.com
JENKINS CLUSTER		
Master	15.207.20.53	ssh -i "Global.pem" ubuntu@ec2-15-207-20-53.ap-south-1.compute.amazonaws.com
Node 1	3.111.53.118	ssh -i "Global.pem" ubuntu@ec2-3-111-53-118.ap-south-1.compute.amazonaws.com
Node 2	65.2.6.69	ssh -i "Global.pem" ubuntu@ec2-65-2-6-69.ap-south-1.compute.amazonaws.com
DB SERVER		
ip	13.232.205.205	ssh -i "Global.pem" centos@ec2-13-232-205-205.ap-south-1.compute.amazonaws.com

root@ansible ansible-k8s-setup# ls
ansible.cfg hosts k8s-master.yml k8s-pkg.yml k8s-workers.yml README.md terraform.tfstate
root@ansible ansible-k8s-setup# ansible-playbook k8s-workers.yml

PLAY [masters] ****
TASK [get join command] ****
changed: [3.111.34.225]
TASK [set join command] ****
ok: [3.111.34.225]
PLAY [workers] ****
TASK [Gathering Facts] ****
ok: [13.126.241.226]
ok: [13.233.199.77]
TASK [join cluster] ****
changed: [13.126.241.226]
changed: [13.233.199.77]
PLAY RECAP ****
13.126.241.226 : ok=2 changed=1 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0
13.233.199.77 : ok=2 changed=1 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0
3.111.34.225 : ok=2 changed=1 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0

[root@ansible ansible-k8s-setup]#

root@ansible:~/ansible-k8s-setup

TASK [Gathering Facts] ****
ok: [15.206.89.156]
TASK [install kubectl] ****
changed: [15.206.89.156]
PLAY [all] ****
TASK [Gathering Facts] ****
ok: [15.206.89.156]
ok: [3.110.218.89]
ok: [15.207.14.100]
TASK [reboot ALL machines] ****
changed: [15.206.89.156]
changed: [3.110.218.89]
changed: [15.207.14.100]
PLAY RECAP ****
15.206.89.156 : ok=17 changed=13 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0
15.207.14.100 : ok=15 changed=12 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0
3.110.218.89 : ok=15 changed=12 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0

[root@ansible ansible-k8s-setup]# ls
ansible.cfg hosts k8s-master.yml k8s-pkg.yml k8s-workers.yml README.md terraform.tfstate
root@ansible ansible-k8s-setup#

root@ansible:~/ansible-k8s-setup

[root@ansible ansible-k8s-setup]# ls
ansible.cfg hosts k8s-master.yml k8s-pkg.yml k8s-workers.yml README.md terraform.tfstate
root@ansible ansible-k8s-setup# ansible-playbook k8s-master.yml

PLAY [masters] ****
TASK [Gathering Facts] ****
ok: [3.111.34.225]
TASK [initialize K8S cluster] ****
changed: [3.111.34.225]
TASK [create .kube directory] ****
changed: [3.111.34.225]
TASK [copy admin.conf to user's kube config] ****
changed: [3.111.34.225]
TASK [install Pod network] ****
changed: [3.111.34.225]
PLAY RECAP ****
3.111.34.225 : ok=5 changed=4 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0

[root@ansible ansible-k8s-setup]#

rakesh.k.singh@del1-lhp-n77137: ~/Downloads

Java & Jenkins Installation Screenshots

Jenkins

Dashboard > Nodes

S	Name	Architecture	Clock Difference	Free Disk Space	Free Swap Space	Free Temp Space	Response Time
1	Built-In Node	Linux (amd64)	In sync	5.48 GB	0 B	5.48 GB	0ms
2	development		N/A	N/A	N/A	N/A	N/A
3	staging	Linux (amd64)	In sync	5.84 GB	0 B	5.84 GB	71ms

Build Queue

No builds in the queue.

Build Executor Status

Built-In Node

1 Idle

development

1 Idle

staging

1 Idle

REST API Jenkins 2.319.1

```
[root@ansible Jenkins]# ls
javaInstallation.yml jenkinsInstall.yml
[root@ansible Jenkins]# ansible-playbook javaInstallation.yml

PLAY [jenkins] ****
TASK [Gathering Facts] ****
ok: [65.2.6.69]
ok: [3.111.53.118]
ok: [15.207.20.53]

TASK [Update APT package manager repositories cache] ****
changed: [3.111.53.118]
changed: [65.2.6.69]
changed: [15.207.20.53]

TASK [Install Java using Ansible] ****
changed: [3.111.53.118]
changed: [65.2.6.69]
changed: [15.207.20.53]

PLAY RECAP ****
15.207.20.53 : ok=3    changed=2    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
3.111.53.118 : ok=3    changed=2    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
65.2.6.69   : ok=3    changed=2    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

[root@ansible Jenkins]# ls
javaInstallation.yml jenkinsInstall.yml
[root@ansible Jenkins]# ansible-playbook jenkinsInstall.yml

PLAY [My_Group] ****
TASK [Gathering Facts] ****
ok: [15.207.20.53]

TASK [ensure the jenkins apt repository key is installed] ****
changed: [15.207.20.53]

TASK [ensure the repository is configured] ****
changed: [15.207.20.53]

TASK [ensure jenkins is installed] ****
changed: [15.207.20.53]

TASK [ensure jenkins is running] ****
ok: [15.207.20.53]

PLAY RECAP ****
15.207.20.53 : ok=5    changed=3    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

[root@ansible Jenkins]#
```

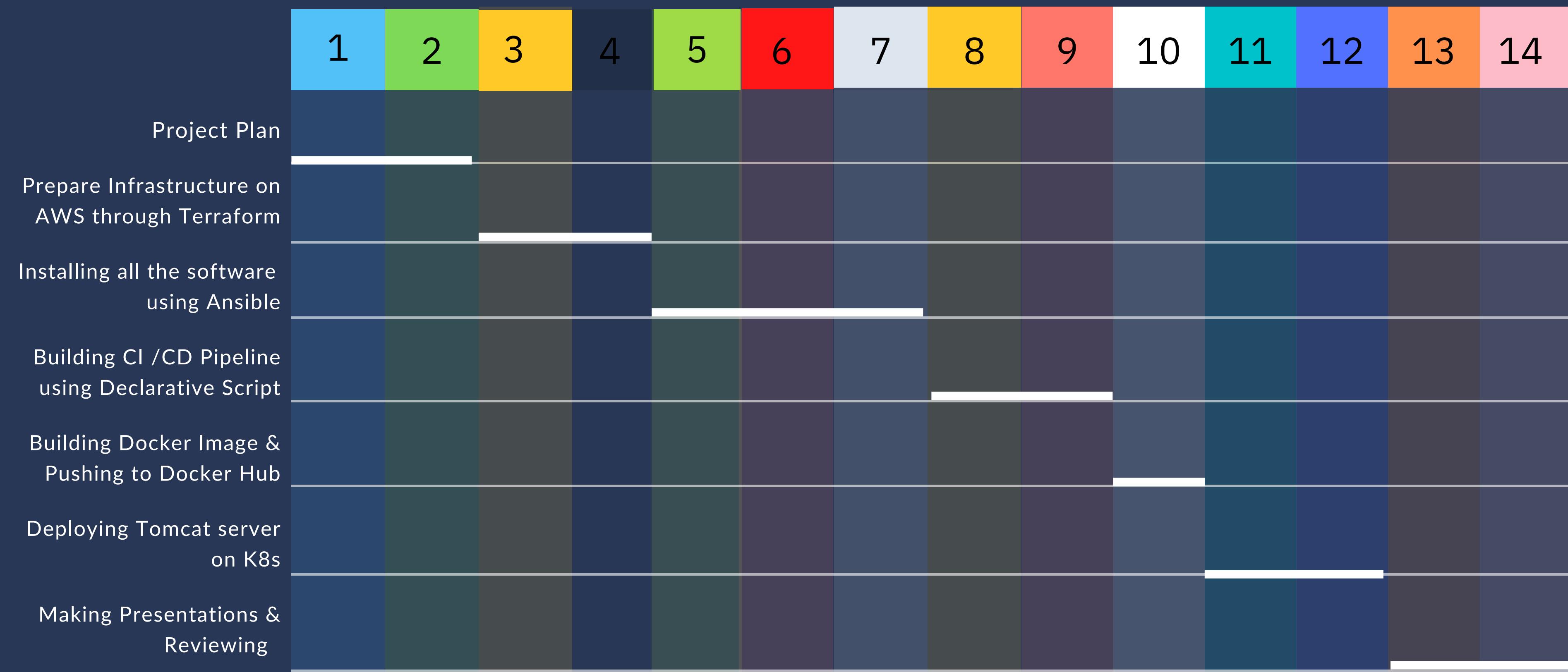
To promotes a culture of shared responsibility, enhanced communication, transparency, flexibility and faster feedback.

Future Developments

- improve security.
- Better communication and cooperation.
- Faster development & deployment
- Fewer mistakes
- Lower costs



Gantt Chart



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Github

<https://github.com/rakeshkumar1019/java-jsp-diary.git>

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Thank you!

Any Questions ?