Sure! Here’s a clear, organized documentation of the tasks you were asked to do in this Linux lab, explained step-by-step:

**Linux Command Line Lab: Identify Connection Properties**

This lab helps you practice commands related to identifying your Linux system information, user details, connection info, and working with dates and files.

**1. Check Linux Distribution**

* **Command:**
* hostnamectl
* **Purpose:**  
  Shows system information including the Linux distribution under the **Operating System** field.

**2. Check User Identity and Groups**

* **Command:**
* id
* **Purpose:**  
  Prints your username, user ID, and group memberships.
* **Command:**
* whoami
* **Purpose:**  
  Prints only your current username.

**3. Show Detailed Connection Info**

* **Command:**
* who am i
* **Purpose:**  
  Shows detailed info about your current connection/session.

**4. Clear Terminal Screen**

* **Shortcut:**  
  Ctrl + l
* **Purpose:**  
  Clears the terminal screen and moves the prompt to the top.

**5. View All Connections**

* **Command:**
* who
* **Purpose:**  
  Lists all users currently connected to the system, showing your connection as pts/1.

**6. Show Detailed Connection and CPU Usage**

* **Command:**
* w
* **Purpose:**  
  Displays who is logged in and their processes plus CPU usage details.

**7. Identify Terminal Device**

* **Command:**
* tty
* **Purpose:**  
  Shows the terminal device file your session is connected to (e.g., /dev/pts/1).

**8. List Terminal Device File Details**

* **Command:**
* ls -l /dev/pts/1
* **Purpose:**  
  Lists detailed metadata for the terminal device file.
* **Shortcut:**
* ls -l $(tty)
* **Purpose:**  
  Uses command substitution to list details of the current terminal device file.

**9. View Current Date and Format**

* **Commands:**
* date
* date +%F
* **Purpose:**
  + date prints the current date and time.
  + date +%F formats the date as YYYY-MM-DD.

**10. Copy and Backup File with Date Extension**

* **Command:**
* cp /etc/hosts ~/hosts.$(date +%F)
* **Purpose:**  
  Copies the file /etc/hosts to your home directory, appending the current date to the filename.
* **Check:**
* ls ~/hosts\*
* **Purpose:**  
  Lists all files in your home directory starting with hosts.

**11. Display Calendars**

* **Commands:**
* cal
* cal -3
* cal 9 1752
* **Purpose:**
  + cal shows the current month calendar.
  + cal -3 shows the previous, current, and next month.
  + cal 9 1752 shows the calendar for September 1752 (Gregorian calendar adoption month in the US).

**12. Print Environment Variables**

* **Print your default shell:**
* echo $SHELL
* **Print SSH connection details:**
* echo $SSH\_CONNECTION
* **Use TAB completion:**  
  Start typing echo $SSH\_CON and press TAB to auto-complete variable names.

**13. Extract Client IP Address from SSH\_CONNECTION**

* **Command:**
* echo $SSH\_CONNECTION | cut -f1 -d" "
* **Purpose:**  
  Pipes SSH connection info to cut to extract the first field (client IP address), using space as the delimiter.

**Summary:**

* Used commands to identify OS, user, and session info (hostnamectl, id, whoami, who, w).
* Learned terminal device handling (tty, ls -l).
* Practiced date commands and file copying with dynamic filenames (date, cp).
* Displayed calendars for specific months and years (cal).
* Read environment variables and extracted specific info using cut.

If you want, I can also help you with **sample command outputs** or **how to write this as a formal report**. Would you like that?

Absolutely! Here's a simple explanation of everything the lab is asking you to do, step by step:

**🧠 Goal of this Exercise**

You're learning **how to find help** in Linux using:

* --help option
* man (manual) pages
* help for shell built-in commands

**✅ Tasks You Need to Do**

**1. Compare --help for Two Commands**

🔹 Run the following two commands:

ls --help

passwd --help

* ls --help will show a **long list** of options.
* passwd --help shows a **short, easy-to-read** summary.

📝 **What to notice:** passwd --help is shorter and fits on one screen.

**2. Make Long Help Easier to Read**

🔹 Use this command:

ls --help | less

* | less lets you scroll through the help **page by page**.
* Press the **space bar** to scroll down.
* Press **q** to quit.

**3. Use man to Read the Manual for a Command**

🔹 Run this:

man ls

* This opens the manual page (like a built-in help document).
* Use **arrow keys** or **space bar** to scroll.
* Press **q** to quit.

**4. Check passwd Command and File Help**

There are **two things** named passwd:

* A **command** (/usr/bin/passwd) → lets you change your password.
* A **file** (/etc/passwd) → stores user account info.

🔹 Run both:

man passwd # Shows help for the command

man 5 passwd # Shows help for the /etc/passwd file (section 5)

**5. Use help for Built-in Shell Commands**

Some commands like cd, echo, and if are not real programs — they're **built into the shell (bash)**.

So instead of man, use help:

🔹 Run these:

help cd

help echo

help if

help read

* These will show explanations and syntax for each command.

**🧾 Summary of What You’ve Learned**

* Use --help for quick info.
* Use man for full manuals (and man 5 for file info).
* Use help for bash built-in commands.
* Use | less to scroll long help texts.

Let me know if you’d like me to put this into a **report format**, or help you with sample outputs for your notes!