

1. To implement Linux Commands

1. sudo

Sudo stands for SuperUser DO and is used to access restricted files and operations. By default, Linux restricts access to certain parts of the system preventing sensitive files from being compromised.

```
raj@raj-MS-7B84:~/Desktop$ sudo -V
Sudo version 1.8.31
Sudoers policy plugin version 1.8.31
Sudoers file grammar version 46
Sudoers I/O plugin version 1.8.31
```

2. Apt -get

Apt is a command-line package management utility for Ubuntu and Debian Linux. Apt is used to install, remove, update and upgrade Debian packages from the command line in Ubuntu and Debian systems.

```
raj@raj-MS-7B84:~/Desktop$ apt
apt 2.0.4 (amd64)
Usage: apt [options] command
```

3. Ls

The ls command is used to list files or directories in Linux and other Unixbased operating systems.

```
raj@raj-MS-7B84:~$ ls
Desktop Downloads Pictures raj2.txt Templates
Documents Music Public raj.txt Videos
raj@raj-MS-7B84:~$ ls -l
total 0
```

4. Cd

cd command in linux known as change directory command. It is used to change current working directory.

```
raj@raj-MS-7B84:~/Desktop$ cd
raj@raj-MS-7B84:~$ cd Downloads
raj@raj-MS-7B84:~/Downloads$ pwd
/home/raj/Downloads
```

5. Pwd

The pwd command writes to standard output the full path name of your current directory (from the root directory).

```
raj@raj-MS-7B84:~/Downloads$ pwd
/home/raj/Downloads
```

6. Cp

The cp command is used for copying files from one location to another.

```
reeve@Reeve6:~$ ls
8.expt Documents expt2 Music Public reeve3.txt reeveeg.txt reevetxt Templates xaa
Desktop Downloads file.tar Pictures reeve2.sh reeve4.sh reeve.sh snap Videos
reeve@Reeve6:~$ cp reeve3.txt reeveeg.txt
reeve@Reeve6:~$
```

7. Mv

It stands for move. mv is used to move one or more files or directories from one place to another in a file system like UNIX

```
raj@raj-MS-7B84:~$ Mv raj.txt Downloads
Mv: command not found
raj@raj-MS-7B84:~$ mv raj.txt Downloads
raj@raj-MS-7B84:~$ cd Downloads
raj@raj-MS-7B84:~/Downloads$ ls
raj2.txt  raj.txt  'TEITB_35_Rheeve_DevOps EXPT1(1).pdf'
```

8. Rm

It is used to remove objects such as files, directories, symbolic links and so on from the file system like UNIX.

```
reeve@ReeveG:~/Downloads$ ls
cn2.2.tcl  cn2.3.tcl  cn2.4.tcl  reevetxt
reeve@ReeveG:~/Downloads$ rm cn2.3.tcl
reeve@ReeveG:~/Downloads$
```

9. Mkdir

mkdir command in Linux allows the user to create directories (also referred to as folders in some operating systems).

```
raj@raj-MS-7B84:~/Downloads$ mkdir --version
mkdir (GNU coreutils) 8.30
Copyright (C) 2018 Free Software Foundation, Inc.
License GPLv3+: GNU GPL version 3 or later <https://gnu.org/licenses/gpl.html>.
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.
```

10. History

history command is used to view the previously executed command. This feature was not available in the Bourne shell.

```
raj@raj-MS-7B84:~/Downloads$ history
 1  cal 2022
 2  date
 3  ps
 4  time date
 5  bc
 6  history
 7  man
 8  who
 9  whoami
10  kill
11  ls
12  pwd
13  cd Documents
14  cat exp2
15  cp --help
16  ls -lh
17  ls -ltr
```

11. Df

It is used to display information related to file systems about total space and available space.

```
raj@raj-MS-7B84:~/Downloads$ df
Filesystem      1K-blocks    Used Available Use% Mounted on
udev              4009732       0   4009732  0% /dev
tmpfs             808528    1904   806624  1% /run
/dev/sdb5     454379936 10843228 420385708  3% /
tmpfs             4042632       0   4042632  0% /dev/shm
tmpfs               5120        4    5116  1% /run/lock
tmpfs             4042632       0   4042632  0% /sys/fs/cgroup
/dev/loop1            128      128       0 100% /snap/bare/5
/dev/loop2            56960     56960       0 100% /snap/core18/2344
/dev/loop4            63488     63488       0 100% /snap/core20/1405
```

12. Du

It allows a user to gain disk usage information quickly.

```
reeve@ReeveG:~$ du
8      ./Desktop/file1
8      ./Desktop/file2
28      ./Desktop
12      ./Pictures
4      ./mozilla/firefox/Pending Pings
4      ./mozilla/firefox/Crash Reports/events
20      ./mozilla/firefox/Crash Reports
```

13. Free

It outputs a summary of RAM usage, including total, used, free, shared, and available memory and swap space.

```
raj@raj-MS-7B84:~/Downloads$ free
              total        used         free      shared  buff/cache   available
Mem:      8085268     903064     4597048      9348     2585156     6908748
Swap:     2097148          0     2097148
```

14. Uname -a

To display system information, use the uname command.

```
raj@raj-MS-7B84:~/Downloads$ uname -a
Linux raj-MS-7B84 5.13.0-28-generic #31~20.04.1-Ubuntu SMP
```

15. Top

The top (table of processes) command shows a real-time view of running processes in Linux and displays kernel-managed tasks.

```
top - 13:25:55 up 22 min,  1 user,  load average: 0.05, 0.24, 0.39
Tasks: 198 total,   1 running, 197 sleeping,   0 stopped,   0 zombie
%Cpu(s):  5.9 us,  1.7 sy,  0.0 ni, 92.1 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem : 2640.0 total,   323.3 free,   956.5 used,  1360.2 buff/cache
MiB Swap: 1421.2 total,   1411.4 free,      9.8 used.  1504.3 avail Mem

      PID USER      PR  NI    VIRT    RES    SHR S %CPU %MEM     TIME+ COMMAND
 1393 reeve    20   0 288232  85936 48492 S  3.0  3.2  0:22.12 Xorg
 1606 reeve    20   0 3677884 315500 122984 S  3.0 11.7  0:35.51 gnome-shell
2335 reeve    20   0 967704 51148 36892 S  1.7  1.9  0:12.43 gnome-terminal-
 4546 reeve    20   0 11856  3692  3188 R  0.7  0.1  0:00.05 top
 573 message+ 20   0  9844  5900  3440 S  0.3  0.2  0:02.80 dbus-daemon
```

16. Man

It is used to display the user manual of any command that we can run on the terminal.

```
MAN(1)                                     Manual pager utils

NAME
man - an interface to the system reference manuals

SYNOPSIS
man [man options] [[section] page ...] ...
man -k [apropos options] regexp ...
man -K [man options] [section] term ...
man -f [whatis options] page ...
man -l [man options] file ...
man -w|-W [man options] page ...

DESCRIPTION
man is the system's manual pager. Each page argument given to man is normally the
gram, utility or function. The manual page associated with each of these argument
and displayed. A section, if provided, will direct man to look only in that sect
ual. The default action is to search in all of the available sections following
order (see DEFAULTS), and to show only the first page found, even if page exists
tions.
```

17. Info

It will give detailed information for a command when compared with the man page.

```
File: dir,      Node: Top,      This is the top of the INFO tree.
```

```
This is the Info main menu (aka directory node).
A few useful Info commands:
```

```
'q' quits;
'H' lists all Info commands;
'h' starts the Info tutorial;
'mTexinfo RET' visits the Texinfo manual, etc.
```

```
* Menu:
```

18. Passwd

The passwd command changes passwords for user accounts.

```
raj@raj-MS-7B84:~$ passwd
Changing password for raj.
Current password:
New password:
Retype new password:
```

19. Whatis

is used to get a one-line manual page descriptions.

```
raj@raj-MS-7B84:~$ whatis pwd
pwd (1)           - print name of current/working directory
```

20. Date

date command is used to display the system date and time. date command is also used to set date and time of the system.

```
raj@raj-MS-7B84:~$ date
Thursday 04 August 2022 08:47:34 PM IST
```

21. W

It is a built-in tool that allows administrators to view information about users that are currently logged in.

```
raj@raj-MS-7B84:~$ w
20:47:42 up 44 min, 1 user, load average: 0.18, 0.35, 0.62
USER     TTY     FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
raj      :0      :0              20:03 ?xdm?    8:37   0.00s /usr/lib/gdm3/g
```

22. Exit

It sends the SIGKILL signal to the running program to force quit the command

23. Shutdown

use the command to shut down the system.

24. Head

prints the first lines of one or more files (or piped data) to standard output.

```
reeve@ReeveG:~/Desktop$ ls
file1 file2 reeve2.txt reeve.txt
reeve@ReeveG:~/Desktop$ head reeve2.txt
ffffffffvvvvvvvv
```

25. Tail

The tail command, as the name implies, print the last N number of data of the given input.

```
reeve@ReeveG:~/Desktop$ ls
file1 file2 reeve2.txt reeve.txt
reeve@ReeveG:~/Desktop$ tail -v reeve.txt
==> reeve.txt <==
ffffffffffvvvvvvv
555
reeve
```

26. Echo

It is used to display line of text/string that are passed as an argument .

```
raj@raj-MS-7B84:~$ echo "Hello World"
Hello World
```

27. Grep

The grep filter searches a file for a particular pattern of characters, and displays all lines that contain that pattern

```
reeve@ReeveG:~/Desktop$ grep -V
grep (GNU grep) 3.4
Copyright (C) 2020 Free Software Foundation, Inc.
License GPLv3+: GNU GPL version 3 or later <https://gnu.org/licenses/gpl.html>
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.
```

28. Zip

The zip command is a command-line tool in Linux that allows us to create an archive of files and directories

```
reeve@ReeveG:~/Desktop$ zip home.zip *
adding: file1/ (stored 0%)
adding: file2/ (stored 0%)
adding: reeve2.txt (deflated 44%)
adding: reeve.txt (deflated 27%)
```

29. Unzip

Extract ZIP file with unzip command

```
reeve@ReeveG:~/Desktop$ unzip home.zip
Archive: home.zip
replace reeve2.txt? [y]es, [n]o, [A]ll, [N]one, [r]ename, [d]elete, [m]ove, [i]nflate, [z]ip, [u]pdate, [v]erify, [h]elp, [q]uit, [?] ? [y]es, [n]o, [A]ll, [N]one, [r]ename, [d]elete, [m]ove, [i]nflate, [z]ip, [u]pdate, [v]erify, [h]elp, [q]uit, [?] ?
```

30. <command name> -h or <command name> --help

```
reeve@ReeveG:~/Desktop$ zip -h
Copyright (c) 1990-2008 Info-ZIP - Type 'zip "-L"' for software license
Zip 3.0 (July 5th 2008). Usage:
zip [-options] [-b path] [-t mmddyyyy] [-n suffixes] [zipfile list] [-x
  The default action is to add or replace zipfile entries from list, wh
  can include the special name - to compress standard input.
  If zipfile and list are omitted, zip compresses stdin to stdout.
  -f  freshen: only changed files   -u  update: only changed or new fi
  -d  delete entries in zipfile   -m  move into zipfile (delete OS f
  -r  recurse into directories    -j  junk (don't record) directory
  -0  store only                 -l  convert LF to CR LF (-ll CR LF
  -1  compress factor           -q  compress better
```

2. To implement Git commands

- Git commands

1. git --version

```
MINGW64:/c/Raj
```

```
Student@LAB-306-009 MINGW64 /c/Raj
$ git --version
git version 2.37.1.windows.1

Student@LAB-306-009 MINGW64 /c/Raj
$
```

2. git init

```
Student@LAB-306-009 MINGW64 /c/Raj
$ git init
Initialized empty Git repository in C:/Raj/.git/

Student@LAB-306-009 MINGW64 /c/Raj (master)
$
```

3. git status

```
Student@LAB-306-009 MINGW64 /c/Raj (master)
$ git status
On branch master

No commits yet

nothing to commit (create/copy files and use "git add" to track)

Student@LAB-306-009 MINGW64 /c/Raj (master)
$ git status
On branch master

No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)
    RB.docx

nothing added to commit but untracked files present (use "git add" to track)
```

Name	Date modified	Type
.git	21-07-2022 14:37	File folder
RB	21-07-2022 14:37	Microsoft Word Document

4. git config

```
Student@LAB-306-009 MINGW64 /c/Raj (master)
$ git config --global user.name 'Raj'

Student@LAB-306-009 MINGW64 /c/Raj (master)
$ git config --global --list
user.name=Raj
user.email=rajburkhao03@student.sfit.ac.in

Student@LAB-306-009 MINGW64 /c/Raj (master)
$
```

5. git add

```
Student@LAB-306-009 MINGW64 /c/Raj (master)
$ git add .

Student@LAB-306-009 MINGW64 /c/Raj (master)
$ git status
On branch master

No commits yet

Changes to be committed:
(use "git rm --cached <file>..." to unstage)
    new file:   RB.docx
    new file:   raj_file1.txt
    new file:   raj_file2.txt

Student@LAB-306-009 MINGW64 /c/Raj (master)
$
```

6. git commit

```
Student@LAB-306-009 MINGW64 /c/Raj (master)
$ git commit --m 'first commit'
[master (root-commit) 97a3629] first commit
 3 files changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 RB.docx
 create mode 100644 raj_file1.txt
 create mode 100644 raj_file2.txt

Student@LAB-306-009 MINGW64 /c/Raj (master)
$
```

```
Student@LAB-306-009 MINGW64 /c/Raj (master)
$ git commit --m 'second commit'
[master 392576b] second commit
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 Raj1.txt
```

```
Student@LAB-306-009 MINGW64 /c/Raj (master)
$ git commit --m 'third commit'
[master 07ae064] third commit
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 raj2.txt
```

7. git log

```
Student@LAB-306-009 MINGW64 /c/Raj (master)
$ git log
commit 07ae064a527e3b65ad42bf7adeb2574ebc7a6b9f (HEAD -> master)
Author: Raj <rajburkhao03@student.sfit.ac.in>
Date:   Thu Jul 21 14:54:41 2022 +0530

    third commit

commit 392576bff0d1911f891199052dfa35671ceadf98
Author: Raj <rajburkhao03@student.sfit.ac.in>
Date:   Thu Jul 21 14:53:52 2022 +0530

    second commit

commit 97a3629c88b0d72f4111f77ffa854c6d24fd806d
Author: Raj <rajburkhao03@student.sfit.ac.in>
Date:   Thu Jul 21 14:50:25 2022 +0530

    first commit

Student@LAB-306-009 MINGW64 /c/Raj (master)
$
```

```
Student@LAB-306-009 MINGW64 /c/Raj (master)
$ git log --oneline
07ae064 (HEAD -> master) third commit
392576b second commit
97a3629 first commit

Student@LAB-306-009 MINGW64 /c/Raj (master)
$ git log --oneline raj2.txt
07ae064 (HEAD -> master) third commit
```

3 . To implement Pull/Push operations between Git and GitHub

- Create a repository in GitHub

Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? [Import a repository.](#)

Owner *



Repository name *

RajExp3



Great repository names are short and memorable. Need inspiration? How about [automatic-waffle?](#)

Description (optional)

Public

Anyone on the internet can see this repository. You choose who can commit.

Private

You choose who can see and commit to this repository.

Initialize this repository with:

Skip this step if you're importing an existing repository.

Add a README file

This is where you can write a long description for your project. [Learn more.](#)

Add .gitignore

Choose which files not to track from a list of templates. [Learn more.](#)

.gitignore template: None ▾

Choose a license

A license tells others what they can and can't do with your code. [Learn more.](#)

License: None ▾

This will set main as the default branch. Change the default name in your [settings](#).

You are creating a public repository in your personal account.

Create repository

- Create a branch on repository

Raj-Burkha / RajExp3 (Public)

Code Issues Pull requests Actions Projects Wiki Security Insights Settings

Search branches... Overview Yours Active Stale All branches New branch

Default branch

- main** Updated 1 minute ago by Raj-Burkha Default
- Your main branch isn't protected** Protect this branch

Your branches

- rbranch1** Updated 1 minute ago by Raj-Burkha 0 0 New pull request

Active branches

- rbranch1** Updated 1 minute ago by Raj-Burkha 0 0 New pull request

- Fork, push and Pull request
- Fetch and merge on Git

RajExp3 / raj.docx in main Cancel changes

Edit file Preview changes Spaces 2 No wrap

```
1 creation of new file in main branch
2
```

main ▾ 2 branches 0 tags Go to file Add file Code

Your main branch isn't protected Protect this branch

Raj-Burkha Create raj.docx 794718a 42 seconds ago 2 commits

File	Commit Message	Time
README.md	Initial commit	5 minutes ago
raj.docx	Create raj.docx	42 seconds ago

README.md

```
TE@LAB-303-019 MINGW64 ~/Documents/raj (master)
$ git clone https://github.com/Raj-Burkha/RajExp3.git
Cloning into 'RajExp3'...
remote: Enumerating objects: 6, done.
remote: Counting objects: 100% (6/6), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 6 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (6/6), done.
```

```
TE@LAB-303-019 MINGW64 ~/Documents/raj (master)
$
```

	RajExp3	04-08-2022 13:47	File folder
1	1	04-08-2022 13:36	PNG File
2	2	04-08-2022 13:36	PNG File
3	3	04-08-2022 13:38	PNG File
4	4	04-08-2022 13:41	PNG File
5	5	04-08-2022 13:42	PNG File
6	6	04-08-2022 13:48	PNG File

```
TE@LAB-303-019 MINGW64 ~/Documents/raj (master)
$ git remote add origin https://github.com/Raj-Burkha/RajExp3.git

TE@LAB-303-019 MINGW64 ~/Documents/raj (master)
$ git remote show origin https://github.com/Raj-Burkha/RajExp3.git
* remote origin
  Fetch URL: https://github.com/Raj-Burkha/RajExp3.git
  Push URL: https://github.com/Raj-Burkha/RajExp3.git
  HEAD branch: main
  Remote branches:
    main      new (next fetch will store in remotes/origin)
    rbranch1 new (next fetch will store in remotes/origin)
* remote https://github.com/Raj-Burkha/RajExp3.git
  Fetch URL: https://github.com/Raj-Burkha/RajExp3.git
  Push URL: https://github.com/Raj-Burkha/RajExp3.git
  HEAD branch: main
```

```
TE@LAB-303-019 MINGW64 ~/Documents/raj (master)
$ git push origin master
Enumerating objects: 10, done.
Counting objects: 100% (10/10), done.
Delta compression using up to 6 threads
Compressing objects: 100% (10/10), done.
Writing objects: 100% (10/10), 161.89 KiB | 23.13 MiB/s, done.
Total 10 (delta 0), reused 0 (delta 0), pack-reused 0
remote:
remote: Create a pull request for 'master' on GitHub by visiting:
remote:     https://github.com/Raj-Burkha/RajExp3/pull/new/master
remote:
To https://github.com/Raj-Burkha/RajExp3.git
 * [new branch]      master -> master

TE@LAB-303-019 MINGW64 ~/Documents/raj (master)
$ git push origin master
Everything up-to-date
```

```
TE@LAB-303-019 MINGW64 ~/Documents/raj (master)
$ git pull origin master
From https://github.com/Raj-Burkha/RajExp3
 * branch           master      -> FETCH_HEAD
Already up to date.
```

```
TE@LAB-303-019 MINGW64 ~/Documents/raj (master)
$ git pull origin master
remote: Enumerating objects: 4, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 3 (delta 1), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), 661 bytes | 6.00 KiB/s, done.
From https://github.com/Raj-Burkha/RajExp3
 * branch           master      -> FETCH_HEAD
   fe2d823..119afba  master      -> origin/master
Updating fe2d823..119afba
Fast-forward
 raj3.docx | 1 +
 1 file changed, 1 insertion(+)
 create mode 100644 raj3.docx
```

Name	Date modified	Type	Size
RajExp3	04-08-2022 13:47	File folder	
1	04-08-2022 13:36	PNG File	27 KB
2	04-08-2022 13:36	PNG File	25 KB
3	04-08-2022 13:38	PNG File	49 KB
4	04-08-2022 13:41	PNG File	12 KB
5	04-08-2022 13:42	PNG File	27 KB
6	04-08-2022 13:48	PNG File	13 KB
7	04-08-2022 13:49	PNG File	12 KB
8	04-08-2022 13:52	PNG File	20 KB
9	04-08-2022 14:02	PNG File	19 KB
10	04-08-2022 14:11	PNG File	6 KB
11	04-08-2022 14:14	PNG File	16 KB
raj3	04-08-2022 14:14	Microsoft Word D...	1 KB

```
TE@LAB-303-019 MINGW64 ~/Documents/raj (master)
$ git fetch origin master
remote: Enumerating objects: 4, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 3 (delta 1), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), 657 bytes | 8.00 KiB/s, done.
From https://github.com/Raj-Burkha/RajExp3
 * branch           master      -> FETCH_HEAD
   119afba..f9d454a  master      -> origin/master
```

```
TE@LAB-303-019 MINGW64 ~/Documents/raj (master)
$ git merge origin/master
Updating 119afba..f9d454a
Fast-forward
 raj4.docx | 1 +
 1 file changed, 1 insertion(+)
 create mode 100644 raj4.docx
```

 RajExp3		04-08-2022 13:47	File folder	
 1		04-08-2022 13:36	PNG File	27 KB
 2		04-08-2022 13:36	PNG File	25 KB
 3		04-08-2022 13:38	PNG File	49 KB
 4		04-08-2022 13:41	PNG File	12 KB
 5		04-08-2022 13:42	PNG File	27 KB
 6		04-08-2022 13:48	PNG File	13 KB
 7		04-08-2022 13:49	PNG File	12 KB
 8		04-08-2022 13:52	PNG File	20 KB
 9		04-08-2022 14:02	PNG File	19 KB
 10		04-08-2022 14:11	PNG File	6 KB
 11		04-08-2022 14:14	PNG File	16 KB
 12		04-08-2022 14:14	PNG File	22 KB
 13		04-08-2022 14:17	PNG File	13 KB
 14		04-08-2022 14:18	PNG File	7 KB
 raj3		04-08-2022 14:14	Microsoft Word D...	1 KB
 raj4		04-08-2022 14:18	Microsoft Word D...	1 KB



Raj-Burkha / Reevedevops (Public)

forked from Reevegon/Reevedevops

Code Pull requests Actions Projects Wiki Security Insights Settings

main 1 branch 0 tags Go to file Add file Code

This branch is up to date with Reevegon/Reevedevops:main. Contribute Sync fork

Reevegon Create reeve.docx 5d7a085 43 minutes ago 2 commits

README.md Initial commit 1 hour ago

reeve.docx Create reeve.docx 43 minutes ago

README.md

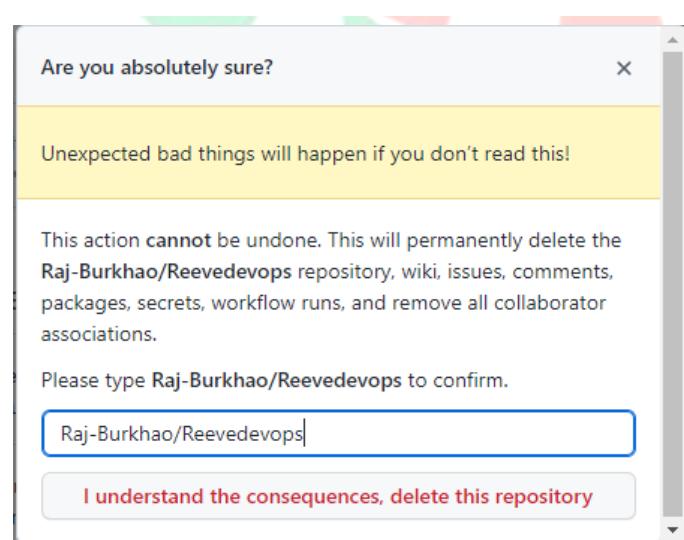
Reevedevops

About No description, website, or topics provided.

Readme 0 stars 0 watching 1 fork

Releases No releases published Create a new release

Packages No packages published Publish your first package



```
TE@LAB-303-019 MINGW64 ~/Documents/raj (master)
$ git branch
* master

TE@LAB-303-019 MINGW64 ~/Documents/raj (master)
$ git branch raj

TE@LAB-303-019 MINGW64 ~/Documents/raj (master)
$ git branch
* master
  raj

TE@LAB-303-019 MINGW64 ~/Documents/raj (raj)
$ git checkout raj
Switched to branch 'raj'

TE@LAB-303-019 MINGW64 ~/Documents/raj (raj)
$ git checkout master
Switched to branch 'master'

TE@LAB-303-019 MINGW64 ~/Documents/raj (master)
$ git branch
* master
  raj
```

```
TE@LAB-303-019 MINGW64 ~/Documents/raj (master)
$ git ls-files
1.PNG
2.PNG
3.PNG
4.PNG
5.PNG
6.PNG
7.PNG
8.PNG
RajExp3
raj3.docx
raj4.docx

TE@LAB-303-019 MINGW64 ~/Documents/raj (master)
$ git branch -v
* master f9d454a Create raj4.docx
  raj   f9d454a Create raj4.docx
```

```
TE@LAB-303-019 MINGW64 ~/Documents/raj (master)
$ git log
commit f9d454a31ba5396f5859770b768e918004b6f19c (HEAD -> master, origin/master, raj)
Author: Raj-Burkhaao <110594513+Raj-Burkhaao@users.noreply.github.com>
Date:   Thu Aug 4 14:16:45 2022 +0530

    Create raj4.docx

commit 119afba8243d390bf7025013c64d6e5219c943e3
Author: Raj-Burkhaao <110594513+Raj-Burkhaao@users.noreply.github.com>
Date:   Thu Aug 4 14:13:53 2022 +0530

    Create raj3.docx

commit fe2d823359fb43b9991f14097e4c3ce054497dd1
Author: Raj <rajburkhaao03@student.sfit.ac.in>
Date:   Thu Aug 4 13:59:25 2022 +0530

    commit2

TE@LAB-303-019 MINGW64 ~/Documents/raj (master)
$ git status
On branch master
Untracked files:
  (use "git add <file>..." to include in what will be committed)
    10.PNG
    11.PNG
    12.PNG
    13.PNG
    14.PNG
    15.PNG
    16.PNG
    9.PNG

nothing added to commit but untracked files present (use "git add" to track)
```



4. To build any Java Project (with and without parameters) using Jenkins

- Without parameters -

Build Steps

≡ Execute Windows batch command ?

Command

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

```
C:  
cd C:\Users\bello\OneDrive\Desktop\DOL Prac 4  
javac Hello.java  
java Hello
```

```
C:  
cd C:\Users\bello\OneDrive\Desktop\DOL Prac 4  
javac Hello.java  
java Hello
```

Hello.java -

```
public class Hello  
{  
    public static void main(String args[])  
    {  
        System.out.println("hello world");  
    }  
}
```

- With parameters -

Build Steps

≡ Execute Windows batch command ?

Command

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

```
C:  
cd C:\Users\bello\OneDrive\Desktop\DOL Prac 4  
javac Helloparameter.java  
java Helloparameter %str1% %str2%
```

Advanced...

```
C:  
cd C:\Users\bello\OneDrive\Desktop\DOL Prac 4  
javac Helloparameter.java  
java Helloparameter %str1% %str2%
```

Helloparameter.java -

```
public class Helloparameter  
{  
    public static void main(String args[])  
    {  
        System.out.println("Your first-name is " + args[0]);  
        System.out.println("Your last-name is " + args[1]);  
    }  
}
```

5. To implement windows batch command on a project in Jenkins (with and without parameters)

- WITHOUT PARAMETERS

≡ Execute Windows batch command ?

Command

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

```
echo "helloworld"
```

echo "helloworld"

- WITH PARAMETERS

≡ Execute Windows batch command ?

Command

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

```
echo '%str1%'  
echo '%str2%'  
echo '%tomato%'  
echo '%food%'
```

echo '%str1%'
echo '%str2%'
echo '%tomato%'
echo '%food%'

6. To build any python project (python file and script) in Jenkins

> Just install 3 plugins of Python



I also had the same error. Jenkins requires the path of where your Python application has been installed on your system. To get the path, you simply type python.exe in your directory search bar.

0

For me, it's: C:\Users"\myusername"\AppData\Local\Programs\Python\Python310" Then navigate to Jenkins -> Manage Jenkins -> Configure System -> Global properties -> Environment variables Then add variable name=path, and path to your python directory (don't include python.exe at the end), apply and save. In case if it's not working, logout and restart Jenkins.



Explicit



Execute Windows batch command ?

Command

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

C:

```
cd C:\Users\bello\OneDrive\Desktop\DOL Prac 4  
python fact.py
```

C:

```
cd C:\Users\bello\OneDrive\Desktop\DOL Prac 4  
python fact.py
```

7. To build a Maven and Ant project in Jenkins-

First set maven and ant in global tools configuration

MAVEN > maven project > git > Repo Url -

<https://github.com/be11o/maven-helloworld.git>

> build > clean compile package > apply > save > build now

Verify creation of war file -

```
C:\WINDOWS\system32>dir C:\ProgramData\Jenkins\.jenkins\workspace\maven3\webapp\target\webapp.war
Volume in drive C is Windows-SSD
Volume Serial Number is E422-6193

Directory of C:\ProgramData\Jenkins\.jenkins\workspace\maven3\webapp\target

08-11-2022  02.03 PM           2,503 webapp.war
              1 File(s)        2,503 bytes
              0 Dir(s)  10,744,815,616 bytes free
```

ANT > freestyle >git > Repo Url > build steps > invoke Ant > ant version - ant > Target - clean compile test package war > apply > save > build now

Verify creation of .war file -

Cmd as admin > paste path of roshambo.war using dir as prefix

```
C:\WINDOWS\system32>dir C:\ProgramData\Jenkins\.jenkins\workspace\ant1\target\roshambo.war
Volume in drive C is Windows-SSD
Volume Serial Number is E422-6193

Directory of C:\ProgramData\Jenkins\.jenkins\workspace\ant1\target

08-11-2022  12.12 PM           9,686 roshambo.war
              1 File(s)        9,686 bytes
              0 Dir(s)  10,793,168,896 bytes free
```

8. To create a pipeline script and build a pipeline of jobs in Jenkins

Hello World pipeline script -

Install all plugins beforehand related to pipeline > enter item name > select pipeline > advanced project options > Pipeline script > select Hello world from dropdown > save > apply > build now

d34e256079d7

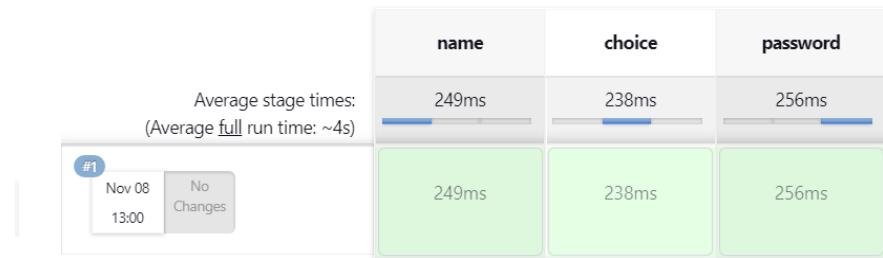
Project with own pipeline script -

Select project is parameterized > add string, choice, password > Pipeline > pipeline script >

```
pipeline {
    agent any
    parameters {
        string(name: 'PERSON' , defaultValue: 'Chrissy', description: 'say hello')
        choice(name: 'CHOICE' , choices: ['1','2','3','4'], description: 'pick')
        password(name: 'PASSWORD' , defaultValue: '1234', description: 'enter pass')
    }
    stages {
        stage('name') {
            steps {
                echo "Hello ${params.PERSON}"
            }
        }
        stage('choice') {
            steps {
                echo "Choice ${params.CHOICE}"
            }
        }
        stage('password') {
            steps {
                echo "Password: ${params.PASSWORD}"
            }
        }
    }
}
```

Apply > save

Stage View

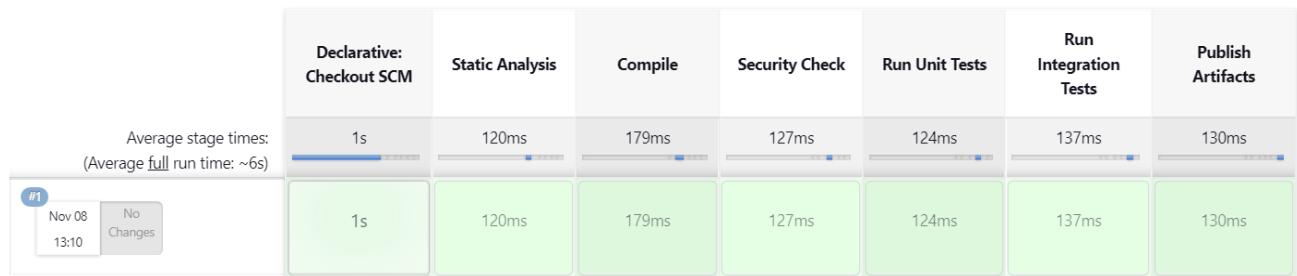


9. To create a Jenkinsfile and build a pipeline of jobs in Jenkins

Using Git -

enter item name > select pipeline > advanced project options > pipeline script from SCM > SCM > Git > repo url - <https://github.com/be11o/jenkins-pipeline-tutorial.git> > Script Path - hello-world/Jenkinsfile > apply > save

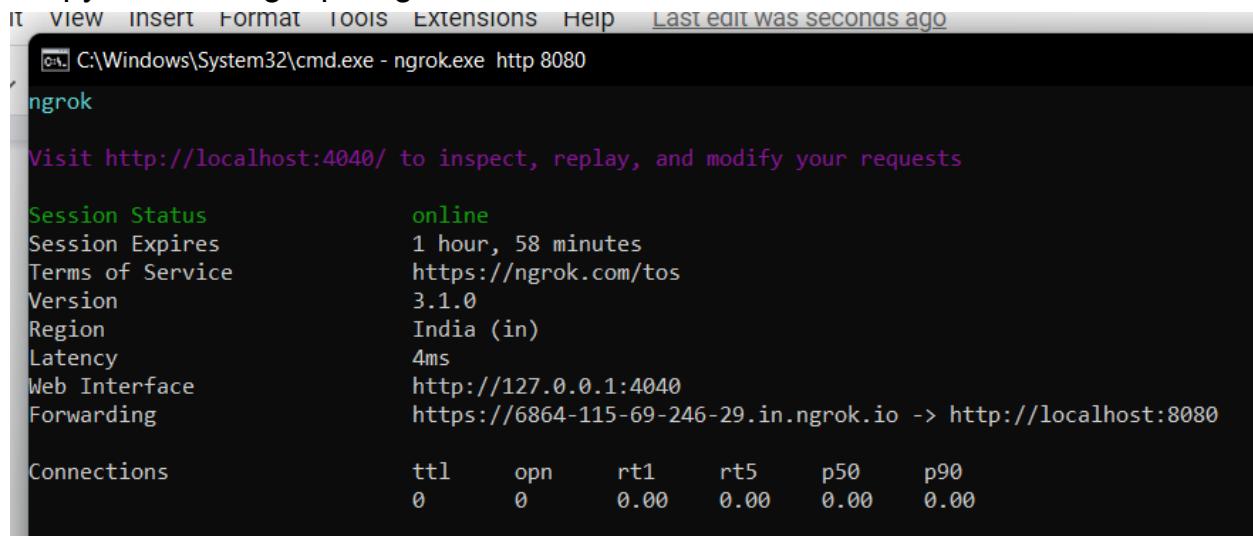
Stage View



**10. In Jenkins, show changes in a project with the help of webhooks.
Also show how builds can be scheduled with cron commands**

> Download ngrok first
> Go to cmd in the folder where ngrok is present
> type the following commands
Ngrok.exe --version
Ngrok.exe http 8080

>copy Forwarding, upto ngrok.io

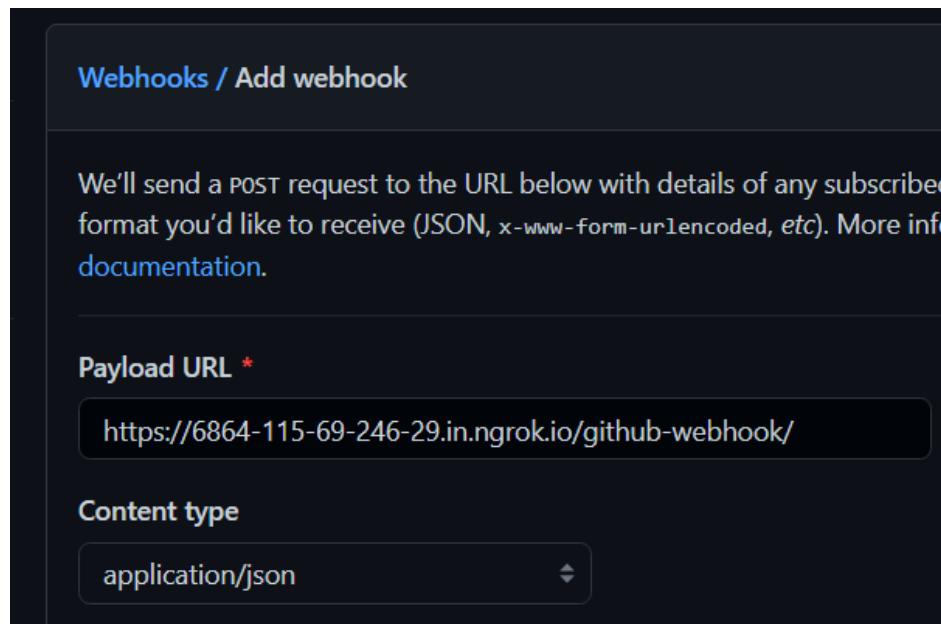


The screenshot shows a Windows Command Prompt window with the title bar "cmd C:\Windows\System32\cmd.exe - ngrok.exe http 8080". The window displays the following text:

```
ngrok
Visit http://localhost:4040/ to inspect, replay, and modify your requests

Session Status      online
Session Expires    1 hour, 58 minutes
Terms of Service   https://ngrok.com/tos
Version            3.1.0
Region             India (in)
Latency            4ms
Web Interface     http://127.0.0.1:4040
Forwarding         https://6864-115-69-246-29.in.ngrok.io -> http://localhost:8080

Connections        ttl     opn      rt1     rt5     p50     p90
                      0       0       0.00    0.00    0.00    0.00
```



The screenshot shows the "Webhooks / Add webhook" configuration page in Jenkins. The page has the following fields:

- Payload URL ***: `https://6864-115-69-246-29.in.ngrok.io/github-webhook/`
- Content type**: `application/json`

> Add webhook

> new pipeline project > Build triggers > GitHub hook trigger for GITScm polling >

Pipeline

Definition

Pipeline script from SCM

SCM ?

Git

Repositories ?

Repository URL ?

`https://github.com/be11o/jenkins-pipeline-tutorial.git`

Script Path > `hello-world/Jenkinsfile`

Apply > save

Forked repository > make changes in Jenkinsfile > commit changes > build now

Add file to forked repository & build >

Commit is visible

Using cron commands - In repository

H/5 * * * *

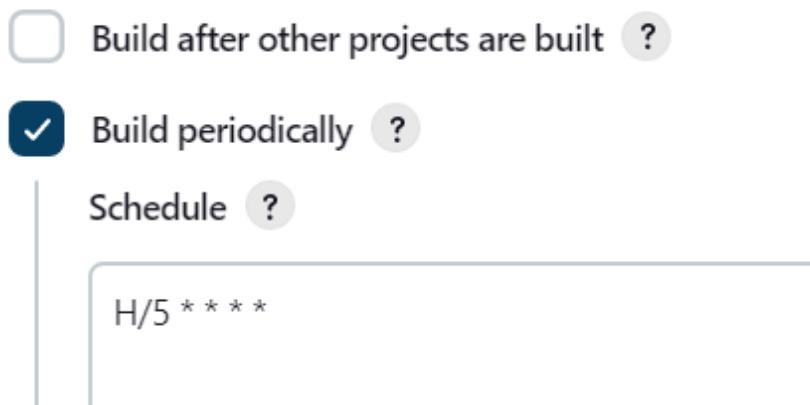
Build Triggers

Build after other projects are built ?

Build periodically ?

Schedule ?

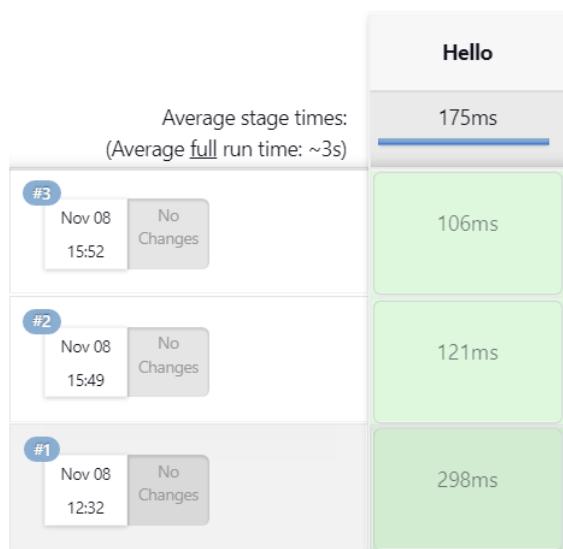
H/5 * * * *



> Initial Build now

> After a few minutes

Stage View



12. To build an image for a web application using Dockerfile

- > Download Dockerfile from classroom exp 10 reference material
- > create a folder and move Dockerfile to this folder
- > create index.html here

```
<html>
<head>
    <title>Welcome Chrisanne</title>
</head>

<body>
    <h1>Welcome to my website</h1>
    <h2>Main Categories:</h2>
    <p>Pages (HTML)</p>
    <p>Style Sheets</p>
    <p>Computer Code (Javascript)</p>
    <p>Live Data</p>

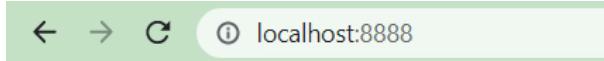
</body>
</html>
```

> edit Dockerfile

```
FROM ubuntu:latest
MAINTAINER "Chrisanne Rebello"
RUN apt update -y
RUN apt install nginx -y
EXPOSE 80
COPY index.html /usr/share/nginx/html/index.html
COPY index.html /var/www/html/index.html
CMD ["nginx", "-g", "daemon off;"]
```

- > in cmd
- > go to folder
- > docker –version
- > docker login
- > docker build -t kashyap_image .
- > docker run -it -p 8888:80 kashyap_image

> go to browser & open localhost:8888



Welcome to my website

Main Categories:

Pages (HTML)

Style Sheets

Computer Code(Javascript)

Live Data

Created image

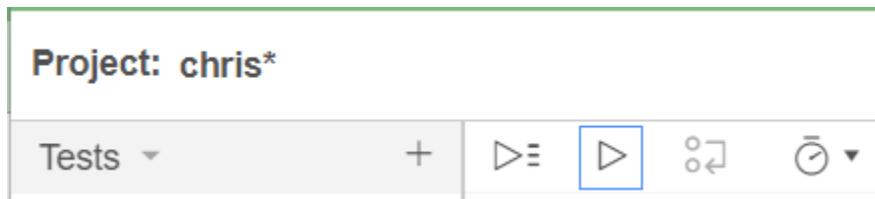
kashyap_image	IN USE	latest	4a05a7d3ca4d	about 3 hours ago	172.84 MB
---------------	--------	--------	--------------	-------------------	-----------

		NAME	IMAGE
		happy_yallow a7dfb5bc07d1	kashyap_image:latest

14. To create and run a test case on Chrome/Firefox browser with selenium IDE addon

- > search selenium IDE
- > add to chrome as extension
- > open selenium extension
- > create new project
- > set base url - <https://www.google.com>
- > start recording
- > stop recording
- > name the test
- > run test
- > **test completed successfully**

To run test



To start and stop recording



Output successful -

11. mouseOver on linkText=Tutorial Pl

'test2' completed successfully

The screenshot shows the TestRail application interface. The top navigation bar includes 'Project: chris*', a search bar ('Search tests...'), and various toolbar icons. A dropdown menu is open over the first test case, 'test1*', with options like 'Edit', 'Copy', 'Delete', and 'Run current test Ctrl+R'. The main table displays two test cases: 'test1*' and 'test2*'. The 'test2*' row is selected, indicated by a blue background. The table has columns for 'Command', 'Target', and 'Value'. The 'test2*' row contains 11 steps, each with a green checkmark. The 'Value' column for step 11 shows 'linkText=Tutorial Playlist'. Below the table are four input fields: 'Command', 'Target', 'Value', and 'Description', each with a dropdown arrow and a magnifying glass icon. At the bottom, there are tabs for 'Log' and 'Reference', and a status message 'test2 completed successfully'.

Test	Command	Target	Value
✓ test1*	3 ✓ send keys	name=q	\$(KEY_DOWN)
✓ test2*	4 ✓ send keys	name=q	\$(KEY_DOWN)
	5 ✓ type	name=q	selenium interview questions
	6 ✓ send keys	name=q	\$(KEY_ENTER)
	7 ✓ mouse over	css=g:nth-child(2).LC20lb	
	8 ✓ click	css=g:nth-child(2).LC20lb	
	9 ✓ mouse out	css=g:nth-child(2).LC20lb	
	10 ✓ run script	window.scrollTo(0,1534.4000244140625)	
	11 ✓ mouse over	linkText=Tutorial Playlist	

Command Target Value

Target

Description

Log Reference

7. mouseOver on css=g:nth-child(2).LC20lb OK 22:32:46

8. click on css=g:nth-child(2).LC20lb OK 22:32:47

9. Trying to find css=g:nth-child(2).LC20lb... OK 22:32:47

Warning Element found with secondary locator xpath=/h3. Use it by default, update the test step to use it as the primary locator. 22:33:18

10. runScript on window.scrollTo(0,1534.4000244140625) OK 22:33:19

11. mouseOver on linkText=Tutorial Playlist OK 22:33:19

'test2' completed successfully 22:33:20

13. In Jenkins, create a slave node, connect it with master and build a project in slave node

- Manage Jenkins
 - Configure System, Jenkins Location, Jenkins URL (<http://192.168.0.108:8080>)
 - Configure Global Security, Agents Random
 - Create a new node (manage jenkins)
 - Name, description, No. of executors 2, Remote root directory [C:/sample1], label Slave, Custom WorkDir path [C:/sample1]
 - Create a new project, freestyle, checkbox Restrict where this project can be run, label Slave
Execute Windows batch command, echo "Hello World"
 - Run the Commands in the created slave on the cmd
 - cd C:\ProgramData\Jenkins\.jenkins\nodes\deekha_slave
Run both the commands
 - Build the project, check output

The 2 commands -

```
>curl -s0 http://172.27.192.1:8080/jnlpJars/agent.jar
```

```
java -jar agent.jar -jnlpUrl http://172.27.192.1:8080/computer/slave/jenkins-agent.jnlp -secret e49a034b4a9f058de02b07ff2c8f1862fd71259921bd1e6d1628fef401f59998 -workDir "C:\Slave"
```