A REPORT OF

“Open-Source Software Laboratory”

Code: 5IT452

B: Beginner (B)

Submitted by

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DEPARTMENT OF INFORMATION TECHNOLOGY

WALCHAND COLLEGE OF ENGINEERING, SANGLI

(An Autonomous Institute)

2022-2023

CERTIFICATE

This is to certify that the report entitled **"Open-Source Software Laboratory (OSS Lab) 5IT452***"* submitted by **MANDAR KAMBLE (2020BTEIT00004)** is a record of student work carried out by him during the academic year 2022-2023, as per the curriculum/syllabus laid down for OSS lab at Final year B. Tech IT Sem-I. He has carried out experiments/FOSS tools hands-on on 13 assignments under B: Beginner category successfully.

Dr. A. J. Umbarkar

(Course Teacher)

Declaration

I, the undersigned, hereby declare that the BTech report entitled “Open-Source Software Laboratory (OSS Lab) 5IT452” submitted by me to OSS Lab report at Final year BTech IT Sem-I, is my original/experimented/experience work. I further declare that, to the beat of my knowledge and belief, this report has not been previously submitted or copied by me.

I declare that this report reflects my thoughts about the subject in my own words. I have sufficiently cited and referenced the original sources, referred, or considered in this work. I have not misinterpreted, fabricated, or falsified any idea/data/fact/source in this my submission. I understand that any violation of the above will be cause for disciplinary action by the course teacher/institute.

(Sign)

Mr.Mandar Kamble

Date:

Place: WCE Sangli

Acknowledgement

I feel immense pleasure in submitting the report entitled “Open-Source Software Laboratory (OSS Lab) 5IT452”. I am thankful to our guide Dr. A. J. Umbarkar for their valuable guidance and kind help during implementing the OSS Lab.

Acknowledged By,

Mr.Mandar Kamble

Course Objectives: (verify from latest syllabus copy)

1) To Configure the Open-Source Software.
2) To contribute/ develop software (system) for open-source environment.
3) To use FOSS for Software Engineering.

Percentage of Objective achieved by students:

Objective No.	Not achieved	40% achieved	70% achieved	100% achieved
1				
2				
3				

Course Learning Outcomes: (verify from latest syllabus copy)

1. Exercise the FOSS in software development
2. Analyze the economics of FOSS
3. Create new FOSS or Contribute to existing FOSS

Percentage of Outcome achieved by students:

Objective No.	Not achieved	40% achieved	70% achieved	100% achieved
1				
2				
3				

(Sign)

Mr.Mandar Kamble

Program Outcomes:

a. **Engineering Knowledge:** Apply the knowledge of mathematics, engineering run and computational science to the solution of engineering problems.
b. **Problem Analysis:** Identify, formulate. Interpret and analyze the complex engineering problems leading to substantiated conclusions
c. **Design/Development of Solutions**: Design systems, components or processes to meet desired needs within realistic constraints such as economic, environmental, societal and ethical considerations.
d. **Conduct investigations of Complex Problems**: Use research based knowledge and methods including design of experiments, analysis, interpretation and synthesis of information to provide valid conclusions.
e. **Modern Tool Usage**: Select and apply appropriate techniques, engineering skills and modem IT tools to prototype the model of complex engineering activities.
f. **The Engineer and Society**: Apply contextual knowledge pertaining social, secure. Legal and cultural issues with consequent responsibilities relevant to IT.
g. **Environment and Sustainability:** Understand the impact of the professional engineering solutions in social, environmental and the global contexts, demonstrating the knowledge of and the need for sustainable development.
h. **Ethics:** Apply ethical principles and commit to the professional ethics with responsibilities and norms of the engineering practices.
i. **Individual and Team Work:** Work effectively as an individual as well as a member or a leader in diverse teams for multidisciplinary settings.
j. **Communication:** Communicate effectively with the engineering community and with society at a large, such as, being able to comprehend and write reports and design documentation to make effective presentations.
k. **Project Management and Finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply those to original work or contemporary issues, as a member or land a leader in a team or an entrepreneur to manage projects in multidisciplinary environments.
l. **Life-long Learning**: Recognize the need and prepare to engage independent and in lifelong learning.

PO Mapping with Tutorial List

Assignment No \PO	(a)	(b)	I	(d)	I	(f)	(g)	(h)	(i)	(j)	(k)	(l)
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17												
18												

(Sign)

Mr.Mandar Kamble

Course Learning outcomes:

CO	After the completion of the course the student should be able to	Bloom's cognitive	
		Level	Descriptor
CO1	Exercise the FOSS tools in software development.	3	Applying
CO2	Analyze the economics of FOSS.	4	Analysing
CO3	Create new FOSS or contribute to existing FOSS in FOSS environment.	6	Creating

CLO mapping with assignment list

Sr.	Assignment	BIE	% Copy	Mapping	category

1	Demonstration of Linux Distributions OS's and their purpose with comparisons.	E	5%	CO1	Application
2	Use of Open-Source tools for Project Management.	E	1%	CO2	Application
3	Use of Bug Tracking	E	1%	CO1	Knowledge
4	Use of version control system	E	0%	CO2	Application
5	Installation and Use of CMS software	E	5%	CO1	Application
6	Comprehend the open-source software development for any one Linux Distro	E	1%	CO3	Synthesis Design
7	Compilation of Linux kernel	E	1%	CO3	Synthesis
8	Creation of RPM or DEB packages	E	0%	CO2	Application
9	Install and demonstrate server based services and their uses	E	5%	CO2	Application
10	Development of new Open Source Software or contribution to existing Open Source Software.	E	1%	CO2	Application
11	Docker container: An open source software development platform	E	1%	CO2	Application
12	Find python kernel code and compile it or use any python library for any application.	E	0%	CO3	Application
13	Agile s/w engineering by using Tuleap, review board and gitea (tools of agile setup)	E	5%	CO1	Synthesis Design
14	Learn Open source programming language GO	E	1%	CO2	Knowledge
15	Bonus Assignments.	E	1%	CO2	Creating

Rubrics Used:

1. Quiz Objective
2. Class Questioning.
3. Quiz Subjective
4. Open Book Test
5. Assignment
6. Program
7. Seminar
8. Mini project
9. PPT
10. Demo Simulator
11. ISE1/ISE2/ESE
12. Videos
13. Posters
14. Presentations

Rubrics mapping with assignment list:

Assi. No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
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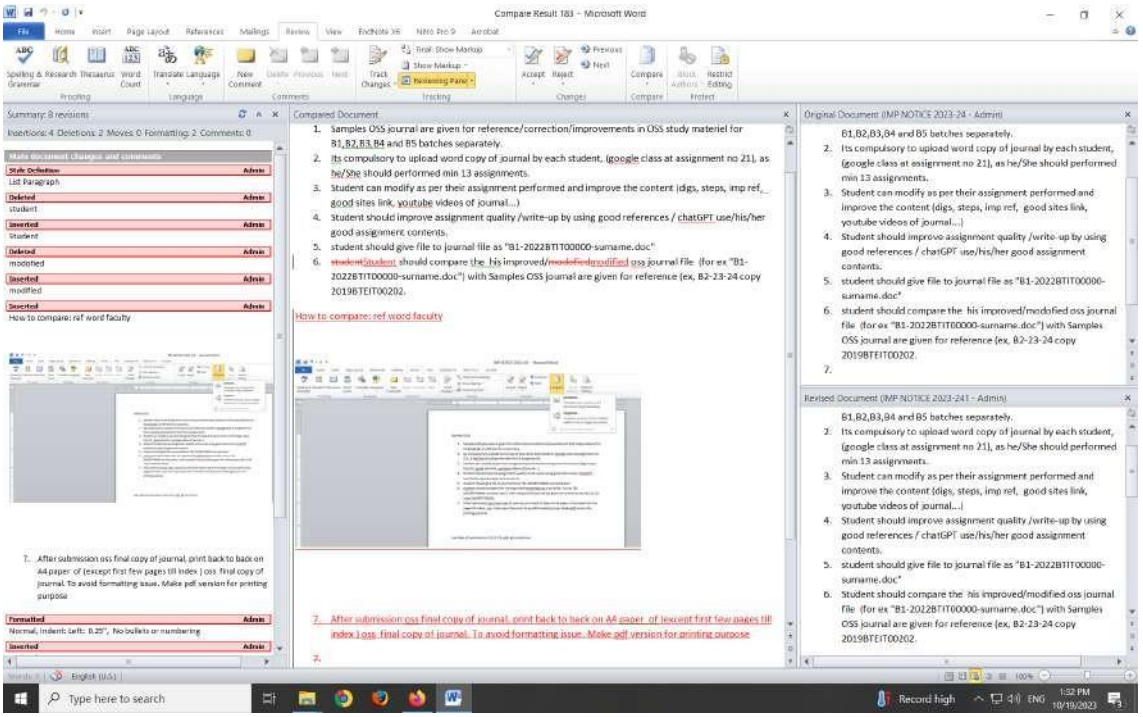

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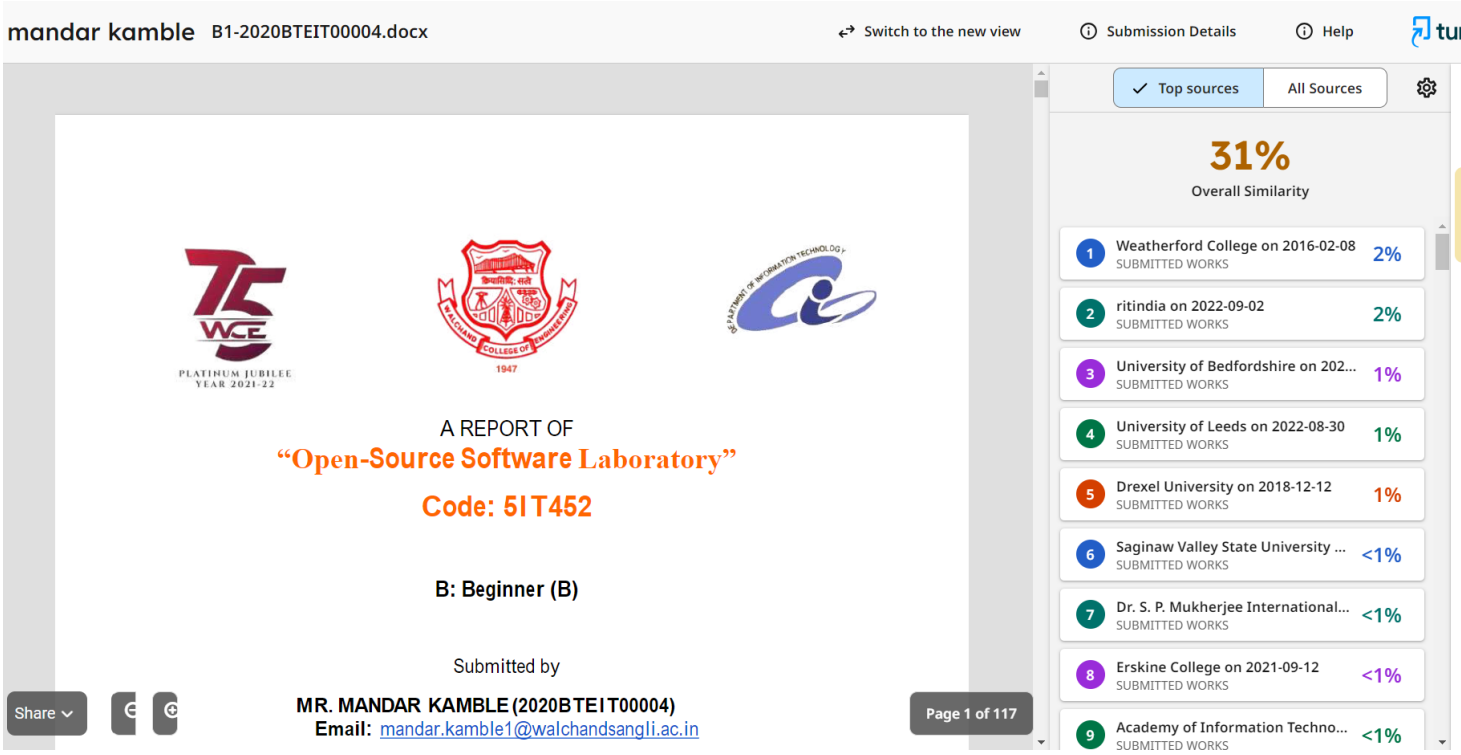


Self-Evaluation by Student:

Name of student	Exam no.	Email ID	Roll no.	Sign

Mandar Kamble	2019BTEIT00004	mandar.Kamble1@walchandsangli.ac.in	04	

5IT452: Open-Source Software Lab

(E: Expert) Final Assignment List

1. **Demonstration of Linux Distributions OS's and their purpose with comparisons. (Fedora/CentOS/any other/etc.: any-one)**

   (Submission by Individual [I])

   Objective: To install and demonstrate Various Linux Distributions and their Purpose/comparison/differences.

   Outcome: Self learning/lifelong learning (PO: b, k, l)

   Student asks to study at least two Linux Distros, with their comparisons and installation on Virtual Box OR Installation Linux on Live USB pen drive. [https://fedoraproject.org/wiki/How_to_create_and_use_Live_USB]

   In Journal, they should write information of that distros, such as-

   i. Various versions of that distros with code name
   ii. Default desktop GUI
   iii. Main purpose of that
   iv. Package management of that distros
   v. List of Default Packages
   vi. Screenshots of that distros
   vii. Compare '/etc' hierarchy
   viii. Compare package managers
   ix. Pros/cons of both distros
   x. Which one is better for development and why?
   xi. Which one is easy to use (for beginner) and why?
   xii. Explorer any top 10 commands of that distro on command prompt.
   xiii. Make the Official Repositories of **Fedora/CentOS** on docker store (https://hub.docker.com/) and experiment for above.

   References-

i. List of Linux Distros- http://distrowatch.com/
ii. For installation on Virtual Box- https://help.ubuntu.com/community/ListOfOpenSourcePrograms
iii. http://www.psychocats.net/ubuntu/virtualbox
iv. https://help.ubuntu.com/

2. **Use of Open-Source tools for Project Management.**
(Sonar, Targetprocess, Redbooth, Pivotal Tracker, OrangeScrum etc.: Any One)
(Submission by Individual [I])

Objective: To install and demonstrate the use of various open-source software's that used in day today life of software engineer

Outcome: (PO: k, l)

Students should experiment at last two project management tools / software's, and they have to use for their project/FOSS project/mini project.

In journal, they have to write information about that tool such as:-

i. Purpose behind that tool.
ii. Various versions of those tools.
iii. Installation and Configuration of that tool.
iv. How to use that tool.

References-

i. https://bitnami.com/stacks
ii. Sphinx for all lab/college documentation by the students.
iii. http://www.sonarqube.org/
iv. Wikipedia List Of Software's:- http://en.wikipedia.org/wiki/List-of-free-and-open-source-software-packages
v. Open Source Software Mega List - http://www.datamation.com/open-source/open- source-software-the-mega-list.html
vi. https://fedoraproject.org/wiki/Education_Spin (This has lots of relevant packages)
vii. http://www.methodsandtools.com/tools/targetprocess.php
viii. https://blog.capterra.com/free-open-source-project-management-software/
ix. http://www.targetprocess.com/
x. https://www.pivotaltracker.com/features/
xi. https://redbooth.com/features

3. Use of Bug Tracking

(Phabricator, Youtrack, Mantis, Futuramo, etc.: Any One)

(Submission by Individual [I])

Objective: To install and demonstrate the use of various open source software's that used in day to day life of software engineering.

Outcome: (PO: k, l)

Students have to experiment at last two bug tracking tools / software's and they have to use for their project/FOSS project/mini project.

In journal, they have to write information about that tool such as:-

i. Purpose behind that tool.
ii. Various versions of that tool.
iii. Installation and Configuration of that tool
iv. How to use that tool.
v. Make the Official Repositories of any one above **Bug Tracking** on docker store (https://hub.docker.com/) and experiment.

References-

i. https://bitnami.com/stacks
ii. http://en.wikipedia.org/wiki/List_of_free_and_open- source_software_packages

4. Use of Version Control System.
(Mercurial (hg), Bazaar, Monotone, etc: Any One).

(Submission by Individual and Group [I and G])

Objective: To use the online and offline Version Control System in Open Source/for their project work.

Outcome: lifelong learning (PO: b, c, k, l)

Students should experiment any two **Version Control System** and use the tool for their project/FOSS project/mini project/ etc.

Sample code developments example of **Version Control System** on both Windows and Linux clients/server.

Make the Official Repositories of any one **Version Control System** on docker store (https://hub.docker.com/) and experiment.

In Journal, They have to write Basic Information about **Version Control System**, commands, their working, diagrams, differences, pros and cons, developments history, etc .
Reference:-

i. https://try.github.io/levels/1/challenges/1
ii. https://github.com/princeton-8/princeton-8.github.io
iii. http://wiki.openhatch.org/Open_Source_Comes_to_Campus/Practicing_Git/Students
iv. GIT Official Documentation:- http://git-scm.com/documentation
v. SVN Official Documentation:- http://svnbook.red-bean.com/en/1.7/index.html
vi. Perforce Helix is a commercial, proprietary revision control system developed by Perforce Software
vii. https://www.smashingmagazine.com/2008/09/the-top-7-open-source-version-control-systems/
viii. http://wiki.bazaar.canonical.com/WindowsDownloads

5. **Installation and Use of CMS software's.**
   (Joomla, Mahara, XOOPS, DokuWiki, etc.: Any One) OR (Social Networking open source: Diaspora or other: Any One)

   (Submission by Individual [I])

Objective: To comprehend the use of Content Management System and their Use for personal website/dept CMS.

Outcome: Self learning (PO: b, I, j, k, l)

Students have to study at least experiment one **CMS** and one **Wiki**. Use **Wiki** for giving the information to class student to perform FOSS assignments. Use **CMS** for giving the creating your personal website/blog or FOSS course website/blog.

In Journal, They have to write,

i. Administration of CMS/wiki.
ii. How to Use.
iii. Installation on Linux Platform.
iv. Screenshots.
v. Make the Official Repositories of any one **CMS/Wiki** on docker store (https://hub.docker.com/) and experiment.

References:-

i. www.wordpress.com
ii. Drupal Tutorials:- http://drupal.org/documentation/customization/tutorials
iii. Moodle Tutorials:- http://docs.moodle.org/22/en/Moodle_video_tutorials
iv. https://bitnami.com

6. **Comprehend the Open Source Software Development for any one Linux distro. (Topic 3rd in Syllabus) (Fedora/CentOS, etc :Any One)**
   (Submission by Individual or Group [I or G])

Objective: To comprehend the open source software development.

Outcome: Self learning/lifelong learning (PO: b, k, l)

In this student have to study open source software development process of **any one above Linux distro.**

Get the details following information like –Name of community, website, Mailing List, wiki, version control, bug tracking and documentation of the particular distro to comprehend.

Sample of Ubuntu Development:-

i. Development Communities:- http://www.ubuntu.com/community/
ii. Mailing List:- https://lists.ubuntu.com/
iii. IRC channels:- https://wiki.ubuntu.com/IRC/ChannelList
iv. Ubuntu Wiki:- https://wiki.ubuntu.com/
v. Ubuntu Version Control:- https://code.launchpad.net/ubuntu
vi. Ubuntu Bug Tracking:- https://bugs.launchpad.net/ubuntu
vii. Ubuntu Localization :- https://translations.launchpad.net/ubuntu
viii. Ubuntu Documentation:- https://help.ubuntu.com/community

Sample of Fedora

I. https://getfedora.org/

Ii. https://fedoraproject.org/wiki/IRC

Iii. https://fedoraproject.org/wiki/

Iv.https://fedoraproject.org/wiki/Packaging:Versioning /
https://fedoraproject.org/wiki/Infrastructure/VersionControl

V. https://fedoraproject.org/wiki/Bugzilla

Vi. https://fedoraproject.org/wiki/Category:Localization

Vii. https://docs.fedoraproject.org/en-US/index.html

7. **Compilation of Linux Kernel selected above.**
   (Fedora/CentOS, etc: Any One)

(Submission by Individual or Group [I or G])

Objective: To demonstrate how to compile Linux Kernel.

Outcome: Self learning (PO: k, l)

In this student have to do the compilation any one mentioned above Linux distro Linux Kernel on their system/VMware/Virtual box or pen drive or docker container.

Reference:-

i. Installation Of Linux Kernel on Fedora:- http://www.howopensource.com/2011/08/how-to-install-compile-linux-kernel-3-0-in-fedora-15-and-14/
Or/and

ii. https://fedoraproject.org/wiki/Building_a_custom_kernel

iii. Latest kernel installation on Fedora and Cent OS:- http://www.tecmint.com/kernel-3-5-released-install-compile-in-redhat-centos-and-fedora/

iv. http://tldp.org/guides.html

v. Installation Of Linux Kernel on Ubuntu:-

Latest kernel installation on :- http://www.backtracklinux.org/forums/showthread.php?t=49347

Installation of Linux Kernel on Suse:-https://en.opensuse.org/Kernel

In Journal you have to write the step by step process of compilation.

8. Create of RPM or DEB packages (Any One)
(Submission by Individual [I])

Objective: To Create package for any above Linux distros.

Outcome: (PO: b, I, j, k, l)

Students have to study RPM or DEB package building for their C, C++ or JAVA Codes(any one programming languages codes). They must build an rpm or debian package and install it through package manager such as YUM or APT-GET

Reference:-

i. Build Simple rpm package:- http://rhce.dposs.org/index.php?title=Build_a_simple_RPM_that_packages_a_single_file
ii. Fedora rpm doc:- http://fedoraproject.org/wiki/How_to_create_an_RPM_package
iii. Simple DEB package for your C code:- http://linuxconfig.org/easy-way-to-create-a-debian-package-and-local-package-repository
iv. Simple DEB build guide:- http://askubuntu.com/questions/90764/how-do-i-create-a-deb-package-for-a-single-python-script
v. Deb Package Build YouTube:- http://www.youtube.com/watch?v=nhoRyd2CEVs
In Journal you have to write the package building process.

9. Install and demonstrate of Server based services and their Uses.
(web **server apache or tomcat or IIS, NFS,NIS**: **Any One)**

(Submission by Individual [I])

Objective: To know server installations and Configurations on Linux Platform

Outcome: (PO: b, I, j, k, l)

Students are asked to install and configure at least 2 servers, such as FTP, HTTP server (web server), TELNET, NFS, NIS etc. All configurations must be done on Linux Platform

In Journal, they have to write installations, Configurations and Screenshots of server on which they worked.

Make the Official Repositories of any one above **server** on docker store (https://hub.docker.com/) and experiment.

References:-

i. Server World:- http://www.server-world.info/en/
ii. Yolinux :- http://www.yolinux.com/
iii. GUI based tool for server configuration Webmin http://www.webmin.com/index.html

10. Development of new Open Source Software or contribution to existing Open Source Software.
(Any small application other than Music Player or Calculator or Text Editor in java/python/perl/c/cpp/etc: Any One or New open source development).

(Submission by Individual or Group [I or G])

Objective: To contribute/introduce the open source software by understanding the GPL Licensing.

Outcome: Self learning/lifelong learning (PO: b, I, j, k, l)

a. Develop simple software for basic needs such as Calculator, editor etc.
Use following:-

i. Language:- C/C++, Python, Perl, PHP, Java, .net
ii. Version Control :- GIT or SVN
iii. Package Building:- debian or rpm
iv. Translation:- Marathi or Hindi
v. Documentation:- Use Mallard for your Help

b. Make the Official login on online repositories of open source projects with valid login by individual and ask group too. Take any above suitable open project from online open source project and add feature/option/GUI/remove error/modules/etc.
c. Appreciation mail may be received from main developer/introducer if your contribution is quality and remarkable.

References:-

i. http://teachingopensource.org/start-contributing-using-open-source-software/
ii. https://www.fossology.org/get-started
iii. http://foss2serve.org/index.php/Category:Projects
iv. http://www.hfoss.org/index.php/project_gallery
v. GIT version control Tutorial:- http://git-scm.com/documentation
vi. SVN :- http://michael-zamir.blogspot.in/2012/01/svn-tutorial.html
vii. Translation :-http://www.tuxamito.com/joomla/index.php/es/component/content/article/60-gettext-tutorial
viii. Using Malarad:- http://projectmallard.org/about/learn/tenminutes.html
ix. http://www.hfoss.org/index.php/project_gallery
x. http://www.shlomifish.org/philosophy/computers/open-source/how-to-start-contributing/tos-document.html

In Journal you have to write the process in Brief.

11. Docker container : An open source software development platform (any two) (Submission by Individual or Group [I or G])

Objective: To understand and use the docker virtualization as OSS.

Outcome: Self learning/lifelong learning (PO: b, I, j, k, l)

a) With the help of Docker/Container show the any one above Linux distros selected. (in assignment 1.)
b) 1. Create image/container of any FOSS tool and upload on Docker Hub.
   2. Pull images/containers from docker-hub: https://hub.docker.com/
c) (FOSS tool bug tracking tool, Project management tool, Version control system, CMS, python, java language running/compilation support, etc. and follow respective tool assignment)
d) Contribute/Introduce the docker/container to make the resource management easy and lighter.
e) Create IPC between two OS container. *** for TY UOS***
f) With the help of Docker-compose deploy the 'Wordpress' and 'Mysql' container and access the front end of 'Wordpress'
g) Docker image:
   A. Create a simple Hello-world python flask application and create the docker image of that Flask application.

   B. Run the docker container from recently created image and run that docker container to 5000 port of host system.

h) Create the 'nginx' container from 'nginx' image. And create the load balancing so that if we go to tha address of 'nginx' it can redirect it to the above created applications (Flask and Wordpress).

Note. Docker has to be installed first, to carry out docker based experiments. Prefer the Linux OS to do this assignment.

References:-

i. https://www.docker.com/
ii. https://opensource.com/resources/what-docker
iii. https://mobyproject.org/
iv. https://labs.play-with-docker.com/

Extra Resources docker/container learning:

1. play with docker
   http://labs.play-with-docker.com/

2. docker curriculum on github
   https://docker-curriculum.com/

3. awesome-docker on github

https://github.com/veggiemonk/awesome-docker

4. docker cheatsheet
   https://www.docker.com/sites/default/files/Docker_CheatSheet_08.09.2016_0.pdf

   https://github.com/wsargent/docker-cheat-sheet

5. basics of docker pdf used in workshop
   ftp://10.10.13.13/Basics%20of%20Docker.pdf

12. Find python kernel code and compile it or use any python library for any application. (Submission by Individual or Group [I])

Objective: To use the python open source ready module for application development.
Outcome: Self learning/lifelong learning (PO: b, I, j, k, l)

Example:

1. A Python library to write a table in various formats: CSV / Elasticsearch / HTML / JavaScript / JSON / Jupyter Notebo…

2. Python Driver for ArangoDB, a NoSQL graph database

3. A fast image processing library with low memory needs.

4. Any work on Concurrency and Parallelism

Libraries for concurrent and parallel execution.

- eventlet - Asynchronous framework with WSGI support.
- gevent - A coroutine-based Python networking library that uses greenlet.
- multiprocessing - (Python standard library) Process-based "threading" interface.
- threading - (Python standard library) Higher-level threading interface.
- Tomorrow - Magic decorator syntax for asynchronous code.
- uvloop - Ultra fast implementation of asyncio event loop on top of libuv.

Profiler

- line_profiler - Line-by-line profiling.
- memory_profiler - Monitor Memory usage of Python code.
- profiling - An interactive Python profiler.
- vprof - Visual Python profiler.

Game Development : *Awesome game development libraries.*

- Cocos2d - cocos2d is a framework for building 2D games, demos, and other graphical/interactive applications. It is based on pyglet.

- Panda3D - 3D game engine developed by Disney and maintained by Carnegie Mellon's Entertainment Technology Center. Written in C++, completely wrapped in Python.
- Pygame - Pygame is a set of Python modules designed for writing games.
- PyOgre - Python bindings for the Ogre 3D render engine, can be used for games, simulations, anything 3D.
- PyOpenGL - Python ctypes bindings for OpenGL and it's related APIs.
- PySDL2 - A ctypes based wrapper for the SDL2 library.
- RenPy - A Visual Novel engine.

Ref: https://github.com/vinta/awesome-python

13. Agile s/w engineering by using Tuleap, review board and gitea (tools of agile setup)
https://www.tuleap.org/1. Read and register for online use. (B and I)

- Offline use, setup Tuleap, review board and gitea setup on docker container?(E)
- Share you tool details setup, usage, videos link etc in assignment write-up. Take small final year project in this environment as case study for demonstration.
- This assignment is introduced in year 19-20 first time.

14. Learn Open source programming language GO (Compulsory for E)

- Write 3 suitable programs using GO language.
- Compare GO language with functional and procedural languages.
- Enlist the features of GO language
- Commands and compiler, debuggers of GO.
- Applications of GO language
- Put programs (with statements) in write-up with compilation steps details and upload.

15. Bonus Assignments.

15.1 Create a poster by individual for a foss tool, using dia online drawing tool. (for 2 additional bonus mark in ise) Use Flowchart Maker & Online Diagram Software: https://www.draw.io/

Uses of tool, Describe working diagrams/steps, information of commands, etc. in poster. Give links of good ref site/videos.

Exported SVG file format and Upload this entire folder one zipped file on schoology.

15.2 Emac editor experience for coding, documentation, indentation, foss std/Google std coding in languages (1 mark bonus)

Experiment Emac editor on Linux/ windows for coding, documentation, indentation, foss std/Google std coding in languages like c,cpp, python, java, latex, etc.

In word file upload

1. Give detail/steps of emac editor installation and packages of coding, documentation, indentation, foss std/Google standard d coding.
2. Explain you experience of coding with Emac editor.
3. Compare Emac with eclipse IDE.

4. Give important link/ reference /videos of Emac editor.

15.3 FOSS HacktoberFest Pull requests can be made in any GitHub-hosted repositories/projects (Optional to assignment 10)

This is Optional assignment to assignment 10. Do any one at least.

Visit for this site before start and reads first page carefully.

Every year October is FOSS month.....hence this is FOSS contribution initiatives.

https://hacktoberfest.digitalocean.com/

Steps.

1. Create account on above link.
2. Make 4 valid Pull Requests on Github between 1st -31st October.
3. Post the screenshot of your Hacktoberfest profile and screenshot of Github Profile on Schoology. (In write-up of this assignment)
4. Give details of all 4 Pull Requests in write-up.
5. Also attach the screenshot of email in write-up.

15.4 (Extra ISE bonus)Sugar is an activity-focused, free/libre open-source software learning platform for children.

https://sugarlabs.org/

Sugar is an activity-focused, free/libre open-source software learning platform for children. Collaboration, reflection, and discovery are integrated directly into the user interface. Through Sugar's clarity of design, children and teachers have the opportunity to use computers on their own terms. Students can reshape, reinvent, and reapply both software and content into powerful learning activities. Sugar's focus on sharing, criticism, and exploration is grounded in the culture of free software (FOSS)

15.5 Create Video any one FOSS tool liked by you (bonus 1 mark)
Upload Video on you tube and give YouTube link here

15.6 Discussion on all assignments (active involvement with technical content will bonus 1 mark in ise) Put the good url/website pdf link, how to do, video links here for other help on assignments. (active involvement with technical content will bonus 1 mark in ise)

Note:-

i. All assignments first need to write in word soft form as per format of word (attached with assignment list). Finally, at the end of all assignments, merge all assignments in the form of journal using word Template format or latex template (is given on schoology). Final well formatted (English checked/plagiarism checked /reference/ page no/ etc) journal expected at the end of course for getting journal marks.
ii. Submit all assignments to ***schoology.com*** on time as per instructions.
iii. See ISE plan for marks allotments.

MANDAR KAMBLE
(2020BTEIT00004)

Assignment 1

Demonstration of Linux Distributions (distros) and their purpose with comparisons.

Operating system : Fedora

Various versions of fedora with code name

- Fedora Linux 18 (spherical cow)
- Fedora Linux 21 (Twenty One)
- The current release is **Fedora 38**, which was released on 18 April 2023.

Default desktop GUI of Fedora

The default desktop environment of Fedora is **GNOME**, but if you prefer an alternative desktop environment such as KDE Plasma Desktop or Xfce, you can download a spin for your preferred desktop environment and use that to install Fedora, pre-configured for the desktop environment of your choice.

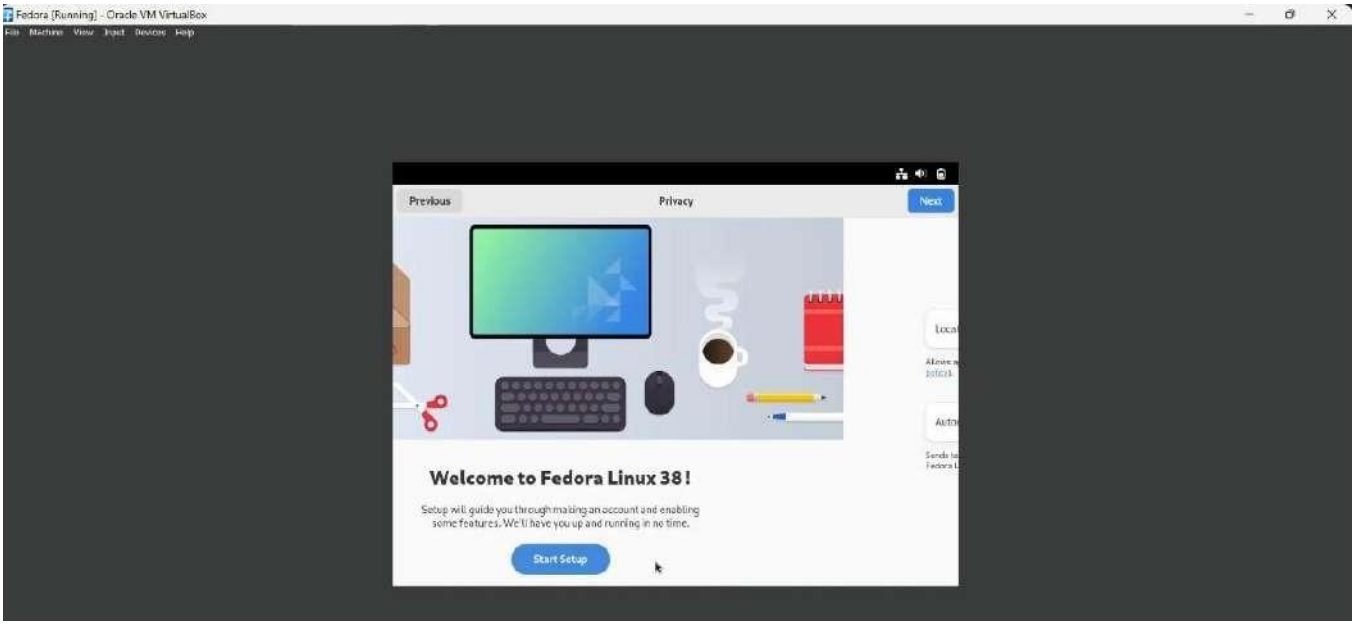
Main purpose of Fedora

It is sponsored by Red Hat. It is designed as a secure operating system for the general-purpose. Fedora operating system offers a suite of virus protection, system tools, office productivity services, media playback, and other desktop application.

Package management of Fedora

DNF is a software package manager that installs, updates, and removes packages on Fedora and is the successor to YUM (Yellow-Dog Updater Modified). DNF makes it easy to maintain packages by automatically checking for dependencies and determines the actions required to install packages. This method eliminates the need to manually install or update the package, and its dependencies, using the rpm command. DNF is now the default software package management tool in Fedora.

Screenshots of that distros



Compare package managers

DNF	APT
works with .rpm package format	works with .deb package format
dnf is the front-end of RPM	apt is the front end of DPKG
dnf updates the repo lists automatically	apt update gets all information from configured source
dnf is used in RHEL, Fedora, CentOS, and other derivatives pf RHEL	apt is used in Debian and all its derivatives like Ubuntu, Knoppix, etc.
can download and install from URLs directly	cannot download and install from URLs directly, it needs .deb packages
doesn’t support one-click installs	supports one-click install
dnf remove <software name>	apt remove <software name>
dnf upgrade	apt upgrade

dnf was first introduced in Fedora in the year **2013**

first stable version of apt was released in the year **2014**

Pros/cons of fedora

Advantages of Fedora Operating System

1. Fedora OS is a very reliable and stable operating system.
2. It enhances the security in this operating system.
3. It offers many graphical tools.
4. This operating system updates automatically.
5. This OS supports many file format.
6. It provides unique security features.

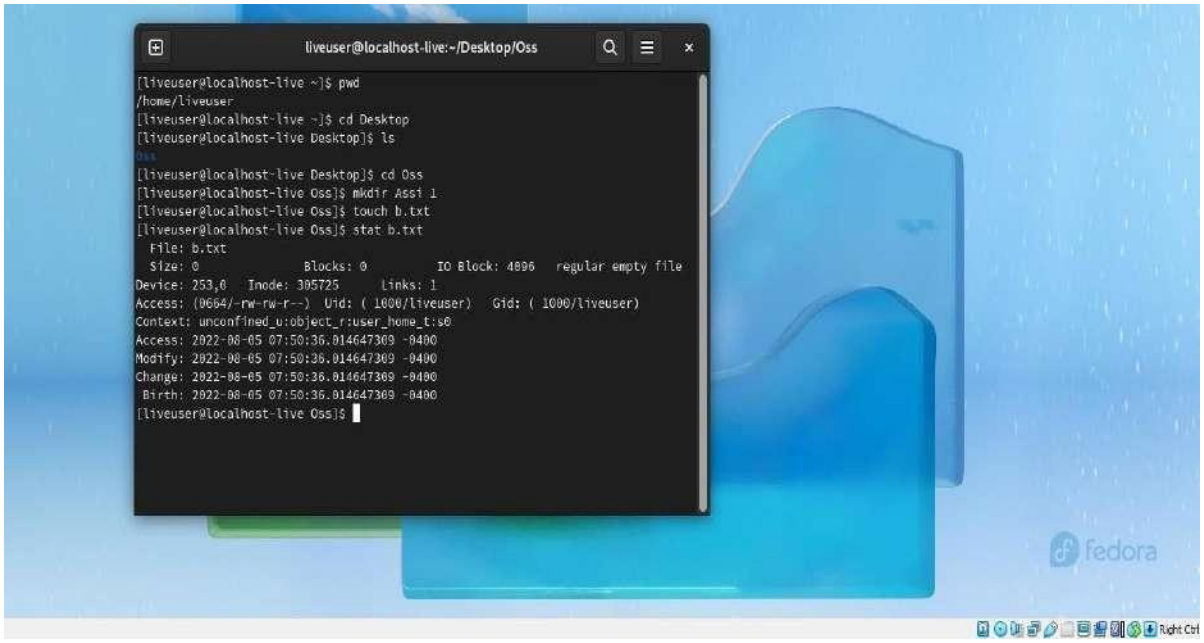
Disadvantages of Fedora Operating System

1. It requires a long time to set up.
2. It requires additional software tools for the server.
3. Fedora has its own server, so we can't work on another server in real-time.

Which one is better for development and why?

fedora is smart auto-configs and various updated packages; that’s why it is the best Linux distro for programmers.
Majorly its focuses on the new technology integration, innovation, and focusing.This operating system is available in five different editions, Fedora workstation, Fedora server, fedora coreOS, Fedora IoT, Fedora Silverblue each of which serves a specific role. These features makes it better for development and programmers

Explorer any top 10 commands of that distro on command prompt.



Operating system : Debian

Various versions of that debian

Debian 1.1 (Buzz)
Debian 1.2 (Rex)
Debian 1.3 (Bo)
Debian 2.0 (Hamm)
Debian 2.1 (Slink)
Debian 2.2 (Potato)
Debian 3.0 (Woody)
Debian 3.1 (Sarge)
Debian 4.0 (Etch)
Debian 5.0 (Lenny)
Debian 6.0 (Squeeze)
Debian 7 (Wheezy)
Debian 8 (Jessie)
Debian 9 (Stretch)
Debian 10 (Buster)
Debian 11 (Bullseye)
Debian 12 (Bookworm)

Default desktop GUI of debian

The default desktop environment of Debian is **GNOME**, but if you prefer an alternative desktop environment such as KDE Plasma Desktop or Xfce, you can download a spin for your preferred desktop environment and use that to install Fedora, pre-configured for the desktop environment of your choice.

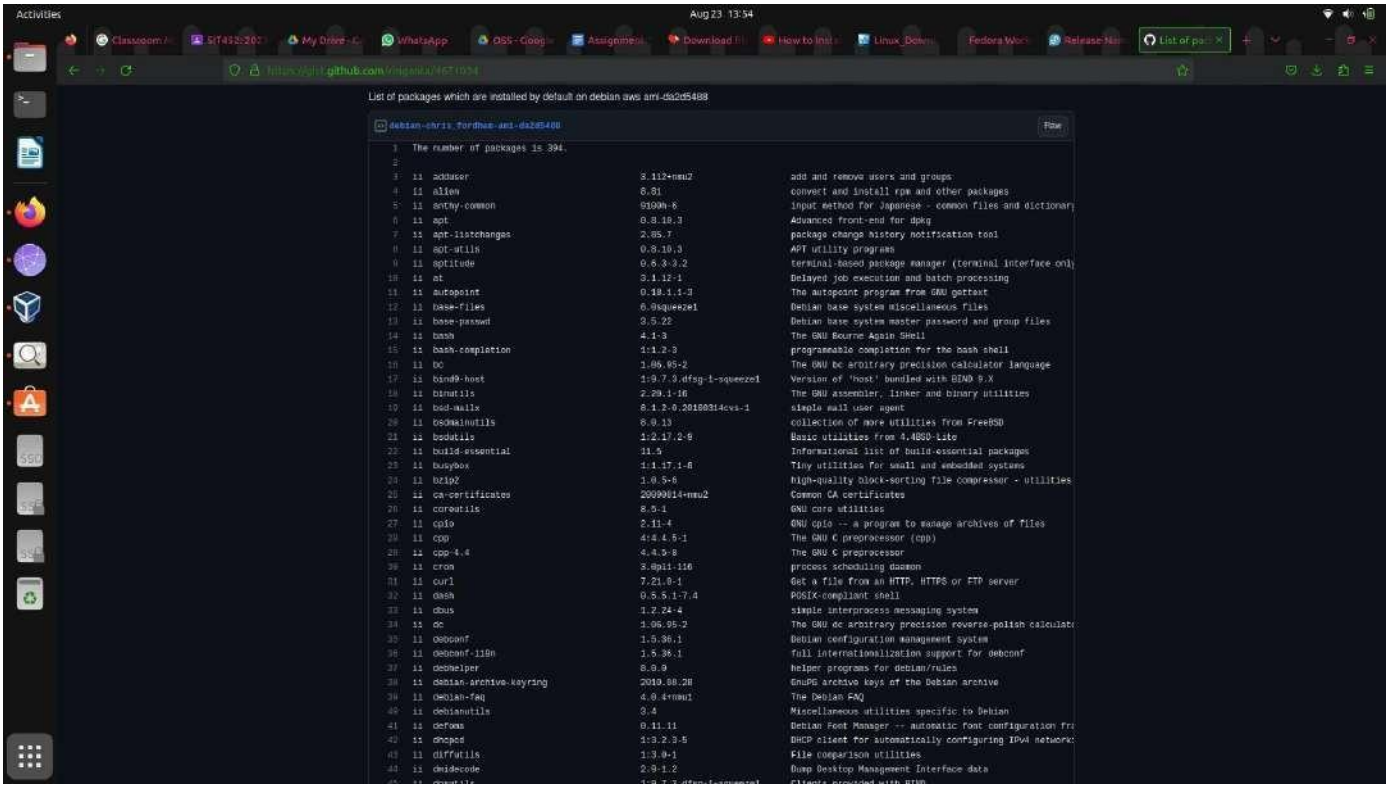
Main purpose of debian

The creation of Debian was sponsored by the FSF's GNU project for one year (November 1994 to November 1995). Debian was meant to be carefully and conscientiously put together, and to be maintained and supported with similar care. It started as a small, tightly-knit group of Free Software hackers, and gradually grew to become a large, well-organized community of developers and users.

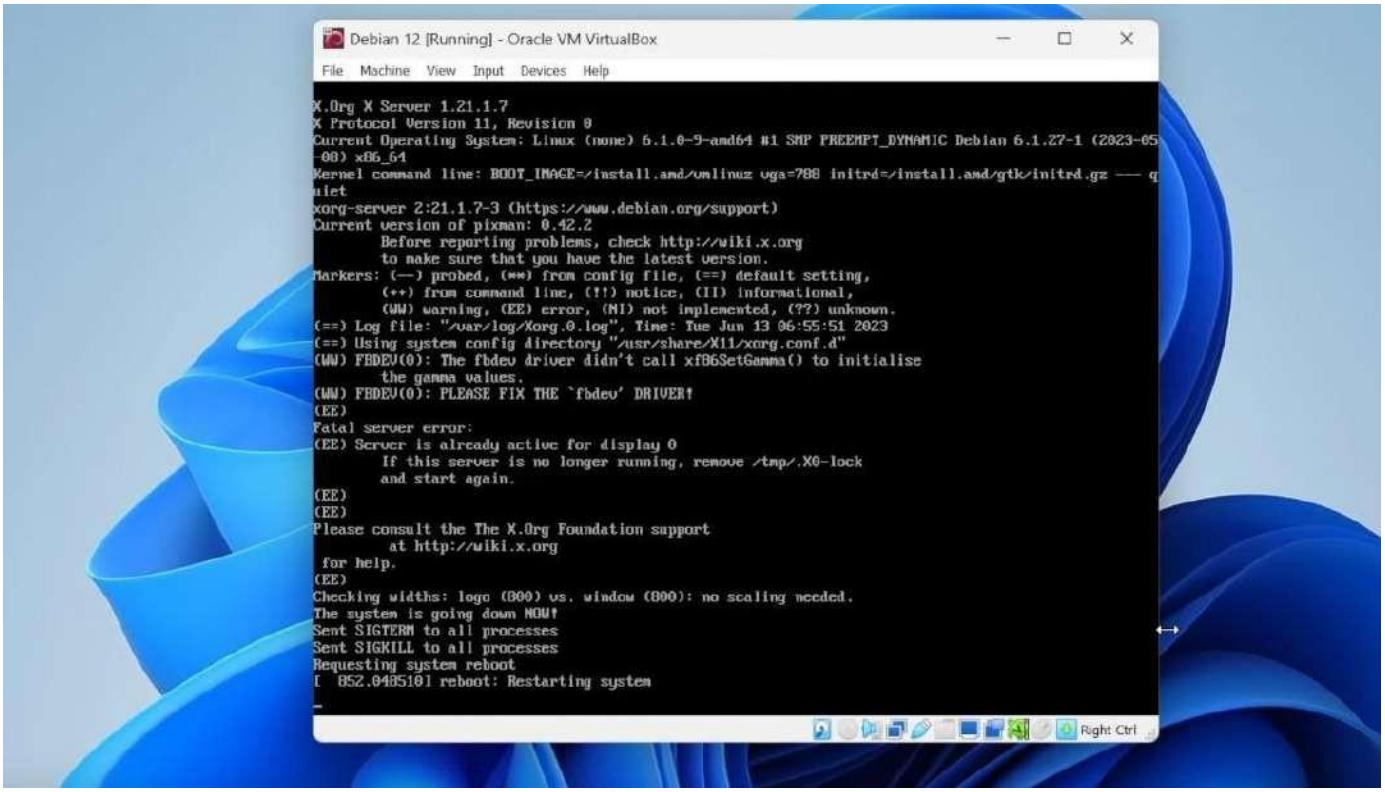
Package management of debian

The Apt (*Advanced Package Tool*) package management system is a set of tools to download, install, remove, upgrade, configure and manage Debian packages, and therefore all software installed on a Debian system.

List of Default Packages in debian



Screenshots of debian



Pros/cons of debian

Advantages:

1. Free and Open Source
2. An established linux versions
3. Supports different system architectures
4. Availability of free and proprietary software
5. Specific desktop and server use cases

Disadvantages:

1. A conservative operating system
2. Issues with the established GNU Principles

Which one is easy to use (for beginners) and why?

Fedora is less user friendly than Debian.The hardware support is not good as Debian. Fedora is stable but not as much as Debian. Fedora includes less than 20000 packages.

Debian has excellent hardware support. Debian is one of the popular distributions available. Debian is the most stable Linux based operating system. Debian comes with over 60000 packages.

Explorer any top 10 commands of debian on command prompt.

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Assignment 2

Title- Use of project management tools for project management.

Objective: To install, use and demonstrate the project management tool that is used in today's life of a software engineer.

About SLACK-

Slack is **a messaging app for business that connects people to the information that they need**. By bringing people together to work as one unified team, Slack transforms the way that organizations communicate.

Features-

1. **Makes Remote work Easier**
   TThe best part about this tool is that you can create different channels and add people within and on the other side of the company. Whatever information you share in the channel can be viewed by every member added to it. Slack channels are only for limited access.
2. **Integrating other tools**

   You can integrate the tools such as Zoom meetings, Google drive, Git-hub etc. in your slack team so the team members do not need to go anywhere but to come to slack. Slack provides shortcut command feature to perform operations on those apps, such as */zoom meeting [title]* will start zoom meeting automatically with the title provided in the square brackets.
3. **Easy and automated reminders**

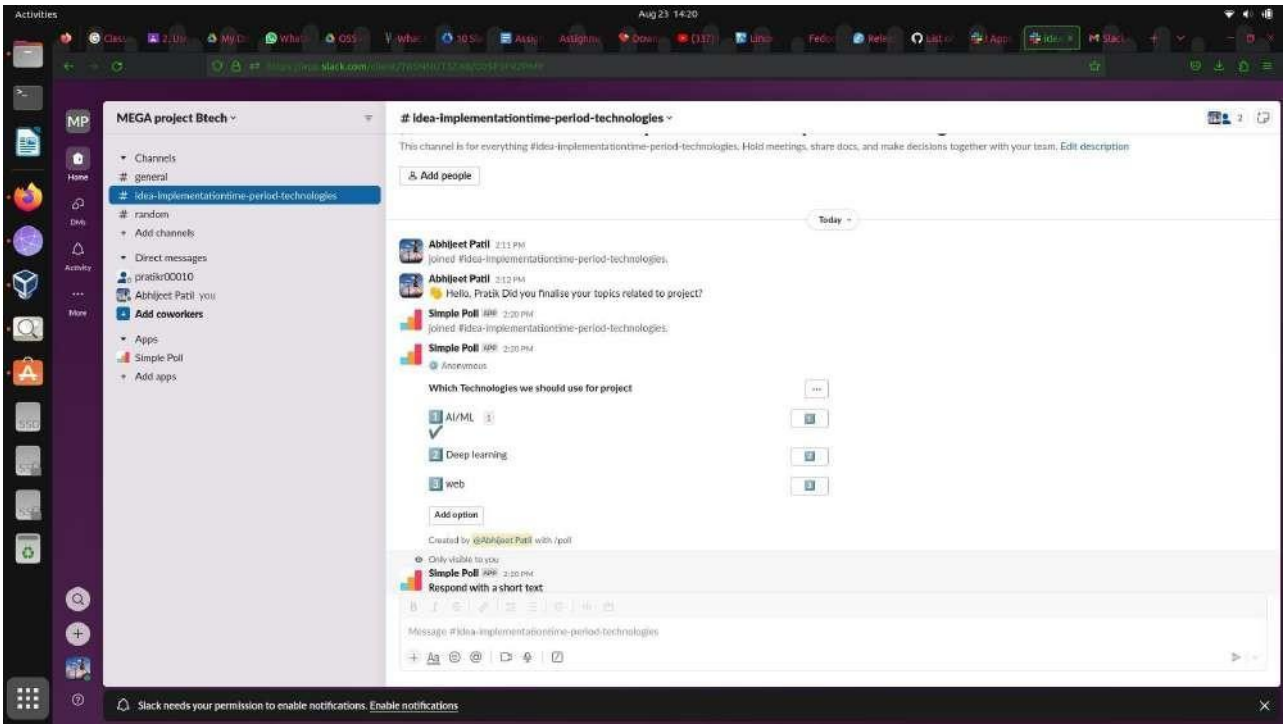
   Slack bot has a feature called reminder which can be activated using */remind* command and it will remind the user the task at the time provided.
4. **Task list management**
   Slack can integrate with tools like *Wunderlist and Todoist*. These integrations let you add items to your task list right from a Slack channel. The tasks can even be assigned priorities using which the user can perform function based on priority

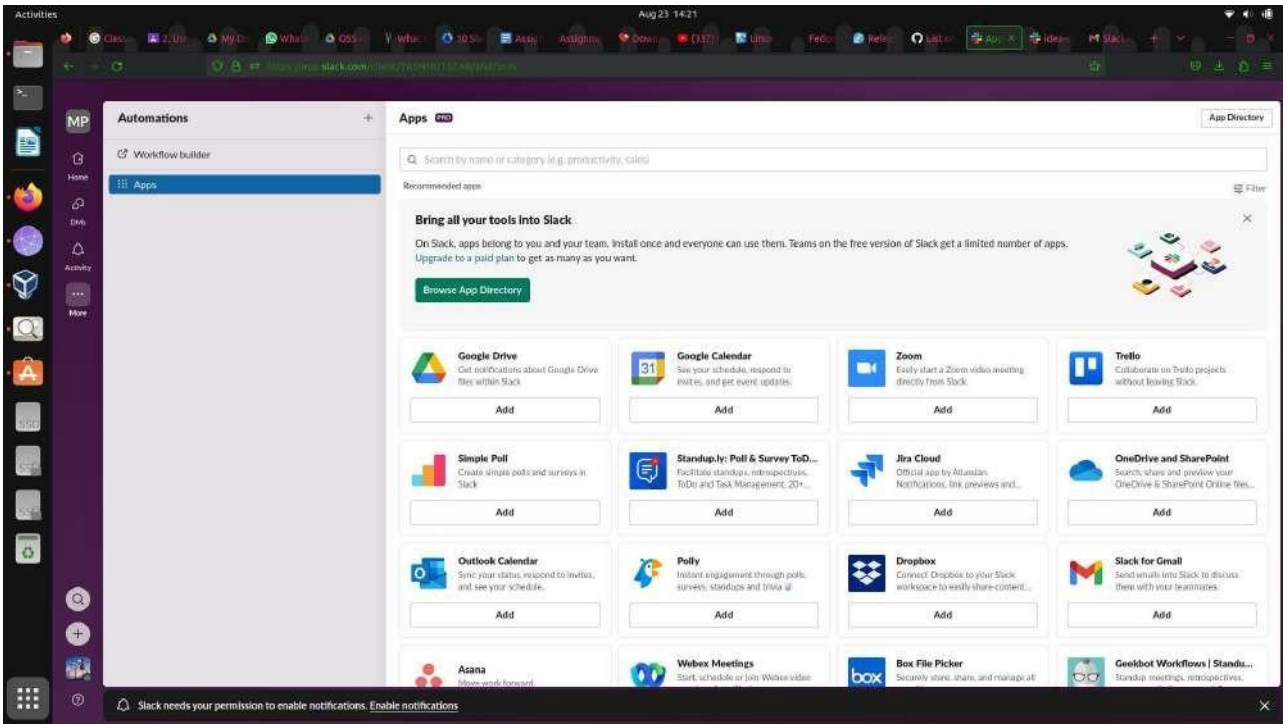
5. Custom shortcuts and commands

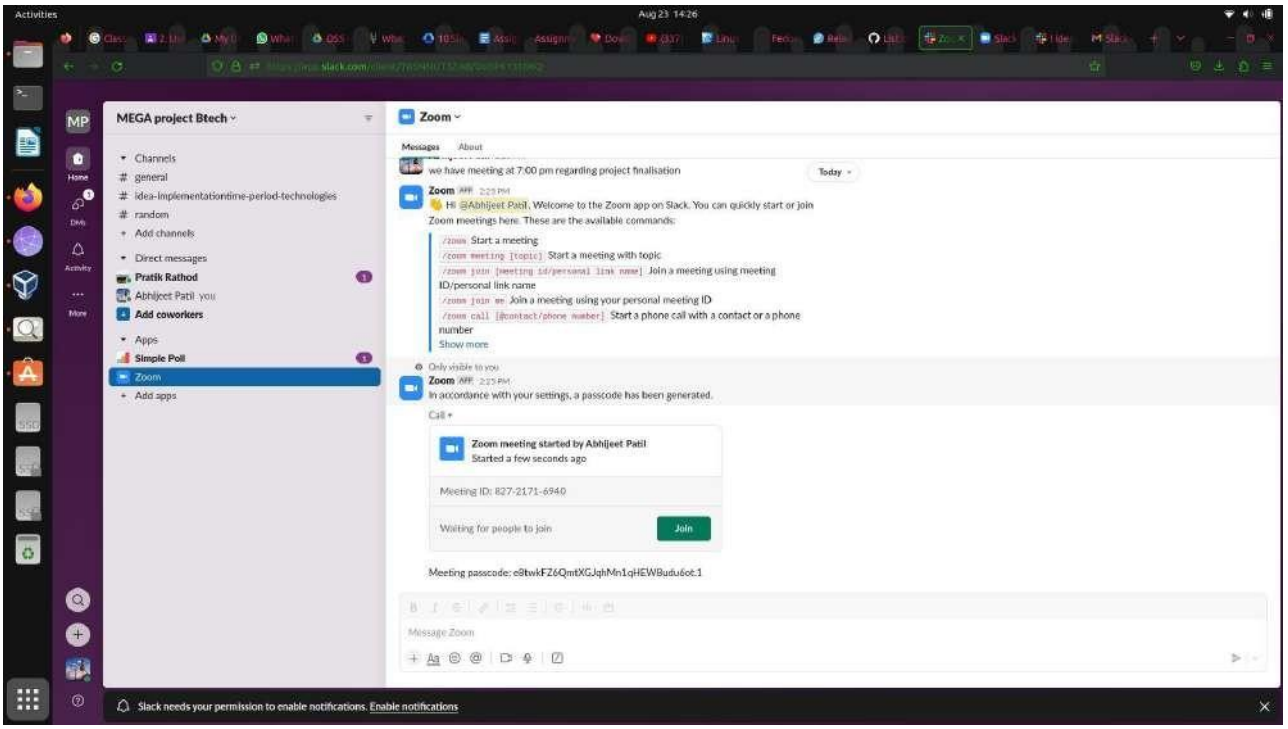
Slack provides a set of custom predefined set of commands which provides better user experience, for example,
/archive – Archives the current channel
/collapse – collapse all inline images and messages of current channel

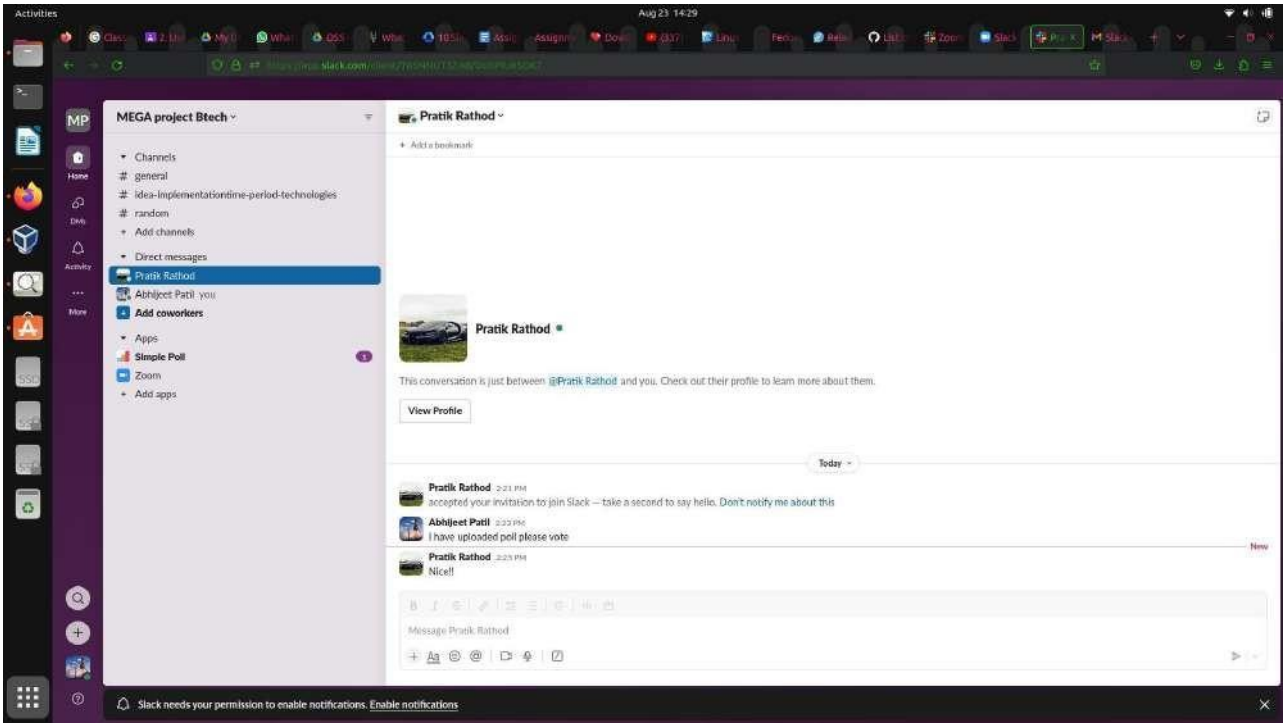
6. Voice and video calls

Through Slack, you can make calls to your work buddies or clients (if they are on Slack) from anywhere at any time. Just with a single click, you can get your work done efficiently by sharing your ideas and screen too.


Activities
Aug 23 14:20
MEGA project Btech
Channels
general
Idea-Implementationtime-period-technologies
random
Add channels
Direct messages
pratikr00010
Abhijeet Patil you
Add coworkers
Apps
Simple Poll
Add apps
Idea-Implementationtime-period-technologies
This channel is for everything #Idea-Implementationtime-period-technologies. Hold meetings, share docs, and make decisions together with your team. Edit description
Add people
Today
Abhijeet Patil 2:11 PM
joined #Idea-Implementationtime-period-technologies.
Abhijeet Patil 2:12 PM
Hello, Pratik Did you finalise your topics related to project?
Simple Poll APP 2:20 PM
joined #Idea-Implementationtime-period-technologies.
Simple Poll APP 2:20 PM
Anonymous
Which Technologies we should use for project
AI/ML 1
Deep learning
web
Add option
Created by @Abhijeet Patil with /poll
Only visible to you
Simple Poll APP 2:20 PM
Respond with a short text
Message #Idea-Implementationtime-period-technologies
Slack needs your permission to enable notifications. Enable notifications


Activities
Aug 23 14:21
Automations
Workflow builder
Apps
Apps
App Directory
Search by name or category (e.g. productivity, sales)
Recommended apps
Filter
Bring all your tools into Slack
On Slack, apps belong to you and your team. Install once and everyone can use them. Teams on the free version of Slack get a limited number of apps.
Upgrade to a paid plan to get as many as you want.
Browse App Directory
Google Drive
Get notifications about Google Drive files within Slack
Add
Google Calendar
See your schedule, respond to invites, and get event updates
Add
Zoom
Easily start a Zoom video meeting directly from Slack
Add
Trello
Collaborate on Trello projects without leaving Slack
Add
Simple Poll
Create simple polls and surveys in Slack
Add
Standup.ly: Poll & Survey ToD...
Facilitate standups, retrospectives, ToDo and Task Management, 20+...
Add
Jira Cloud
Official app by Atlassian. Notifications, link previews and...
Add
OneDrive and SharePoint
Search, share and preview your OneDrive & SharePoint Online files...
Add
Outlook Calendar
Sync your status, respond to invites, and see your schedule.
Add
Polly
Instant engagement through polls, surveys, standups and trivia
Add
Dropbox
Connect Dropbox to your Slack workspace to easily share content...
Add
Slack for Gmail
Send emails into Slack to discuss them with your teammates
Add
Asana
Move work forward.
Webex Meetings
Start, schedule or join Webex video
Box File Picker
Securely store, share, and manage all
Geekbot Workflows | Standu...
Standup meetings, retrospectives,
Slack needs your permission to enable notifications. Enable notifications


Activities
Aug 23 14:26
MEGA project Btech
Channels
general
idea-implementationtime-period-technologies
random
Add channels
Direct messages
Pratik Rathod
Abhijeet Patil you
Add coworkers
Apps
Simple Poll
Zoom
Add apps
Zoom
Messages
About
we have meeting at 7:00 pm regarding project finalisation
Today
Zoom APP 2:25 PM
Hi @Abhijeet Patil, Welcome to the Zoom app on Slack. You can quickly start or join Zoom meetings here. These are the available commands:
/zoom Start a meeting
/zoom meeting [topic] Start a meeting with topic
/zoom join [meeting id/personal link name] Join a meeting using meeting ID/personal link name
/zoom join me Join a meeting using your personal meeting ID
/zoom call [@contact/phone number] Start a phone call with a contact or a phone number
Show more
Only visible to you
Zoom APP 2:25 PM
In accordance with your settings, a passcode has been generated.
Call
Zoom meeting started by Abhijeet Patil
Started a few seconds ago
Meeting ID: 827-2171-6940
Waiting for people to join
Join
Meeting passcode: e8twkFZ6QmtXGJqhMn1qHEWBudu6ot.1
Message Zoom
Slack needs your permission to enable notifications. Enable notifications


Activities
Aug 23 14:29
MEGA project Btech
Channels
general
idea-implementationtime-period-technologies
random
Add channels
Direct messages
Pratik Rathod
Abhijeet Patil you
Add coworkers
Apps
Simple Poll
Zoom
Add apps
Pratik Rathod
Add a bookmark
Pratik Rathod
This conversation is just between @Pratik Rathod and you. Check out their profile to learn more about them.
View Profile
Today
Pratik Rathod 2:21 PM
accepted your invitation to join Slack — take a second to say hello. Don't notify me about this
Abhijeet Patil 2:23 PM
I have uploaded poll please vote
New
Pratik Rathod 2:25 PM
Nice!!
Message Pratik Rathod
Slack needs your permission to enable notifications. Enable notifications

About ASANA-

Asana is similar to other task and project management software which allow teams to organize, collaborate, plan, and execute tasks. It acts as a perfect companion to overcome chaos and meet deadlines. It is a web-based task management and collaboration tool which eliminates the email mess and brings all tasks together. Teams can use Asana to keep track of all tasks, collaborate with other team members, exchange related files, and more.

Features-

1. Multiple project views

   With Asana, users can view projects and manage tasks in several different ways, including Kanban boards, lists, calendars, portfolios, workloads, and timelines. Other project management tools on the market only offer one or two views, so it's great to see that Asana gives you every option you'd ever need. Each team member can manage tasks in a way that works best for them, enabling them to be as productive as possible.

2. Project management automation

   Asana makes it super easy to automate processes, repetitive tasks, and workflows that cross over into your other business tools. Setting up custom rules, triggers, and actions is easier than ever thanks to Asana's graphical workflow builder.

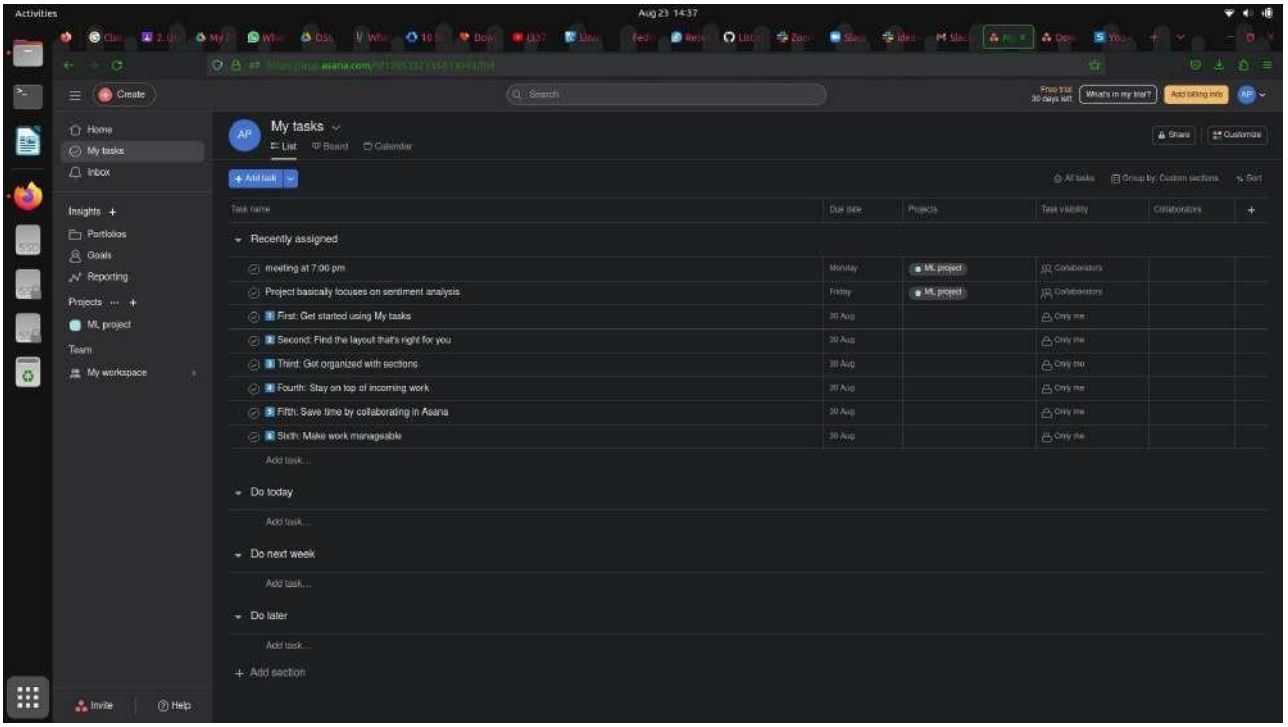
3. Team collaboration

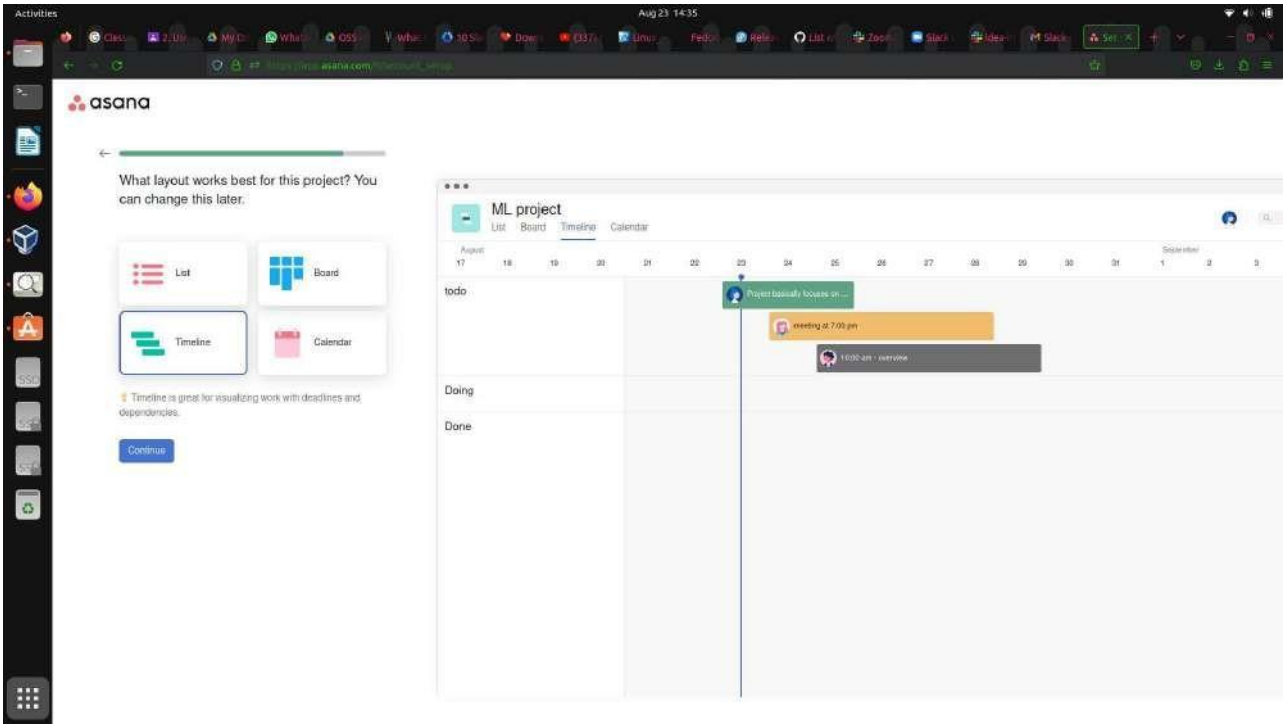
   Most of the project management tools we've tried don't offer enough collaboration tools, causing us to look elsewhere for software to fill in the gaps. However, Asana is one of the few that can act as a single source of

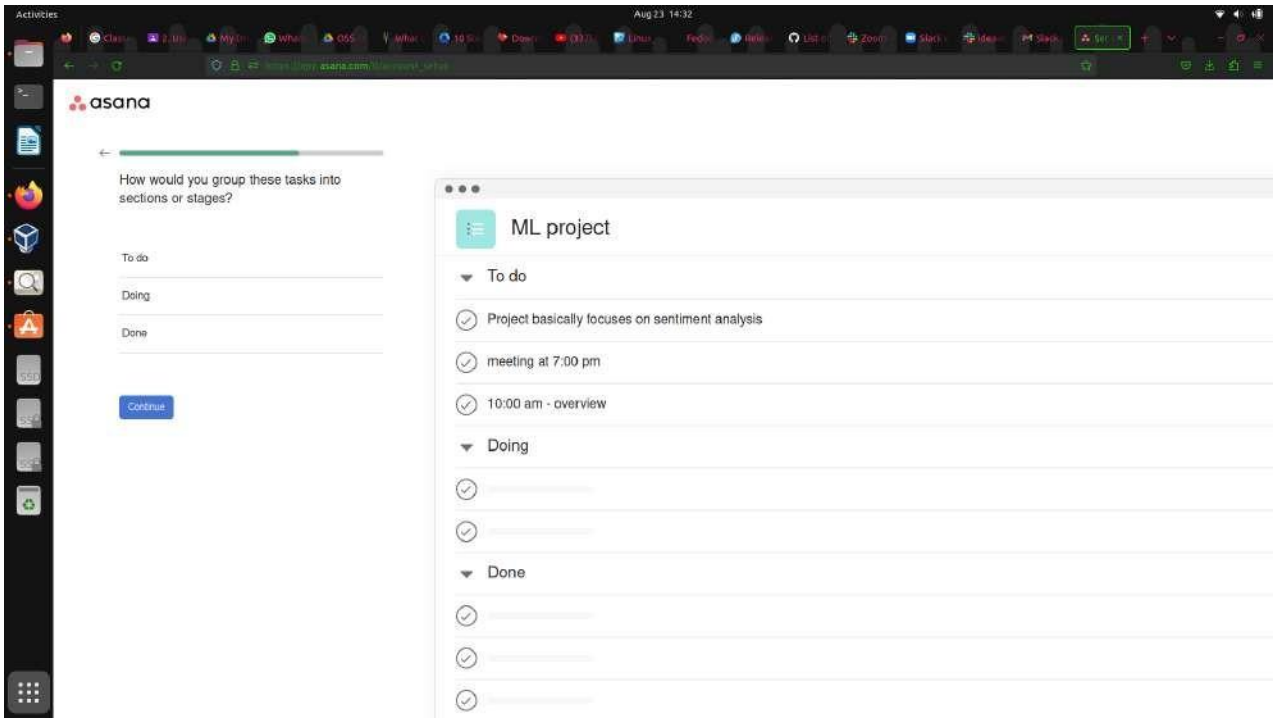
truth for file sharing PDFs, JPGs, Google docs, team communication, group communication, and more. Users can assign tasks to team members, create task dependencies, assign priorities, set due dates, adjust due dates, and chat back and forth (all within a single card so everything's centralized in one place)

4. Agile and Scrum support

   If you're a fan of agile project management, you'll be glad to hear that Asana is flexible enough to support the philosophy. From sprint planning, bug tracking, product launches, work requests, roadmaps, feedback, and tracking task iterations, you get everything you need to match how you do work rather than the other way around.


Activities
Aug 23 14:37
Create
Search
Home
My tasks
Inbox
Insights
Portfolios
Goals
Reporting
Projects
ML project
Team
My workspace
My tasks
List
Board
Calendar
Add task
Share
Customize
Task name
Due date
Projects
Task visibility
Collaborators
Recently assigned
meeting at 7:00 pm
Monday
ML project
Project basically focuses on sentiment analysis
Friday
ML project
First: Get started using My tasks
Second: Find the layout that's right for you
Third: Get organized with sections
Fourth: Stay on top of incoming work
Fifth: Save time by collaborating in Asana
Sixth: Make work manageable
Add task...
Do today
Add task...
Do next week
Add task...
Do later
Add task...
Add section
Invite
Help


Activities
Aug 23 14:35
asana
What layout works best for this project? You can change this later.
List
Board
Timeline
Calendar
Timeline is great for visualizing work with deadlines and dependencies.
Continue
ML project
List
Board
Timeline
Calendar
todo
Project basically focuses on ...
meeting at 7:00 pm
Doing
Done


Activities
Aug 23 14:32
asana
How would you group these tasks into sections or stages?
To do
Doing
Done
Continue
ML project
To do
Project basically focuses on sentiment analysis
meeting at 7:00 pm
10:00 am - overview
Doing
Done

References-

1. https://www.webdew.com/blog/features-of-slack
2. https://www.simplilearn.com/tutorials/asana-tutorial/what-is-asana- project-management-tool

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Assignment 3

Title - Use of Bug Tracking

Problem Statement : To install and demonstrate the use of various open source software‟s that are used in day to day life of software engineering.

Objectives: Students have to study at last 3 various open source tools / softwares that they uses and their day to day life, with their installation and configuration on their system

Theory- JIRA is a project management software . jira used for– bug tracking, issue tracking, and project management. Many businesses also use JIRA software in non-standard ways as a warehouse automation tool, document flow, expenses optimization, and others. The JIRA dashboard contains several useful functions and features which enable easy handling of issues. One of the most sought after agile project management solutions, JIRA has recently tweaked some of its products for all kinds of teams and organizations including IT, marketing, operations, finance, HR, legal and other departments.

Features Of Jira

1. Projects: They are used to organize and manage work within Jira. Each project contains a set of issues and can have its own custom fields, workflows, and permission schemes.
2. Issues: They are the primary unit of work in Jira. They represent tasks, bugs, and other work items that need tracking and managing. Issues can be assigned to individuals or teams with various attributes like priority, status,

and due date.

3. Workflows: They define the lifecycle of an issue, including its status and transitions. Jira has a default workflow, but it can also be customized to match the needs of a specific project.
4. Boards: They are used to visualize and manage the progress of issues in a project. Jira has three types of boards: Scrum boards, Kanban boards, and Agile boards.
5. Sprints: Sprints are time-boxed periods of work in Scrum methodology. Sprints help teams to focus on a specific set of tasks and deliverables within a fixed timeframe.
6. Epics: Epics are large work items that are broken down into smaller issues. They provide a high-level view of the work that needs to be done and help teams to prioritize their work.
7. Versions: Versions are used to track and manage releases of a project. They represent a specific set of features or fixes that are ready to be shipped to users.
8. Dashboards: Dashboards provide a customizable view of project information, such as status, progress, and key metrics. Dashboards can be shared with team members or stakeholders to provide visibility into the project.

-

System Requirements

Server Hardware Requirement

1. Server type- The server can be a shared public web server or a dedicated co- located box.
2. CPU and Memory- Multi-core cpu with 2.5 Ghz
3. Disk- Minimum 10 GB of free space

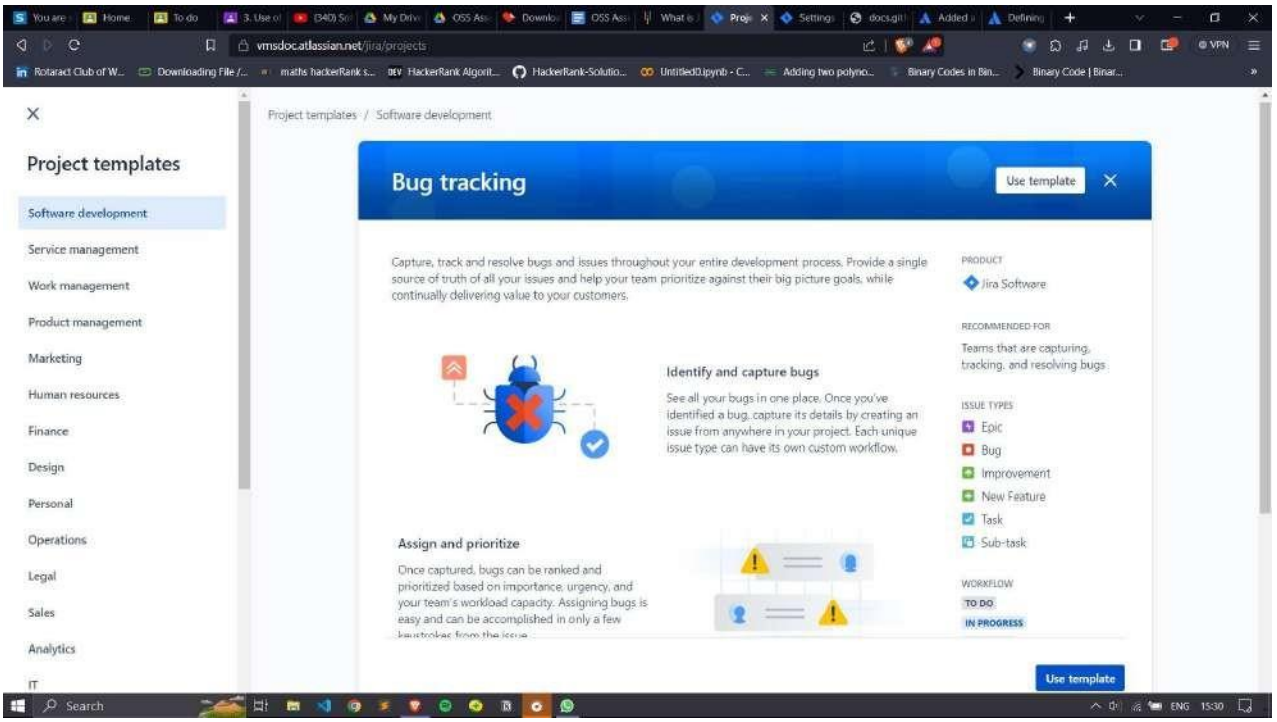
Server Software Requirements

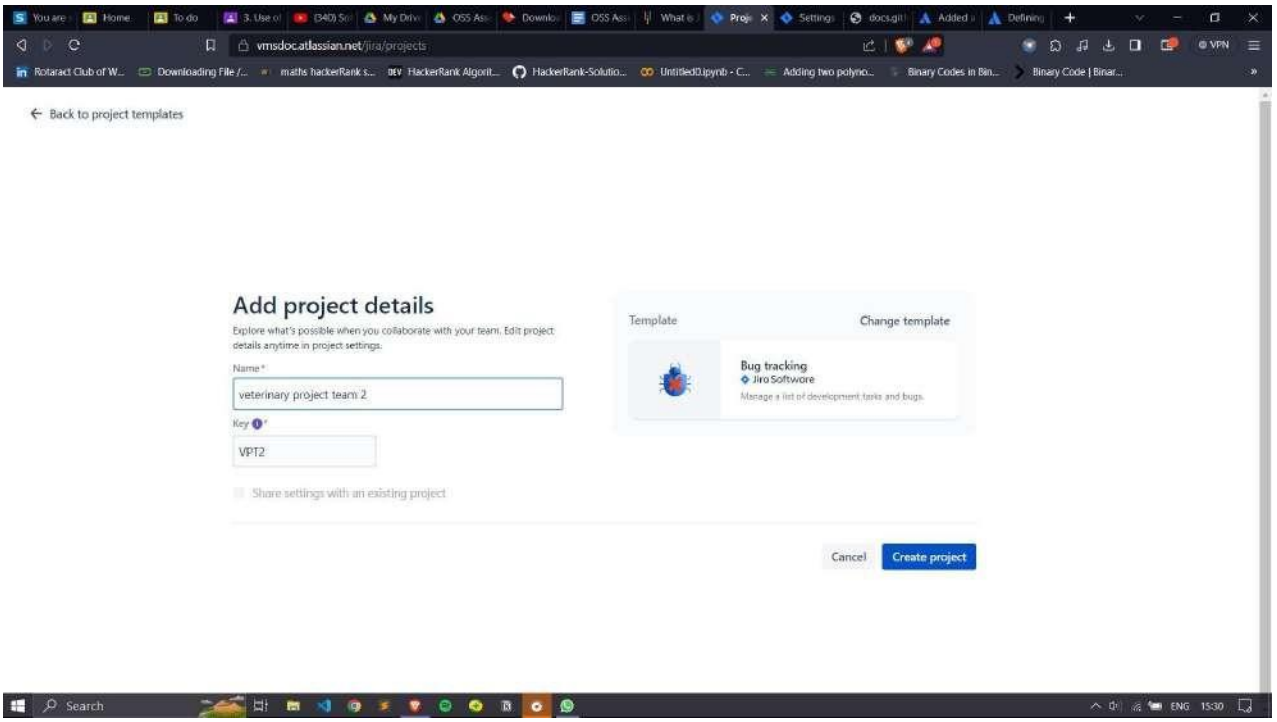
Operating System - windows ,max ,linux
Database - mysql,postgresql,oracle

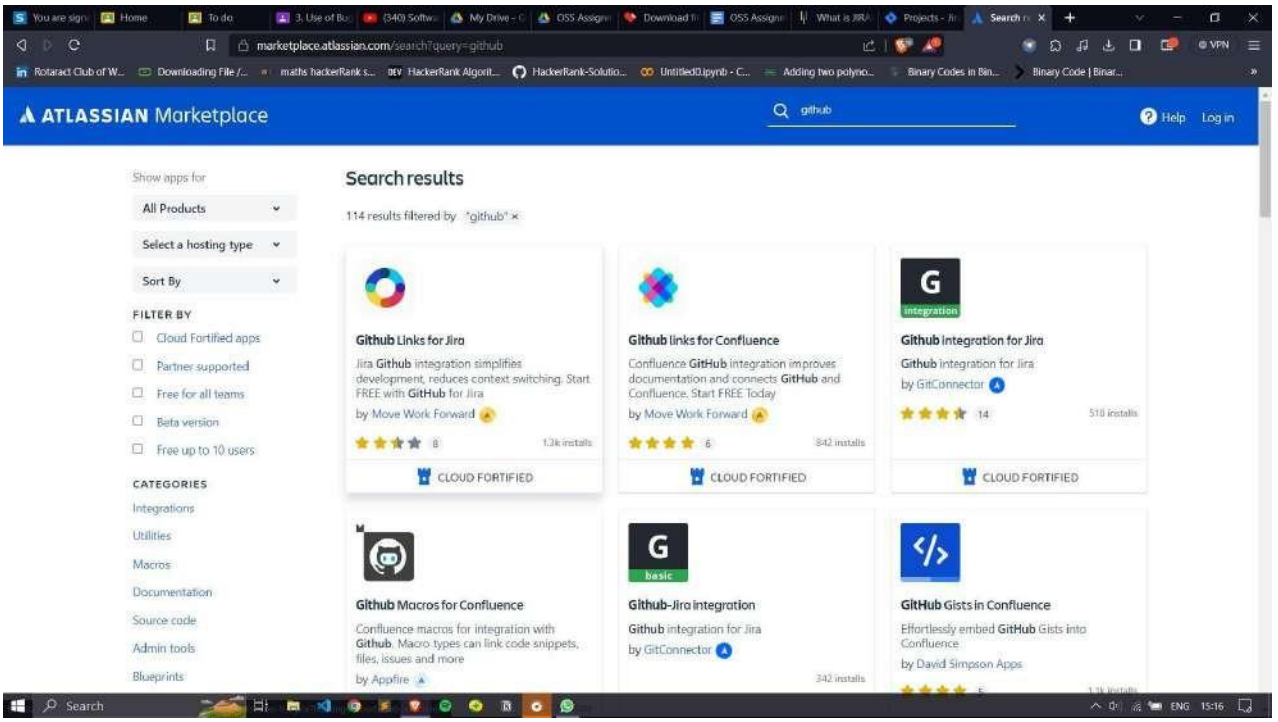
Key steps In finding Bug:
1.Summary
2.Description
3.Expected
Result
4.Actual
Result
5.
severit
y
6.priori
ty
7. Logs/Attachment
8. Sprint
9. Label
10. Types of the bug

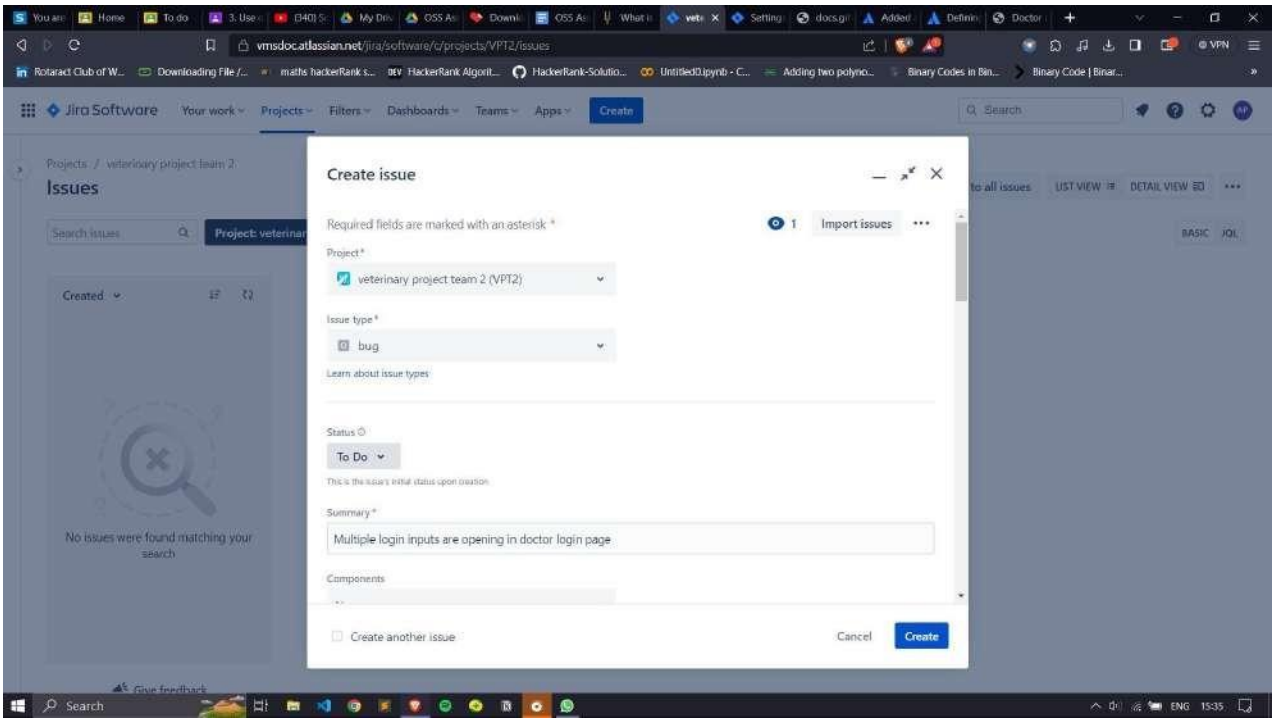
steps:

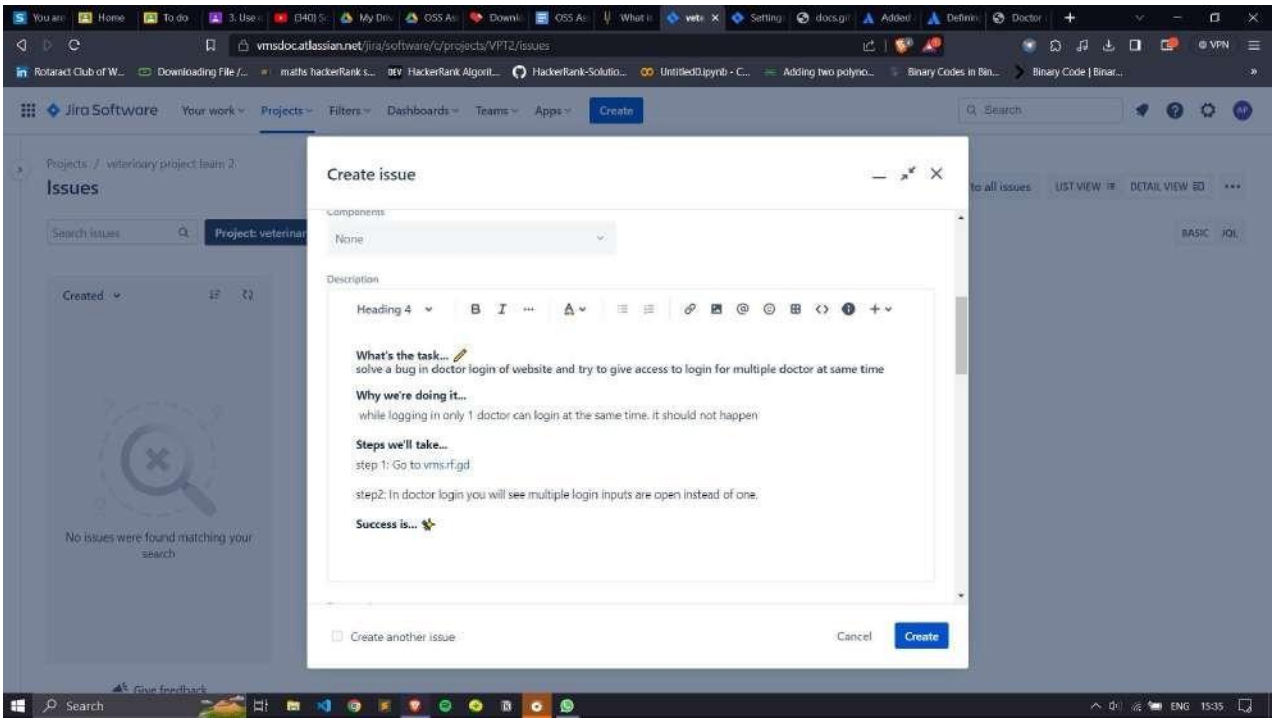
1. choosing a project to find a bug
2. Link your Github Account to jira if necessary
3. create Bug issue for your project
4. Add description about the issue , give the type of issues , place in project where it soccuring etc.
5. give the system that you were using during this bug occurrence
6. Assign a bug to a particular person by mentioning the name .
7. Bug Assigned .
8. Check Dashboard for further update

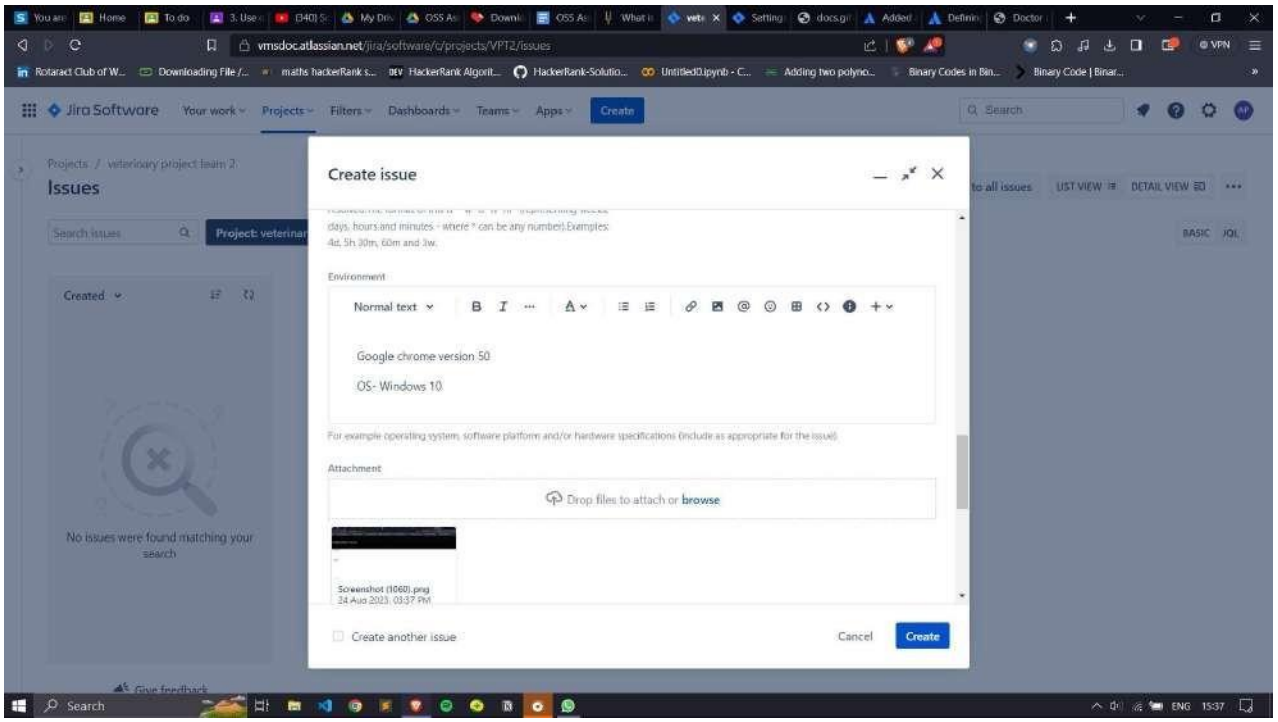

vmsdoc.atlassian.net/jira/projects
Project templates / Software development
Project templates
Software development
Service management
Work management
Product management
Marketing
Human resources
Finance
Design
Personal
Operations
Legal
Sales
Analytics
IT
Bug tracking
Use template
Capture, track and resolve bugs and issues throughout your entire development process. Provide a single source of truth of all your issues and help your team prioritize against their big picture goals, while continually delivering value to your customers.
PRODUCT
Jira Software
RECOMMENDED FOR
Teams that are capturing, tracking, and resolving bugs
Identify and capture bugs
See all your bugs in one place. Once you've identified a bug, capture its details by creating an issue from anywhere in your project. Each unique issue type can have its own custom workflow.
ISSUE TYPES
Epic
Bug
Improvement
New Feature
Task
Sub-task
Assign and prioritize
Once captured, bugs can be ranked and prioritized based on importance, urgency, and your team's workload capacity. Assigning bugs is easy and can be accomplished in only a few
WORKFLOW
TO DO
IN PROGRESS
Use template
Search
ENG 15:30

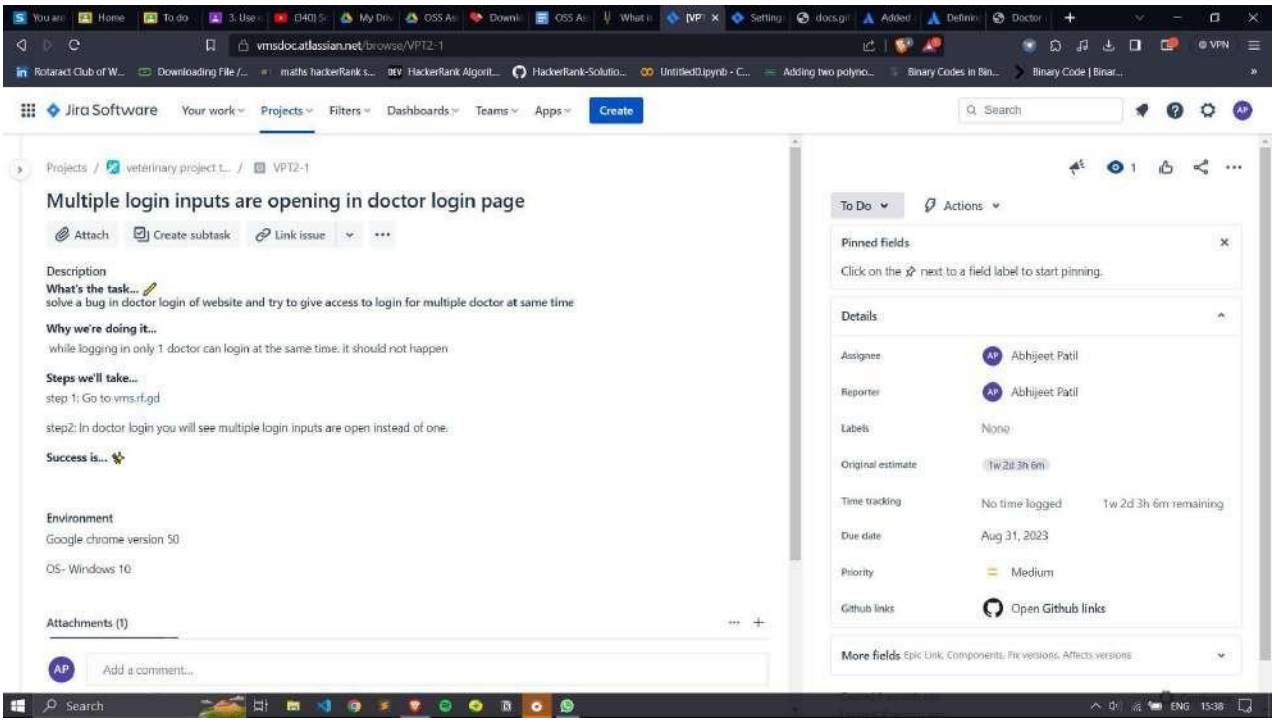

vmsdoc.atlassian.net/jira/projects
Back to project templates
Add project details
Explore what's possible when you collaborate with your team. Edit project details anytime in project settings.
Name *
veterinary project team 2
Key *
VPT2
Share settings with an existing project
Template
Change template
Bug tracking
Jira Software
Manage a list of development tasks and bugs.
Cancel
Create project
Search
ENG 15:30

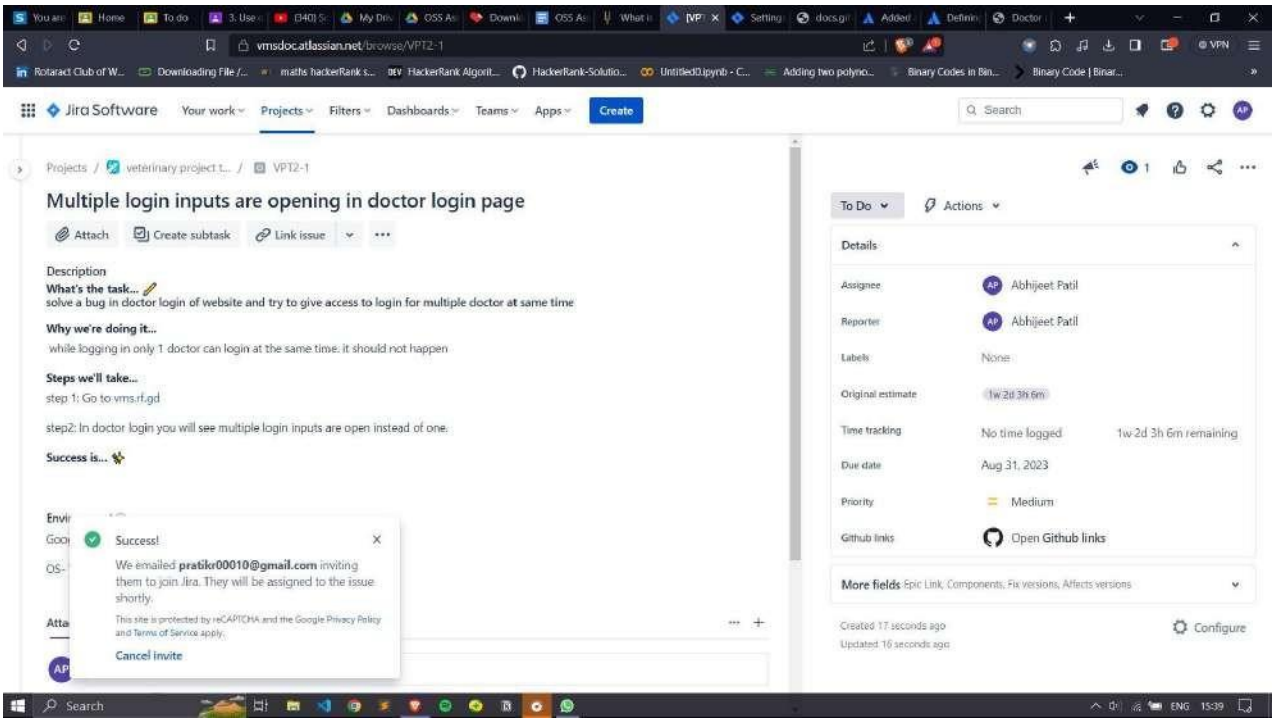

ATLASSIAN Marketplace
github
Help
Log in
Show apps for
All Products
Select a hosting type
Sort By
FILTER BY
Cloud Fortified apps
Partner supported
Free for all teams
Beta version
Free up to 10 users
CATEGORIES
Integrations
Utilities
Macros
Documentation
Source code
Admin tools
Blueprints
Search results
114 results filtered by "github"
Github Links for Jira
Jira Github integration simplifies development, reduces context switching. Start FREE with GitHub for Jira
by Move Work Forward
CLOUD FORTIFIED
Github links for Confluence
Confluence GitHub integration improves documentation and connects GitHub and Confluence. Start FREE Today
by Move Work Forward
CLOUD FORTIFIED
Github integration for Jira
Github integration for Jira
by GitConnector
CLOUD FORTIFIED
Github Macros for Confluence
Confluence macros for integration with Github. Macro types can link code snippets, files, issues and more
by Appfire
Github-Jira integration
Github integration for Jira
by GitConnector
GitHub Gists in Confluence
Effortlessly embed GitHub Gists into Confluence
by David Simpson Apps


vmsdoc.atlassian.net/jira/software/c/projects/VPT2/issues
Jira Software
Your work
Projects
Filters
Dashboards
Teams
Apps
Create
Issues
Create issue
Required fields are marked with an asterisk *
Import issues
Project *
veterinary project team 2 (VPT2)
Issue type *
bug
Learn about issue types
Status
To Do
Summary *
Multiple login inputs are opening in doctor login page
Components
Create another issue
Cancel
Create
No issues were found matching your search


vmsdoc.atlassian.net/jira/software/c/projects/VPT2/issues
Jira Software
Your work
Projects
Filters
Dashboards
Teams
Apps
Create
Search
Projects / veterinary project team 2
Issues
Create issue
None
Description
Heading 4
What's the task...
solve a bug in doctor login of website and try to give access to login for multiple doctor at same time
Why we're doing it...
while logging in only 1 doctor can login at the same time. it should not happen
Steps we'll take...
step 1: Go to vms.rf.gd
step2: In doctor login you will see multiple login inputs are open instead of one.
Success is...
Create another issue
Cancel
Create
Created
No issues were found matching your search
Give feedback
Search
ENG
15:35


vmsdoc.atlassian.net/jira/software/c/projects/VPT2/issues
Jira Software
Your work
Projects
Filters
Dashboards
Teams
Apps
Create
Search
Projects / veterinary project team 2
Issues
Create issue
days, hours and minutes - where * can be any number).Examples:
4d, 5h 30m, 60m and 3w.
Environment
Normal text
Google chrome version 50
OS- Windows 10
For example operating system, software platform and/or hardware specifications (include as appropriate for the issue).
Attachment
Drop files to attach or browse
Screenshot (1060).png
24 Aug 2023, 03:37 PM
Create another issue
Cancel
Create
Created
No issues were found matching your search
Give feedback
Search
ENG
15:37


vmsdoc.atlassian.net/browse/VPT2-1
Jira Software
Your work
Projects
Filters
Dashboards
Teams
Apps
Create
Search
Projects / veterinary project t... / VPT2-1
Multiple login inputs are opening in doctor login page
Attach
Create subtask
Link issue
Description
What's the task...
solve a bug in doctor login of website and try to give access to login for multiple doctor at same time
Why we're doing it...
while logging in only 1 doctor can login at the same time. it should not happen
Steps we'll take...
step 1: Go to vms.rf.gd
step2: In doctor login you will see multiple login inputs are open instead of one.
Success is...
Environment
Google chrome version 50
OS- Windows 10
Attachments (1)
Add a comment...
To Do
Actions
Pinned fields
Click on the next to a field label to start pinning.
Details
Assignee
Abhijeet Patil
Reporter
Abhijeet Patil
Labels
None
Original estimate
1w 2d 3h 6m
Time tracking
No time logged
1w 2d 3h 6m remaining
Due date
Aug 31, 2023
Priority
Medium
Github links
Open Github links
More fields
Epic Link, Components, Fix versions, Affects versions


vmsdoc.atlassian.net/browse/VPT2-1
Jira Software
Your work
Projects
Filters
Dashboards
Teams
Apps
Create
Search
Projects / veterinary project t... / VPT2-1
Multiple login inputs are opening in doctor login page
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What's the task...
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Why we're doing it...
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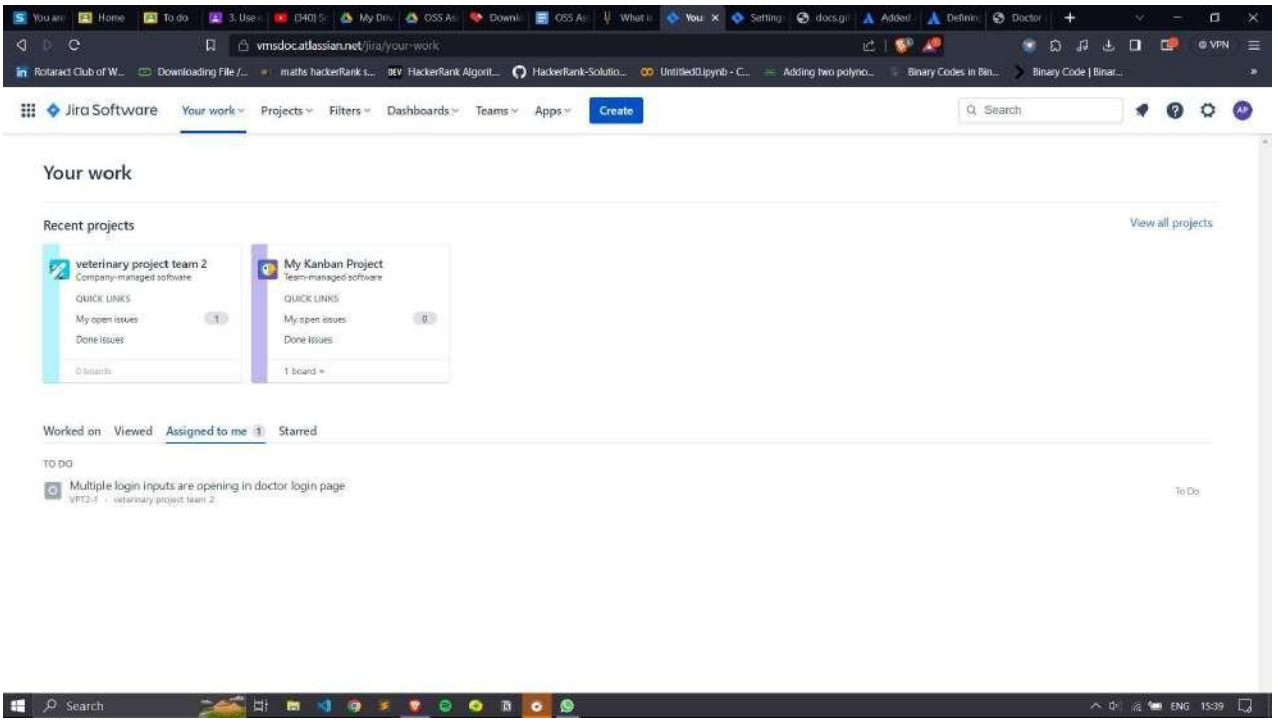
Steps we'll take...
step 1: Go to vms.rf.gd
step2: In doctor login you will see multiple login inputs are open instead of one.
Success is...
Success!
We emailed pratikr00010@gmail.com inviting them to join Jira. They will be assigned to the issue shortly.
This site is protected by reCAPTCHA and the Google Privacy Policy and Terms of Service apply.
Cancel invite
To Do
Actions
Details
Assignee
Abhijeet Patil
Reporter
Abhijeet Patil
Labels
None
Original estimate
1w 2d 3h 6m
Time tracking
No time logged
1w 2d 3h 6m remaining
Due date
Aug 31, 2023
Priority
Medium
Github links
Open Github links
More fields
Epic Link, Components, Fix versions, Affects versions
Created 17 seconds ago
Updated 16 seconds ago
Configure


vmsdoc.atlassian.net/jira/your-work
Jira Software
Your work
Projects
Filters
Dashboards
Teams
Apps
Create
Search
Your work
Recent projects
View all projects
veterinary project team 2
Company-managed software
QUICK LINKS
My open issues
Done issues
My Kanban Project
Team-managed software
QUICK LINKS
My open issues
Done issues
1 board
Worked on
Viewed
Assigned to me
Starred
TO DO
Multiple login inputs are opening in doctor login page
To Do
Search
ENG
15:39

Various versions of Jira

Collapsed**9.10.1**Jira Server 9.10.12023-08-02Minor bugfix release
Collapsed**9.10.0**Jira Server 9.10.0 - 9.10.12023-07-11 Minor bugfix release
Collapsed**9.9.1**Jira Server 9.9.12023-06-29Minor bugfix release
Collapsed**9.9.0**Jira Server 9.9.02023-06-01Minor bugfix release
Collapsed**9.8.1**Jira Server 9.8.12023-05-12Minorbugfix release
Collapsed**9.8.0**Jira Server 9.8.02023-04-25Minor bugfix release
Collapsed**9.7.1**Jira Server 9.7.12023-04-13Minor bugfix release

Compare Tools

JIRA Vs Mantis

JIRA is the tracker for teams planning & building great products. Millions choose JIRA to capture & organize issues, assign work, & follow team activity.

Whereas,

MantisBT is an open source, bug and issue tracking software written in PHP, and under GNU protocol, facilitating the collaboration of team members and client.

Conclusion

Learned how to install and demonstrate the use of various open source software‟s like bug tracking tools (Phabricator, mantis, etc.)that are used in day to day life of software engineering.

Reference

https://www.simplilearn.com/tutorials/jira/what-is-jira-and-how-to

-use-jira-testing-software

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(2020BTEIT00004)

Assignment 4

Title- Use of version control system

Objective- To use/experiment the online and offline version control system for foss project work.

About Git-

Git is a free and open-source distributed version control system designed to handle everything from small to very large projects with speed and efficiency.

Git is used to track changes in the open-source code, enabling multiple developers to work together on non-linear development

Creator- Linus Torvalds created Git in 2005 for the development of the Linux kernel

Installation-

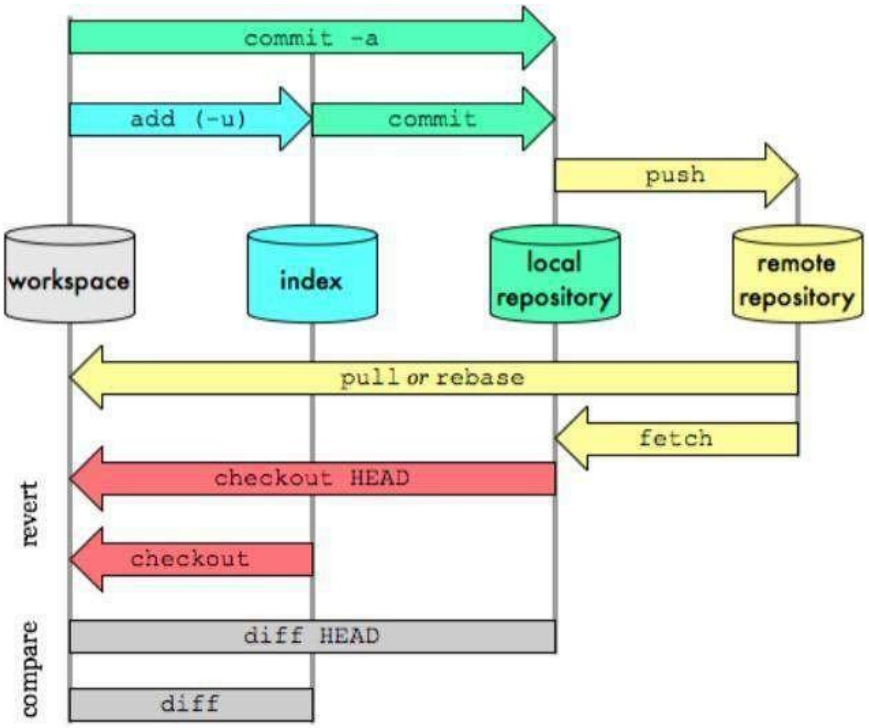
Open the terminal and write the command **sudo apt-get install git** for Linux based machines and for windows download the file from Git's official website and run it

Features of Git-

- Tracks history
- Free and open source
- Supports non-linear development
- Creates backups
- Scalable

- Supports collaboration
- Branching is easier
- Distributed development

Git workflow-

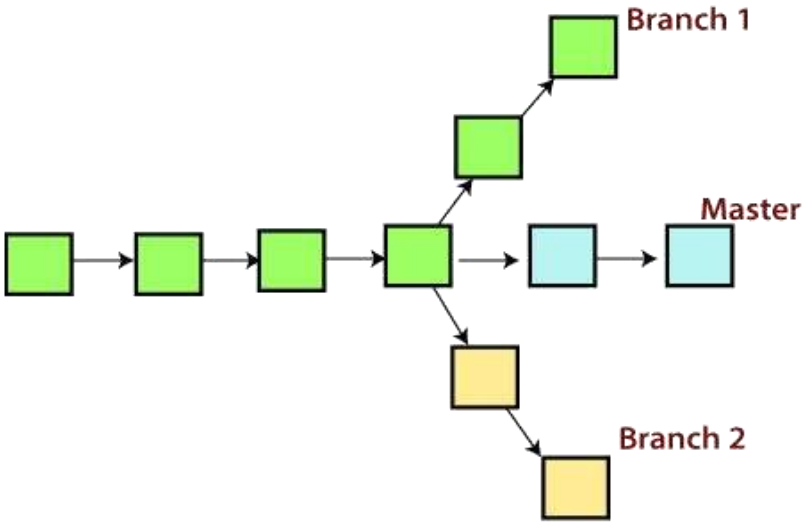


The Git workflow is divided into three states:

- Working directory - Modify files in your working directory
- Staging area (Index) - Stage the files and add snapshots of them to your staging area
- Git directory (Repository) - Perform a commit that stores the snapshots permanently to your Git directory. Checkout any existing version, make changes, stage them and comm

Branch in Git-

Branch in Git is used to keep your changes until they are ready. You can do your work on a branch while the main branch (master) remains stable. After you are done with your work, you can merge it with the main office.



The above diagram shows there is a master branch. There are two separate branches called “small feature” and “large feature.” Once you

are finished working with the two separate branches, you can merge them and create a master branch.

Some commands in Git-

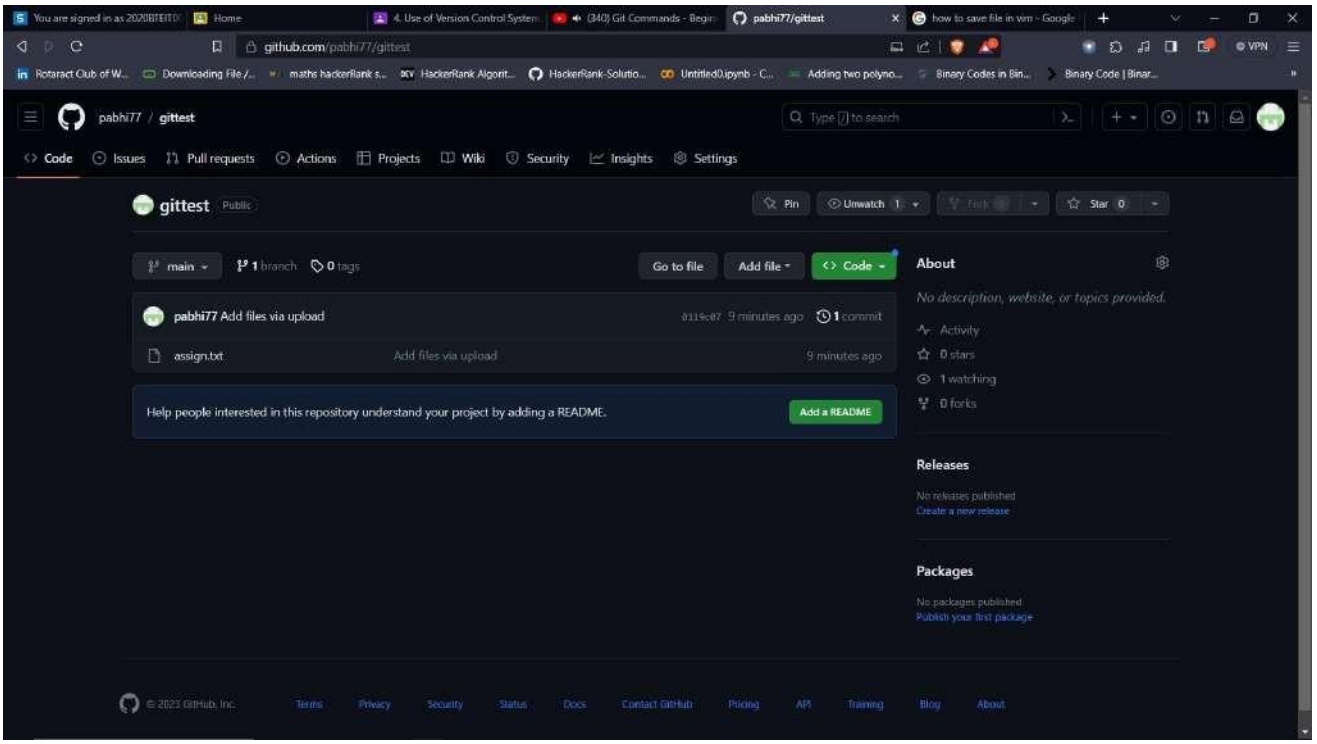
Create Repositories- creates new git repository

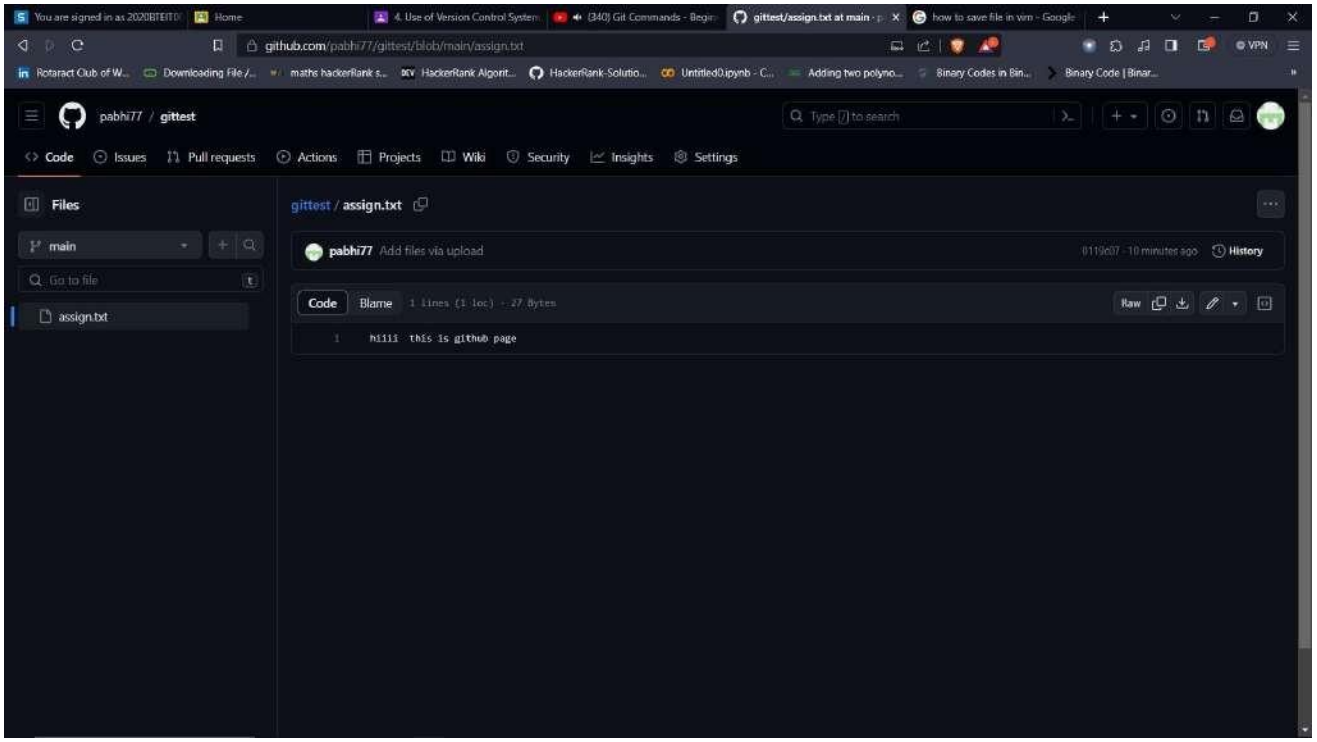
Check git status- Gives status of working directory and staged

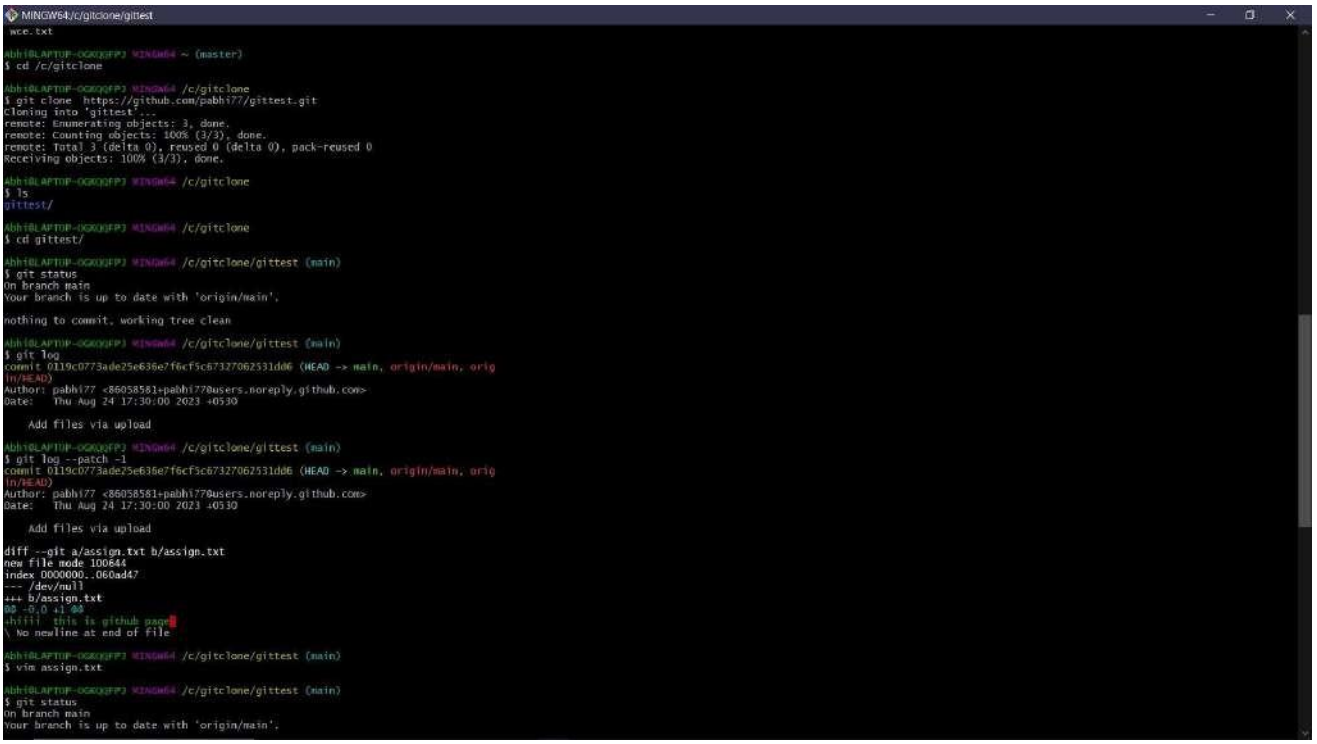
area Git add command- Adds untracked files to the staged area

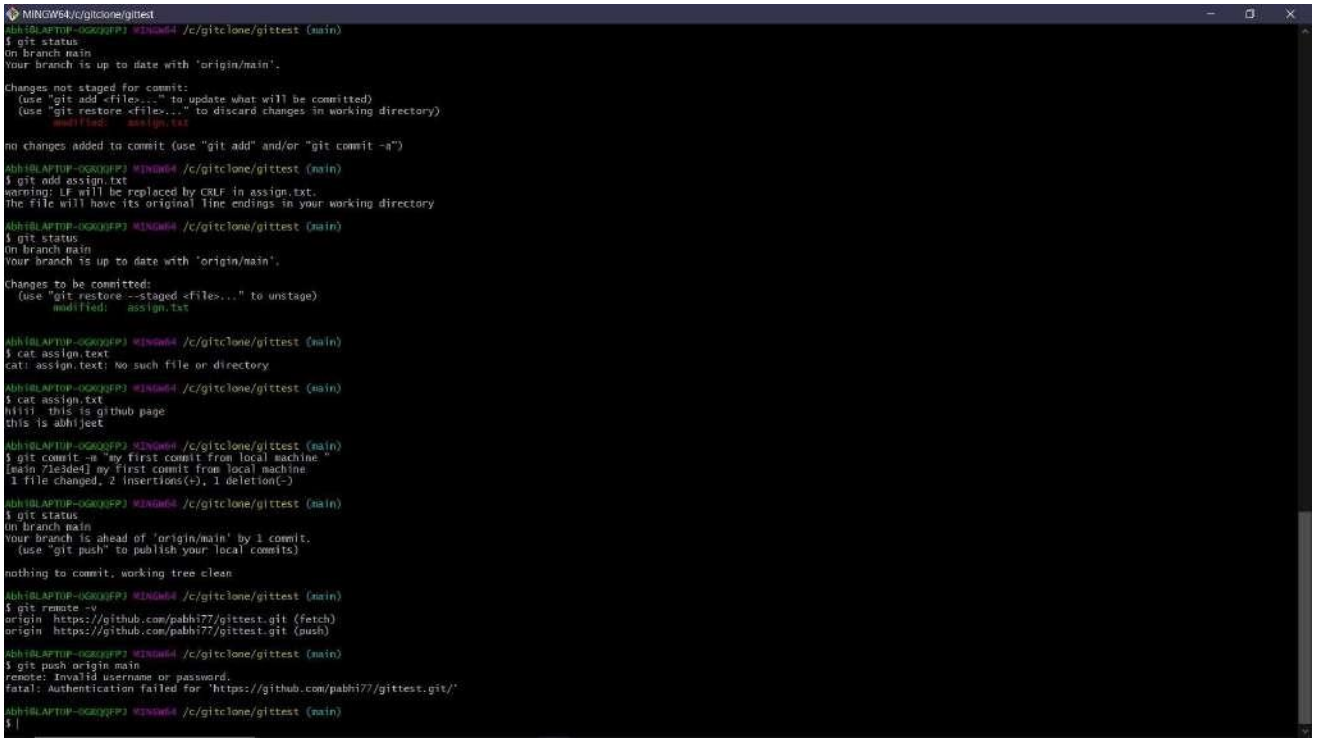
Git status- Commits the changes to the version control

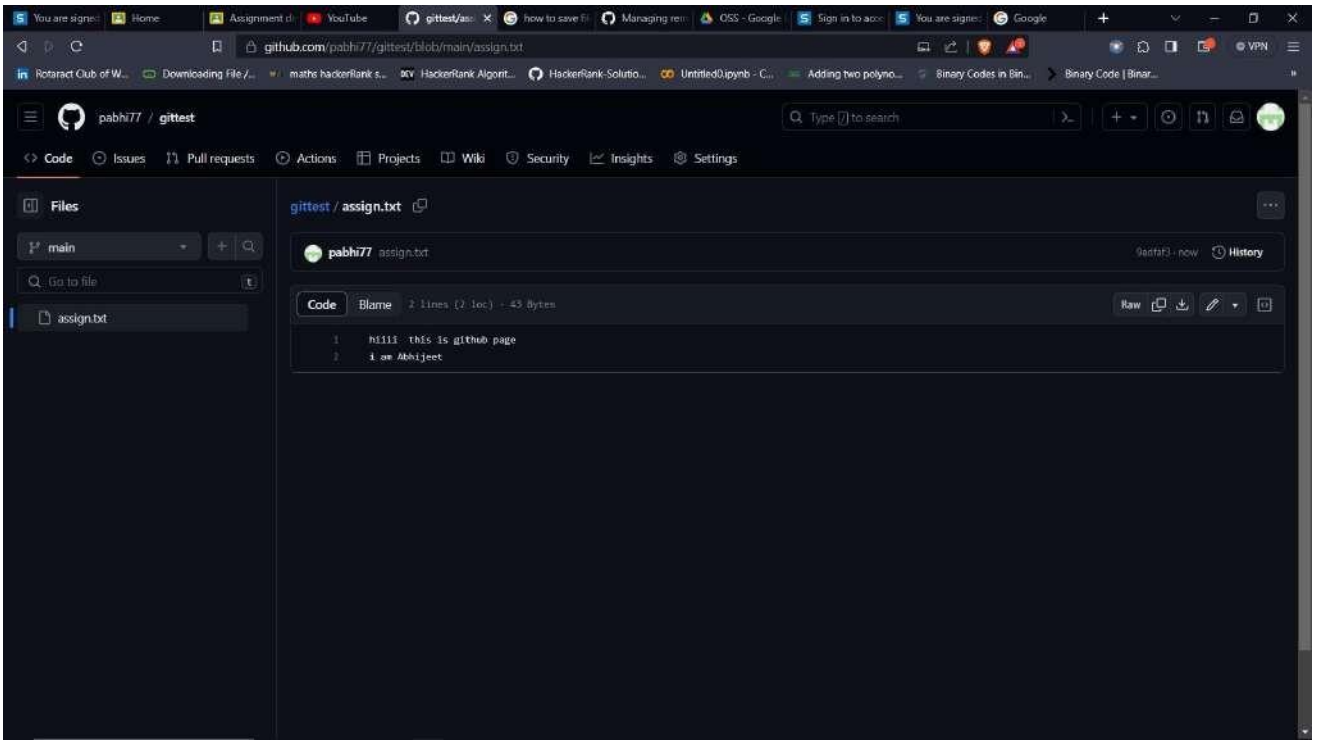
Git restore- discards the change in working directory and restores earlier changes as on the last commit




github.com/pabhi77/gittest/blob/main/assign.txt
pabhi77 / gittest
Code
Issues
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
Files
main
assign.txt
gittest / assign.txt
pabhi77 Add files via upload
Code
Blame
1 lines (1 loc) · 27 Bytes
Raw
1 hiiii this is github page

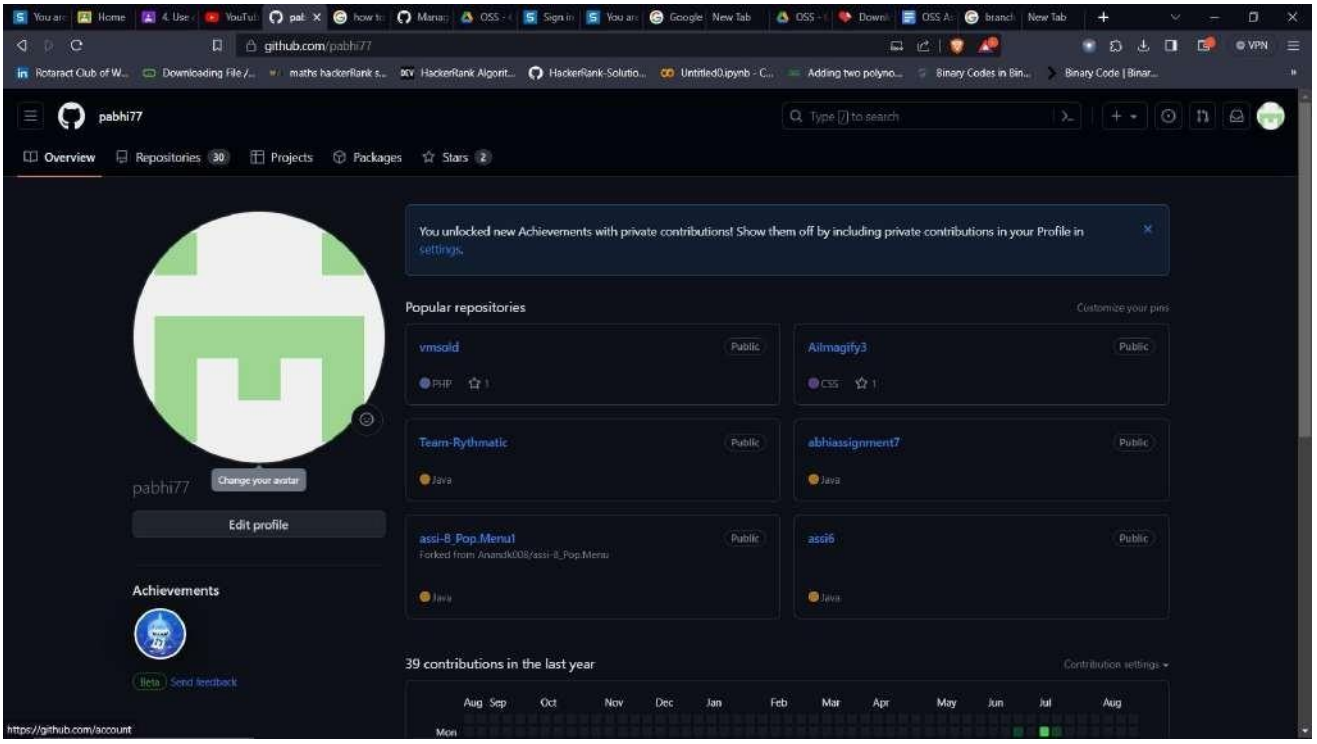

MINGW64:/c/gitclone/gittest
wce.txt
$ cd /c/gitclone
$ git clone https://github.com/pabhi77/gittest.git
Cloning into 'gittest'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (3/3), done.
$ ls
gittest/
$ cd gittest/
$ git status
On branch main
Your branch is up to date with 'origin/main'.
nothing to commit, working tree clean
$ git log
commit 0119c0773ade25e636e7f6cf5c67327062531dd6 (HEAD -> main, origin/main, orig
in/HEAD)
Author: pabhi77 <86058581+pabhi77@users.noreply.github.com>
Date: Thu Aug 24 17:30:00 2023 +0530
Add files via upload
$ git log --patch -1
commit 0119c0773ade25e636e7f6cf5c67327062531dd6 (HEAD -> main, origin/main, orig
in/HEAD)
Author: pabhi77 <86058581+pabhi77@users.noreply.github.com>
Date: Thu Aug 24 17:30:00 2023 +0530
Add files via upload
diff --git a/assign.txt b/assign.txt
new file mode 100644
index 0000000..060ad47
--- /dev/null
+++ b/assign.txt
@@ -0,0 +1 @@
+hiiii this is github page
\ No newline at end of file
$ vim assign.txt
$ git status
On branch main
Your branch is up to date with 'origin/main'.


MINGW64:/c/gitclone/gittest
$ git status
On branch main
Your branch is up to date with 'origin/main'.
Changes not staged for commit:
(use "git add <file>..." to update what will be committed)
(use "git restore <file>..." to discard changes in working directory)
modified: assign.txt
no changes added to commit (use "git add" and/or "git commit -a")
$ git add assign.txt
warning: LF will be replaced by CRLF in assign.txt.
The file will have its original line endings in your working directory
$ git status
On branch main
Your branch is up to date with 'origin/main'.
Changes to be committed:
(use "git restore --staged <file>..." to unstage)
modified: assign.txt
$ cat assign.text
cat: assign.text: No such file or directory
$ cat assign.txt
hiii this is github page
this is abhijeet
$ git commit -m "my first commit from local machine "
[main 71e3de4] my first commit from local machine
1 file changed, 2 insertions(+), 1 deletion(-)
$ git status
On branch main
Your branch is ahead of 'origin/main' by 1 commit.
(use "git push" to publish your local commits)
nothing to commit, working tree clean
$ git remote -v
origin https://github.com/pabhi77/gittest.git (fetch)
origin https://github.com/pabhi77/gittest.git (push)
$ git push origin main
remote: Invalid username or password.
fatal: Authentication failed for 'https://github.com/pabhi77/gittest.git/'

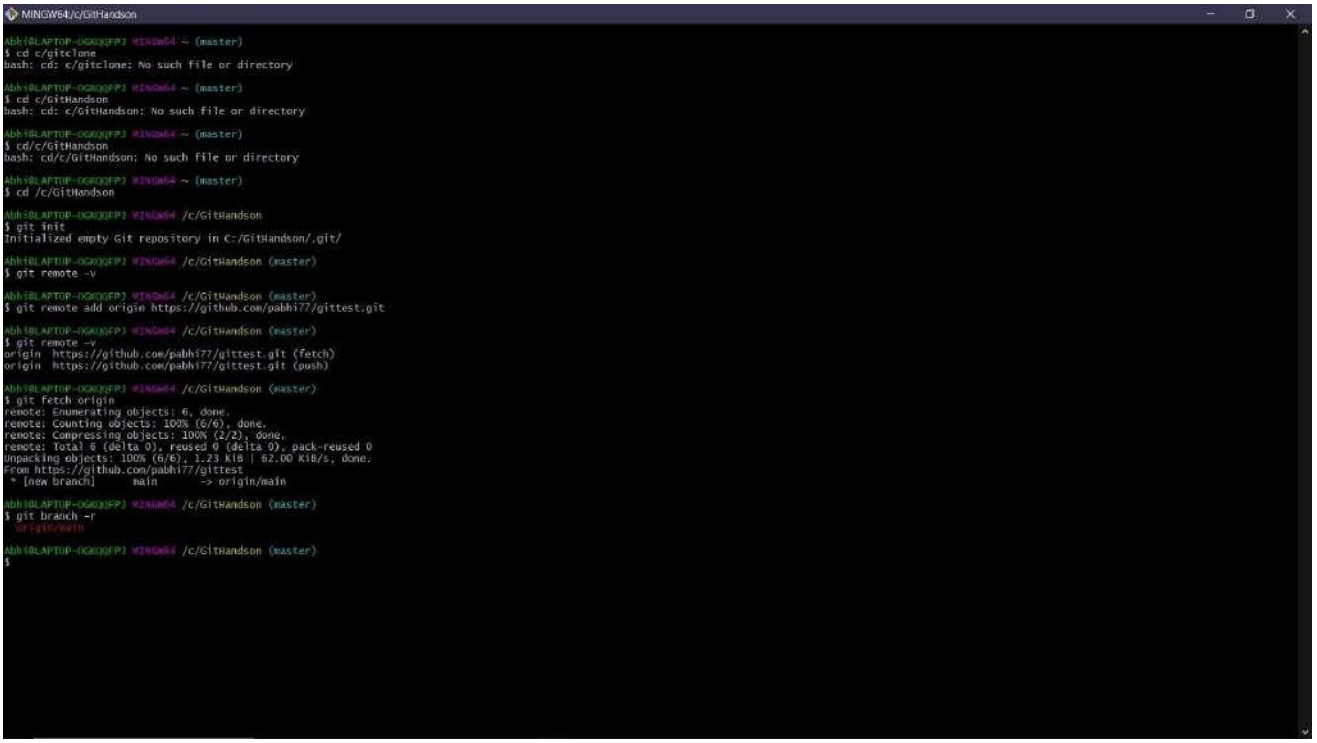

github.com/pabhi77/gittest/blob/main/assign.txt
pabhi77 / gittest
Code
Issues
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
Files
main
assign.txt
gittest / assign.txt
pabhi77 assign.txt
History
Code
Blame
2 lines (2 loc) · 43 Bytes
Raw
hiii this is github page
i am Abhijeet

Git-hub - At a high level, GitHub is a website and cloud-based service that helps developers store and manage their code, as well as track and control changes to their code.

Home screen-

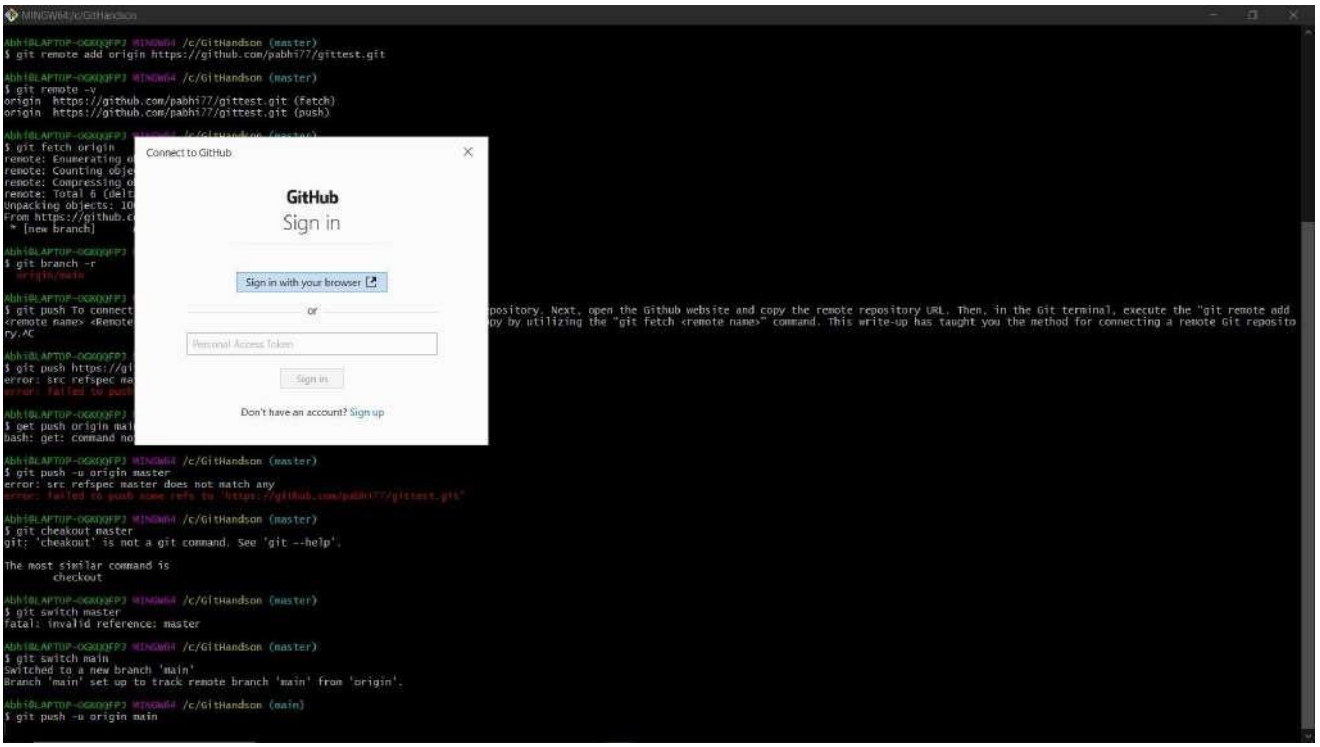


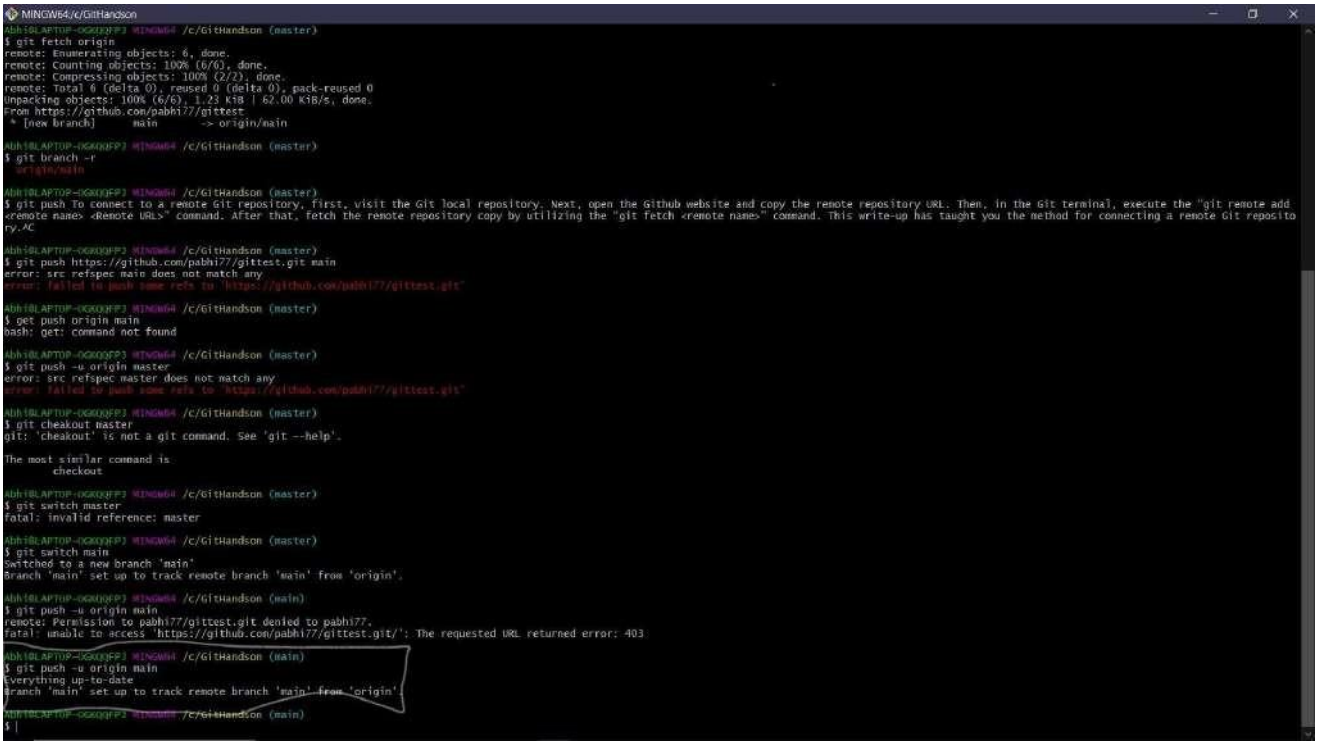
Connecting with remote repository-



To connect to a remote Git repository, first, visit the Git local repository. Next, open the Github website and copy the remote repository URL. Then, in the Git terminal, execute the “**git remote add <remote name> <Remote URL>**” command. After that, fetch the remote repository copy by utilizing the “**git fetch <remote name>**” command. This write-up has taught you the method for connecting a remote Git repository.

Pushing to remote repository-


MINGW64:/c/GitHandson
Connect to GitHub
GitHub
Sign in
Sign in with your browser
or
Personal Access Token
Sign in
Don't have an account? Sign up


MINGW64:/c/GitHandson

Check if the changes has been updated to git-hub repository-

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Assignment 5

Title: "Open Source Content Management Systems (CMS) and Wikis: Installation, Administration, and Usage"

Objectives:

1. To introduce students to various open-source Content Management Systems (CMS) and Wiki platforms, including WordPress, Moodle, Drupal, Joomla, MediaWiki, etc.

2. To enable students to create their personal websites/blogs or FOSS course websites/blogs using the chosen CMS or Wiki.

3. To document the installation process of the selected CMS or Wiki on a Linux platform.

How to Install WordPress on an Ubuntu

Prerequisites:

- An Ubuntu server with root or sudo access.
- A domain name (optional but recommended).
- LAMP (Linux, Apache, MySQL, PHP) stack installed.

command:

sudo apt update

sudo apt install apache2 mysql-server php php-mysql libapache2-mod-php php-cli php-fpm php-json php-common php-mbstring php-zip php-gd php-xml php-curl php-pear php-bcmath

Step 1: Create a MySQL Database and User

1. Log in to your MySQL server.
2. Create a database for WordPress.
3. Create a user for WordPress.

4. Grant the user all privileges on the database.

Command:

sudo mysql -u root -p

CREATE DATABASE your_database;

CREATE USER 'your_user'@'localhost' IDENTIFIED BY

'your_password'; GRANT ALL PRIVILEGES ON your_database.* TO

'your_user'@'localhost'; FLUSH PRIVILEGES;

EXIT;

Step 2: Download and Configure WordPress

1. Download the latest version of WordPress.

Command:

wget https://wordpress.org/latest.tar.gz

2. Extract the downloaded archive.

Command:

tar -xzvf latest.tar.gz

3. Move the WordPress files to the Apache web server directory.

Command:

sudo mv wordpress /var/www/html/

4. Set the correct permissions on the WordPress directory.

Command:

sudo chown -R www-data:www-data /var/www/html/wordpress

Step 3: Configure Apache for WordPress

1. Create a virtual host configuration file for WordPress.
2. Enable the virtual host and Apache rewrite module.
3. Restart Apache.

Step 4: Complete WordPress Installation

1. Access your server's IP address or domain name in a web browser.

Command :

sudo nano /etc/apache2/sites-available/wordpress.conf

<VirtualHost *:80>

ServerAdmin

webmaster@your_domain

DocumentRoot

/var/www/html/wordpress

ServerName your_domain

ServerAlias www.your_domain

ErrorLog ${APACHE_LOG_DIR}/error.log

CustomLog ${APACHE_LOG_DIR}/access.log combined

<Directory

/var/www/html/wordpress>

AllowOverride All

</Directory>

</VirtualHost>

2. Follow the on-screen instructions to complete the installation.

Command:

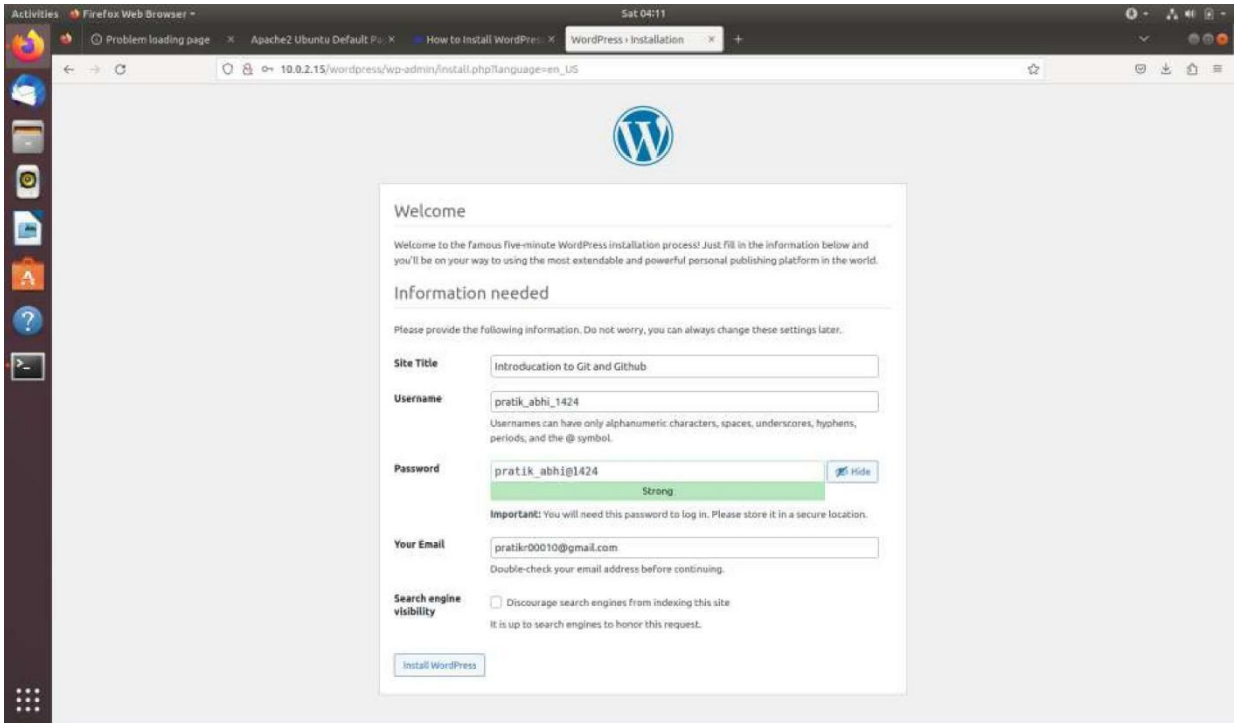
sudo a2ensite

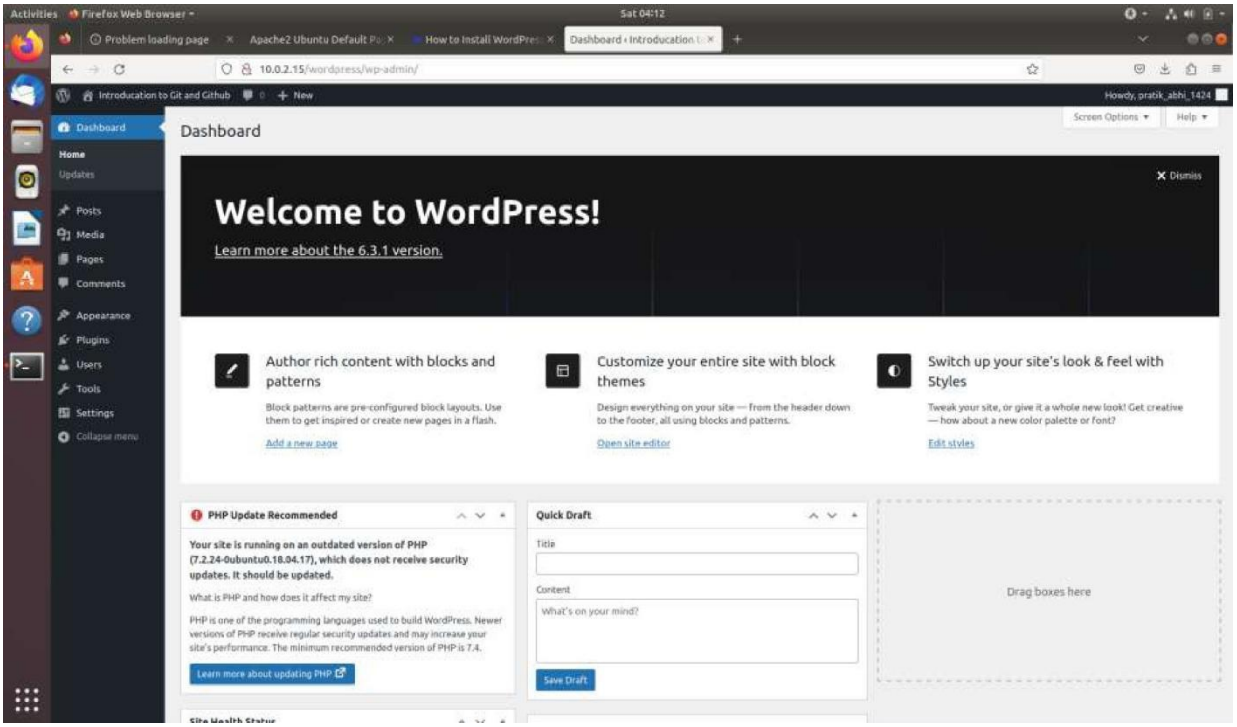
wordpress.conf sudo

a2enmod rewrite

Now you have successfully installed WordPress on your Ubuntu.

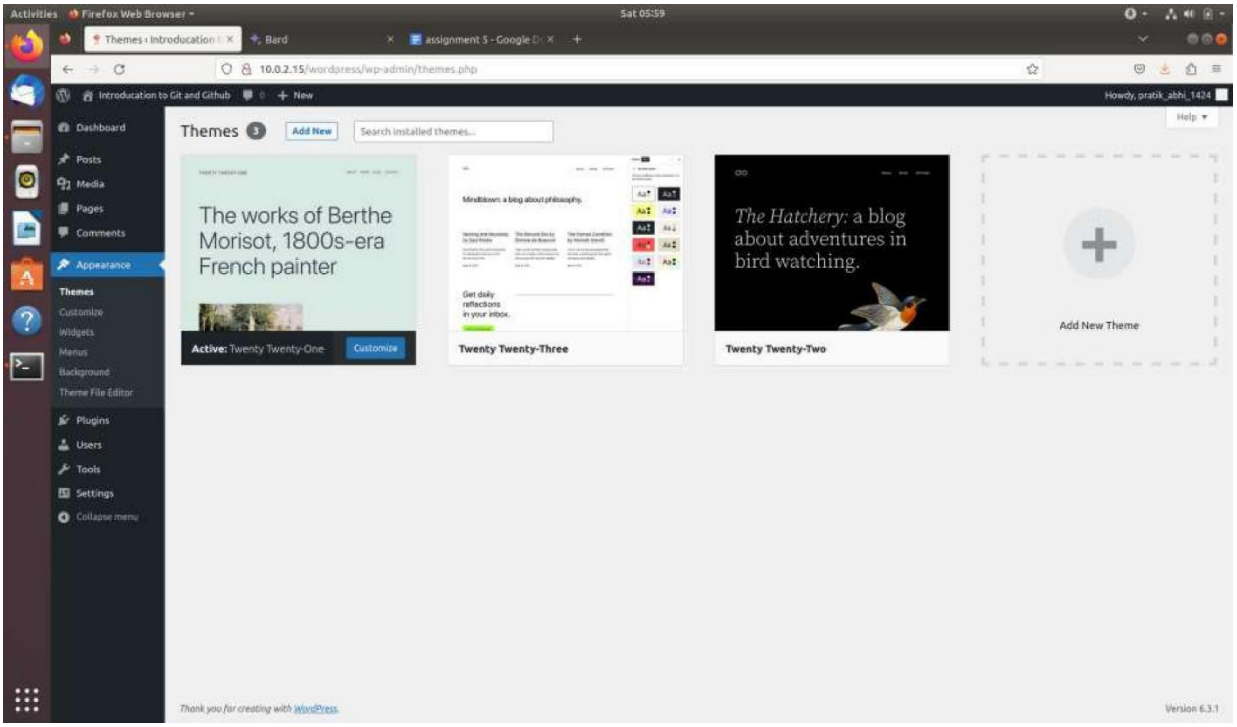
.





How to use Wordpress for content writing:

1. **Install WordPress.** Once you have chosen a WordPress hosting provider, you will need to install WordPress.
2. **Choose a theme.** A theme is the design of your blog. There are many different themes available, so you can choose one that matches your style and preferences. You can find free and premium themes.
3. **Customize your blog**. Once you have installed WordPress and chosen a theme, you can start customizing your blog. You can change the colors, fonts, and layout of your blog to make it look the way you want. You can also add widgets and plugins to your blog to add functionality.
4. **Start writing blog posts**. Once you have customized your blog, you can start writing blog posts. To do this, go to the "Posts" page in the WordPress dashboard and click on the "Add New" button.



Host the CMS on web server/free webspace:

To host your WordPress website on a web server or free web hosting space, you'll need to follow these general steps:

1. Choose a Free Web Hosting Provider:

There are several free web hosting providers available, such as 000WebHost, InfinityFree, or Awardspace. You can sign up for an account on one of these platforms. Keep in mind that free hosting may come with limitations in terms of storage, bandwidth, and features.

2. Get a Domain Name (Optional):

Most free hosting providers offer subdomains (e.g., yoursite.000webhostapp.com), but if you want a custom domain (e.g., www.yourblog.com), you'll need to register one through a domain registrar like Namecheap or Google Domains. You may need to configure DNS settings to point your domain to your hosting provider.

3. Upload WordPress Files:

Access your hosting account's control panel or file manager. Look for an option to upload files or access FTP (File Transfer Protocol). You'll need to upload your WordPress files to your hosting space. You can download the latest WordPress files from the official website (https://wordpress.org/download/). After uploading, extract the files if necessary.

4. Create a Database:

Most hosting providers offer a control panel like cPanel or a custom dashboard. Find the database section and create a new MySQL database. Take note of the database name, username, and password.

5. Configure wp-config.php:

In the WordPress files you uploaded, locate the `wp-config-sample.php` file and rename it to `wp-config.php`. Open it and enter the database details you obtained in the previous step:

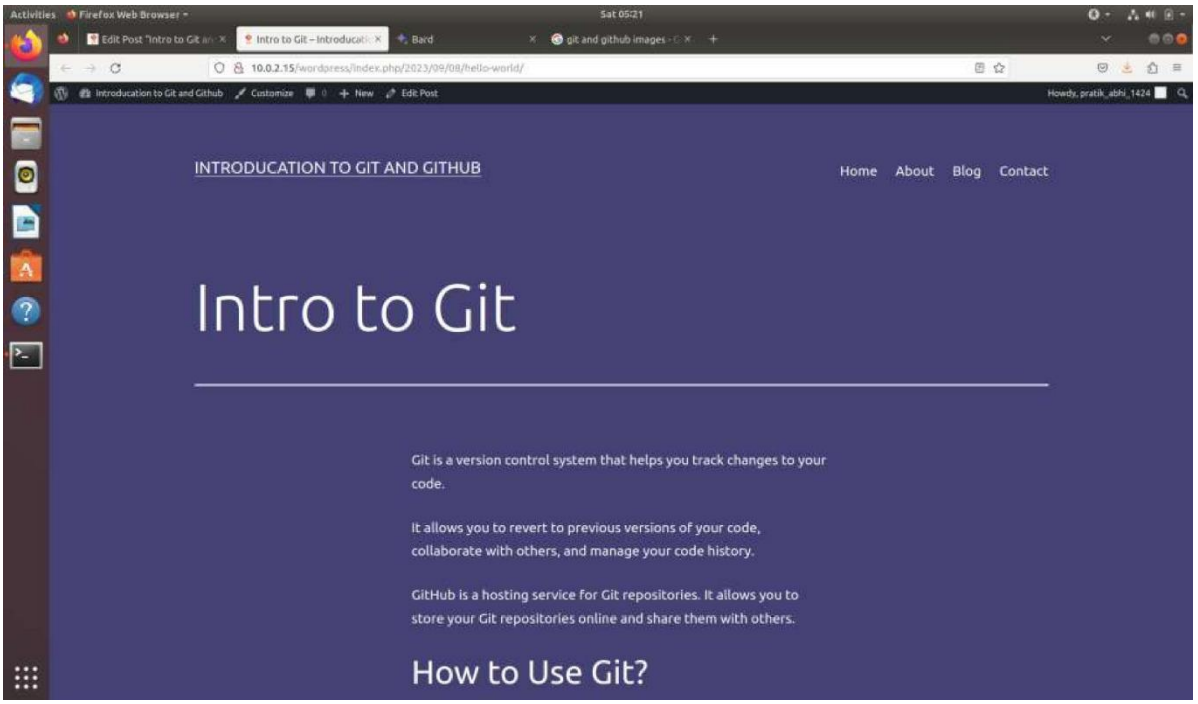
```php
define('DB_NAME', 'your_database_name');
define('DB_USER', 'your_database_user');
define('DB_PASSWORD',
'your_database_password');
```

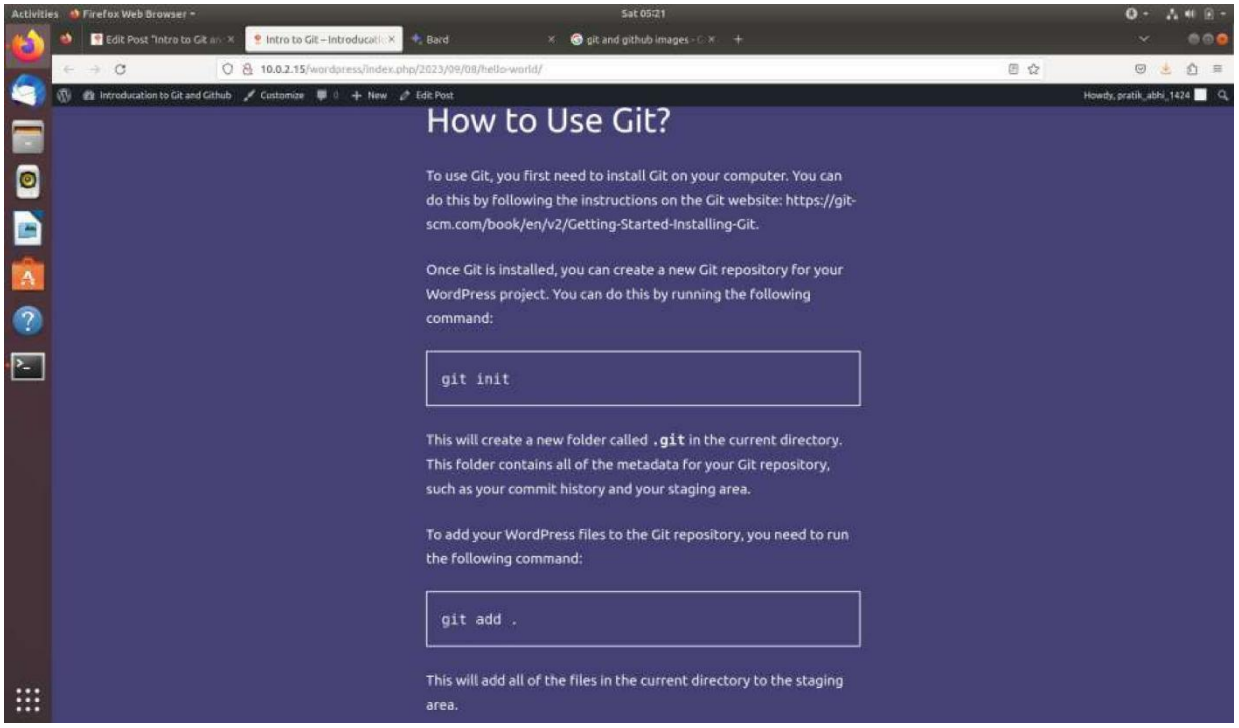
6. Install WordPress:

Open your web browser and navigate to your website's domain or subdomain. You should see the WordPress installation screen. Follow the on-screen instructions to complete the installation, including setting up your admin username and password.

7. Customize Your Website:

After installation, log in to the WordPress dashboard. You can customize your website's appearance and functionality using themes and plugins. Start by choosing a theme, installing necessary plugins, and creating content.

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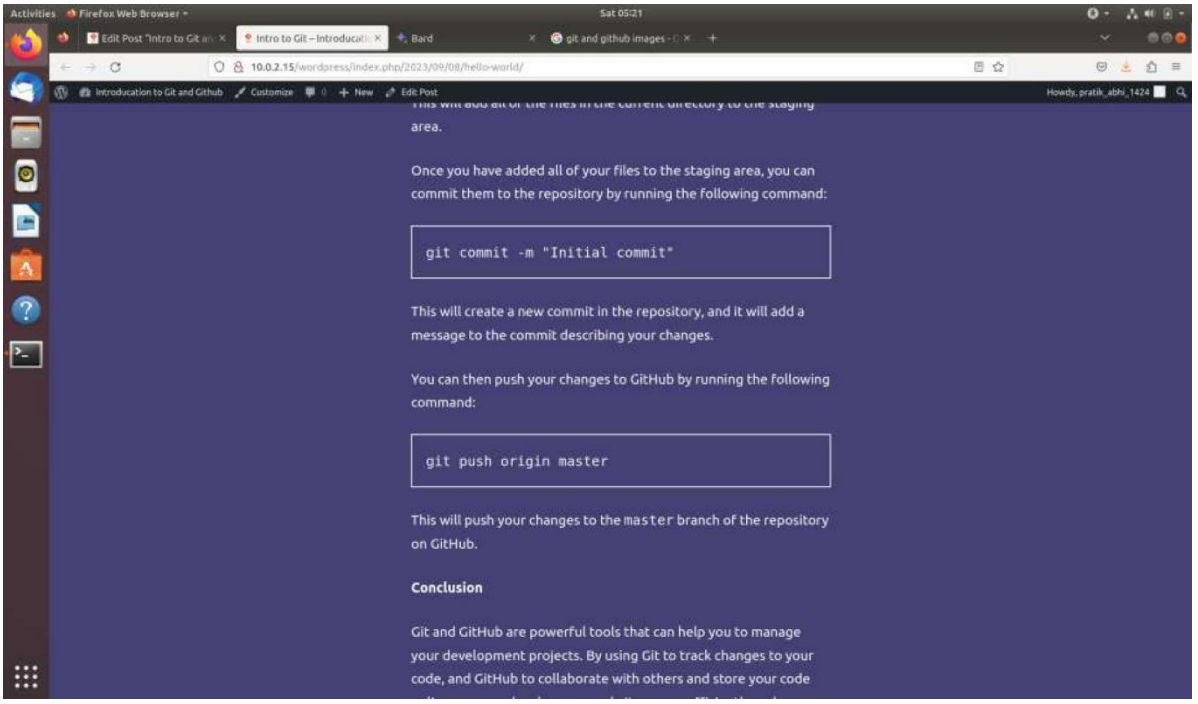
10.0.2.15/wordpress/index.php/2023/09/08/hello-world/
Introducation to Git and Github
Customize
New
Edit Post
Howdy, pratik_abhi_1424
How to Use Git?
To use Git, you first need to install Git on your computer. You can do this by following the instructions on the Git website: https://git-scm.com/book/en/v2/Getting-Started-Installing-Git.
Once Git is installed, you can create a new Git repository for your WordPress project. You can do this by running the following command:
git init
This will create a new folder called .git in the current directory. This folder contains all of the metadata for your Git repository, such as your commit history and your staging area.
To add your WordPress files to the Git repository, you need to run the following command:
git add .
This will add all of the files in the current directory to the staging area.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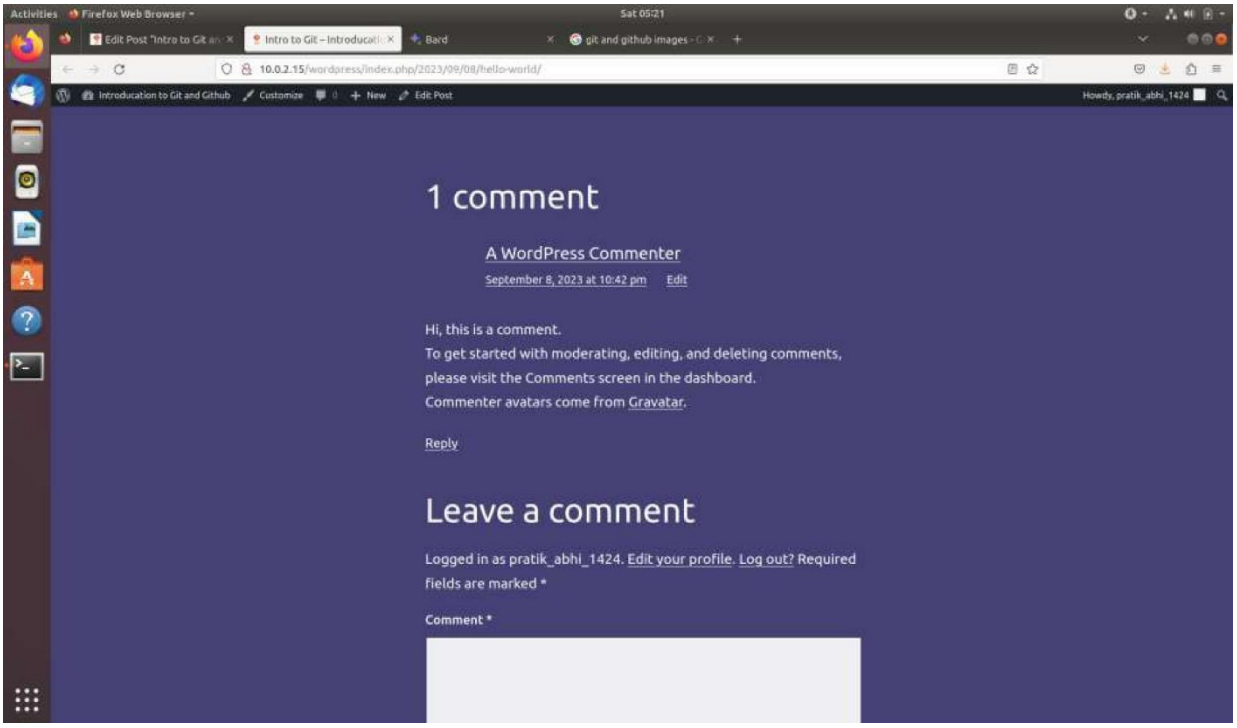
Introducation to Git and Github
Customize
New
Edit Post
Howdy, pratik_abhi_1424
area.
Once you have added all of your files to the staging area, you can commit them to the repository by running the following command:
git commit -m "Initial commit"
This will create a new commit in the repository, and it will add a message to the commit describing your changes.
You can then push your changes to GitHub by running the following command:
git push origin master
This will push your changes to the master branch of the repository on GitHub.
Conclusion
Git and GitHub are powerful tools that can help you to manage your development projects. By using Git to track changes to your code, and GitHub to collaborate with others and store your code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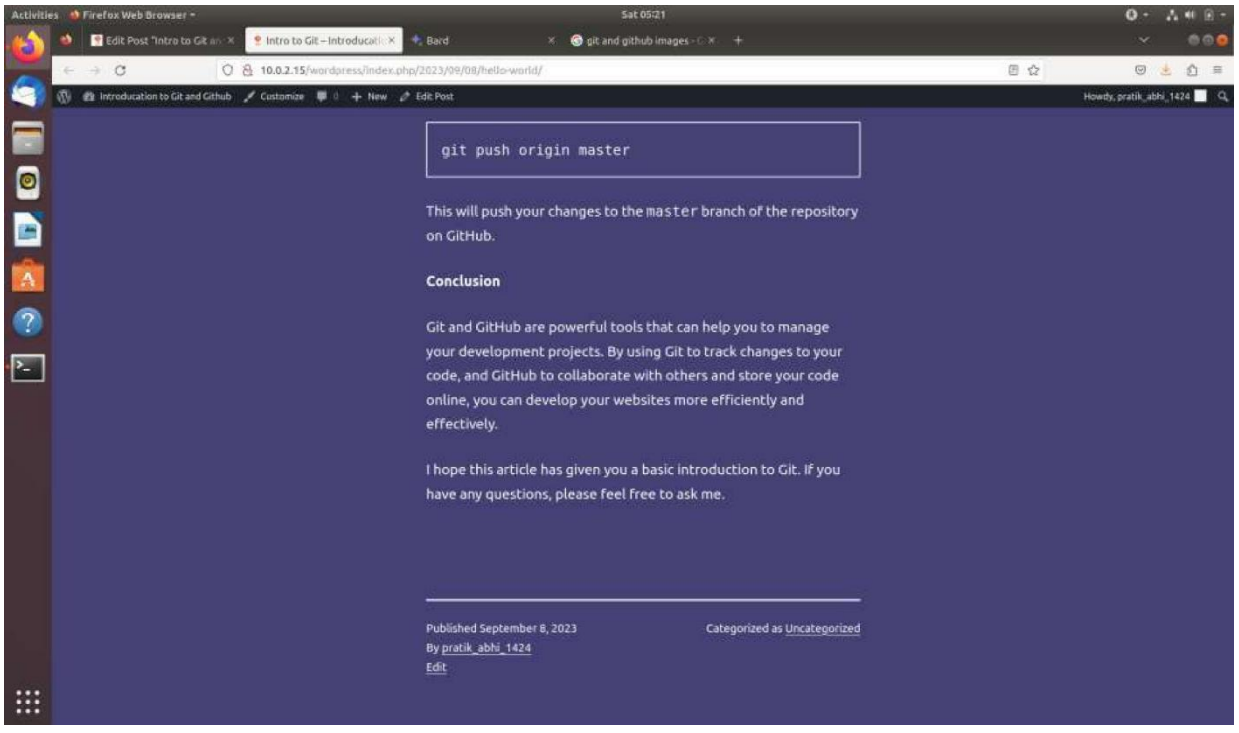
Customize
New
Edit Post
Howdy, pratik_abhi_1424
1 comment
A WordPress Commenter
September 8, 2023 at 10:42 pm
Edit
Hi, this is a comment.
To get started with moderating, editing, and deleting comments, please visit the Comments screen in the dashboard.
Commenter avatars come from Gravatar.
Reply
Leave a comment
Logged in as pratik_abhi_1424. Edit your profile. Log out? Required fields are marked *
Comment *


Activities
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git and github images
10.0.2.15/wordpress/index.php/2023/09/08/hello-world/
Introducation to Git and Github
Customize
New
Edit Post
Howdy, pratik_abhi_1424
git push origin master
This will push your changes to the master branch of the repository on GitHub.
Conclusion
Git and GitHub are powerful tools that can help you to manage your development projects. By using Git to track changes to your code, and GitHub to collaborate with others and store your code online, you can develop your websites more efficiently and effectively.
I hope this article has given you a basic introduction to Git. If you have any questions, please feel free to ask me.
Published September 8, 2023
By pratik_abhi_1424
Edit
Categorized as Uncategorized

MANDAR KAMBLE
(2020BTEIT00004)

Assignment 6

Title: Investigation of the open source software development process for Ubuntu

Objective: To investigate and document the following information about the open source software development process for Ubuntu:

1. Name of the community behind the distribution.
2. Official website of the distribution.
3. Mailing lists used by the community.
4. Wiki or documentation resources.
5. Version control system used for development.
6. Bug tracking system.
7. Localization resources (if available).
8. Official documentation and user guides.

A.

i. Name of the community behind the distribution

The community behind Ubuntu is called the Ubuntu Community. It is a large and diverse group of people from all over the world who are passionate about Ubuntu. The community is responsible for many aspects of Ubuntu, including development, documentation, and support.

ii. Official website of the distribution

The official website of Ubuntu is https://ubuntu.com/. This website contains a wealth of information about Ubuntu, including news, documentation, and downloads.

iii. Mailing lists used by the community

The Ubuntu community uses a number of mailing lists to communicate with each other. These mailing lists are divided into different topics, such as development, documentation, and support.

iv. Wiki or documentation resources

The Ubuntu community maintains a number of wikis and documentation

resources. These resources provide detailed information about Ubuntu, including how to install, use, and troubleshoot it.

v. Version control system used for development

The Ubuntu project uses the Git version control system for development. This system allows developers to track changes to the Ubuntu code and collaborate on its development.

vi. Bug tracking system

The Ubuntu project uses the Launchpad bug tracking system to track bugs in the Ubuntu code. This system allows users to report bugs and track their progress.

vii. Localization resources (if available)

Ubuntu is available in a number of languages. The Ubuntu community provides localization resources to help translate Ubuntu into other languages.

viii. Official documentation and user guides

The Ubuntu community provides a number of official documentation and user guides. These resources provide detailed information about Ubuntu, including how to install, use, and troubleshoot it.

B. open source software development process for ubuntu

Name of community: The community behind Ubuntu is called the Ubuntu Community. It is a large and diverse group of people from all over the world who are passionate about Ubuntu. The community is responsible for many aspects of Ubuntu, including development, documentation, and support.

Website: The official website of Ubuntu is https://ubuntu.com/. This website contains a wealth of information about Ubuntu, including news, documentation, and downloads.

Mailing lists: The Ubuntu community uses a number of mailing lists to communicate with each other. These mailing lists are divided into different topics, such as development, documentation, and support.

- **Development mailing lists:** These mailing lists are for developers who are working on Ubuntu. They are used to discuss new features, bug fixes,

and other development topics.

- **Documentation mailing lists:** These mailing lists are for people who are interested in writing or editing documentation for Ubuntu. They are used to discuss documentation standards, style guides, and other documentation topics.
- **Support mailing lists:** These mailing lists are for users who need help with Ubuntu. They are used to ask questions, report bugs, and get help from other users and developers.

Wiki: The Ubuntu community maintains a wiki that contains detailed information about Ubuntu. The wiki is a good place to find information about how to install, use, and troubleshoot Ubuntu.

Version control: The Ubuntu project uses the Git version control system for development. This system allows developers to track changes to the Ubuntu code and collaborate on its development.

Bug tracking: The Ubuntu project uses the Launchpad bug tracking system to track bugs in the Ubuntu code. This system allows users to report bugs and track their progress.

Documentation: The Ubuntu community provides a number of official documentation and user guides. These resources provide detailed information about Ubuntu, including how to install, use, and troubleshoot it.

Additional resources:

- Ubuntu Community Hub: https://discourse.ubuntu.com/
- Ubuntu Forums: https://forums.ubuntu.com/
- Ask Ubuntu: https://askubuntu.com/
- Ubuntu Documentation: https://help.ubuntu.com

MANDAR KAMBLE
(2020BTEIT00004)

Assignment 7

Title- Compilation of Linux Kernel

Problem Statement - Compilation of Linux Kernel. (Debian or ubantu)

Objectives - To demonstrate how to compile Linux Kernel.

What is a Kernel?

A kernel is a piece of software, that controls the hardware and does some basic functions like file management. Every operating system has one. The Linux kernel is an open source; meaning you can view, modify and publish its source code.

Configuring Grub

Grub should have enough timeout so that we can choose another kernel if kernel installation fails.

To change the grub timeout, open the grub config file in nano as root by giving the below command in terminal.

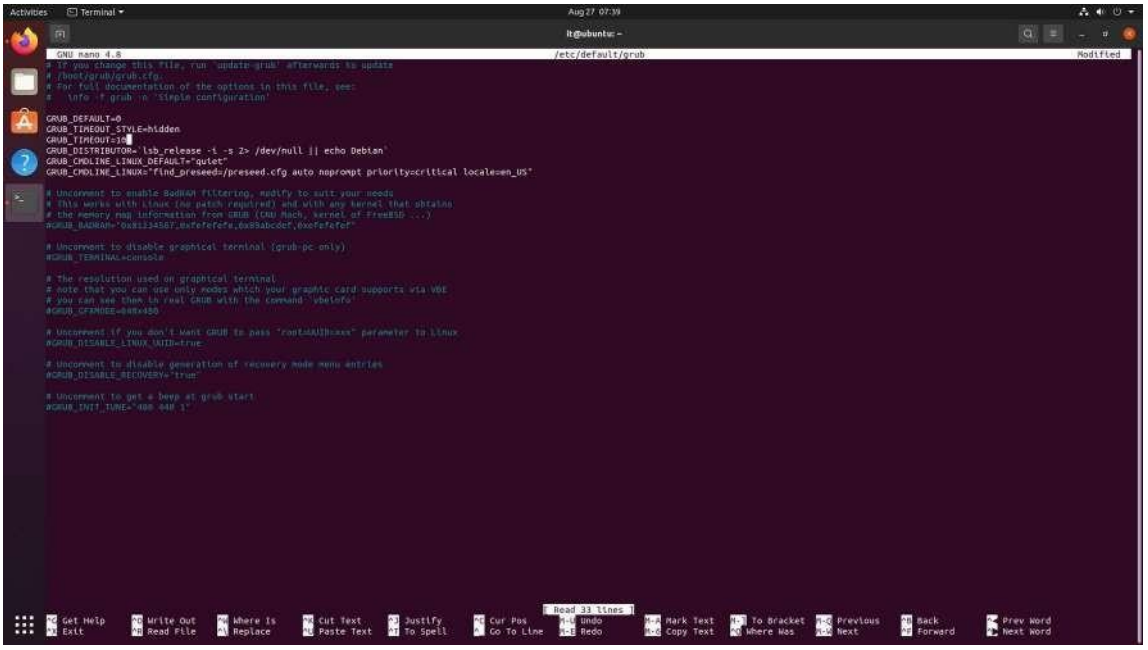
```
sudo nano /etc/default/grub
```

Comment these lines, by inserting "#" at the beginning of the lines.
After commenting, the lines should look like as below.

```
# GRUB_HIDDEN_TIMEOUT=0
# GRUB_HIDDEN_TIMEOUT_QUIET=true
```

"**GRUB_TIMEOUT**" property should not be commented. To increase the grub timeout to 10 seconds, change this line as below.

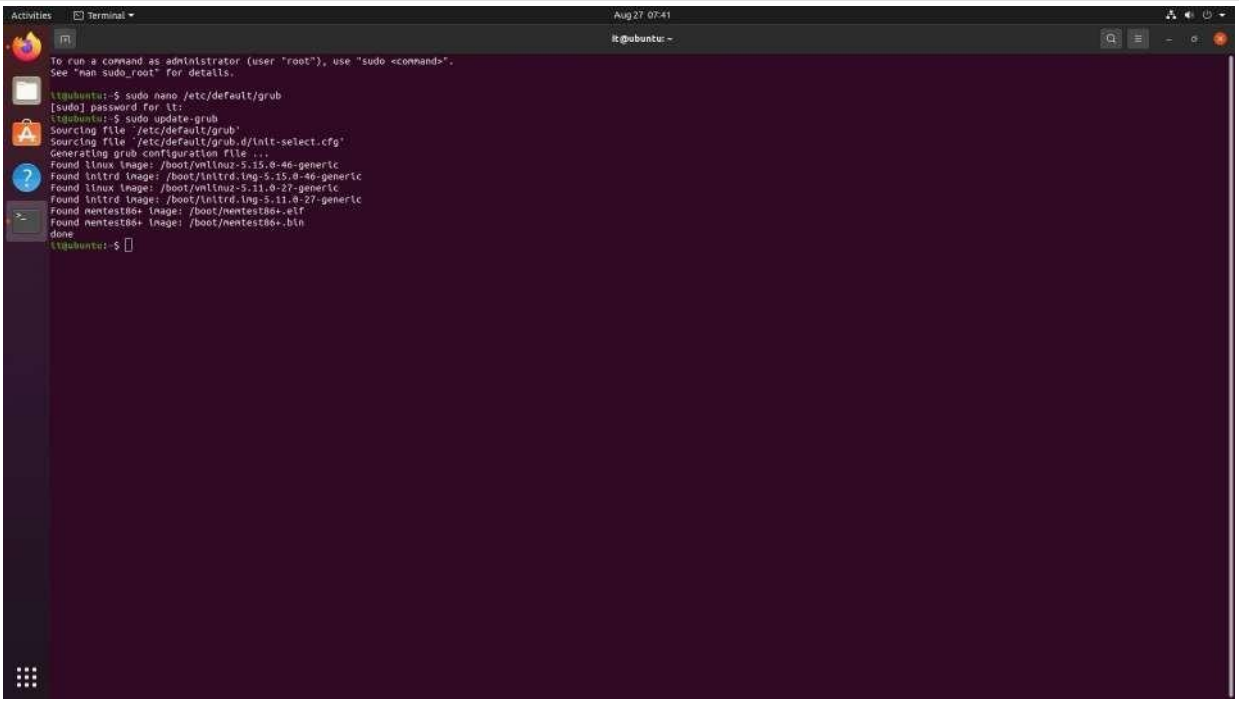
```
GRUB_TIMEOUT=10
```



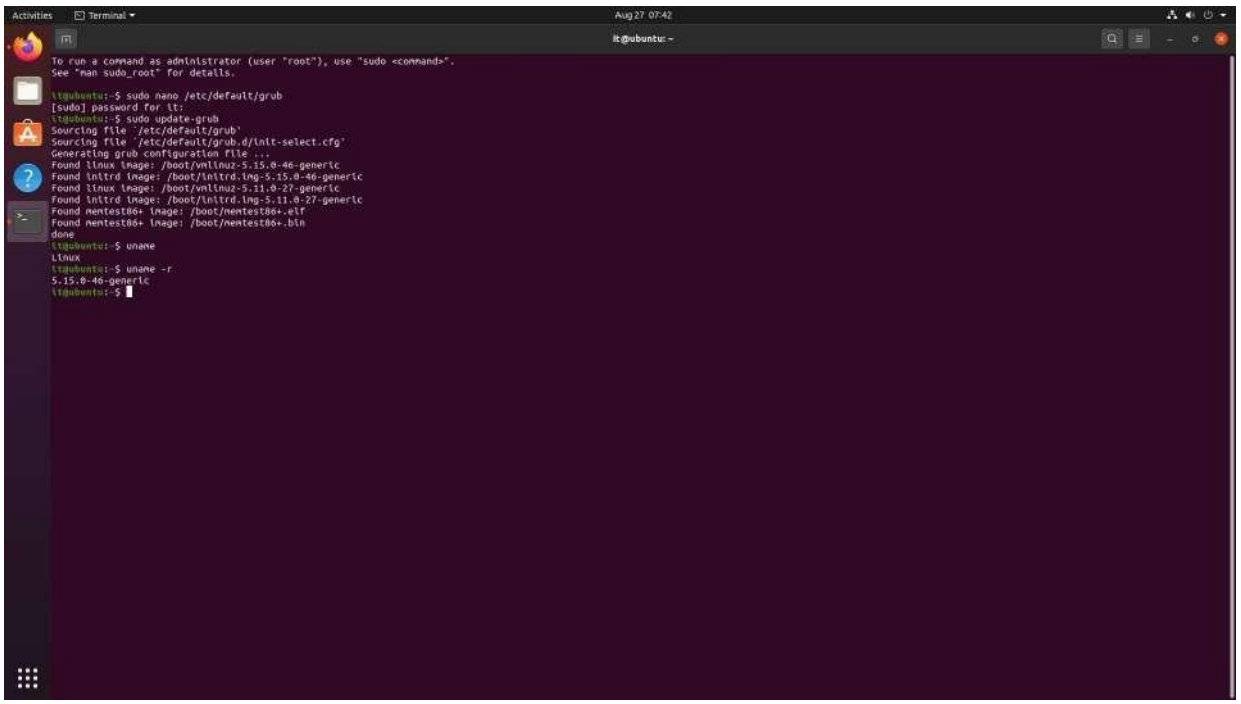
Press (Ctrl+O) to save the file and then press (Ctrl+X) to exit out of nano.

As the changes has been made to GRUB config, it is needed to update our grub by giving the below command.

```
sudo update-grub
```



Check Current Kernel Version



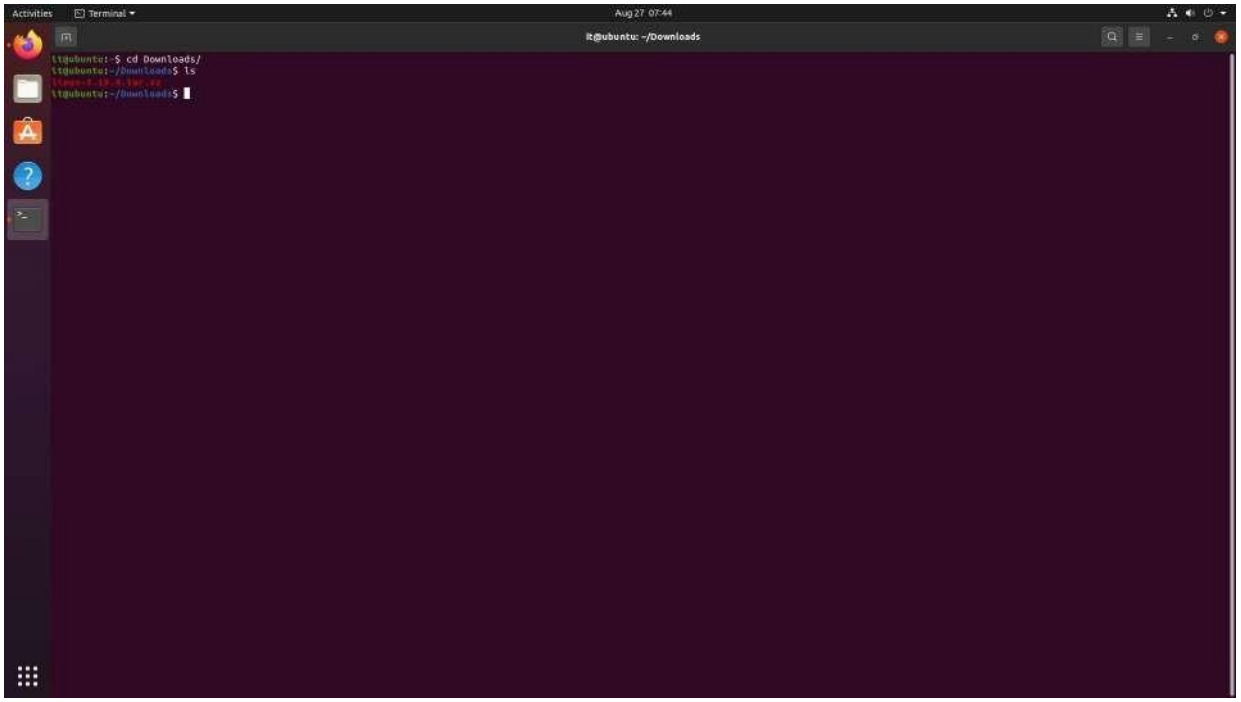
Downloading The Kernel Source

Download the stable Linux kernel source code by visiting the website Kernel.org.

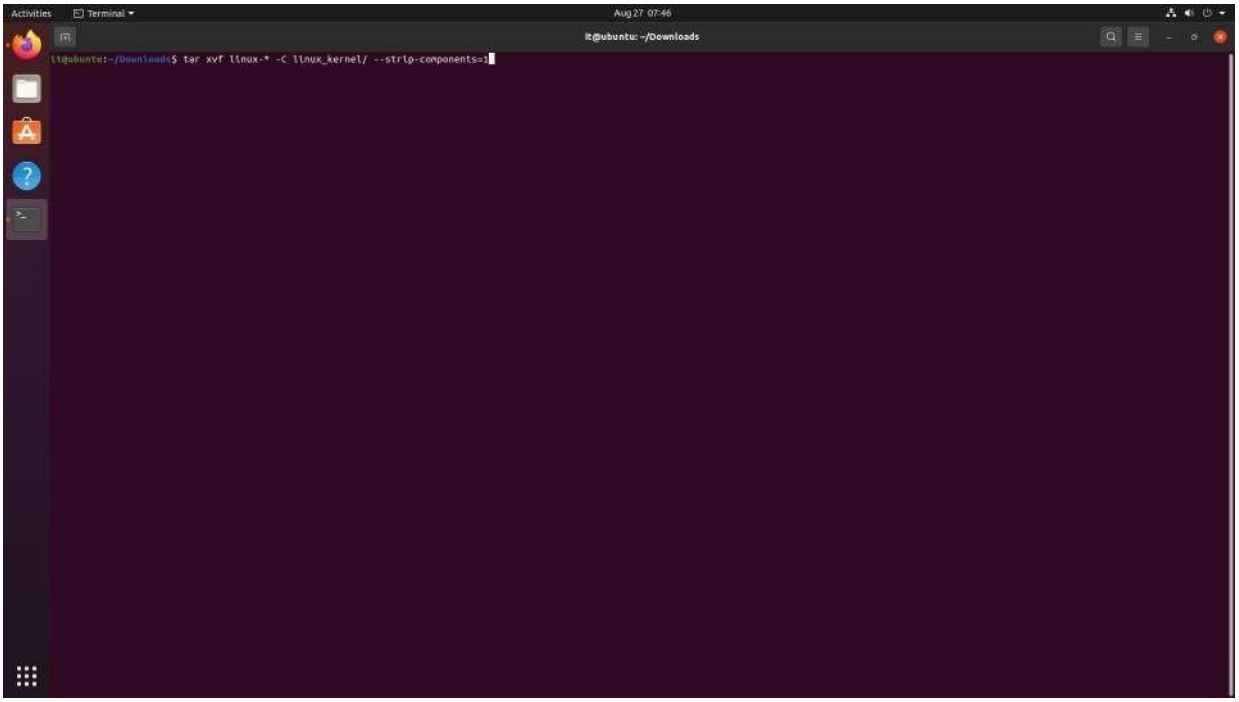
Once you have chosen the kernel version that you want to download. Click on the link that says "[tarball]". Now the download should start and hopefully you will be downloading a file that ends with either ".tar.gz" or ".tar.xz".

After the downloading has been completed, run the below command to extract the downloaded file.

Note: While extracting if you don't want want the terminal to output filenames you can replace the "xvf" in the below command with "xf". By doing that; the extraction will be a bit faster.

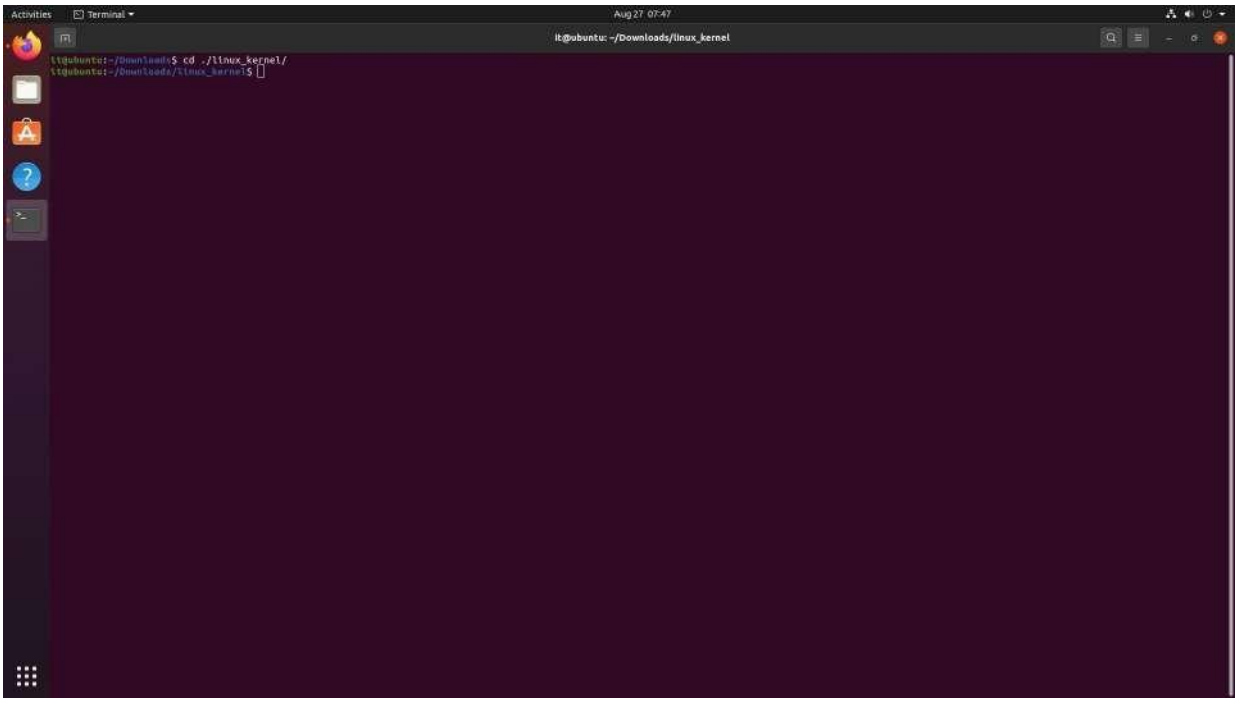



```
mkdir "linux_kernel"
tar xvf linux-* -C linux_kernel/ --strip-components=1
```



And then, change into the extracted directory by running the command:

```
cd ./linux_kernel/
```



Configuring The Downloaded Kernel

Before we can compile our downloaded kernel source, we need to have our configuration file in place. The configuration file tells the compiler what features, drivers, filesystems etc. to include. It is very hard to fire up a text editor and edit the configuration file manually because; there are thousands of options and modules. So, we have two ways to create the config file:

1. Use the config file that came with your distribution or,
2. Generate a new config file based on the currently connected devices to your computer.

Note: Use the config file that came with your distribution, if you frequently connect new hardware to your Linux machine.

The config file that came with your distro already has around 4000 different kernel modules and drivers for supporting different hardware you may connect to your machine. In-case you generate a new config file and try to connect new devices, you will need to re-create the config file and then re-compile the kernel.

Note: The kernel compilation time with the config file from your distro will take much longer and will result in a heavier kernel.

1. Use The Configaration File That Came With Your Distro

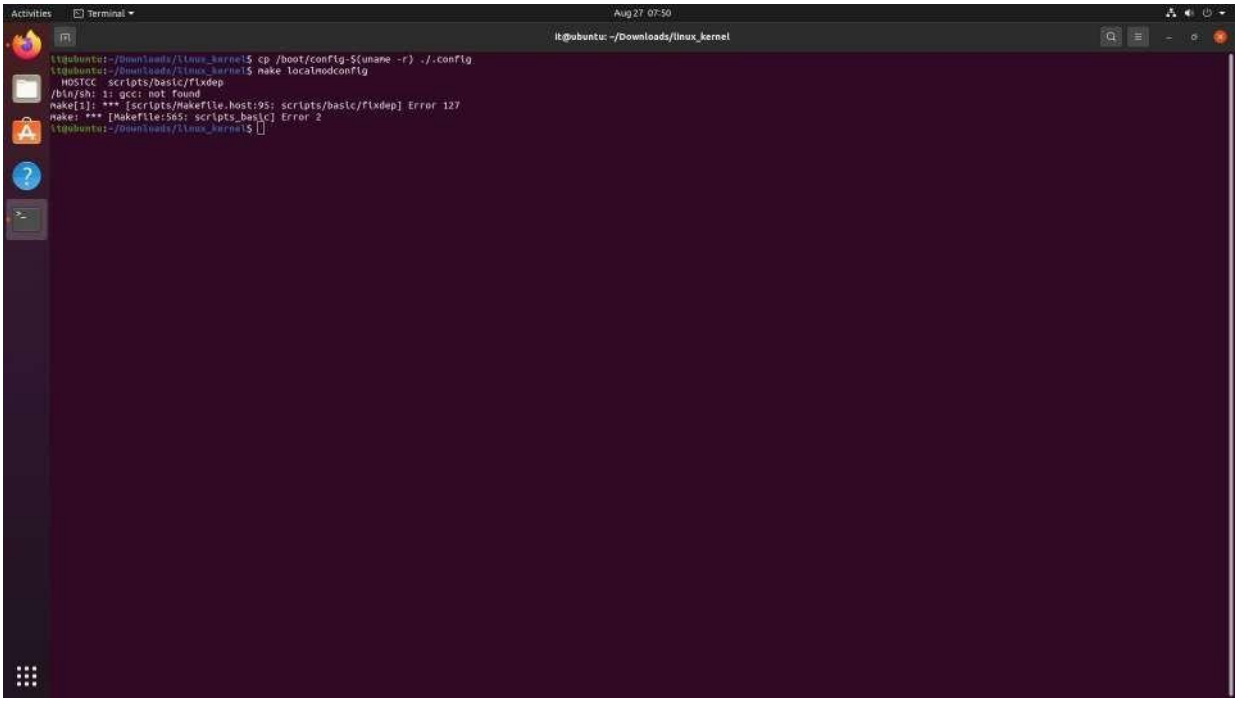
In this tutorial, I will use the config file that came with my Ubuntu Linux. To copy the config file from your distro, enter the following command:

```
cp /boot/config-$(uname -r) ./.config
```

2. Generate A Configaraion File Based On Connected Devices

If you want to use the second method, which will generate the config file based on the currently connected devices and on your hardware configuration, enter the following command.

```
make localmodconfig
```

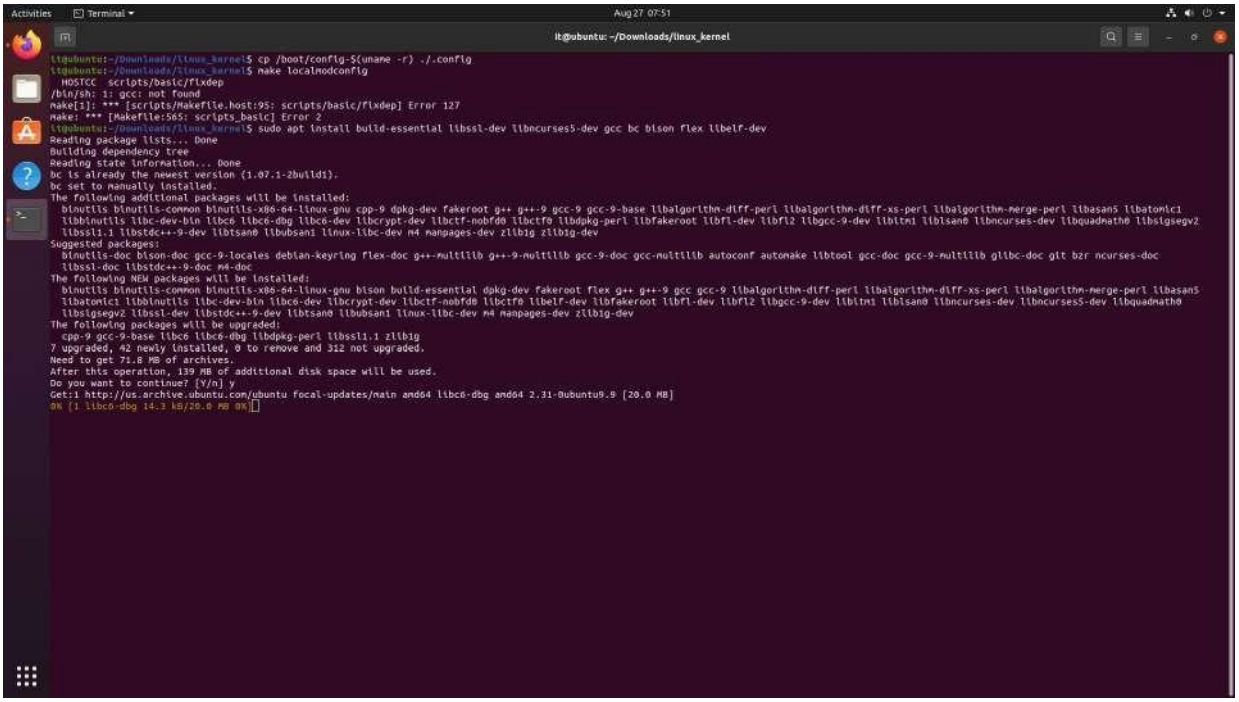


You will be asked some questions weather to include some new features that the kernel provides. Press the enter key until all the questions are over otherwise. If you know what you are doing; you can take time to answer each question.

Setting Up The Environment

Run the below command to install all the required dependency packages, for a successful compilation.

```
sudo apt install build-essential libssl-dev libncurses5-dev gcc bc bison flex
libelf-dev
```



Note: The dependencies may change over time. Also, the names of some packages defer from distribution to distribution, so please use other websites like StackOverflow to troubleshoot any compilation problems.

Before we start the compilation process, ensure screensaver and auto-sleep are disabled, as they would interrupt the compilation process.

Compiling The Linux Kernel

Now, that everything is set-up, let's compile the Linux kernel. As the compilation process will take a long time, it is your choice to run the compilation process under a single core or split the job to all the available cores in your processor.

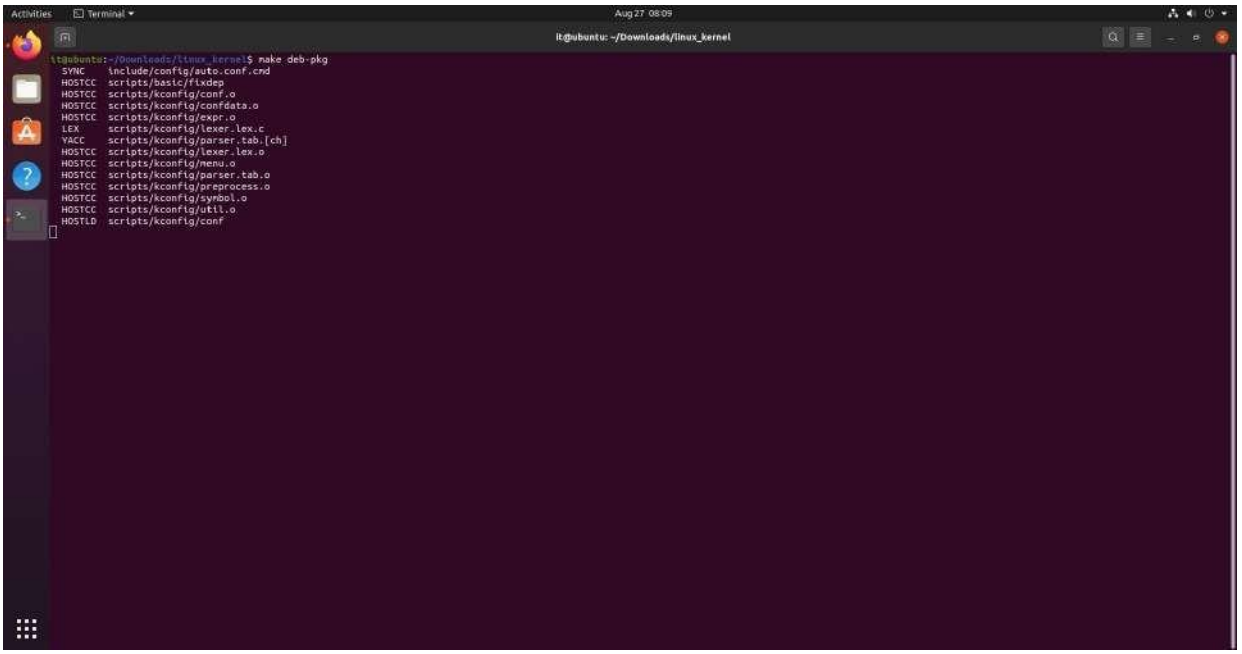
To start the compilation process; run the below command in the terminal after replacing the "[x]" with the number of cores your processor has.

```
make -j[x] deb-pkg
```

Note: Running the compilation process using single core is recommended, though it takes more time, the compilation will result in good quality. Using more than one core takes less compilation time but, compilation quality may decrease.

To start the compilation process, using one core, run the below command in terminal.

```
make deb-pkg
```



Keep pressing enter key for all the the prompts asking to enable new features. Depending upon your computer's horsepower; compilation process may take anywhere from minutes to days. Do not interrupt the compilation process, otherwise you will have to start from the beginning.

Installing The Compiled Kernel

Once the compilation process has been completed successfully without any errors, you will find some deb packages in the parent directory. Now you can distribute these deb packages as a compiled kernel. I recommend you to first try installing on a virtual machine and test the kernel and see if everything works fine.

After ensuring the compiled deb packages work as expected, you can install them by running the following command.

```
cd ../
sudo dpkg -i linux-*.deb
```

The installation will take a few minutes. Finally reboot your Linux machine and enjoy your new kernel.

Conclusion

Compiling a kernel is not so easy and only developers who are into that kind of stuff do it. There are different forums that help you in-case there is any problem. To get a better idea, please watch this video.

MANDAR KAMBLE
(2020BTEIT00004)

Assignment 8

Title- Create of RPM or DEB packages

Objective- To Create package building process in Linux

Theory (Functions of tool /How to Use /Drawbacks)-
A Debian package, or a Debian archive file, contains the executable files, libraries, and documentation associated with a particular suite of program or set of related programs. Normally, a Debian archive file has a filename that ends in .deb.

Debian control file- Package:
hello Priority:
optional Section:
python
Installed-Size: 45
Maintainer: Onkar Panchare,
onkar.panchare2000@gmail..com Architecture: i386
Version: 1.3-16
Depends: libc6 (v=
2.1)
Description: The classic greeting, and a good example The GNU hello program produces a familiar, friendly greeting. It allows nonprogrammers to use a classic computer science tool which would otherwise be unavailable to them. Seriously, though: this is an example of how to do a Debian package. It is the Debian version of the GNU Project's 'hello world' program (which is itself an example for the GNU Project).

What are those fields-
The Package field gives the package name. The Version field gives both the upstream developer's version number. The Architecture field specifies the chip for which this particular binary was compiled. The Depends field gives a list of packages that have to be installed in order to install this package successfully. The Installed-Size indicates how much disk space the installed package will consume. The Section line gives the section where this Debian package is stored at the Debian FTP sites. The Priority indicates how important is this package for installation, so that semi-intelligent software like deselect or aptitude can sort the package into a category of e.g. packages optionally installed. The Maintainer field gives the e-mail address of the person who is currently responsible for maintaining

this package. The Description field gives a brief summary of the package's features.

Steps-

```
#include<iostrea
m> using
namespace std; int
main()
{
   cout<<"Hello
   World"; return 0;
}
```

Save the above code as **helloworld.c**. At this point make sure that you have compiler installed on your system by executing:
$ sudo apt-get install build-essential

Compile and execute your code with a following command:
$ g++ helloworld.cc -o helloworld
$ ./helloworld

At this point you should have a binary executable called helloworld which prints some string on the screen.
Now that we have program ready in form of executable binary we can package it up into a debian package. To do that we would use a dpkg-deb tool. But first we need to create a debian package structure. The only files required in to build a debian package are:
1. DEBIAN/control
2. custom files to be part of the package (not required)

First create a directory called Calc.
This directory will hold all necessary package files:
$ mkdir helloworld

Next, create a control file:
$ cd helloworld
$ mkdir DEBIAN

When ready open up DEBIAN/control file
$ vi DEBIAN/control

and enter a following information:
Package:
helloworld
Version: 1.0
Section: custom
Priority: optional
Architecture: all
Essential: no
Installed-Size:
1024
Maintainer:
helloworld.org
Description: Display
String.

In root of helloworld directory create a directory which will be used to install helloworld program and copy program into this directory. Best choice for us will be /usr/bin:
$ mkdir -p /usr/bin/

$ cp /home/sdk/helloworld /usr/bin/

At this point we are ready to create a debian package.
$ cd ..
$ dpkg-deb –build helloworld
dpkg-deb: building package 'helloworld' in 'helloworld.deb'.
$ ls
helloworld
helloworld.deb To
install file
$ sudo apt-get install helloworld

Conclusion-
We Built our own debian package named helloworld which prints "Hello World" over the console

Reference- http://linuxconfig.org/

MANDAR KAMBLE
(2020BTEIT00004)

Assignment 9

Title- Install and demonstrate Server based services and their uses

Problem statement- To install and demonstrate Server based services (FTP and Telnet)

Objectives- To know server installations and configurations on Linux Platform

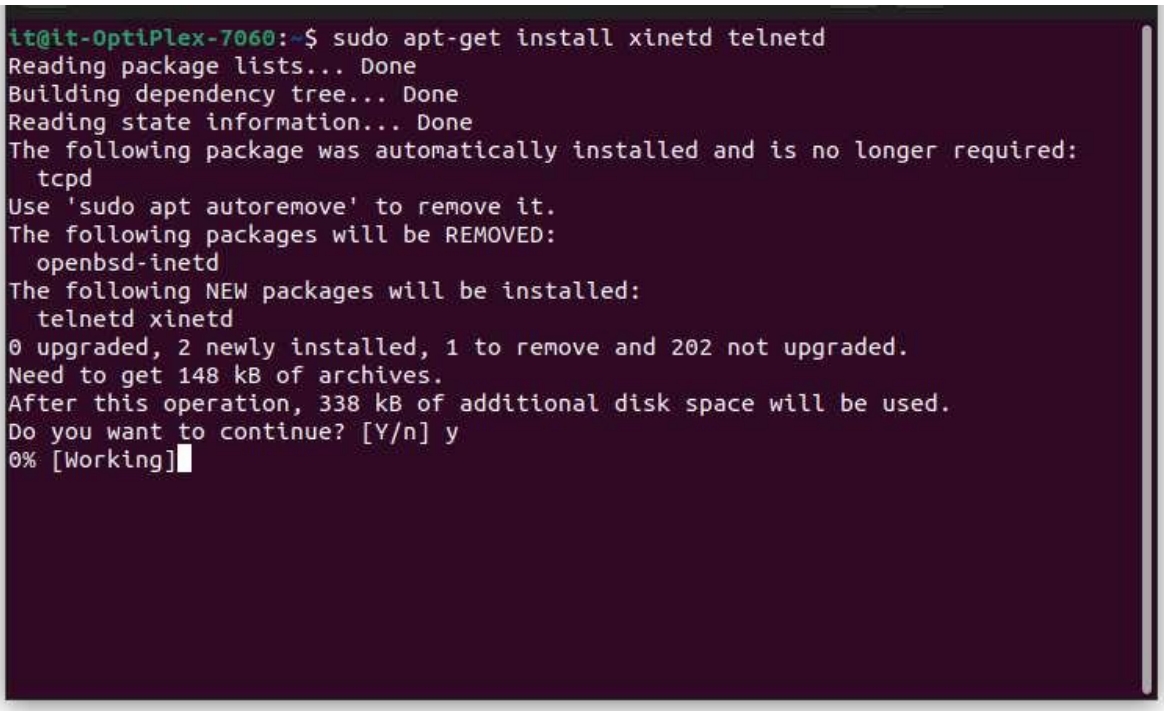
➢ **<u>Configuring Telnet Server</u>**

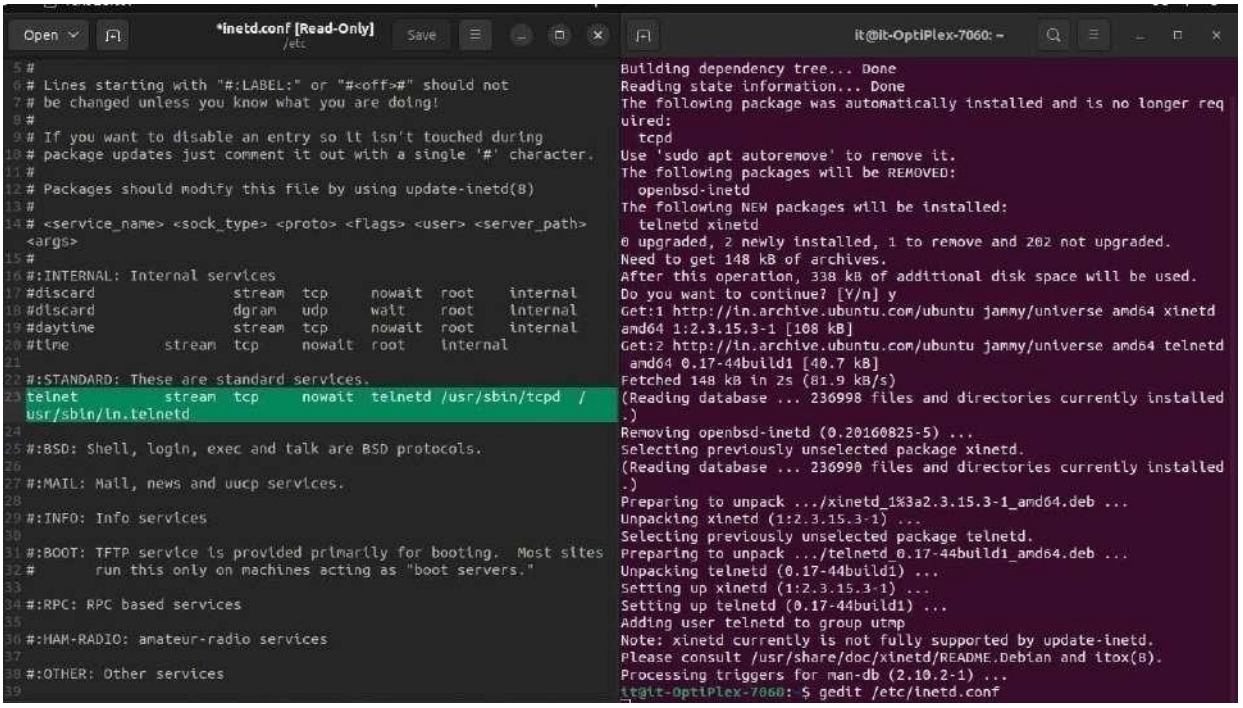
➢ Install telnet using the command-

$ sudo apt-get install xinetd telnetd

➢ Edit */etc/inetd.conf* file with root permission, ass the following line

telnet stream tcp nowait telnetd /usr/sbin/tcps /usr/sbin/in.telnetd





➢ Edit */etc/xinetd.conf* it should look like following-

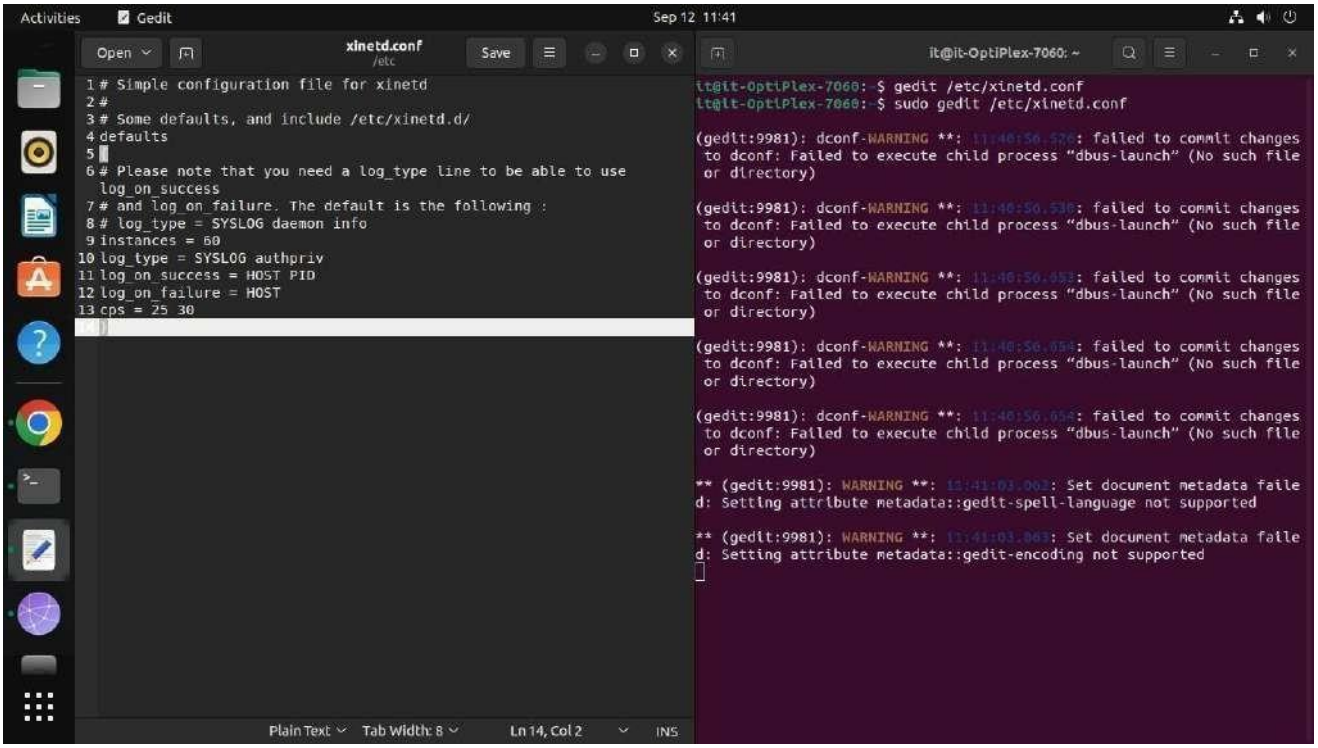
 # Simple configuration file for xinetd #

 # Some defaults, and include /etc/xinetd.d/ defaults

{

 # Please note that you need a log_type line to be able to use log_on_success # and log_on_failure. The default is the following :
 # log_type = SYSLOG daemon info
instances = 60
log_type = SYSLOG authpriv log_on_success = HOST PID
log_on_failure = HOST
cps = 25 30

}



➢ You can change telnet port number by editing */etc/services* with this line – *telnet 23/tcp*

➢ If you're not satisfied with default *configuration.Edit etc/xinetd.d/telnet*,

add following:

 # default: on
 # description: The telnet server serves telnet sessions; it uses # unencrypted username/password pairs for authentication. service telnet
{
disable =
no flags =
REUSE
socket_type =
stream wait = no
user = root
server =
/usr/sbin/in.telnetd
log_on_failure +=
USERID
}

➢ Use this command to start telnet server-

Sudo /etx/init.d/xinetd restart

Install Telnet and connect to server in Ubuntu Linux-

➢ Install telnet client

$ sudo apt install telnet

➢ Connect to Telnet server

$ Telnet <ip address

```
Trying 10.10.13.188...
Connected to 10.10.13.188.
Escape character is '^]'.
Ubuntu 22.04 LTS
it-OptiPlex-7060 login: it
Password:
Welcome to Ubuntu 22.04 LTS (GNU/Linux 5.15.0-47-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

1 device has a firmware upgrade available.
Run `fwupdmgr get-upgrades` for more information.


188 updates can be applied immediately.
To see these additional updates run: apt list --upgradable


14 updates could not be installed automatically. For more details,
see /var/log/unattended-upgrades/unattended-upgrades.log

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.


1 device has a firmware upgrade available.
Run `fwupdmgr get-upgrades` for more information.
```

Demonstrate use of Telnet-

➢ Check directories in server desktop folder using client terminal (Telnet connection)

```
Trying 10.10.13.188...
Connected to 10.10.13.188.
Escape character is '^]'.
Ubuntu 22.04 LTS
it-OptiPlex-7060 login: it
Password:
Welcome to Ubuntu 22.04 LTS (GNU/Linux 5.15.0-47-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

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the exact distribution terms for each program are described in the
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Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.


1 device has a firmware upgrade available.
Run `fwupdmgr get-upgrades` for more information.

it@it-OptiPlex-7060: $ cd Desktop/
it@it-OptiPlex-7060:~/Desktop$ ls
 Cool-desktop-backgrounds.jpg  'New Folder'  'Research Papers'
it@it-OptiPlex-7060:~/Desktop$
```
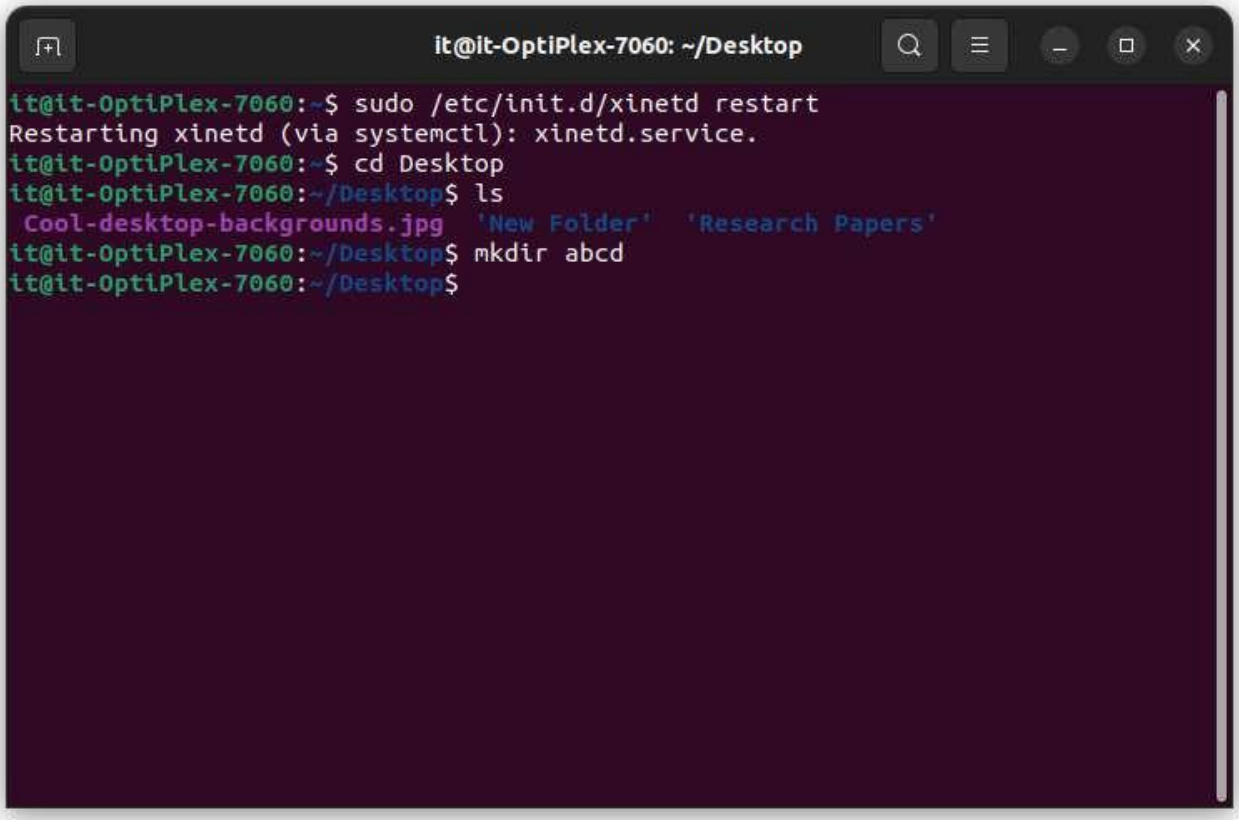
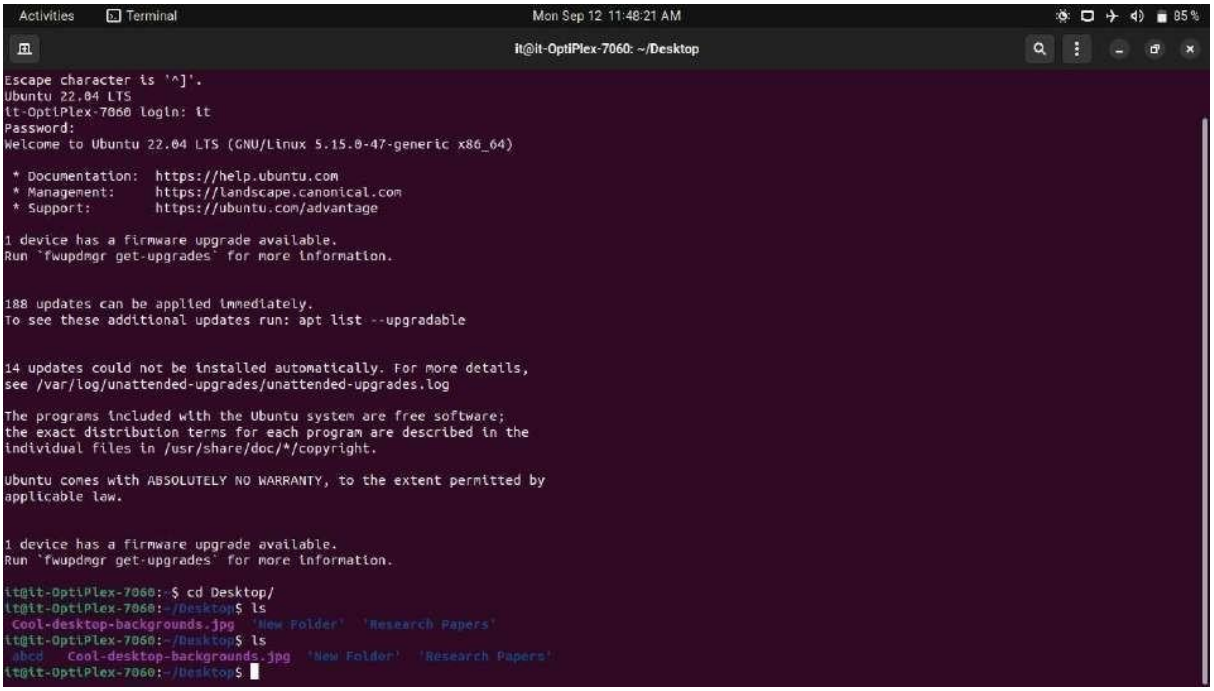

➢ Create new directory **abcd** in server folder

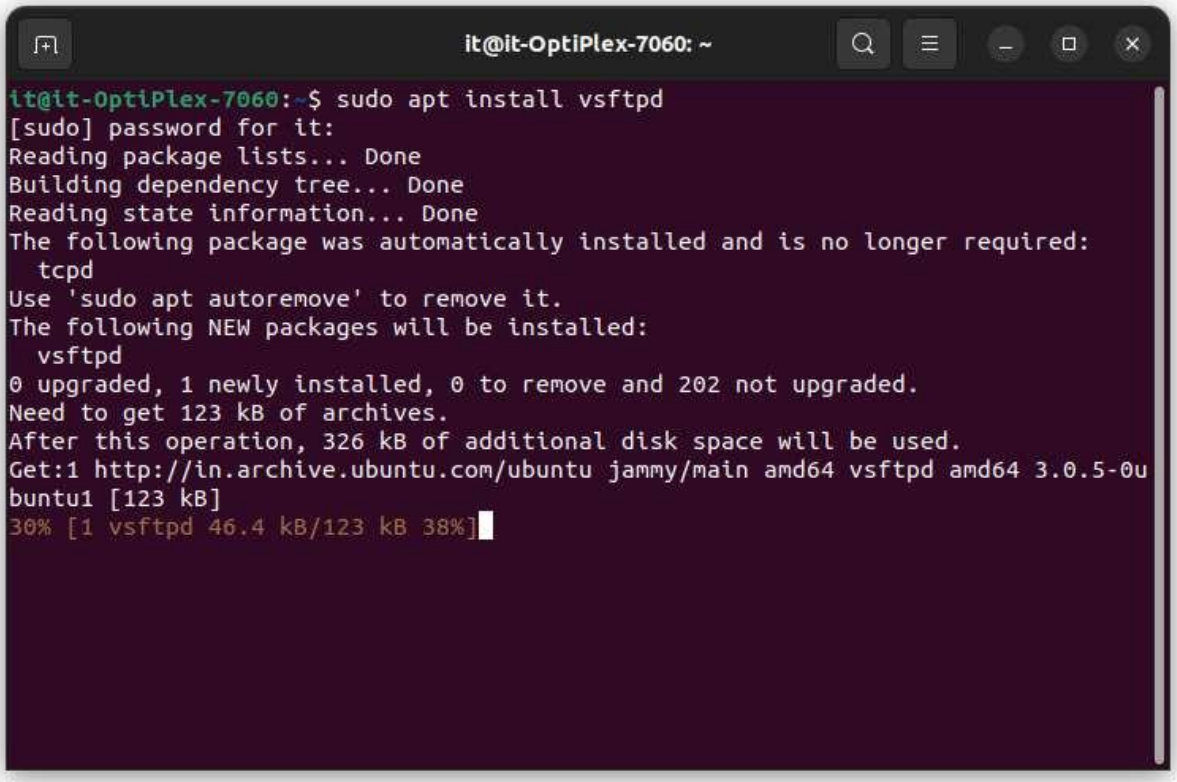


➢ Check directories in server desktop folder using client terminal



➢ Configuring FTP Server

- Install vsftpd on your system by using following command=
  $ sudo apt install vsftpd



- Configure vsftp server-
  It's always best practice to keep a backup of the original config file, just in case something goes wrong later. Rename the default config file:
  $ sudo mv /etc/vsftpd.conf /etc/vsftpd.conf_orig

- Create a new *vsftpd* configuration file using nano/vi editor-
  $ sudo nano /etc/vsftpd.conf

- **Copy the following base configuration into your file-**

This configuration will suffice for a basic FTP server, and can later be tweaked for the specific needs of environment once verified this is working properly:

listen=NO

listen_ipv6=YES

anonymous_enable=NO

local_enable=YES

write_enable=YES

local_umask=022

dirmessage_enable=YES

use_localtime=YES

xferlog_enable=YES

connect_from_port_20=

YES

chroot_local_user=YES

secure_chroot_dir=/var/run/vsftpd/empty p

am_service_name=vsftpd

rsa_cert_file=/etc/ssl/certs/ssl-cert-snakeoil.

pem

rsa_private_key_file=/etc/ssl/private/ssl-cert-snakeoil.key

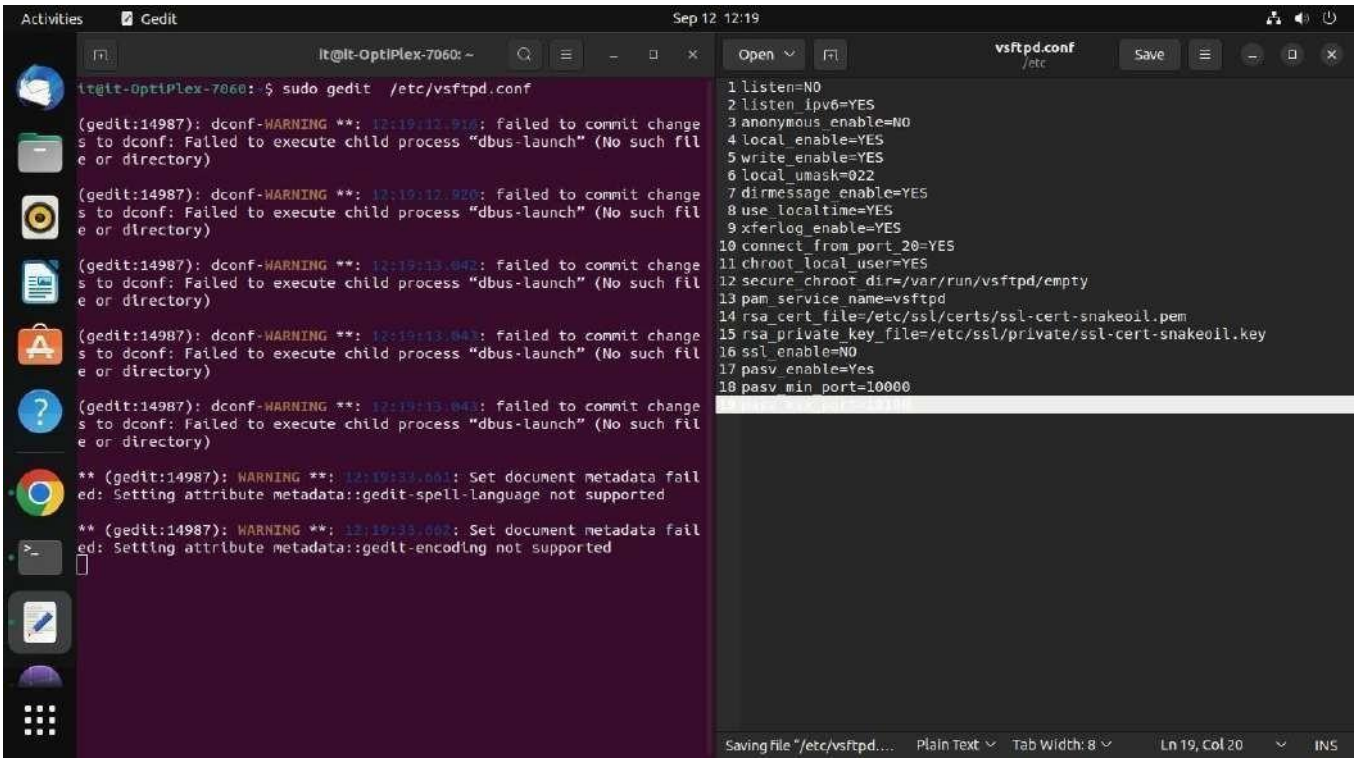
ssl_enable=NO

pasv_enable=Yes pasv_min_port=10000

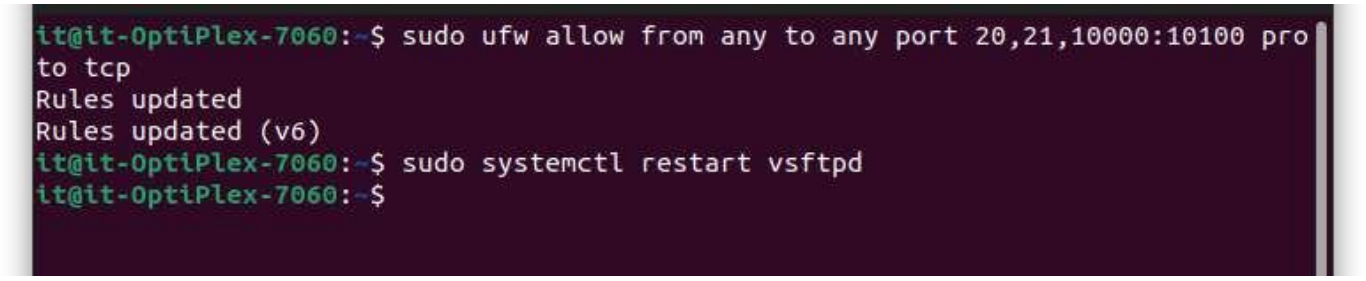
pasv_max_port=10100

allow_writeable_chroot=YES

Paste the above lines into your newly created */etc/vsftpd.conf* file, and then save changes and close the file.



- Allow Firewall
  Ubuntu's built-in firewall will block FTP traffic by default, but the following command will create an exception in UFW to allow the traffic:
  $ sudo ufw allow from any to any port 20,21,10000:10100 proto tcp
- Restart FTP server
  With the configuration file saved and the firewall rules updated, restart vsftpd to apply the new changes:
  $ sudo systemctl restart vsftpd

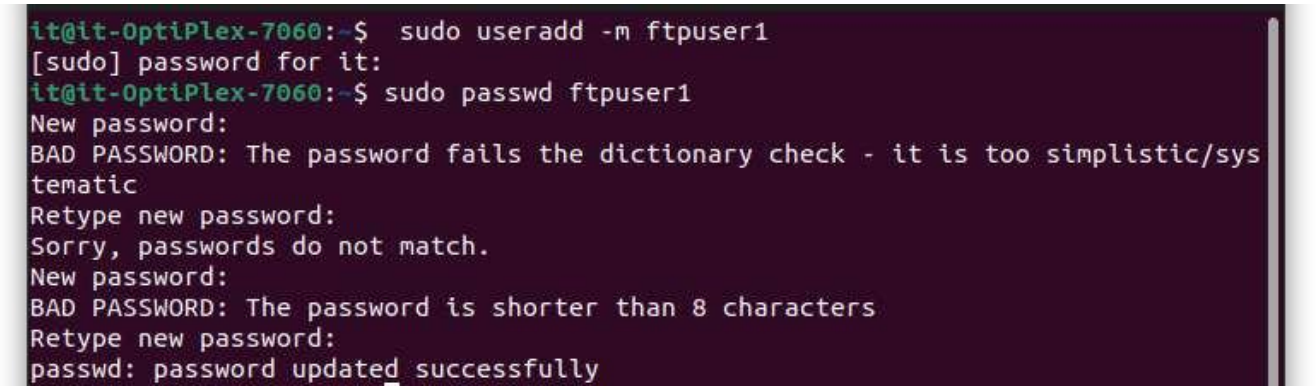


- Create an FTP user

$ sudo useradd -m ftpuser

$ sudo passwd ftpuser

Add password to successfully add user



- In order to verify that everything's working properly, store at least one file in ftp user's home directory. This file should be visible when we login to FTP in the next steps.

  $ sudo bash -c "echo FTP TESTING > /home/ftpuser/FTP-TEST"

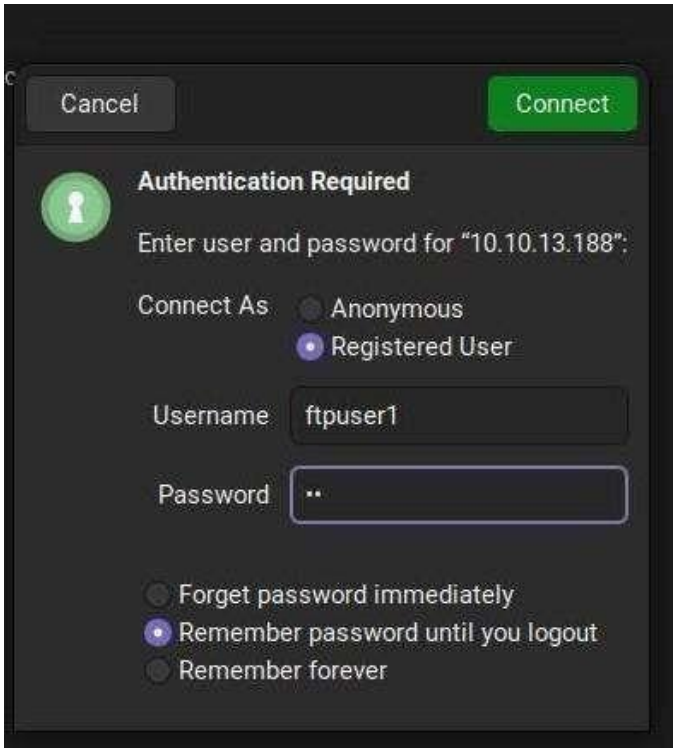
- Connect to FTP server

  There are many options for FTP clients to connect to server, but the default GNOME GUI on Ubuntu already comes with the ability to connect to FTP servers from the file manager.

Here’s how to use it to connect to your FTP server.

1. Open the file manager from within the Activities menu or the quick launch bar.
2. Click on “Other Locations” and enter ftp://1<ip address> in the “Connect to server” box at the bottom of the window and click connect.
3. Choose “registered user” and then enter the FTP account’s credentials that we set up earlier and click connect.

- Entering our FTP user credentials Upon a successful connection, you’ll see the file you created earlier. You’ll now be able to download and view this file, or upload your own contents to the directo



Successful connection to FTP server, showing our file

Conclusion:

We learnt detailed installation and configuration of FTP and Telnet server. We learnt how client connection to above servers is made

References:

1. https://linuxconfig.org/how-to-setup-and-use-ftp-server-in-ubuntu-linux
2. http://ubuntuguide.net/install-and-enable-telnet-server-in-ubuntu-linux

Assignment 11

MANDAR KAMBLE
(2020BTEIT00004)

Title- Docker container- An OSS virtualization command, practice, use and understanding

Objectives-

1. To understand and use docker virtualization as OSS
2. With the help of Docker-compose deploy the Wordpress and Mysql container and access the front end of Wordpress

Introduction-

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. With Docker, you can manage your infrastructure in the same ways you manage your applications. By taking advantage of Docker's methodologies for shipping, testing, and deploying code quickly, you can significantly reduce the delay between writing code and running it in production

Docker Features-

1. Easy and Faster Configuration
2. Increase productivity
3. Application Isolation
4. Swarm
5. Routing Mesh
6. Security Management

Installation-

Uninstall old versions-

$sudo apt-get remove docker docker-engine docker.io

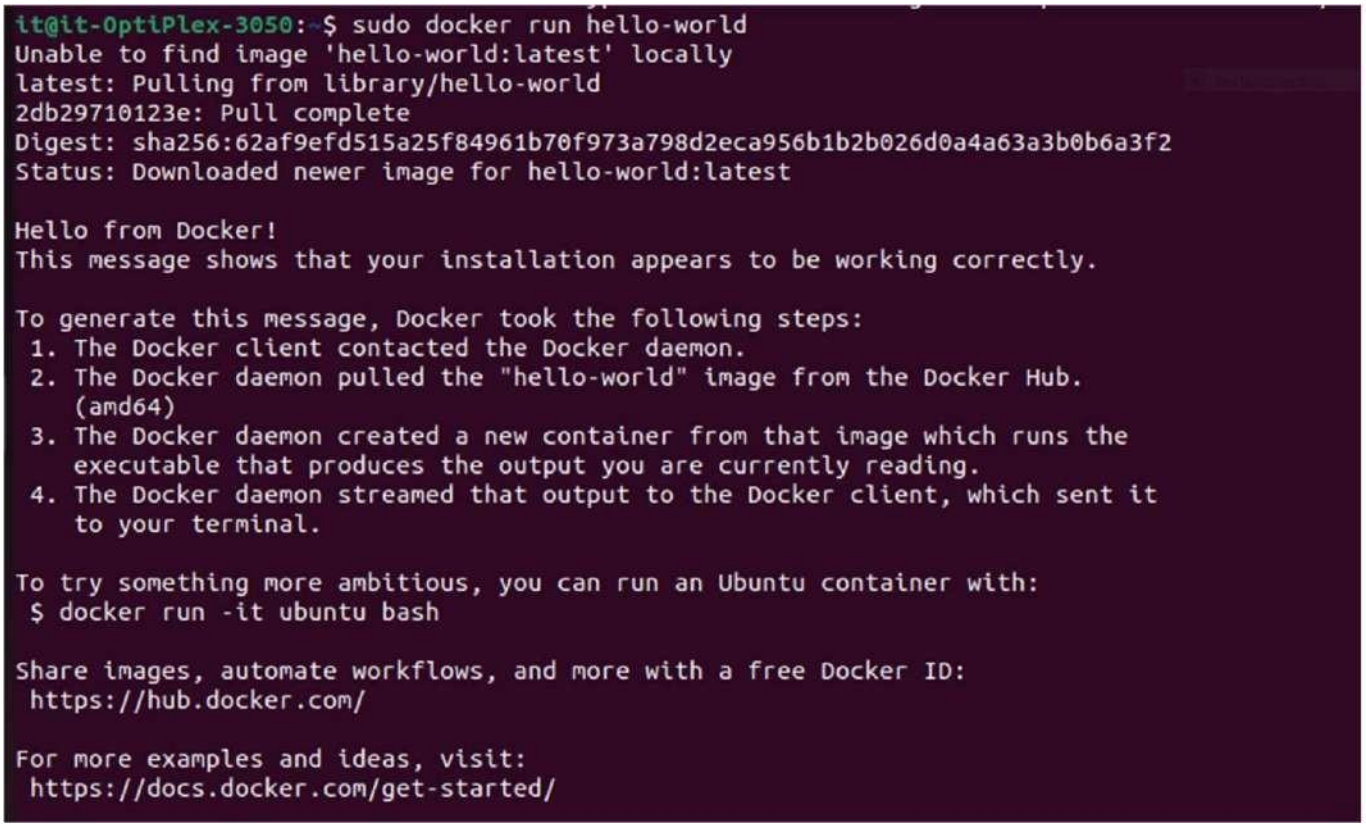
Install Docker CE-

$sudo apt-get update $sudo apt-get install docker-ce

$ sudo apt-get install docker-ce 3.apt-cache madison docker-ce 17.09.0 ce-0 ubuntu https://download.docker.com/linux/ubuntu xenial/stable amd64 Packages

Implementing wordpress through docker screenshots-

1. Pulling hello-world image from docker-hub-



2. Pulling wordpress image from docker-hub-

```
it@it-OptiPlex-3050:~$ sudo docker pull wordpress
[sudo] password for it:
Using default tag: latest
latest: Pulling from library/wordpress
31b3f1ad4ce1: Already exists
ad30ef427bea: Pull complete
deeb65fd0ffb: Pull complete
136a0d294b5e: Pull complete
c8d44545310e: Pull complete
f4d7b00e3206: Pull complete
294cc749e981: Pull complete
e19e2497f8a5: Pull complete
b0f9ed317db4: Pull complete
325b2945a2e0: Pull complete
8285ab747036: Pull complete
588c5e3629c0: Pull complete
b967f35769db: Pull complete
b163598a08e0: Pull complete
69be19c6283b: Pull complete
93b26c57a35d: Pull complete
1a7a09ffbf3b: Pull complete
8f0e13184ffc: Pull complete
148b3414dc3e: Pull complete
bb6e545e086c: Pull complete
aeb47f5fd8d1: Pull complete
Digest: sha256:3dff5e9e1497b522b48dd8a0fcf50dfbbb925f1487c6db581c28e73fdbfc49c1
Status: Downloaded newer image for wordpress:latest
docker.io/library/wordpress:latest
```

3. Pulling my-sql image-

```
it@it-OptiPlex-3050:~$ sudo docker pull mysql
[sudo] password for it:
Using default tag: latest
latest: Pulling from library/mysql
051f419db9dd: Pull complete
7627573fa82a: Pull complete
a44b358d7796: Pull complete
95753aff4b95: Pull complete
a1fa3bee53f4: Pull complete
f5227e0d612c: Pull complete
b4b4368b1983: Pull complete
f26212810c32: Pull complete
d803d4215f95: Pull complete
d5358a7f7d07: Pull complete
435e8908cd69: Pull complete
Digest: sha256:b9532b1edea72b6cee12d9f5a78547bd3812ea5db842566e17f8b33291ed2921
Status: Downloaded newer image for mysql:latest
docker.io/library/mysql:latest
```

4. Pulling nginix server image-Accessing wordpress on local host after

5. binding port 5000 onn host machine to container port (port no. 80/tcp)

$ sudo docker run -p 5000:80 wordpress

MANDAR KAMBLE (2020BTEIT00004)

Assignment 18

Licensing (terms n conditions) comparisons

1. Social Media (Twitter v/s Facebook)

	Twitter	Facebook
Information Collection	• the web page visited • IP address • browser type, • operating system, • cookie information.	• Your activity and information that you provide • Friends, followers and other connections • App, browser and device information • Information from partners, vendors and third parties
Use of Collected Data	• Operate, improve, and personalize our services. • Foster safety and security. • Measure, analyze and make our services better. • Communicate with you about our services. • Research	• To provide, personalize and improve our products • To promote safety, security and integrity • To provide measurement, analytics and business services • To communicate with you • To research and innovate for social good

2. Gmail v/s Rediff mail

	Gmail	Rediff mail
Information Collected	• People with whom Views and interactions with content and ads you communicate or share content • Activity on third-party sites and apps that use our services • Chrome browsing history you've synced with your Google Account	• web server cookie stored on your hard drive • an IP address, assigned to the computer which you use • the domain server through which you access our service • the type of computer you're using • the type of web browser you're using
Use of collected data	• Provide our services • Maintain & improve our • Provide personalized services, including content and ads • Measure performance • Communicate with you	• direct our efforts for product improvement • contact you as a survey respondent • send you promotional materials from our contest sponsors or advertisers • help us provide personalized features • tailor our sites to your interest • to get in touch with you in the case of password retrieval and policy changes

3. AWS v/s Azure

	AWS	Azure
Information Collected	• Information You Give Us: We collect any information you provide in relation to AWS Offerings. • Automatic Information: We automatically collect certain types of information when you interact with AWS Offerings. • Information from Other Sources: We might collect information about you from other sources, including service providers, partners, and publicly available sources.	• Microsoft collects data from you, through our interactions with you and through our products. You provide some of this data directly, and we get some of it by collecting data about your interactions, use, and experiences with our products.
Use of collected data	• Provide AWS Offerings: We use your personal information to provide and deliver AWS Offerings and process transactions related to AWS Offerings, including registrations, subscriptions, purchases, and payments. • Measure, Support, and Improve AWS Offerings: We use your personal information to measure use of, analyze performance of, fix errors in, provide support for, improve, and develop AWS Offerings. • Recommendations and Personalization: We use your personal information to recommend AWS Offerings that might be of interest to you, identify your preferences, and personalize your experience with AWS Offerings. • Comply with Legal Obligations: In certain cases, we have a legal obligation to collect, use, or retain your personal information. For example, we collect bank account information from AWS Marketplace sellers for identity verification. • Communicate with You: We use your personal information to communicate with you in relation to AWS Offerings via different channels (e.g., by phone, email, chat) and to respond to your requests.	• Provide our products, which includes updating, securing, and troubleshooting, as well as providing support. It also includes sharing data, when it is required to provide the service or carry out the transactions you request. • Improve and develop our products. • Personalise our products and make recommendations. • Advertise and market to you, which includes sending promotional communications, targeting advertising, and presenting you with relevant offers.

4. MAC OS v/s Windows

	Mac OS	Windows
Information Collected (Privacy)	• Apple Pay will transfer payment information in an encrypted format between your Mac and your Supported Device to complete your transaction. • Data that directly identifies you — such as your name — is personal data, and also data that does not directly identify you, but that can reasonably be used to identify you — such as the serial number of your device — is personal data. Aggregated data is considered non-personal data for the purposes of this Privacy Policy.	• Many of these features can be switched off in the user interface, or you can choose not to use them. • By accepting this agreement and using the software you agree that Microsoft may collect, use, and disclose the information as described in the Microsoft Privacy Statement (aka.ms/privacy), and as may be described in the user interface associated with the software features.
Use of collected data	• Power Our Services. Apple collects personal data necessary to power our services, which may include personal data collected to improve our offerings, for internal purposes such as auditing or data analysis. • Process Your Transactions. To process transactions, Apple must collect data such as your name, purchase, and payment information. • Communicate with You. To respond to communications, reach out to you about your transactions or account, market our products and services, provide other relevant information, or request information or feedback. • Security and Fraud Prevention To protect individuals, employees, and Apple and for loss prevention and to prevent fraud, including to protect individuals, employees, and Apple for the benefit of all our users, and prescreening or scanning uploaded content for potentially illegal content, including child sexual exploitation material.	• Provide our products, which includes updating, securing, and troubleshooting, as well as providing support. It also includes sharing data, when it is required to provide the service or carry out the transactions you request. • Improve and develop our products. • Personalise our products and make recommendations. • Advertise and market to you, which includes sending promotional communications, targeting advertising, and presenting you with relevant offers. • Use data to operate our business, which includes analyzing our performance, meeting our legal obligations, developing our workforce and doing research.

References:

- https://www.facebook.com/privacy/policy/
- http://www.rediff.com/w3c/policy.html
- https://policies.google.com/privacy#infocollect
- https://aws.amazon.com/privacy/
- https://privacy.microsoft.com/en-ca/privacystatement

MANDAR KAMBLE (2020BTEIT00004)

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