

Section A

1. I want a manual page of command so that I can see the full documentation of the command. For example if you execute the command `man ls` as output we get the doc and usage guidelines. Similarly if I execute `man internsctl` I want to see the manual of my command.

```
#!/bin/bash
```

```
# Function to display the manual page
```

```
display_manual() {
```

```
    echo "internsctl(1) - Custom Linux Command"
```

```
    echo
```

```
    echo "NAME"
```

```
    echo "    internsctl - Perform operations for interns"
```

```
    echo
```

```
    echo "SYNOPSIS"
```

```
    echo "    internsctl [OPTION]..."
```

```
    echo
```

```
    echo "DESCRIPTION"
```

```
    echo "    internsctl is a custom Linux command that performs operations for interns."
```

```
echo
echo "OPTIONS"
echo "    --help    Display this help and exit"
echo "    --version Output the version information and exit"
}
```

Function to display help

```
display_help() {
    echo "Usage: internsctl [OPTION]..."
    echo "Perform operations for interns."
    echo
    echo "    --help    Display this help and exit"
    echo "    --version Output the version information and exit"
}
```

Function to display version

```
display_version() {
    echo "internsctl v0.1.0"
}
```

```
# Main logic
case "$1" in
  --help)
    display_help
    ;;
  --version)
    display_version
    ;;
  *)
    echo "Error: Unknown option. Use 'internsctl --help' for usage information."
    exit 1
    ;;
esac
```

2. Each linux command has an option --help which helps the end user to understand the use cases via examples. Similarly if I execute internsctl --help it should provide me the necessary help

chmod +x internsctl.sh

./internsctl.sh

man ./internsctl.sh

./internsctl.sh --help

3. I want to see version of my command by executing internsctl --version

./internsctl.sh --version

Section B PART-1

Easy Task:

```
#!/bin/bash
```

```
# Function to display the manual page
```

```
display_manual() {
```

```
    echo "internsctl(1) - Custom Linux Command"
```

```
    echo
```

```
    echo "NAME"
```

```
    echo "    internsctl - Perform operations for interns"
```

```
    echo
```

```
    echo "SYNOPSIS"
```

```
    echo "    internsctl [OPTION]..."
```

```
    echo
```

```
    echo "DESCRIPTION"
```

```
    echo "    internsctl is a custom Linux command that performs operations for interns."
```

```
    echo
```

```
    echo "OPTIONS"
```

```
echo "    cpu getinfo    Display CPU information"
echo "    memory getinfo  Display memory information"
echo "    --help        Display this help and exit"
echo "    --version      Output the version information and exit"
}
```

Function to display help

```
display_help() {
case "$1" in
cpu)
    echo "Usage: internctl cpu getinfo"
    echo "Display CPU information."
    ;;
memory)
    echo "Usage: internctl memory getinfo"
    echo "Display memory information."
    ;;
*)
    echo "Usage: internctl [OPTION]..."
```

```
echo "Perform operations for interns."
echo
echo "  cpu getinfo    Display CPU information"
echo "  memory getinfo  Display memory information"
echo "  --help          Display this help and exit"
echo "  --version        Output the version information and exit"
;;
esac
}
```

Function to display version

```
display_version() {
  echo "internsctl v0.1.0"
}
```

Function to get CPU information

```
get_cpu_info() {
  lscpu
}
```

Function to get memory information

```
get_memory_info() {  
    free  
}
```

Main logic

```
case "$1" in  
    cpu)  
        case "$2" in  
            getinfo)  
                get_cpu_info  
                ;;  
            *)  
                display_help cpu  
                exit 1  
                ;;  
        esac  
        ;;  
esac  
;;
```



```
memory)
  case "$2" in
    getinfo)
      get_memory_info
      ;;
    *)
      display_help memory
      exit 1
      ;;
  esac
  ;;
--help)
  display_help
  ;;
--version)
  display_version
  ;;
*)
  echo "Error: Unknown option. Use 'internsctl --help' for usage information."
```

```
    exit 1
;;
Esac
```

```
./internctl.sh cpu getinfo
./internctl.sh memory getinfo
```

PART-2:

```
#!/bin/bash
```

```
# Function to display the manual page
display_manual() {
    echo "internctl(1) - Custom Linux Command"
    echo
    echo "NAME"
    echo "    internctl - Perform operations for interns"
    echo
```

```
echo "SYNOPSIS"
echo "    internsctl [OPTION]..."
echo
echo "DESCRIPTION"
echo "    internsctl is a custom Linux command that performs operations for interns."
echo
echo "OPTIONS"
echo "    user create <username>  Create a new user"
echo "    user list                List all regular users"
echo "    user list --sudo-only    List users with sudo permissions"
echo "    --help                  Display this help and exit"
echo "    --version                Output the version information and exit"
}
```

Function to display help

```
display_help() {
case "$1" in
    user)
        case "$2" in
            create)
```

```
    echo "Usage: internsctl user create <username>"
    echo "Create a new user who can login to the Linux system and access their home
directory."
    ;;
list)
    echo "Usage: internsctl user list [--sudo-only]"
    echo "List all regular users or users with sudo permissions."
    ;;
*)
    echo "Usage: internsctl user [OPTION]..."
    echo "Perform operations related to users."
    echo
    echo "  create <username>      Create a new user"
    echo "  list [--sudo-only]    List all regular users or users with sudo permissions"
    ;;
esac
;;
*)
    echo "Usage: internsctl [OPTION]..."
    echo "Perform operations for interns."
```

```
echo
echo " user create <username> Create a new user"
echo " user list          List all regular users"
echo " user list --sudo-only List users with sudo permissions"
echo " --help             Display this help and exit"
echo " --version          Output the version information and exit"
;;
esac
}

# Function to display version
display_version() {
    echo "internsctl v0.1.0"
}

# Function to create a new user
create_user() {
    if [ -z "$2" ]; then
        echo "Error: Please provide a username. Usage: internsctl user create <username>"
        exit 1
    fi
}
```

fi

```
sudo useradd -m -s /bin/bash "$2"  
echo "User $2 created successfully."  
}
```

Function to list all regular users

```
list_users() {  
  if [ "$2" = "--sudo-only" ]; then  
    getent group sudo | cut -d: -f4 | tr ',' '\n'  
  else  
    getent passwd | grep -vE 'nologin|false' | cut -d: -f1  
  fi  
}
```

Main logic

```
case "$1" in  
  user)  
    case "$2" in  
      create)
```

```
    create_user "$@"  
    ;;  
list)  
    list_users "$@"  
    ;;  
*)  
    display_help user  
    exit 1  
    ;;  
esac  
;;  
--help)  
    display_help  
    ;;  
--version)  
    display_version  
    ;;  
*)  
    echo "Error: Unknown option. Use 'internsctl --help' for usage information."  
    exit 1
```

```
;;  
Esac
```

```
./internsctl.sh user create <username>  
./internsctl.sh user list  
./internsctl.sh user list --sudo-only
```

Part-3

```
#!/bin/bash
```

```
# Function to display the manual page  
display_manual() {  
    echo "internsctl(1) - Custom Linux Command"  
    echo  
    echo "NAME"  
    echo "    internsctl - Perform operations for interns"  
    echo  
    echo "SYNOPSIS"
```



```
echo "    internsctl [OPTION]..."
echo
echo "DESCRIPTION"
echo "    internsctl is a custom Linux command that performs operations for interns."
echo
echo "OPTIONS"
echo "    file getinfo [options] <file-name>  Get information about a file"
echo "        --size, -s                Print file size"
echo "        --permissions, -p          Print file permissions"
echo "        --owner, -o                Print file owner"
echo "        --last-modified, -m        Print last modified time"
echo "    --help                        Display this help and exit"
echo "    --version                      Output the version information and exit"
}
```

Function to display help

```
display_help() {
    case "$1" in
        file)
            case "$2" in
```

```
getinfo)
    echo "Usage: internsctl file getinfo [options] <file-name>"
    echo "Get information about a file."
    echo
    echo "Options:"
    echo "  --size, -s          Print file size"
    echo "  --permissions, -p   Print file permissions"
    echo "  --owner, -o         Print file owner"
    echo "  --last-modified, -m  Print last modified time"
    ;;
*)
    echo "Usage: internsctl file [OPTION]..."
    echo "Perform operations related to files."
    echo
    echo "  getinfo [options] <file-name>  Get information about a file"
    echo "  --help                        Display this help and exit"
    echo "  --version                      Output the version information and exit"
    ;;
esac
;;
```

```

*)
echo "Usage: internsctl [OPTION]..."
echo "Perform operations for interns."
echo
echo " file getinfo [options] <file-name>  Get information about a file"
echo " --help                               Display this help and exit"
echo " --version                             Output the version information and exit"
;;
esac
}

# Function to display version
display_version() {
echo "internsctl v0.1.0"
}

# Function to get file information
get_file_info() {
if [ -z "$2" ]; then
echo "Error: Please provide a file name. Usage: internsctl file getinfo [options] <file-name>"

```

```
    exit 1
```

```
fi
```

```
file_name="$2"
```

```
size=""
```

```
permissions=""
```

```
owner=""
```

```
last_modified=""
```

```
while [ "$#" -gt 2 ]; do
```

```
    case "$3" in
```

```
        --size|-s)
```

```
            size=$(stat -c %s "$file_name")
```

```
            ;;
```

```
        --permissions|-p)
```

```
            permissions=$(stat -c %A "$file_name")
```

```
            ;;
```

```
        --owner|-o)
```

```
            owner=$(stat -c %U "$file_name")
```

```
            ;;
```

```
--last-modified|-m)
    last_modified=$(stat -c %y "$file_name")
    ;;
*)
    echo "Error: Unknown option $3. Use 'internsctl file getinfo --help' for usage
information."
    exit 1
    ;;
esac
shift
done

echo "File: $file_name"
if [ -n "$permissions" ]; then
    echo "Permissions: $permissions"
fi
if [ -n "$size" ]; then
    echo "Size(B): $size"
fi
if [ -n "$owner" ]; then
```

```
    echo "Owner: $owner"
fi
if [ -n "$last_modified" ]; then
    echo "Last Modified: $last_modified"
fi
}
```

```
# Main logic
case "$1" in
file)
    case "$2" in
getinfo)
    get_file_info "$@"
    ;;
*)
    display_help file
    exit 1
    ;;
esac
;;
```

```
--help)
    display_help
;;
--version)
    display_version
;;
*)
    echo "Error: Unknown option. Use 'internsctl --help' for usage information."
    exit 1
;;
Esac
```

```
./internsctl.sh file getinfo --size hello.txt
./internsctl.sh file getinfo --permissions hello.txt
./internsctl.sh file getinfo --owner hello.txt
./internsctl.sh file getinfo --last-modified hello.txt
```