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CST1500 Coursework 2: Bash Script Menu

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File 1: main.sh

```
#!/bin/bash
source menu.sh
########## PROGRAM LAUNCH ################
menu
```

File 2: menu.sh

```
#!/bin/bash

source system_config.sh
source calender.sh
source Date_and_time.sh
source stop.sh
source delete.sh

###################### MENU CALLING DIFFERENT FUNCTIONS ####################
menu() {
   while true; do
      reply=""
      dialog --backtitle "Bash Dialog Menu" --title "Menu" --menu "Choose an
option: " 25 60 5 \
      A "Display Date and Time" \
      B "Calendar" \
      C "Delete" \
      D "System Information" \
      E "Exit" 2>respond

      read -r reply < "respond"

      case $reply in
         A)
            show_date_and_time
            ;;
         B)
            calendar
            ;;
         C)
            delete
            ;;
```

```
        D)
           system_config
           ;;
        E)
           stop
           ;;
     esac
  done
}
```

File 3: Date_and_time.sh

```
#!/bin/bash

###################### TO SHOW DATE AND TIME ########################
show_date_and_time() {
   dialog --msgbox "Date:    $(date +'%d/%m/%y')\nTime:    $(date +'%T ')" 10
40
}
```

File 4: Calender.sh

```
#!/bin/bash

###################### TO SHOW CALENDAR FUNCTION ########################
calendar() {
   dialog --calendar "Select a date" 0 0 2>respond
   calendar_choice=$(<"respond")

   if [ -z "$calendar_choice" ]; then
      calendar
   else
      dialog --menu "OPTIONS" 20 40 3 1 "Show reminder" 2 "Add reminder"
2>respond
      options=$(<"respond")

      if [ "$options" -eq 1 ]; then
         show_reminder
      fi

      if [ "$options" -eq 2 ]; then
         add_reminder
      fi
   fi
```

```
}

########################## To add a reminder ##############################
add_reminder() {
   dialog --title "Notes" --inputbox "Enter text to be reminded" 40 40
2>temp_reminder
   reminder_text=$(<"temp_reminder")

   # Remove newlines and leading/trailing whitespaces
   reminder_text=$(echo "$reminder_text" | tr -d '\n' | awk '{$1=$1};1')

   # Append reminder to file
   echo "$calendar_choice $reminder_text" >> reminder

   rm temp_reminder
}

########################## To show reminder ########################
show_reminder() {
   dialog --textbox reminder 40 40
}
```

File 5: Delete.sh

```
#!/bin/bash

delete() {
# Use dialog to prompt the user for a path (file or folder)
path=$(dialog --stdout --inputbox "Input path to delete:" 10 50)

# Verify that the path exists
if [ ! -e "$path" ]; then
    dialog --msgbox "Path not found: $path" 10 50
    exit 1
fi

# Use dialog to confirm the deletion
dialog --yesno "Are you sure you want to delete: $path?" 10 50

# Check the exit code of the previous dialog command
# 0 means "yes" was selected, 1 means "no" was selected
if [ "$?" -eq 0 ]; then
    # Delete the file or folder
    rm -r "$path"
    dialog --msgbox "Deleted: $path" 10 50
```

```
else
    dialog --msgbox "Not deleted." 10 50
fi
}
```

File 6: System_config.sh

```
#!/bin/bash

# Include the required scripts
source system_info.sh
source sys_cfg_menu.sh

# Define the system_config function
system_config() {
    # Loop until the user selects "Exit"
    while true; do
        # Display the main menu using dialog
        choice=$(display_menu)

        # Process the user's choice
        case $choice in
            [1-5])
                case $choice in
                    1)
                        info=$(get_os_type)
                        ;;
                    2)
                        info=$(get_cpu_info)
                        ;;
                    3)
                        info=$(get_memory_info)
                        ;;
                    4)
                        info=$(get_disk_info)
                        ;;
                    5)
                        info=$(get_filesystem_info)
                        ;;
                    *)
                        ;;
                esac
                dialog --backtitle "System Configuration" --msgbox "$info" 20
80
```

```
                ;;
            6)
                dialog --backtitle "System Configuration" --msgbox
"Exiting..." 8 40
                break
                ;;
            *)
                ;;
        esac
    done
}
```

File 7: System_info.sh

```
#!/bin/bash

# Function to get the operating system type
get_os_type() {
    grep -w "PRETTY_NAME" /etc/os-release | cut -d "=" -f 2 | tr -d '"'
}

# Function to get the CPU information
get_cpu_info() {
    lscpu | grep -E "Model name|Architecture|CPU(s):|Thread(s) per
core|Core(s) per socket|Socket(s)"
}

# Function to get the memory information
get_memory_info() {
    free -h | awk 'NR==1{print "Total: "$2} NR==2{print "Used: "$3}
NR==3{print "Free: "$4}'
}

# Function to get the hard disk information
get_disk_info() {
    df -h --output=source,size,used,avail | awk 'NR>1{print $1" ("$2")\nUsed:
"$3"\nAvailable: "$4}'
}

# Function to get the file system information
get_filesystem_info() {
    mount | awk '{print $1" ("$5")"}'
}

# Function to display system information
show_system_info() {
```

```
    echo "Operating System:"
    get_os_type
    echo

    echo "CPU Information:"
    get_cpu_info
    echo

    echo "Memory Information:"
    get_memory_info
    echo

    echo "Hard Disk Information:"
    get_disk_info
    echo

    echo "File System Information:"
    get_filesystem_info
}
```

File 8: sys_cfg_menu.sh

```
#!/bin/bash

# Function to display the main menu
display_menu() {
    dialog --backtitle "System Configuration" --title "Menu" --menu "Select an
option:" 25 60 6 "${options[@]}" 2>&1 >/dev/tty
}

# Main menu options
options=(
    1 "Operating System Type"
    2 "CPU Information"
    3 "Memory Information"
    4 "Hard Disk Information"
    5 "File System"
    6 "Exit"
)
```

File 9: stop.sh

```
#!/bin/bash

######################### FUNCTION TO EXIT SCRIPT AND DIALOG ###################
```

```
stop() {
   clear
   exit
}
```

CONTRIBUTION TABLE

Student Name	Task
Harshvardhan Doyal	Wrote function to display system information and document for submission.
Darish Nursing	Wrote function for calendar and delete.
Kovid Bogyah	Wrote function to display date and time and to function to exit.

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ReadMe

The menu allows users to access features like displaying date and time, calendar functionality with reminders, deleting files or folders, system information retrieval, and system configuration options.

main.sh: The main script file that serves as the entry point for the program. It sources menu.sh to launch the menu.

menu.sh: This file sets up the menu functionality by sourcing several other files, including system_config.sh, calender.sh, Date_and_time.sh, stop.sh, and delete.sh. It defines the menu function, which displays a dialog-based menu and calls different functions based on the user's selection.

Date_and_time.sh: Contains the show_date_and_time function, which displays the current date and time using the dialog command.

Calender.sh: Implements the calendar function, which presents a calendar selection to the user. It also provides options to show and add reminders.

Delete.sh: Defines the delete function, which prompts the user to input a file or folder path and confirms its deletion using dialog. If confirmed, the script deletes the specified path.

System_config.sh: This script incorporates system_info.sh and sys_cfg_menu.sh. It offers a system configuration menu with options such as operating system type, CPU information, memory information, disk information, and file system information.

System_info.sh: Contains functions to gather various system information, such as the operating system type, CPU information, memory information, disk information, and file system information.

sys_cfg_menu.sh: Implements the display_menu function, which presents the main menu for system configuration. It uses the dialog command to display options such as operating system type, CPU information, memory information, disk information, file system, and exit.

stop.sh: Defines the stop function, which clears the screen and exits the script.

The computer system being used is running the Linux Ubuntu operating system. The editor being used is Visual Studio Code and Gedit. Dialog is used for menu and Terminal is used to execute the program.

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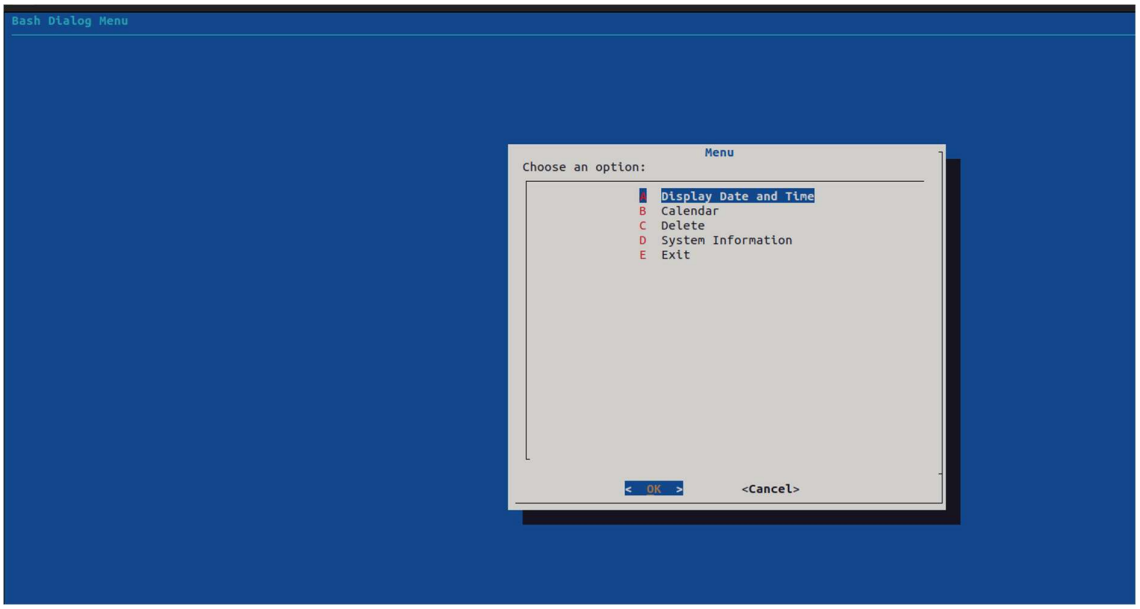
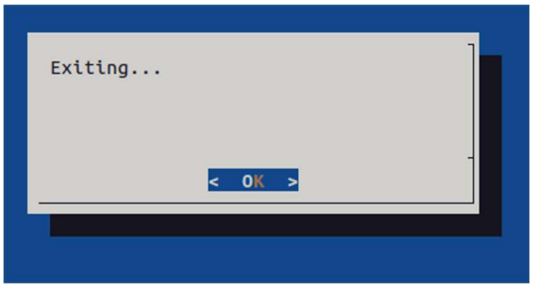
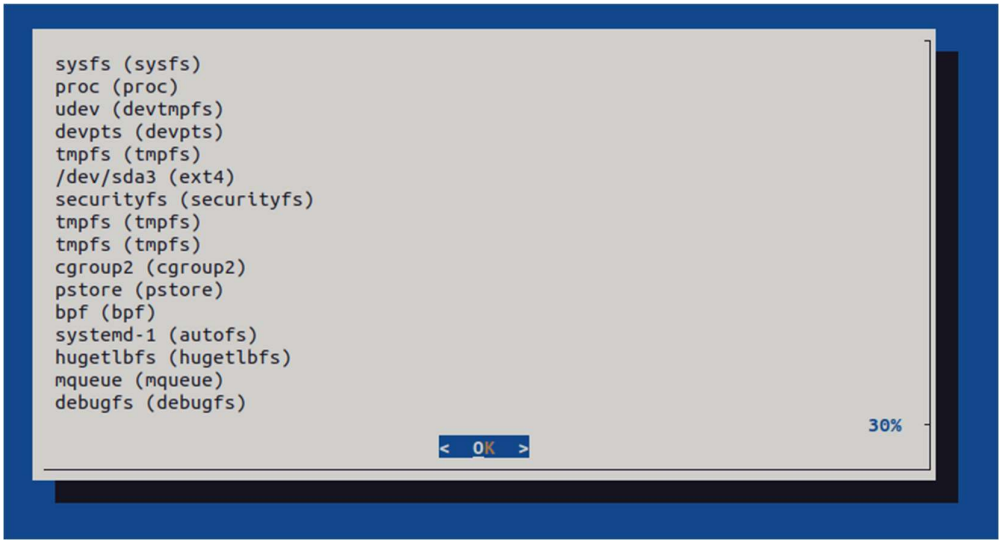
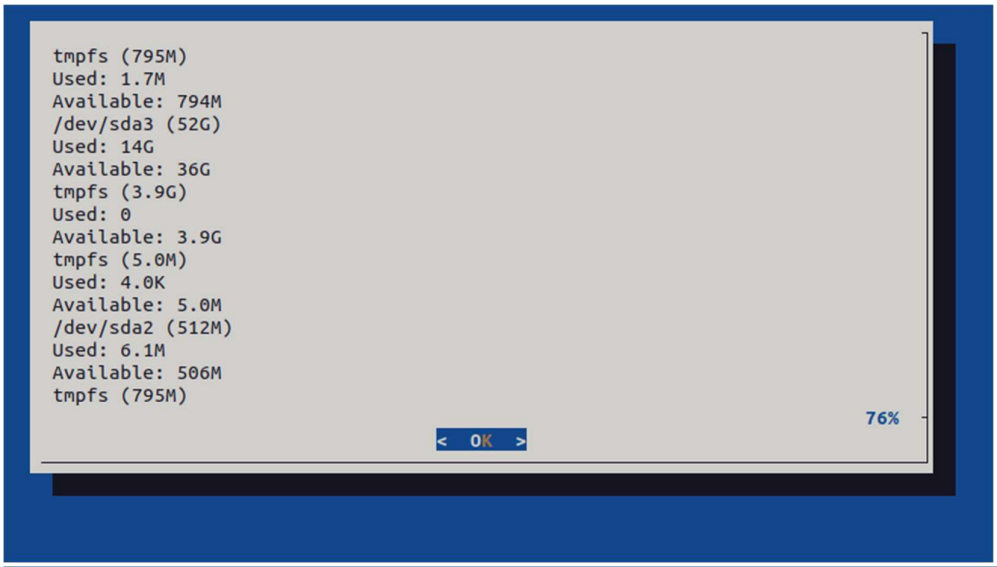
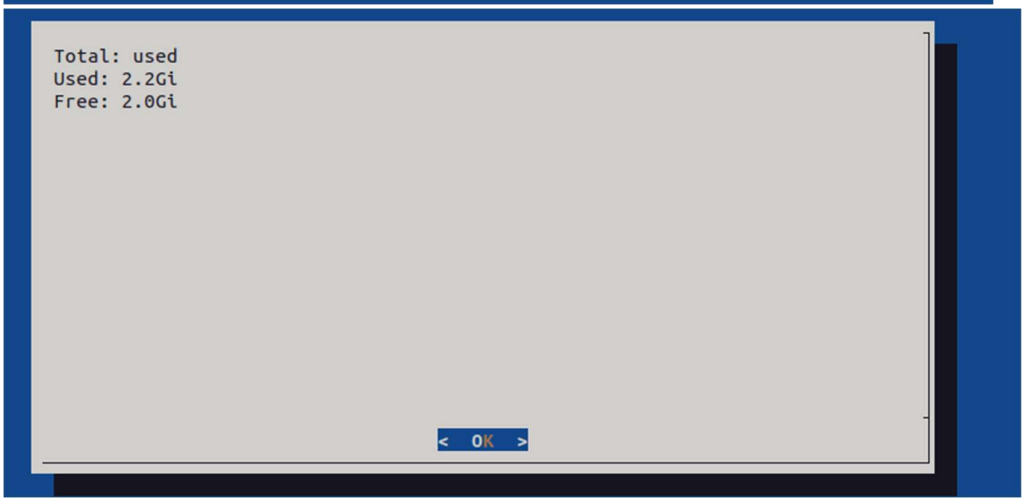
Screenshots

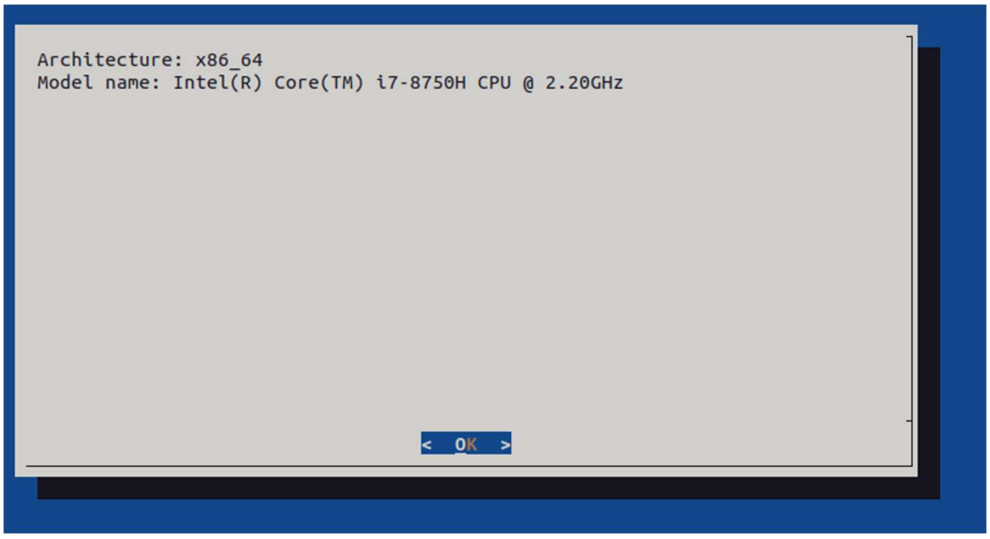







tmpfs (795M)
Used: 1.7M
Available: 794M
/dev/sda3 (52G)
Used: 14G
Available: 36G
tmpfs (3.9G)
Used: 0
Available: 3.9G
tmpfs (5.0M)
Used: 4.0K
Available: 5.0M
/dev/sda2 (512M)
Used: 6.1M
Available: 506M
tmpfs (795M)
76%
< OK >


Total: used
Used: 2.2Gi
Free: 2.0Gi
< OK >


Architecture: x86_64
Model name: Intel(R) Core(TM) i7-8750H CPU @ 2.20GHz
< OK >

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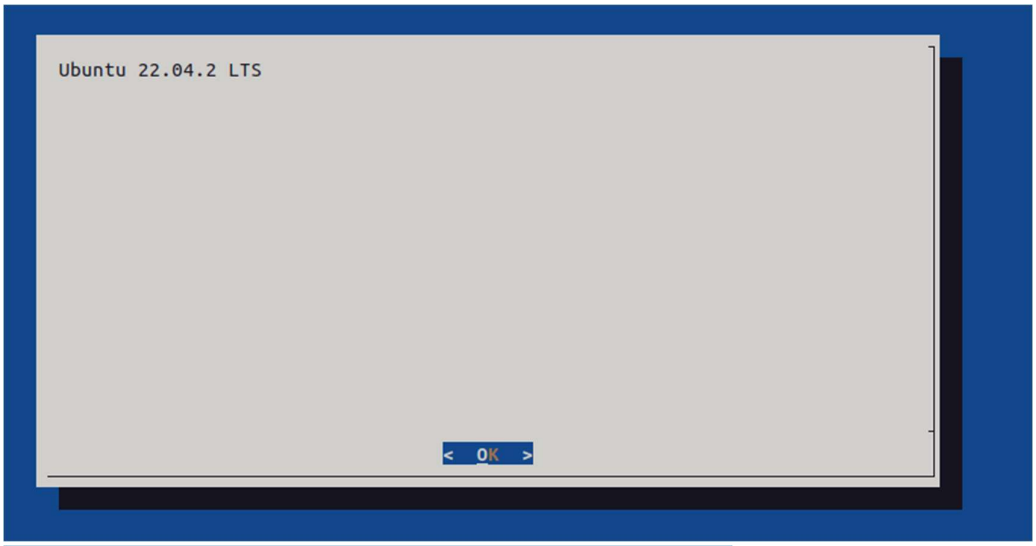

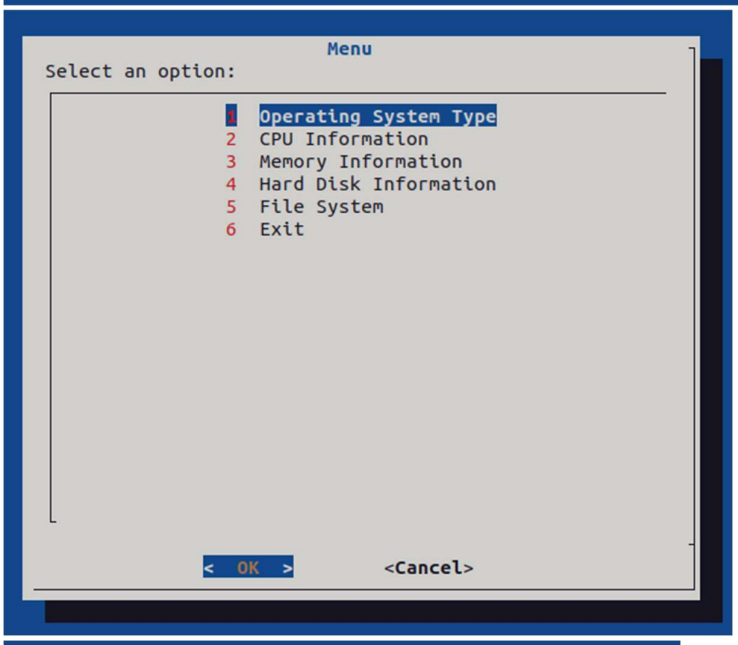

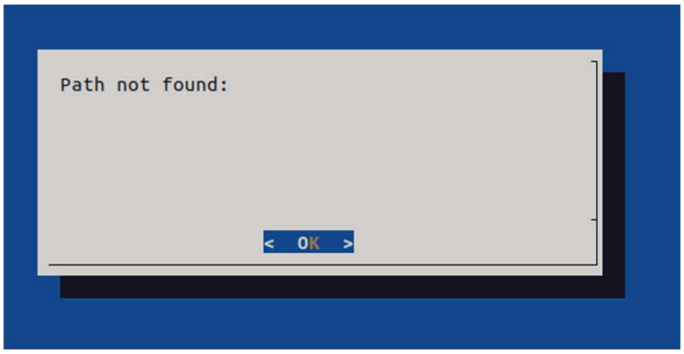

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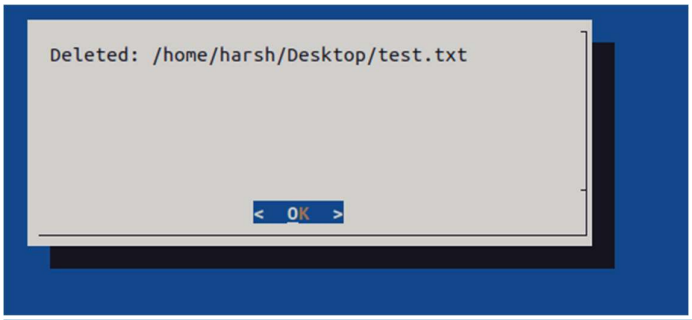

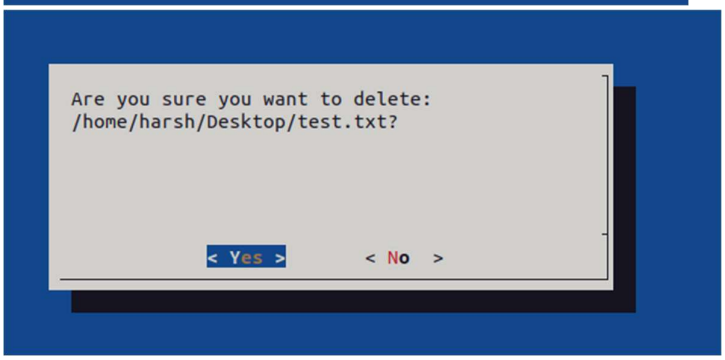

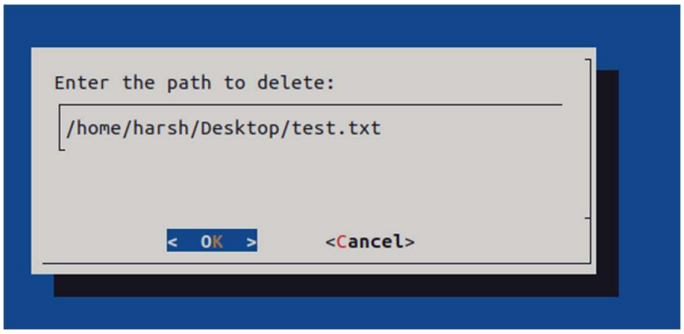

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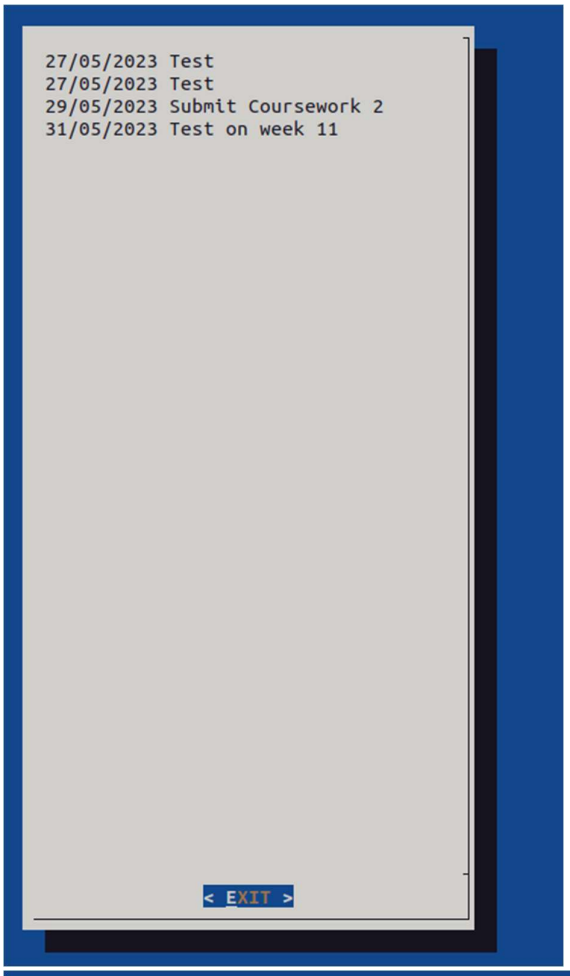

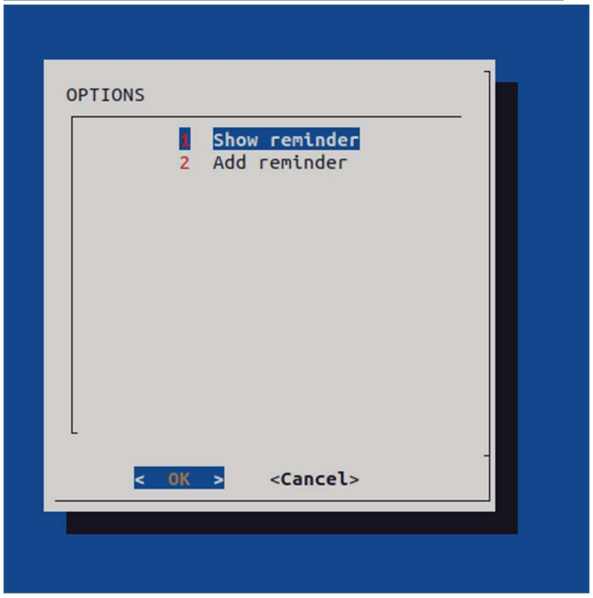

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