

Lab2

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G1

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

```
benzema@Benzema:~$ #!/bin/bash
echo "Enter your name:"
read name
echo "Hello, $name!"
Enter your name:
Ebrahim
Hello, 'Ebrahim!
benzema@Benzema:~$
```

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

- a. In s1 there is a variable called x, it's value 5
- b. Try to print the value of x in s2 by two different ways.

```
GNU nano 7.2
#!/bin/bash

x=5

echo "In s1: x = $x"

export x
./s2.sh

./s2.sh $x
```

```
GNU nano 7.2
#!/bin/bash

echo "Inside s2"

echo "Using export: x = $x"

echo "Using argument: x = $1"
```

```
benzema@Benzema:~$ chmod +x s1.sh
chmod +x s2.sh
benzema@Benzema:~$ ./s1.sh
In s1: x = 5
Inside s2
Using export: x = 5
Using argument: x =
Inside s2
Using export: x = 5
Using argument: x = 5
benzema@Benzema:~$
```

3. Create a script called mycp where:

- a. It copies a file to another
- b. It copies multiple files to a directory.

```
GNU nano 7.2                                     mycp.sh
#!/bin/bash

if [ $# -lt 2 ]; then
    echo "Usage:"
    echo "  ./mycp.sh source_file destination_file"
    echo "  ./mycp.sh file1 file2 ... directory"
    exit 1
fi

if [ $# -eq 2 ]; then
    cp "$1" "$2"
    echo "Copied $1 to $2"
else
    dest="${@: -1}"

    if [ ! -d "$dest" ]; then
        echo "Error: Last argument must be a directory."
        exit 1
    fi

    for ((i=1; i<$#; i++)); do
        cp "${!i}" "$dest"
        echo "Copied ${!i} to $dest"
    done
fi[]
```

```
benzema@Benzema:~$ touch file1.txt file2.txt
mkdir dir
benzema@Benzema:~$ ./mycp.sh file1.txt file2.txt
Copied file1.txt to file2.txt
benzema@Benzema:~$ ./mycp.sh file1.txt file2.txt dir/
Copied file1.txt to dir/
Copied file2.txt to dir/
benzema@Benzema:~$ []
```

4. Create a script called mycd where:

- a. It changed directory to the user home directory, if it is called without arguments.
- b. Otherwise, it change directory to the given directory.

```
GNU nano 7.2                                     mycd.sh
#!/bin/bash

if [ $# -eq 0 ]; then
    cd "$HOME" || exit
else
    cd "$1" || { echo "Error: Directory does not exist"; exit 1; }
fi

pwd[]
```

```
benzema@Benzema:~$ nano mycd.sh
benzema@Benzema:~$ chmod +x mycd.sh
benzema@Benzema:~$ ./mycd.sh
/home/benzema
benzema@Benzema:~$ ./mycd.sh /tmp
/tmp
benzema@Benzema:~$ ./mycd.sh /tmped
./mycd.sh: line 6: cd: /tmped: No such file or directory
Error: Directory does not exist
benzema@Benzema:~$ []
```

5. Create a script called myls where:

- a. It lists the current directory, if it is called without arguments.
- b. Otherwise, it lists the given directory.

```
GNU nano 7.2                                     myls.sh *
#!/bin/bash

if [ $# -eq 0 ]; then
    ls
else
    if [ -d "$1" ]; then
        ls "$1"
    else
        echo "Error: Directory does not exist"
        exit 1
    fi
fi[]
```

```

benzema@Benzema:~$ nano myls.sh
benzema@Benzema:~$ chmod +x myls.sh
benzema@Benzema:~$ ./myls.sh
Desktop      greet.sh          mycp.sh      package.json    s1.sh
dir          mongodb-compass_1.43.4_amd64.deb myinfo       package-lock.json s2
Documents    Music             myls         Pictures        s2.sh
Downloads   mycd             myls.sh      Postman        snap
file1.txt   mycd.sh          mytest       Public         Templates
file2.txt   mycp             node_modules s1           Videos
benzema@Benzema:~$ ./myls.sh /tmp
com.google.Chrome.scoped_dir.1XBdPX
com.google.Chrome.scoped_dir.utqvEN
com.google.Chrome.scoped_dir.VYenU8
com.google.Chrome.SOuoLz
gdm3-config-err-rNqoga
lu12725acd1m.tmp

```

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

- a. **-l**: list in long format
- b. **-a**: list all entries including the hiding files.
- c. **-d**: if an argument is a directory, list only its name
- d. **-i**: print inode number
- e. **-R**: recursively list subdirectories

```

GNU nano 7.2                                     myls.sh
#!/bin/bash

# Default target is current directory
target=". "
options=""

while [[ $# -gt 0 ]]; do
    case "$1" in
        -l|-a|-d|-i|-R)
            options="$options $1"
            shift
            ;;
        *)
            target="$1"
            shift
            ;;
    esac
done

if [ ! -e "$target" ]; then
    echo "Error: Directory or file does not exist"
    exit 1
fi

if [[ "$options" == *"-d"* ]]; then
    echo "$target"
else
    ls $options "$target"
fi

```

```
benzema@Benzema:~$ ./myls.sh -l -a /tmp
total 888
drwxrwxrwt 28 root      root      4096 Feb 23 15:55 .
drwxr-xr-x 23 root      root      4096 Nov 16 20:07 ..
drwx-----  2 benzema  benzema   4096 Feb 23 14:48 com.google.Chrome.scoped_dir.1XBdPX
drwx-----  2 benzema  benzema   4096 Feb 23 14:54 com.google.Chrome.scoped_dir.utqvEN
```

```
benzema@Benzema:~$ ./myls.sh -i
7735524 Desktop                         7798705 mycd.sh           7735530 Pictures
8428130 dir                            7798615 mycp              9864763 Postman
7735528 Documents                        7798668 mycp.sh            7735527 Public
7735525 Downloads                        7798664 myinfo             7778557 s1
7795705 file1.txt                      7798650 myls               7781201 s1.sh
7795705 file2.txt                      7798600 node_modules       7735291 snap
7735529 Music                           7805979 package.json        7735526 Templates
7798644 mycd                           7812364 package-lock.json    7735531 Videos
```

```
benzema@Benzema:~$ ./myls.sh -d /tmp
```

```
/tmp
```

```
benzema@Benzema:~$ [ ]
```

```
benzema@Benzema:~$ ./myls.sh -a
.                          .gnupg          package.json
..                         .gphoto          package-lock.json
.angular-config.json     greet.sh         Pictures
.antigravity              .java            .pki
.bash_history              .lessht          Postman
.bash_logout                .local            .profile
.bashrc                     .mongodb         Public
.cache                      mongodb-compass_1.43.4_amd64.deb  s1
```

```
benzema@Benzema:~$ ./myls.sh -l
total 107320
drwxr-xr-x  3 benzema benzema   4096 Feb 20 13:06 Desktop
drwxrwxr-x  2 benzema benzema   4096 Feb 23 15:48 dir
drwxr-xr-x  2 benzema benzema   4096 Nov 16 15:00 Documents
drwxr-xr-x  8 benzema benzema   4096 Feb 23 13:30 Downloads
-rw-rw-r--  1 benzema benzema     0 Feb 23 15:48 file1.txt
-rw-rw-r--  1 benzema benzema     0 Feb 23 15:48 file2.txt
-rwxrwxr-x  1 benzema benzema    67 Feb 23 14:42 greet.sh
-rw-rw-r--  1 benzema benzema 109766938 May   8 2025 mongodb-compass_1.43.4_amd64.deb
```

```
benzema@Benzema:~$ ./myls.sh /tmp
com.google.Chrome.scoped_dir.1XBdPX
com.google.Chrome.scoped_dir.utqvEN
com.google.Chrome.scoped_dir.VYenU8
com.google.Chrome.S0uoLz
gdm3-config-err-rNqoga
lu12725acd1m.tmp
mongodb-27017.sock
node-compile-cache
OSL_PIPE_1000_SingleOfficeIPC_1fc53e45fc5e8929e49a823db4f3741
```

```

vscode typescript1000
benzema@Benzema:~/Desktop$ ./myls.sh
Desktop      greet.sh                  mycp.sh      package.json    s1.sh
dir          mongodb-compass_1.43.4_amd64.deb myinfo       package-lock.json s2
Documents    Music                     myls        Pictures       s2.sh
Downloads   mycd                     myls.sh     Postman        snap
file1.txt   mycd.sh                 mytest      Public         Templates
file2.txt   mycp                    node_modules s1           Videos
benzema@Benzema:~/Desktop$ 

```

Bonus: enhance the above script to support the following Synopsis:

myls -option1 -option2
myls -option2 -option1
myls -option1option2
myls -option2option1

```

GNU nano 7.2                                     myls.sh *
#!/bin/bash

target="."
options=""

while [[ $# -gt 0 ]]; do
    arg="$1"
    if [[ "$arg" == --* ]]; then
        # Handle double dash incorrectly formatted like --l etc
        echo "Invalid option: $arg"
        exit 1
    elif [[ "$arg" == -* ]]; then
        # Split combined options like -la into -l -a
        opt="${arg:1}"
        for (( i=0; i<${#opt}; i++ )); do
            ch="${opt:$i:1}"
            case "$ch" in
                l|a|d|i|R)
                    options="$options -$ch"
                    ;;
                *)
                    echo "Invalid option: -$ch"
                    exit 1
                    ;;
            esac
        done
        shift
    else
        target="$arg"
        shift
    fi
done

if [ ! -e "$target" ]; then
    echo "Error: Directory or file does not exist"
    exit 1
fi

if [[ "$options" == *"-d"* ]]; then
    echo "$target"
else
    ls $options "$target"
fi

```

```
benzema@Benzema:~$ nano myls.sh
benzema@Benzema:~$ ./myls.sh -l -a
./myls.sh -a -l
total 107484
drwxr-x--- 32 benzema benzema      4096 Feb 23 16:09 .
drwxr-xr-x  3 root    root        4096 Nov 16 14:59 ..
-rw-rw-r--  1 benzema benzema       192 Jan 31 12:13 .angular-config.json
drwxrwxr-x  3 benzema benzema      4096 Jan 17 16:12 .antigravity
-rw-------  1 benzema benzema     59187 Feb 23 14:06 .bash_history
```

```
benzema@Benzema:~$ ./myls.sh -la
./myls.sh -al
total 107484
drwxr-x--- 32 benzema benzema      4096 Feb 23 16:09 .
drwxr-xr-x  3 root    root        4096 Nov 16 14:59 ..
-rw-rw-r--  1 benzema benzema       192 Jan 31 12:13 .angular-config.json
drwxrwxr-x  3 benzema benzema      4096 Jan 17 16:12 .antigravity
-rw-------  1 benzema benzema     59187 Feb 23 14:06 .bash_history
-rw-r--r--  1 benzema benzema     220 Mar 31 2024 .bash_logout
-rw-r----- 1 benzema benzema      4096 Jan 21 12:13 .bashrc
```

```
benzema@Benzema:~$ ./myls.sh -la /tmp
./myls.sh -Rl /var/log
total 888
drwxrwxrwt 28 root    root        4096 Feb 23 16:11 .
drwxr-xr-x 23 root    root        4096 Nov 16 20:07 ..
drwx----- 2 benzema benzema      4096 Feb 23 14:48 com.google.Chrome.scoped_dir.1XBdPX
drwx----- 2 benzema benzema      4096 Feb 23 14:54 com.google.Chrome.scoped_dir.utqvEN
drwx----- 2 benzema benzema      4096 Feb 23 13:34 com.google.Chrome.scoped_dir.VYenU8
drwx----- 2 benzema benzema      4096 Feb 23 09:04 com.google.Chrome.SOuoLz
```

7. Create a script called mytest where:

- a. It check the type of the given argument (file/directory)
- b. It check the permissions of the given argument (read/write/execute)

```

GNU nano 7.2                                     mytest.sh
#!/bin/bash

if [ $# -ne 1 ]; then
    echo "Usage: ./mytest.sh <file_or_directory>"
    exit 1
fi

target="$1"

if [ -d "$target" ]; then
    echo "$target is a directory"
elif [ -f "$target" ]; then
    echo "$target is a file"
else
    echo "$target does not exist"
    exit 1
fi

[ -r "$target" ] && echo "Readable" || echo "Not readable"
[ -w "$target" ] && echo "Writable" || echo "Not writable"
[ -x "$target" ] && echo "Executable" || echo "Not executable" []

```

```

benzema@Benzema:~$ nano mytest.sh
benzema@Benzema:~$ chmod +x mytest.sh
benzema@Benzema:~$ ./mytest.sh file1.txt
file1.txt is a file
Readable
Writable
Not executable
benzema@Benzema:~$ ./mytest.sh /tmp
/tmp is a directory
Readable
Writable
Executable
benzema@Benzema:~$ ./mytest.sh nofile
nofile does not exist
benzema@Benzema:~$ []

```

8. Create a script called myinfo where:

- a. It asks the user about his/her logname.
- b. It print full info about files and directories in his/her home directory
- c. Copy his/her files and directories as much as you can in /tmp directory.
- d. Gets his current processes status.

```

GNU nano 7.2                                myinfo.sh
#!/bin/bash

read -p "Enter your logname: " logname

home_dir=$(eval echo "~$logname")

if [ ! -d "$home_dir" ]; then
    echo "Error: Home directory for $logname does not exist"
    exit 1
fi

echo "Full info about files and directories in $home_dir:"
ls -la "$home_dir"

echo
echo "Copying files and directories from $home_dir to /tmp/$logname..."
mkdir -p "/tmp/$logname"
cp -r "$home_dir"/* "/tmp/$logname" 2>/dev/null

echo
echo "Current process status for $logname:"
ps -u "$logname" □

```

```

benzema@Benzema:~$ ./myinfo.sh
Enter your logname: benzema
Full info about files and directories in /home/benzema:
total 107492
drwxr-x--- 32 benzema benzema      4096 Feb 23 16:41 .
drwxr-xr-x  3 root    root        4096 Nov 16 14:59 ..
-rw-rw-r--  1 benzema benzema       192 Jan 31 12:13 .angular-config.json
drwxrwxr-x  3 benzema benzema      4096 Jan 17 16:12 .antigravity
-rw-----  1 benzema benzema     59187 Feb 23 14:06 .bash_history
-rw-r--r--  1 benzema benzema      220 Mar 31 2024 .bash_logout
-rw-r--r--  1 benzema benzema      4036 Jan 31 12:13 .bashrc
drwx----- 29 benzema benzema      4096 Feb 20 15:04 .cache
drwxrwxr-x  4 benzema benzema      4096 Feb  3 02:15 .codex
drwx----- 31 benzema benzema      4096 Feb 22 12:38 .config
drwxr-xr-x  3 benzema benzema      4096 Feb 20 13:06 Desktop
drwxrwxr-x  2 benzema benzema      4096 Feb 23 15:48 dir
drwxr-xr-x  2 benzema benzema      4096 Nov 16 15:00 Documents
drwxrwxr-x  3 benzema benzema      4096 Nov 16 19:37 .dotnet
drwxr-xr-x  8 benzema benzema      4096 Feb 23 13:30 Downloads

```