**TERMINOLOGIES AND FUNDAMENTALS**

**1. Linux and Scripting**

* **Linux Fundamentals**: File system, permissions, networking, process management.
* **Shell Scripting**: Bash (essential), plus maybe some Python for automation.

**2. Version Control**

* **Git**: Branching, merging, rebasing, pull requests, and collaboration via GitHub or GitLab.

**3. Continuous Integration/Continuous Deployment (CI/CD)**

* **Concepts**: Pipelines, build automation, test automation, deployment strategies.
* **Tools**: Jenkins, GitHub Actions, GitLab CI, CircleCI.

**4. Configuration Management & Infrastructure as Code**

* **Tools**:
  + Ansible (agentless configuration)
  + Terraform (infrastructure provisioning)
* **Concepts**: Idempotency, declarative vs imperative approach.

**5. Containers & Orchestration**

* **Docker**: Build, run, network, and manage containers.
* **Kubernetes**: Pods, services, deployments, scaling, and Helm charts.

**6. Cloud Platforms**

* **Learn One Cloud Provider Well**:
  + **AWS** (most popular in industry)
  + Others: Azure, Google Cloud (GCP)
* **Core Services**: EC2, S3, IAM, VPC, RDS, CloudWatch, Lambda.

**7. Monitoring & Logging**

* **Concepts**: Observability, metrics, logs, traces.
* **Tools**: Prometheus, Grafana, ELK stack, Datadog, New Relic.

**8. Networking Basics**

* **Topics**: DNS, HTTP/HTTPS, TCP/IP, firewalls, VPNs, load balancers.

**9. Security Fundamentals**

* IAM (Identity and Access Management)
* Secrets management (e.g., HashiCorp Vault)
* Secure CI/CD practices

**10. Soft Skills & Collaboration**

* Agile/Scrum basics
* Communication with developers, testers, and operations
* Documentation and knowledge sharing

### HOW TO PROPERLY PROMTS AS DEV OPS ENG.. ✅ 1. ****Linux & Scripting****

**Bad prompt**:

How do I fix a permission issue?

**Good prompt**:

I'm trying to run a Bash script on Ubuntu 22.04 and it fails with Permission denied. I’ve used chmod +x script.sh but still can’t execute it. The script is in /usr/local/bin. What could be causing this?

### ✅ 2. ****Git & Version Control****

**Bad prompt**:

Git merge isn’t working.

**Good prompt**:

I'm trying to merge a feature branch into main, but I'm getting merge conflicts in config.yml. What’s the best way to resolve these conflicts and keep the version from the feature branch?

### ✅ 3. ****CI/CD (Jenkins, GitHub Actions, etc.)****

**Bad prompt**:

My pipeline is failing. Help?

**Good prompt**:

I'm using GitHub Actions to deploy a Node.js app. The workflow fails at the npm install step with EACCES error. I tried adding --unsafe-perm but it didn’t work. Any idea how to fix this in the GitHub runner?

### ✅ 4. ****Terraform / Infrastructure as Code****

**Bad prompt**:

Terraform apply isn’t working.

**Good prompt**:

I’m using Terraform to create an AWS EC2 instance. When I run terraform apply, I get an error: InvalidAMIID.NotFound. I double-checked the AMI ID for my region. Is there a better way to reference the latest AMI dynamically?

### ✅ 5. ****Docker****

**Bad prompt**:

My container is not working.

**Good prompt**:

I'm running a Docker container with a Python app using docker run -p 5000:5000 myapp, but when I go to localhost:5000 it doesn’t connect. The app runs on port 5000 inside the container. How can I debug this?

### ✅ 6. ****Kubernetes****

**Bad prompt**:

My pod won't start.

**Good prompt**:

I deployed a pod using a YAML file, but it’s stuck in CrashLoopBackOff. When I run kubectl logs <pod>, I see Connection refused on port 80. The container uses NGINX. How do I troubleshoot this startup failure?

### ✅ 7. ****Cloud (AWS Example)****

**Bad prompt**:

EC2 isn’t connecting.

**Good prompt**:

I launched an EC2 instance with a security group allowing port 22 from my IP. When I try to SSH, I get Connection timed out. I checked my IP and it matches. Could this be a VPC or routing table issue?

Git is for: Version Control in 2 words.

Git from Remote to local Git Clone.

Git hub website like Facebook.  
  
  
  
Git pushing from local to Remote using git commands\*\*\*\*\*\*\*

0. git pull - para ma-update yung main branch(assuming na nasa main branch).

1. git branch -c feature/test-study origin/main - creating new branch for new projects or file path and para maiwasan magupload sa ibang branch.

2. git switch branchName

3. git branch - to check the existing branch or if the new branch are already in the system.

4. git status - to check if there are changes in branch.

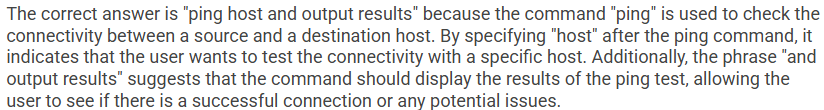
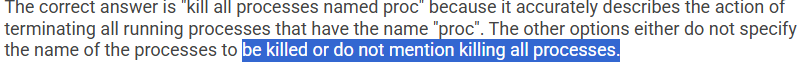
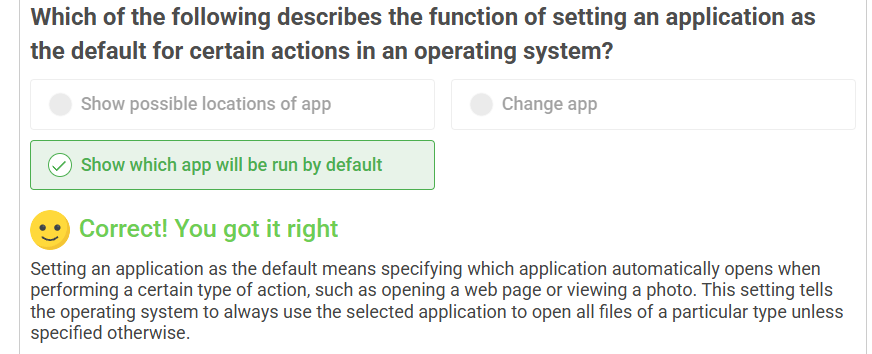
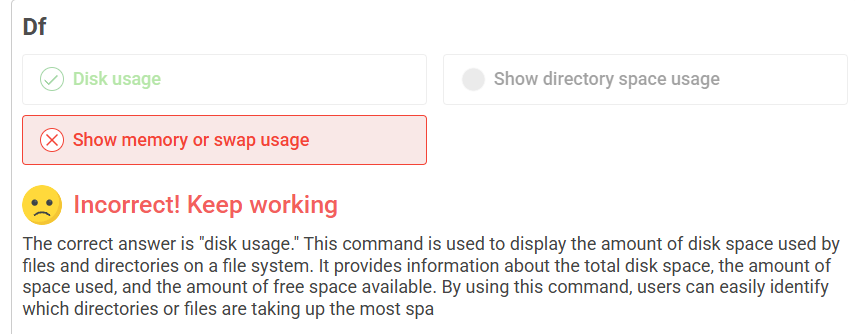
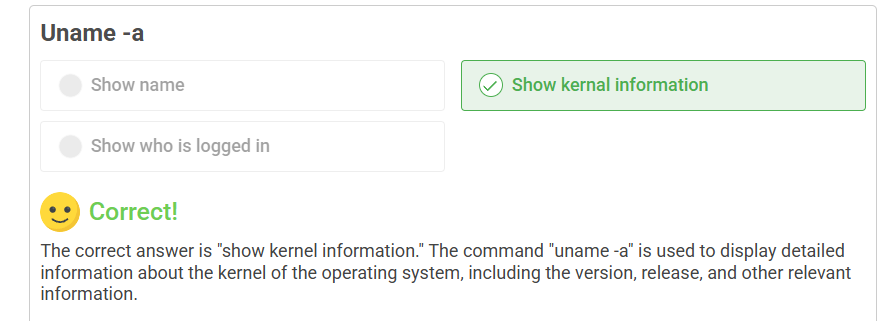
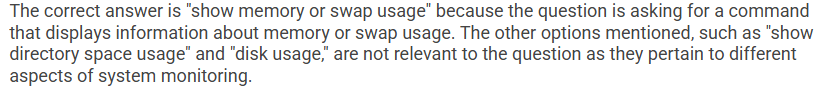
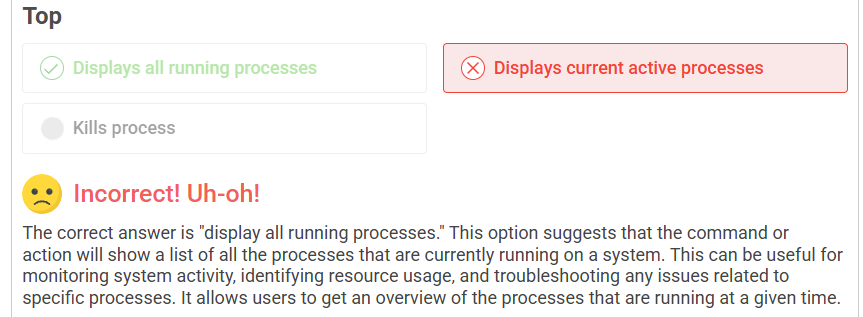
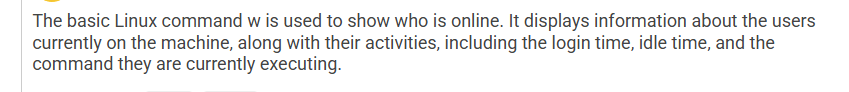
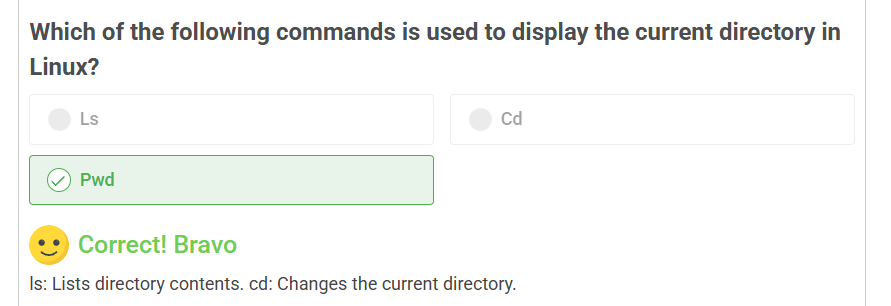
5. echo. > filename.txt - since there are no changes, "hard changes" is applied. (not best practice).

6. git status - to check if again if there are changes in the file

7. git add filename.txt - para nasave yung changes sa specific file.

8. git commit -m "Message be specific and reasonable"

9. git push origin HEAD

ghp\_BZaHGNUeSITeY0nAtKFH5ZARPN4Iae1o4FfK  
  
  
ghp\_ZbB8pp0KkYRwSQGfrvV4xCVCPzZfu735vUmz legits|  
  
  
ghp\_Tq9v9Jwj44Qly03t1Z1RTPcpMyfwbn0PcDyx  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
ls -al  
  
The command "ls -al" is used to display a formatted listing of all files and directories in the current directory, including hidden files. The "-a" flag is used to show all files, including hidden files, and the "-l" flag is used to display the files in a long format, providing additional information such as permissions, owner, size, and modification date  
  
Cd dir  
  
The command "cd dir" is used to change the current directory to the directory named "dir". It does not refer to renaming a file or creating a new directory.  
  
Cp file1 file2  
  
The given command "cp file1 file2" is used to copy the contents of "file1" and paste them into "file2". It does not move or delete any files.  
  
Pwd  
  
The command "pwd" stands for "print working directory" and is used to display the current directory that the user is in. It does not create or update files, nor does it delete files.  
  
Touch  
  
The correct answer is "create or update file" because the action of "touch" in computing refers to creating a new file or updating the timestamp of an existing file. It does not involve deleting or moving a file.  
  
Man command  
  
The correct answer is "show manual for command". The "man" command is used in Unix and Unix-like operating systems to display the manual pages for a specific command.  
  
  
  
Mkdir dir  
  
The correct answer is "create directory dir" because the command "mkdir dir" is used to create a new directory named "dir". The other options do not accurately describe the action of creating a directory.  
  
Rm file  
  
The correct answer is "delete file" because the command "rm" is used to remove or delete a file in Unix-based operating systems. It is a commonly used command to permanently delete a file from the system.  
  
Rm -r dir  
  
The given command "rm -r dir" is used to delete a directory named "dir". The "-r" option is used to recursively delete all the files and subdirectories within the specified directory  
  
Ps  
The correct answer is "display currenty active processes" because the question asks for a command that will show the currently active processes. The other options, "display date and time" and "show months calendar," do not fulfill this requirement.  
  
Mv file1 file2  
The command "mv file1 file2" is used to rename or move "file1" to "file2". It does not delete any files or copy "file1" to "file2"  
  
**Which command is used to list all files and directories in the current directory in Linux?**  
  
Ls  
  
  
  
Head file  
  
The command "head file" is used to display the top 10 lines of a file. It is a command-line tool commonly used in Unix-like operating systems to view the beginning portion of a file.  
  
Uptime  
  
The correct answer is "show current uptime" because the command "uptime" is used to display the current uptime of a system. It provides information about how long the system has been running since it was last booted up or restarted.  
  
Tail file  
  
The correct answer is "show bottom 10 lines" because the command "tail" is used to display the last few lines of a file, and the instruction specifically asks for the bottom 10 lines.  
  
Cp -r dir1 dir2  
  
The given command "cp -r dir1 dir2" is used to copy the contents of "dir1" to "dir2". The "-r" option is used to copy directories recursively, meaning it will copy all the files and subdirectories within "dir1" to "dir2".  
  
Cd   
  
The command "cd" is used to change the current directory in a command line interface. In this case, the correct answer suggests that the command "cd" should be used to change the current directory to the "home" directory.  
  
Ls  
  
The answer "directory listing" is correct because the command "ls" is used to display the contents of a directory. It provides a list of files and directories within the current directory.  
  
  
More file  
  
The correct answer is "show contents of files" because the question is asking for a command that will display the contents of files. The other options, "show top 10 lines" and "show bottom 10 lines," suggest commands that would only display a portion of the file, rather than the entire contents.  
  
Rm -f file   
  
The command "rm -f file" is used to forcefully remove a file. The "-f" flag stands for "force" and it allows the deletion of the file without prompting for confirmation.  
  
Whereis app  
  
The correct answer is "show possible locations of app". This option suggests that it will display the various locations where the app can be found or accessed  
  
Finger user  
  
The command "finger user" is used to display information about a specific user. It provides details such as the user's login name, full name, login time, idle time, and terminal location  
  
Ping host  
  
  
  
  
Kill all proc  
  
  
  
**Tar cf file.tar files**  
  
The given command "tar cf file.tar files" creates a tar file named "file.  
  
  
  
  
  
Cal  
  
The correct answer is "show months calendar" because the word "cal" is a common abbreviation for "calendar." Therefore, when the user inputs "cal," the expected action would be to display the months calendar.  
  
  
  
Whoami  
  
The given answer "who are you logged in as" is a possible response to the question "whoami". It is asking for the username or identity of the current user who is logged into the system.  
  
Tar xf file.tar  
  
The command "tar xf file.tar" is used to extract the files from a tar file named "file.  
  
  
Date  
  
The correct answer is "show date and time" because it is the option that includes both the date and the time. The other options only include either the month calendar or just the date.  
  
  
Df  
  
  
  
  
  
Free  
  
  
  
  
  
W  
  
  
  
  


| **Flag** | **Description** | **Example** |
| --- | --- | --- |
| -l | Long listing (permissions, owner, size, date) | ls -l |
| -a | Show hidden files (those starting with .) | ls -a |
| -h | Human-readable sizes (used with -l) | ls -lh |
| -R | List subdirectories recursively | ls -R |
| -t | Sort by modification time | ls -lt |