**🟦 main\_menu**

**📌 Purpose:**

Displays the main interface with three options:

* User Sessions
* Sudo Commands
* Export Logs

**🛠 Commands Used:**

* dialog --menu – Creates the main menu interface.
* exec 3>&1, 2>&1 1>&3 – Redirects output to capture dialog input.
* case – Handles user selections.
* clear, exit – Clears screen and exits if user cancels.

**🔍 Flags:**

* --backtitle – Background title of dialog box.
* --title – Main title of menu.
* --clear – Clears the screen before showing dialog.
* --cancel-label – Renames “Cancel” to “Exit”.
* --menu – Shows a menu with options.

**🟦 user\_sessions\_menu**

**📌 Purpose:**

Displays a submenu for user and system activity info.

**📋 Options:**

1. Total number of users – get\_total\_users
2. Currently logged in users – show\_logged\_in\_users
3. Session time per user – show\_session\_time
4. CPU utilization – show\_cpu\_utilization
5. Memory utilization – show\_memory\_utilization
6. Network utilization – show\_network\_utilization
7. User command history – list\_user\_commands

**🛠 Commands Likely Used Inside:**

* who, users, w, uptime – User info
* ps, top, vmstat, free – CPU/Memory
* ifconfig, ip, netstat – Network
* history, .bash\_history – Command logs

**🔍 Flags (used in dialog like above):**

Same as main\_menu (with menu option labels changed)

**🟦 sudo\_commands\_menu**

**📌 Purpose:**

Shows sudo usage details.

**📋 Options:**

1. Raw sudo commands – show\_sudo\_commands
2. Structured sudo commands by user – show\_structured\_sudo

**🛠 Commands Likely Used Inside:**

* grep 'sudo' /var/log/auth.log – Shows sudo logs
* awk, cut, sort, uniq – Format and group logs

**🟦 get\_total\_users**

**📌 Purpose:**

Counts total users on the system.

**🛠 Commands:**

* cut -d: -f1 /etc/passwd – Lists usernames
* wc -l – Counts them

**🟦 show\_logged\_in\_users**

**📌 Purpose:**

Displays currently logged-in users.

**🛠 Commands:**

* who – Shows current sessions
* users – Short list of usernames
* w – Detailed session info

**🟦 show\_session\_time**

**📌 Purpose:**

Shows how long each user has been logged in.

**🛠 Commands:**

* who -u – Shows login time and idle time
* last – Historical logins

**🟦 show\_cpu\_utilization**

**📌 Purpose:**

Shows current CPU usage.

**🛠 Commands:**

* top -bn1 | grep "Cpu" – Real-time CPU info
* vmstat – System performance summary

**🔍 Flags:**

* -b – Batch mode (no interactive display)
* -n1 – One iteration

**🟦 show\_memory\_utilization**

**📌 Purpose:**

Displays RAM usage.

**🛠 Commands:**

* free -h – Human-readable memory usage
* vmstat – Memory and process info

**🔍 Flags:**

* -h – Human readable format (MB/GB)

**🟦 show\_network\_utilization**

**📌 Purpose:**

Shows network usage stats.

**🛠 Commands:**

* ifconfig or ip addr – Network interface info
* netstat -i – Network interface stats
* sar -n DEV – Per-device network usage (if available)

**🟦 list\_user\_commands**

**📌 Purpose:**

Lists user command history.

**🛠 Commands:**

* cat ~/.bash\_history – User's history file
* history – Shows current session history
* grep, less – Filter or scroll

**🟦 show\_sudo\_commands**

**📌 Purpose:**

Shows all sudo commands from logs.

**🛠 Commands:**

* grep 'sudo' /var/log/auth.log – Filters sudo entries

**🟦 show\_structured\_sudo**

**📌 Purpose:**

Groups sudo usage by user.

**🛠 Commands:**

* grep 'sudo' /var/log/auth.log | awk '{print $1}' | sort | uniq -c – Groups and counts sudo usage per user

**🟦 export\_logs**

**📌 Purpose:**

Exports session or sudo logs to a file.

**🛠 Commands (expected):**

* cp, echo, cat, > – To write logs to .txt or .log file
* tar, zip – To compress exported logs (optional)