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Lab 2

1- Create a script that asks for user name then send a greeting to him.

```
localhost:~# echo "Please enter your name:"
Please enter your name:
localhost:~# read username
zeinab
localhost:~# echo "Hello, $username! Welcome to the script."
Hello, zeinab! Welcome to the script.
```

2- Create a script called s1 that calls another script s2 where:

In s1 there is a variable called x, it's value 5

Try to print the value of x in s2 by two different ways.

```
localhost:~# echo '#!/bin/bash' > s1.sh
localhost:~# echo 'x=5' >> s1.sh
localhost:~# echo './s2.sh "$x"' >> s1.sh
localhost:~# echo 'source ./s2.sh "$x"' >> s1.sh
localhost:~# chmod +x s1.sh
localhost:~# echo '#!/bin/bash' > s2.sh
localhost:~# echo 'x="$1"' >> s2.sh
localhost:~# echo 'echo "Method 1 - Direct access: x = $x"' >> s2.sh
localhost:~# echo 'echo "Method 2 - Sourced access: x = $x"' >> s2.sh
localhost:~# chmod +x s2.sh
localhost:~# ./s1.sh
Method 1 - Direct access: x = 5
Method 2 - Sourced access: x = 5
```

3- Create a script called mycp where:

It copies a file to another

It copies multiple files to a directory.

```
localhost:~# echo '#!/bin/bash' > mycp
localhost:~# echo 'if [ $# -lt 2 ]; then' >> mycp
localhost:~# echo '    echo "Usage: $0 <source_file> <destination_file_or_direct
ory>"' >> mycp
localhost:~# echo '    exit 1' >> mycp
localhost:~# echo 'fi' >> mycp
localhost:~# echo 'source_files=("${@:1:$#-1}")' >> mycp
localhost:~# echo 'destination="$1"' >> mycp
localhost:~# echo 'if [ -d "$destination" ]; then' >> mycp
localhost:~# echo '    for file in "${source_files[@]}"; do' >> mycp
localhost:~# echo '        cp "$file" "$destination"' >> mycp
localhost:~# echo '        echo "Copied $file to $destination"' >> mycp
localhost:~# echo '    done' >> mycp
localhost:~# echo 'else' >> mycp
localhost:~# echo '    cp "${source_files[0]}" "$destination"' >> mycp
localhost:~# echo '    echo "Copied ${source_files[0]} to $destination"' >> mycp
localhost:~# echo 'fi' >> mycp
localhost:~# chmod +x mycp
```

4- Create a script called mycd where:

It changed directory to the user home directory, if it is called without arguments.

Otherwise, it change directory to the given directory.

```
localhost:~# if [ $# -eq 0 ]; then
>     cd ~
>     echo "Changed to home directory: $HOME"
> else
>     cd "$1"
>     if [ $? -eq 0 ]; then
>         echo "Changed to directory: $1"
>     else
>         echo "Error: Unable to change to directory: $1"
>     fi
> fi
Changed to home directory: /root
localhost:~# chmod +x mycd
```

5- Create a script called myls where:

It lists the current directory, if it is called without arguments.

Otherwise, it lists the given directory.

```
localhost:~# if [ $# -eq 0 ]; then
>     ls
> else
>     ls "$1"
> fi
bench.py    hello.c     hello.js    readme.txt
```

6- Enhance the above script to support the following options individually:

–l: list in long format

–a: list all entries including the hiding files.

–d: if an argument is a directory, list only its name

–i: print inode number

–R: recursively list subdirectories

```
localhost:~# usage() {
>     echo "Usage: $0 [-l] [-a] [-d] [-i] [-R] [directory]"
>     exit 1
> }
localhost:~# while getopts "ladiR" option; do
>     case "$option" in
>         l) list_long_format=true ;;
>         a) list_all_entries=true ;;
>         d) list_directory_name=true ;;
>         i) print_inode=true ;;
>         R) recursively_list_subdirectories=true ;;
>         *) usage ;;
>     esac
> done
localhost:~# shift $((OPTIND - 1))
localhost:~# directory="$1"
localhost:~# if [ -n "$directory" ]; then
>     cd "$directory" || exit 1
> fi
localhost:~# ls_command="ls"
localhost:~# [ "$list_long_format" = true ] && ls_command+=" -l"
localhost:~# [ "$list_all_entries" = true ] && ls_command+=" -a"
localhost:~# [ "$list_directory_name" = true ] && ls_command+=" -d"
localhost:~# [ "$print_inode" = true ] && ls_command+=" -i"
localhost:~# [ "$recursively_list_subdirectories" = true ] && ls_command+=" -R"
localhost:~# $ls_command
bench.py    hello.c     hello.js    readme.txt
```