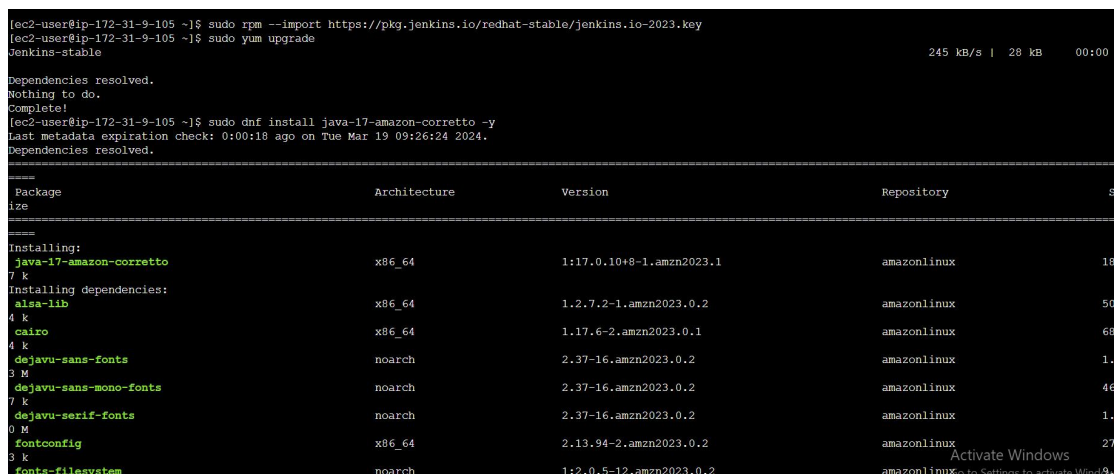
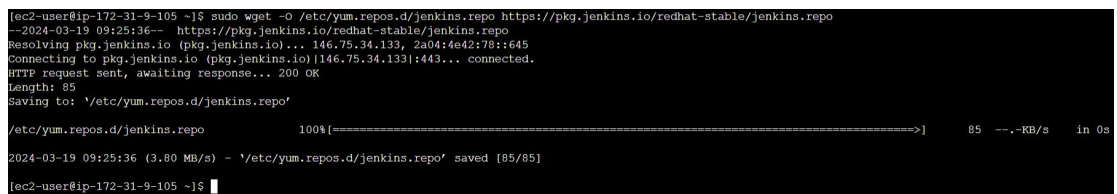
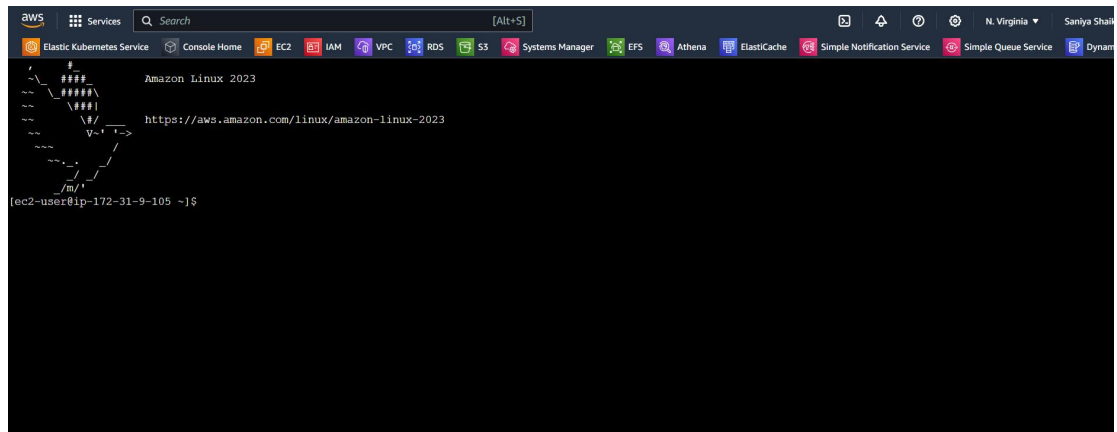


## Jenkins\_Assigment\_01

1. Install Jenkins on one of the server on your setup (Local VM / Ec2 / WSL).  
Once Jenkins is installed , try install plugins with and without restart option.  
Please verify plugins installed successfully.

SOLUTION:-



```
[ec2-user@ip-172-31-9-105 ~]$ sudo yum install jenkins -y
Last metadata expiration check: 0:02:18 ago on Tue Mar 19 09:26:24 2024.
Dependencies resolved.

=====
Package Architecture Version Repository
=====
Installing:
jenkins noarch 2.440.1-1.1 jenkins
2 M
Transaction Summary
=====
Install 1 Package

Total download size: 82 M
Installed size: 63 M
Downloading Packages:
jenkins-2.440.1-1.1.noarch.rpm 0% [ ] --- B/s | 0 B --:--
jenkins-2.440.1-1.1.noarch.rpm 0% [ ] 664 kB/s | 203 kB 02:06
jenkins-2.440.1-1.1.noarch.rpm 1% [ ] 818 kB/s | 1.2 MB 01:41
jenkins-2.440.1-1.1.noarch.rpm 2% [ ] 993 kB/s | 2.3 MB 01:22
jenkins-2.440.1-1.1.noarch.rpm 4% [ ] 1.1 MB/s | 3.4 MB 01:09
jenkins-2.440.1-1.1.noarch.rpm 5% [ ] 1.3 MB/s | 4.5 MB 01:00
jenkins-2.440.1-1.1.noarch.rpm 6% [ ] 1.4 MB/s | 5.6 MB 00:53
jenkins-2.440.1-1.1.noarch.rpm 8% [ ] 1.6 MB/s | 6.7 MB 00:48
jenkins-2.440.1-1.1.noarch.rpm 9% [ ] 1.7 MB/s | 7.8 MB 00:44
jenkins-2.440.1-1.1.noarch.rpm 10% [ ] 1.8 MB/s | 8.9 MB 00:40
jenkins-2.440.1-1.1.noarch.rpm 12% [ ] 1.9 MB/s | 10 MB 00:37
jenkins-2.440.1-1.1.noarch.rpm 13% [ ] 2.0 MB/s | 11 MB 00:35
jenkins-2.440.1-1.1.noarch.rpm 14% [ ] 2.1 MB/s | 12 MB 00:32

[ec2-user@ip-172-31-9-105 ~]$ sudo systemctl enable jenkins
Created symlink /etc/systemd/system/multi-user.target.wants/jenkins.service → /usr/lib/systemd/system/jenkins.service.
[ec2-user@ip-172-31-9-105 ~]$ sudo systemctl start jenkins
```

```
[ec2-user@ip-172-31-9-105 ~]$ sudo systemctl start jenkins
[ec2-user@ip-172-31-9-105 ~]$ sudo systemctl status jenkins
● jenkins.service - Jenkins Continuous Integration Server
   Loaded: loaded (/usr/lib/systemd/system/jenkins.service; enabled; preset: disabled)
   Active: active (running) since Tue 2024-03-19 09:32:09 UTC; 30s ago
     Main PID: 26178 (java)
       Tasks: 42 (limit: 1114)
      Memory: 344.0M
         CPU: 38.007s
    CGroup: /system.slice/jenkins.service
            └─26178 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=/var/cache/jenkins/war --httpPort=8080

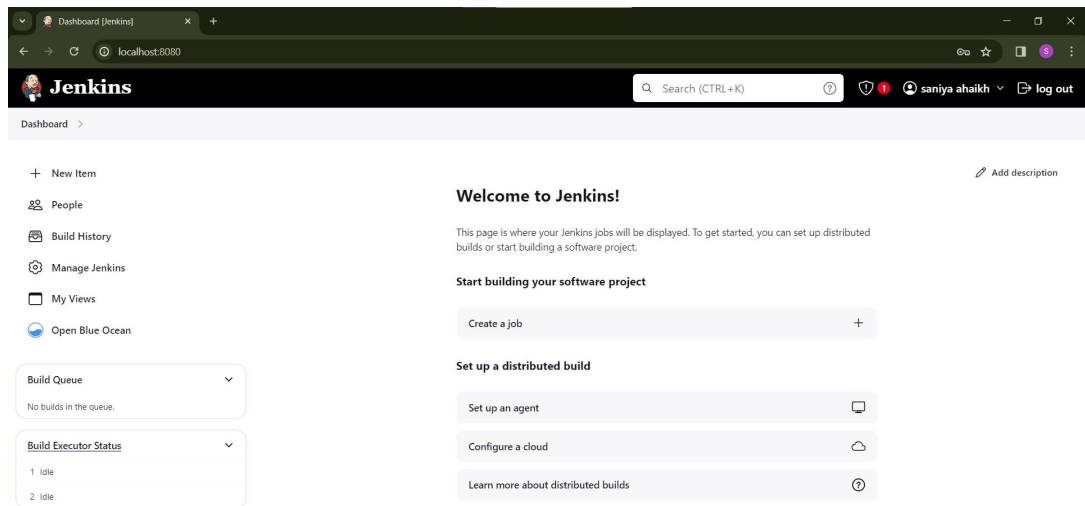
Mar 19 09:31:40 ip-172-31-9-105.ec2.internal jenkins[26178]: This may also be found at: /var/lib/jenkins/secrets/initialAdminPassword
Mar 19 09:31:40 ip-172-31-9-105.ec2.internal jenkins[26178]: *****
Mar 19 09:31:40 ip-172-31-9-105.ec2.internal jenkins[26178]: *****
Mar 19 09:31:40 ip-172-31-9-105.ec2.internal jenkins[26178]: *****
Mar 19 09:32:09 ip-172-31-9-105.ec2.internal jenkins[26178]: 2024-03-19 09:32:09.606+0000 [id=31] INFO jenkins.InitReactorRunner$1:onAttained: Completed
Mar 19 09:32:09 ip-172-31-9-105.ec2.internal jenkins[26178]: 2024-03-19 09:32:09.629+0000 [id=24] INFO hudson.lifecycle.Lifecycle#onReady: Jenkins is fu
Mar 19 09:32:09 ip-172-31-9-105.ec2.internal systemd[1]: Started jenkins.service - Jenkins Continuous Integration Server.
Mar 19 09:32:09 ip-172-31-9-105.ec2.internal jenkins[26178]: 2024-03-19 09:32:09.743+0000 [id=47] INFO h.m.DownloadService$Downloadable#load: Obtained t
Mar 19 09:32:09 ip-172-31-9-105.ec2.internal jenkins[26178]: 2024-03-19 09:32:09.743+0000 [id=47] INFO hudson.util.Retrier#start: Performed the action c
Mar 19 09:32:14 ip-172-31-9-105.ec2.internal jenkins[26178]: 2024-03-19 09:32:14.742+0000 [id=58] WARNING h.n.DiskSpaceMonitorDescriptor#markNodeOffline
lines 1-20/20 (END)
```


2. Create any 4 local Jenkins users on your Jenkins server. Also create 2 Jenkins roles named developers & delivery.

Once roles are created, assign developers role to 3 users and delivery role to project Manager user.

Please take screenshots and prepare well formatted document of your understanding.


SOLUTION:-






Nodes

Add, remove, control and monitor the various nodes that Jenkins runs jobs on.



Clouds


Add, remove, and configure cloud instances to provision agents on-demand.



Appearance


Configure the look and feel of Jenkins

Security




Security

Secure Jenkins; define who is allowed to access/use the system.




Users

Create/delete/modify users that can log in to this Jenkins.



Credentials


Configure credentials



Credential Providers


Configure the credential providers and types

Status Information




System Information

Displays various environmental information to assist trouble-shooting.



System Log

System log captures output from java.util.logging output related to Jenkins.



Load Statistics

Check your resource utilization and see if you need more computers for your builds.

Activate Windows



Go to Settings to activate Windows

Dashboard > Manage Jenkins > Jenkins' own user database

Users

+ Create User

These users can log into Jenkins. This is a sub set of [this list](#), which also contains auto-created users who really just made some commits on some projects and have no direct Jenkins access.

User ID ↓	Name
 sanu9822	saniya ahaikh 

First User

Create User

Username

Clair

Password

.....

Confirm password

.....

Full name

Clair

E-mail address

Clair123@gmail.com

## Second User

---

### Create User

Username

David

Password

.....

Confirm password

.....

Full name

David

E-mail address

David456@gmail.com

Create User

## Third User

---

### Create User

Username

Tina

Password

....

Confirm password

....

Full name

Tina

E-mail address

Tina788@gmail.com

Create User

## Fourth User

### Create User

Username

Klaus

Password

.....

Confirm password

.....

Full name

Klaus

E-mail address







Klaus596@gmail.com

Create User

### Users

+ Create User

These users can log into Jenkins. This is a sub set of [this list](#), which also contains auto-created users who really just made some commits on some projects and have no direct Jenkins access.

User ID ↓	Name		
 <a href="#">Clair</a>	Clair		
 <a href="#">David</a>	David		
 <a href="#">Klaus</a>	Klaus		
 <a href="#">sanu9822</a>	saniya ahaikh		
 <a href="#">Tina</a>	Tina		

## create 2 Jenkins roles named developers & delivery

Dashboard > Manage Jenkins > Plugins

### Plugins

Search plugin updates

Update

Updates

19

Available plugins

Installed plugins

Advanced settings

<input type="checkbox"/>	Name ↓	Released	Installed
<input type="checkbox"/>	<a href="#">Bitbucket Branch Source</a> 880.vc4056c5a_71f <small>bitbucket Source Code Management</small> Allows to use Bitbucket Cloud and Bitbucket Server as sources for multi-branch projects. It also provides the required connectors for Bitbucket Cloud Team and Bitbucket Server Project folder (also known as repositories auto-discovering).	5 days 11 hr ago	877.vb_b_d5243f6794
<input type="checkbox"/>	<a href="#">Bootstrap 5 API</a> 5.3.3-1 <small>Library plugins (for use by other plugins)</small> Provides <a href="#">Bootstrap 5</a> for Jenkins Plugins. Bootstrap is (according to their self-perception) the world's most popular front-end component library to build responsive, mobile-first projects on the web.	12 days ago	5.3.2-4
<input type="checkbox"/>	<a href="#">ECharts API</a> 5.5.0-1 <small>Library plugins (for use by other plugins)</small> Provides <a href="#">ECharts</a> for Jenkins Plugins, a JavaScript visualization tool to create intuitive, interactive, and highly-customizable charts.	12 days ago	5.4.3-4
<input type="checkbox"/>	<a href="#">Git client</a> 4.7.0 <small>Library plugins (for use by other plugins)</small> Utility plugin for Git support in Jenkins	9 days 11 hr ago	4.6.0 <small>Go to Settings to activate Windows.</small>

Dashboard > Manage Jenkins > Plugins

Plugins

Updates19

Available plugins

Installed plugins

Advanced settings

role

Install

Install	Name	Released
<input checked="" type="checkbox"/>	<div>Role-based Authorization Strategy713.vb_3837801b_8cc</div> <div>SecurityAuthentication and User Management</div> <div>Enables user authorization using a Role-Based strategy. Roles can be defined globally or for particular jobs or nodes selected by regular expressions.</div>	3 days 8 hr ago
<input type="checkbox"/>	<div>AWS Credentials218.v1b_e9466ec5da_aws</div> <div>Allows storing Amazon IAM credentials within the Jenkins Credentials API. Store Amazon IAM access keys (AWSAccessKeyId and AWSSecretKey) within the Jenkins Credentials API. Also support IAM Roles and IAM MFA Token.</div>	6 mo 23 days ago

Dashboard &gt; Manage Jenkins &gt; Plugins

Plugins

Updates19

Available plugins

Installed plugins

Advanced settings

Download progress

Download progress

Preparation

- Checking internet connectivity
- Checking update center connectivity
- Success

Role-based Authorization Strategy

Success

Loading plugin extensions

Success

Go back to the top page

(you can start using the installed plugins right away)

☐

Restart Jenkins when installation is complete and no jobs are running

Jenkins

Search (CTRL+K)

saniya ahaikh

log out

Dashboard > Manage Jenkins > Security

Security

Authentication

Disable "Keep me signed in"

Security RealmJenkins' own user database

Allow users to sign up

Authorization

Role-Based Strategy

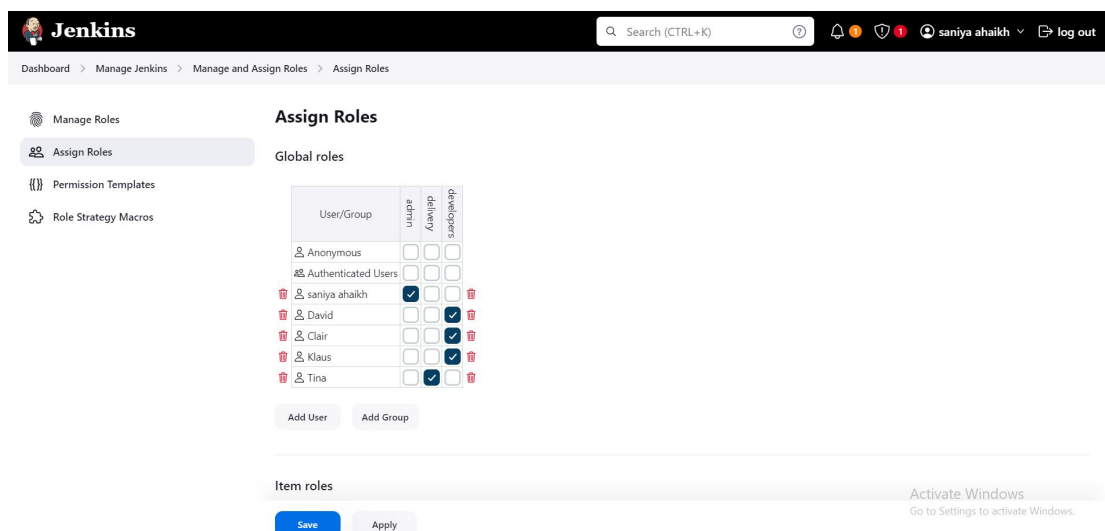
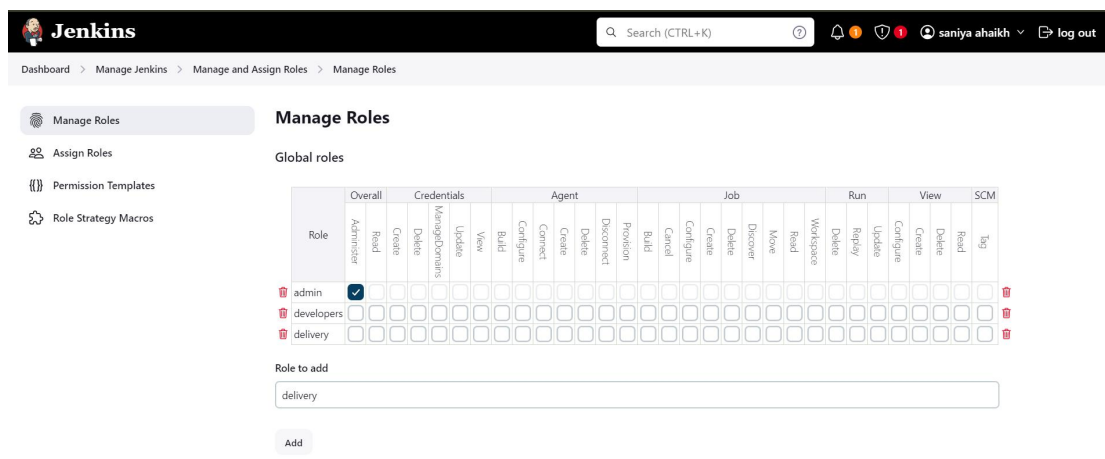
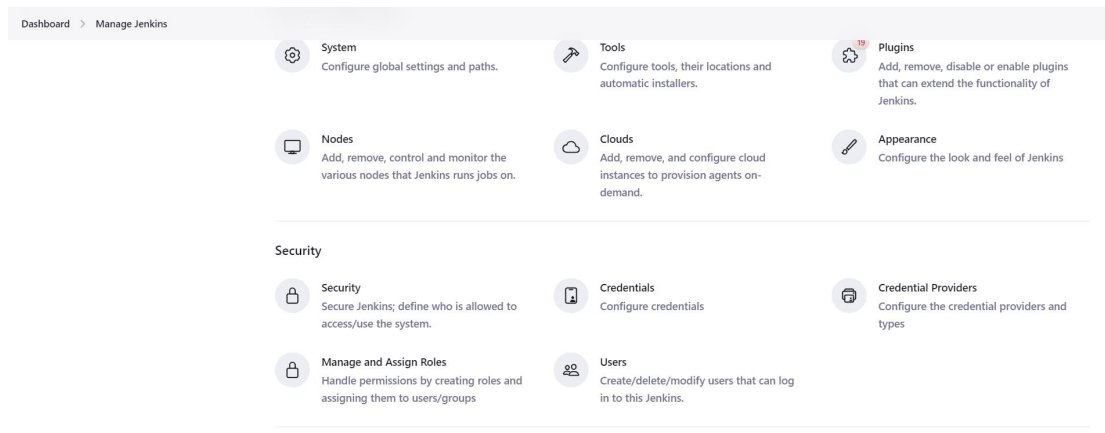
Markup Formatter

Markup Formatter

Save

Apply

Activate Windows  
Go to Settings to activate Windows.




- Create a Jenkins job named YOURNAME\_Job\_01 on a Jenkins Server. This job should run below given shell script in the job. Please check the console output of job and make sure it is successful.

```
#!/bin/bash
# This is a simple "Hello World" script
echo "Hello World!"
```

Prepare well formatted document with screenshots.

## SOLUTION:-

 **Jenkins**

Search (CTRL+K)

🔔 🛡️ 📌 🧑🏻 saniya ahaikh 🚪 log out

Dashboard >

+ New Item

👤 People

📅 Build History

⚙️ Manage Jenkins

📋 My Views

🌊 Open Blue Ocean

Build Queue

No builds in the queue.

Build Executor Status

1 idle

2 idle

Welcome to Jenkins!

This page is where your Jenkins jobs will be displayed. To get started, you can set up distributed builds or start building a software project.

Start building your software project

Create a job


Set up a distributed build

Set up an agent

Configure a cloud

Learn more about distributed builds

Add description

 **Jenkins**

Search (CTRL+K)

🔔 🛡️ 📌 🧑🏻 saniya ahaikh 🚪 log out

Dashboard >

Enter an item name

Saniya\_Job\_01

\* Required field

📁 Freestyle project

Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.

🔗 Pipeline

Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.

📁 Multi-configuration project

Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.

📁 Folder

Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.

OK Branch Pipeline

Activate Windows  
Go to Settings to activate Windows.

Dashboard > Saniya\_Job\_01 > Configuration

Configure

⚙️ General

🔗 Source Code Management

🕒 Build Triggers

🌐 Build Environment

📋 Build Steps

🛡️ Post-build Actions

☐ Delete workspace before build starts

☐ Use secret text(s) or file(s) ?

☐ Add timestamps to the Console Output

☐ Inspect build log for published build scans

☐ Terminate a build if it's stuck

☐ With Ant ?

Build Steps

≡ Execute shell ?

Command

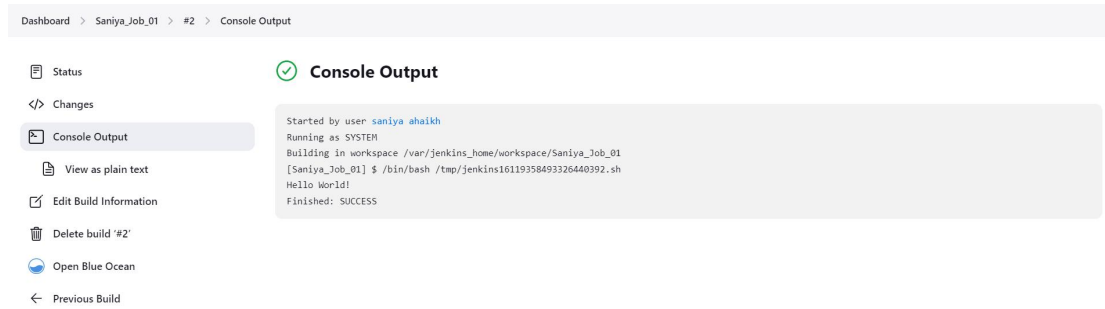
See the list of available environment variables

```
#!/bin/bash
# This is a simple "Hello World" script
echo "Hello World!"
```

Save Apply

Activate Windows  
Go to Settings to activate Windows.





4. Create a Jenkins job named YOURNAME\_Job\_02 that runs a shell script on a local server Jenkins.

The script should take in two parameters, e.g. num1, num2 from Jenkins.

This shell is taking 2 command line arguments as numbers.

Try to execute script locally to understand it more.

```
# sh your_script_name.sh 11 12
```

```
#] vim your_script_name.sh
```

```
#!/bin/bash
```

```
#Define a variable named "name"  
name="John Doe"
```

```
#Print the value of the variable  
echo "My name is $name"
```

```
#except the value from the user for two numbers and  
store the values in variables  
num1 = $1  
num2 = $2
```

```
#Use an if statement to check if the first number is  
greater than the second number
```

```
if [ $num1 -gt $num2 ]; then  
    echo "$num1 is greater than $num2"  
else  
    echo "$num2 is greater than $num1"  
fi
```

```
#Use a for loop to print the numbers from 1 to the value  
of the first number
```

```
for i in $(seq 1 $num1); do  
    echo $i  
done
```

```
#Print a message indicating that the script is finished
echo "Script finished."
```

Once script is tested locally , create 2 parameters in Jenkins and pass those parameters to the shell script.

Run the Jenkins job and check the console out for detailed job logs.

SOLUTION:-

```
root@DESKTOP-VIDGD8F:JENKINS# vim saniya.sh
root@DESKTOP-VIDGD8F:JENKINS#
root@DESKTOP-VIDGD8F:JENKINS# cat saniya.sh
#!/bin/bash

#Define a variable named "name"
name="John Doe"

#Print the value of the variable
echo "My name is $name"

#except the value from the user for two numbers and store the values in variables
num1=$1
num2=$2

#Use an if statement to check if the first number is greater than the second number
if [ $num1 -gt $num2 ]; then
    echo "$num1 is greater than $num2"
else
    echo "$num2 is greater than $num1"
fi

#Use a for loop to print the numbers from 1 to the value of the first number
for i in $(seq 1 $num1); do
    echo $i
done

#Print a message indicating that the script is finished
echo "Script finished."
```

```
root@DESKTOP-VIDGD8F:JENKINS# ./saniya.sh 10 5
My name is John Doe
10 is greater than 5
1
2
3
4
5
6
7
8
9
10
Script finished.
root@DESKTOP-VIDGD8F:JENKINS#
```



Dashboard > All >

Enter an item name

= Required field

**Freestyle project**  
Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.

**Pipeline**  
Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.

**Multi-configuration project**  
Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.

**Folder**  
Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.

**OK** **Cancel** **Create Pipeline**

Activate Windows  
Go to Settings to activate Windows.

Dashboard > Saniya\_Job\_02 > Configuration

## Configure

- General
- Source Code Management
- Build Triggers
- Build Environment
- Build Steps**
- Post-build Actions

### Build Steps

**Execute shell**

Command

[See the list of available environment variables](#)

```
#!/bin/bash

#Define a variable named "name"
name="John Doe"

#Print the value of the variable
echo "My name is $name"

#except the value from the user for two numbers and store the values in variables
num1=$1
num2=$2

#Use an if statement to check if the first number is greater than the second number
if [ $num1 -gt $num2 ]; then
    echo "$num1 is greater than $num2"
else
    echo "$num2 is greater than $num1"
fi

#Use a for loop to print the numbers from 1 to the value of the first number
for i in $(seq 1 $num1); do
    echo $i
done

#Print a message indicating that the script is finished
echo "Script finished."
```

**Save** **Apply**

Activate Windows  
Go to Settings to activate Windows.

☒ This project is parameterized ?

≡ String Parameter ?

Name ?

num1

Default Value ?

10

Description ?

Plain text [Preview](#)

☐ Trim the string ?

≡ String Parameter ?

Name ?

num2

Default Value ?

5

Description ?

Plain text [Preview](#)

☐ Trim the string ?

Add Parameter ▾

Dashboard > Saniya\_Job\_02 >

📄 Status

🔗 Changes

📁 Workspace

▶ Build with Parameters

⚙️ Configure

🗑️ Delete Project

★ Favorite

🌊 Open Blue Ocean

✎ Rename

## Project Saniya\_Job\_02

This build requires parameters:

num1

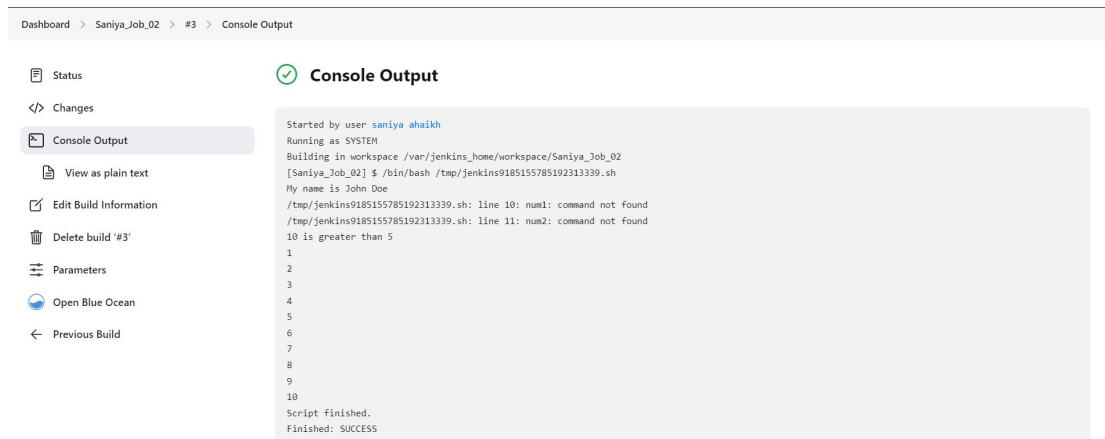
10

num2

5

▶ Build

Cancel



5. Create a Jenkins job named YOURNAME\_Job\_03 that runs a shell script on a local server using Jenkins parameters.

The script should take in three parameters, like NAME, LAST\_NAME, SHOW.  
Print the NAME and LAST\_NAME if value of SHOW is true.

```
#!/bin/bash
# Define a variable and except the value from the user and store the
values in variables
NAME=$1
LAST_NAME=$2
SHOW=$3
# Use an if statement to check if the value SHOW is TRUE.
if [[ $SHOW == "true" ]]
then
    echo " $NAME $LAST_NAME"
else
    echo " Not allowed to show the Names "
fi

# Print a message indicating that the script is finished
echo "Script finished."
```

SOLUTION:-

```
root@DESKTOP-VIDGD8F:JENKINS# vim saniya.sh
root@DESKTOP-VIDGD8F:JENKINS# cat saniya.sh
#!/bin/bash
# Define a variable and except the value from the user and store the values in variables
NAME=$1
LAST_NAME=$2
SHOW=$3
# Use an if statement to check if the value SHOW is TRUE.
if [[ $SHOW == "true" ]]
then
    echo "$NAME $LAST_NAME"
else
    echo "Not allowed to show the Names"
fi


# Print a message indicating that the script is finished
echo "Script finished."
```


```
root@DESKTOP-VIDGD8F:JENKINS# chmod +x saniya.sh
root@DESKTOP-VIDGD8F:JENKINS# ./saniya.sh saniya shaikh true
saniya shaikh
Script finished.
root@DESKTOP-VIDGD8F:JENKINS#
```


Enter an item name


Saniya\_job\_03

» Required field

 **Freestyle project**  
Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.

 **Pipeline**  
Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.

 **Multi-configuration project**  
Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.

 **Folder**  
Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.

OK branch Pipeline

Activate Windows  
Go to Settings to activate Windows.

≡ Execute shell ?

Command

See [the list of available environment variables](#)

bash /saniya.sh Saniya Shaikh true

Advanced ▾

✓ This project is parameterized ?

≡ String Parameter ?

Name ?

NAME

Default Value ?

Saniya

Description ?

Plain text [Preview](#)

☐ Trim the string ?

String Parameter ?

Name ?

LAST\_NAME

Default Value ?

Shaikh

Description ?

Plain text

Preview

☐

Trim the string ?

Choice Parameter ?

Name ?

SHOW

Choices ?

true  
false

Description ?

Plain text

Preview

Activate Windows  
Go to Settings to activate Windows

Save Apply

Jenkins

Search (CTRL+K)

saniya ahaikh

log out

Dashboard

Saniya\_Job\_03

#26

Console Output

Status

Changes

Console Output

View as plain text

Edit Build Information

Delete build '#26'

Parameters

Open Blue Ocean

Previous Build

Console Output

Started by user saniya ahaikh

Running as SYSTEM

Building in workspace /var/jenkins\_home/workspace/Saniya\_Job\_03

[Saniya\_Job\_03] \$ /bin/sh -xe /tmp/jenkins572420277396589213.sh

+ bash /saniya.sh Saniya Shaikh true

Saniya Shaikh

Script finished.

Finished: SUCCESS