DATE :- 19/07/2024

TASK1:

File Management :-

Create, rename, or delete multiple files based on a pattern or criteria.

Organize files into a specific directory structure.

Back up or archive important files.

```
backup.tar.gz  Downloads  f3        fucntion.sh  hello.o    Message.txt   My_folder.sh  n4  Public    test1.sh  test.sh
rps@rps-virtual-machine:~$ touch file1.txt file2.txt file3.txt
rps@rps-virtual-machine:~$ for file in *.txt; do mv "$file" "${file%.txt}.bak";done
rps@rps-virtual-machine:~$ ls
addnum        Desktop    f2      file1.bak    hello.cpp    loop.sh     my_folder.sh  n5        supriya    test4.sh
addnum.cpp    Documents  f3      file2.bak    hello.i      message.bak  n1           Pictures  Templates  test.sh
backup        Downloads  f4      file3.bak    hello.o      Music       n2            Projects  test1.sh   text
backup.tar.gz exercises  f5      fucntion.sh  hello.s      myfolder    n3            Public    test2.sh   Videos
data.bak      f1         file1   hello_class  LINUX_COMMANDS  my_folder1.sh  n4     snap      test3.sh
rps@rps-virtual-machine:~$ rm file1.bak file2.bak file3.bak
rps@rps-virtual-machine:~$ ls
addnum        data.bak   exercises  f4       hello_class  hello.s      Music          n1  n5       snap       test2.sh  text
addnum.cpp    Desktop    f1         f5       hello.cpp    LINUX_COMMANDS  myfolder    n2  Pictures supriya    test3.sh  Videos
backup        Documents  f2         file1    hello.i      loop.sh      my_folder1.sh  n3  Projects Templates  test4.sh
backup.tar.gz Downloads  f3         fucntion.sh  hello.o  message.bak  my_folder.sh   n4  Public   test1.sh   test.sh
rps@rps-virtual-machine:~$ mkdir -p project/{src,bin,docs}
rps@rps-virtual-machine:~$ mv file1.txt project/src/
mv: cannot stat 'file1.txt': No such file or directory
rps@rps-virtual-machine:~$ ls project/src/
rps@rps-virtual-machine:~$ mv file2.txt project/bin/
mv: cannot stat 'file2.txt': No such file or directory
rps@rps-virtual-machine:~$ ls project/bin/
rps@rps-virtual-machine:~$ mv file3.txt project/docs/////
mv: cannot stat 'file3.txt': No such file or directory
```

```
rps@rps-virtual-machine:~$ touch file1.txt file2.txt file3.txt
rps@rps-virtual-machine:~$ ls
addnum        Desktop    f2      file1.txt    hello.cpp    loop.sh     my_folder.sh  n5        snap       test3.sh
addnum.cpp    Documents  f3      file2.txt    hello.i      message.bak  n1           Pictures  supriya    test4.sh
backup        Downloads  f4      file3.txt    hello.o      Music       n2            project   Templates  test.sh
backup.tar.gz exercises  f5      fucntion.sh  hello.s      myfolder    n3            Projects  test1.sh   text
data.bak      f1         file1   hello_class  LINUX_COMMANDS  my_folder1.sh  n4     Public    test2.sh   Videos
rps@rps-virtual-machine:~$ mkdir -p project/src project/bin project/docs
rps@rps-virtual-machine:~$ mv file1.txt project/src/
rps@rps-virtual-machine:~$ mv file2.txt project/bin/
rps@rps-virtual-machine:~$ mv file3.txt project/docs/
rps@rps-virtual-machine:~$ ls project/src
file1.txt
rps@rps-virtual-machine:~$ ls project/bin/
file2.txt
rps@rps-virtual-machine:~$ ls project/docs
file3.txt
rps@rps-virtual-machine:~$ tar -cvf backup.tar project/
project/
project/src/
project/src/file1.txt
project/docs/
project/docs/file3.txt
project/bin/
project/bin/file2.txt
rps@rps-virtual-machine:~$ tar -xvf backup.tar
project/
project/src/
project/src/file1.txt
project/docs/
project/docs/file3.txt
project/bin/
project/bin/file2.txt
rps@rps-virtual-machine:~$
```

Text Processing :-

Search and replace text within a group of files.

Extract specific information from log files or data sets.

Format text files in a particular way

```
rps@rps-virtual-machine:~$ cd ~
rps@rps-virtual-machine:~$ ls
addnum        data.bak    f1  file1        hello.o        Music      n2  project    Templates  test.sh
addnum.cpp    Desktop     f2  fucntion.sh  hello.s        myfolder   n3  Projects   test1.sh   text
backup        Documents   f3  hello_class  LINUX_COMMANDS my_folder1.sh n4  Public     test2.sh   Videos
backup.tar    Downloads   f4  hello.cpp    loop.sh        my_folder.sh  n5  snap       test3.sh
backup.tar.gz exercises   f5  hello.i      message.bak    n1             Pictures  supriya    test4.sh
rps@rps-virtual-machine:~$ cd projects
bash: cd: projects: No such file or directory
rps@rps-virtual-machine:~$ cd project
rps@rps-virtual-machine:~/project$ ls
bin  docs  src
rps@rps-virtual-machine:~/project$ pwd
/home/rps/project
rps@rps-virtual-machine:~/project$ cd docs
rps@rps-virtual-machine:~/project/docs$ ls
file3.txt
rps@rps-virtual-machine:~/project/docs$ cd src
bash: cd: src: No such file or directory
rps@rps-virtual-machine:~/project/docs$ cd docs
bash: cd: docs: No such file or directory
rps@rps-virtual-machine:~/project/docs$ ped
Command 'ped' not found, but there are 16 similar ones.
rps@rps-virtual-machine:~/project/docs$ pwd
/home/rps/project/docs
rps@rps-virtual-machine:~/project/docs$ ls
file3.txt
rps@rps-virtual-machine:~/project/docs$ echo "this is old text:" > file1.txt
rps@rps-virtual-machine:~/project/docs$ echo "here is another old text:" > file2.txt
rps@rps-virtual-machine:~/project/docs$ echo "yet another text:" > file3.txt
```

```
rps@rps-virtual-machine:~/project/docs$ echo "here is another old text:" > file2.txt
rps@rps-virtual-machine:~/project/docs$ echo "yet another text:" > file3.txt
rps@rps-virtual-machine:~/project/docs$ sed -i 's/oldtext/newtext/g' file1.txt file2.txt file3.txt
rps@rps-virtual-machine:~/project/docs$ cat file1.txt
this is old text:
rps@rps-virtual-machine:~/project/docs$ cat file2.txt
here is another old text:
rps@rps-virtual-machine:~/project/docs$ cat file3.txt
yet another text:
rps@rps-virtual-machine:~/project/docs$ grep 'search_term' logfile.log
grep: logfile.log: No such file or directory
rps@rps-virtual-machine:~/project/docs$ ped
Command 'ped' not found, but there are 16 similar ones.
rps@rps-virtual-machine:~/project/docs$ pwd
/home/rps/project/docs
rps@rps-virtual-machine:~/project/docs$ cd logs
bash: cd: logs: No such file or directory
rps@rps-virtual-machine:~/project/docs$ mkdir logs
rps@rps-virtual-machine:~/project/docs$ ls
file1.txt  file2.txt  file3.txt  logs
rps@rps-virtual-machine:~/project/docs$ cd logs
rps@rps-virtual-machine:~/project/docs/logs$ ls
rps@rps-virtual-machine:~/project/docs/logs$ cd logs
bash: cd: logs: No such file or directory
rps@rps-virtual-machine:~/project/docs/logs$ mkdir logs
rps@rps-virtual-machine:~/project/docs/logs$ cd logs
rps@rps-virtual-machine:~/project/docs/logs/logs$ echo "test log enter:" > test.log
rps@rps-virtual-machine:~/project/docs/logs/logs$ ls
test.log
rps@rps-virtual-machine:~/project/docs/logs/logs$ cat test.log
test log enter:
rps@rps-virtual-machine:~/project/docs/logs/logs$ echo "Error:something went wrong:" <logfile.log
bash: logfile.log: No such file or directory
rps@rps-virtual-machine:~/project/docs/logs/logs$ echo "Error:something went wrong:" <test.log
```

```
rps@rps-virtual-machine:~/project/docs/logs/logs$ echo "Error:something went wrong:" <logfile.log
bash: logfile.log: No such file or directory
rps@rps-virtual-machine:~/project/docs/logs/logs$ echo "Error:something went wrong:" <test.log
Error:something went wrong:
rps@rps-virtual-machine:~/project/docs/logs/logs$ echo "info : all is well:" <test.log
info : all is well:
rps@rps-virtual-machine:~/project/docs/logs/logs$ echo "Warning : check this out:" <test.log
Warning : check this out:
rps@rps-virtual-machine:~/project/docs/logs/logs$ grep 'Error' test.log
rps@rps-virtual-machine:~/project/docs/logs/logs$ ls
test.log
rps@rps-virtual-machine:~/project/docs/logs/logs$ ls -l inputfile.txt
ls: cannot access 'inputfile.txt': No such file or directory
rps@rps-virtual-machine:~/project/docs/logs/logs$ pwd
/home/rps/project/docs/logs/logs
rps@rps-virtual-machine:~/project/docs/logs/logs$ ls -la
total 12
drwxrwxr-x 2 rps rps 4096 Jul 19 09:48 .
drwxrwxr-x 3 rps rps 4096 Jul 19 09:47 ..
-rw-rw-r-- 1 rps rps   16 Jul 19 09:48 test.log
rps@rps-virtual-machine:~/project/docs/logs/logs$ find / -type f -name inputfile.txt 2>/dev/null
rps@rps-virtual-machine:~/project/docs/logs/logs$ echo "name age location" > inputfile.txt
rps@rps-virtual-machine:~/project/docs/logs/logs$ echo "priya 24 andhra" > iputfile.txt
rps@rps-virtual-machine:~/project/docs/logs/logs$ echo "kajal 45 mumbai" > inputfile.txt
rps@rps-virtual-machine:~/project/docs/logs/logs$ echo "supriya 23 andhrapradesh " inputfile.txt
supriya 23 andhrapradesh  inputfile.txt
rps@rps-virtual-machine:~/project/docs/logs/logs$ ls -l inputfile.txt
-rw-rw-r-- 1 rps rps 16 Jul 19 10:04 inputfile.txt
rps@rps-virtual-machine:~/project/docs/logs/logs$ cat inputfile.txt
kajal 45 mumbai
rps@rps-virtual-machine:~/project/docs/logs/logs$ grep 'search_term' inputfile.txt
rps@rps-virtual-machine:~/project/docs/logs/logs$ grep 'kajal' inputfile.txt
kajal 45 mumbai
rps@rps-virtual-machine:~/project/docs/logs/logs$ cat inputfile.txt
kajal 45 mumbai
```

```
rps@rps-virtual-machine:~/project/docs/logs/logs$ grep 'kajal' inputfile.txt
kajal 45 mumbai
rps@rps-virtual-machine:~/project/docs/logs/logs$ cat inputfile.txt
kajal 45 mumbai
rps@rps-virtual-machine:~/project/docs/logs/logs$ awk '{print $1, $2}' inputfile.txt > formatted_output.txt
rps@rps-virtual-machine:~/project/docs/logs/logs$ cat formatted_output.txt
kajal 45
rps@rps-virtual-machine:~/project/docs/logs/logs$ 
```

PS - EF :-

```
rps@rps-virtual-machine:~/ayelet$ ps -ef
UID          PID    PPID  C STIME TTY          TIME CMD
root           1       0  0 Jun15 ?        00:01:19 /sbin/init splash
root           2       0  0 Jun15 ?        00:00:00 [kthreadd]
root           3       2  0 Jun15 ?        00:00:00 [rcu_gp]
root           4       2  0 Jun15 ?        00:00:00 [rcu_par_gp]
root           5       2  0 Jun15 ?        00:00:00 [slub_flushwq]
root           6       2  0 Jun15 ?        00:00:00 [netns]
root           8       2  0 Jun15 ?        00:00:00 [kworker/0:0H-events_highpri]
root          11       2  0 Jun15 ?        00:00:00 [mm_percpu_wq]
root          12       2  0 Jun15 ?        00:00:00 [rcu_tasks_kthread]
root          13       2  0 Jun15 ?        00:00:00 [rcu_tasks_rude_kthread]
root          14       2  0 Jun15 ?        00:00:00 [rcu_tasks_trace_kthread]
root          15       2  0 Jun15 ?        00:00:21 [ksoftirqd/0]
root          16       2  0 Jun15 ?        00:31:50 [rcu_preempt]
root          17       2  0 Jun15 ?        00:00:18 [migration/0]
root          18       2  0 Jun15 ?        00:00:00 [idle_inject/0]
root          19       2  0 Jun15 ?        00:00:00 [cpuhp/0]
root          20       2  0 Jun15 ?        00:00:00 [cpuhp/1]
root          21       2  0 Jun15 ?        00:00:00 [idle_inject/1]
root          22       2  0 Jun15 ?        00:00:17 [migration/1]
root          23       2  0 Jun15 ?        00:00:05 [ksoftirqd/1]
root          25       2  0 Jun15 ?        00:00:00 [kworker/1:0H-kblockd]
root          26       2  0 Jun15 ?        00:00:00 [cpuhp/2]
```

ECHO $? :-

```
rps@rps-virtual-machine:~/ayelet$ ls
ayelet.txt   failure_success.sh
rps@rps-virtual-machine:~/ayelet$ $?
0: command not found
rps@rps-virtual-machine:~/ayelet$ echo $?
127
rps@rps-virtual-machine:~/ayelet$ ls -l
total 8
-rw-rw-r-- 1 rps rps  49 Jul 19 11:14 ayelet.txt
-rw-rw-r-- 1 rps rps 113 Jul 19 11:25 failure_success.sh
rps@rps-virtual-machine:~/ayelet$ $?
0: command not found
rps@rps-virtual-machine:~/ayelet$ echo $?
127
rps@rps-virtual-machine:~/ayelet$
```

CREATE AN FUNCTION IN A SHELL :-

```
rps@rps-virtual-machine:~/ayelet$ vim failure_success.sh
rps@rps-virtual-machine:~/ayelet$ bash failure_success.sh
0
rps@rps-virtual-machine:~/ayelet$ bash failure_success.sh
1
rps@rps-virtual-machine:~/ayelet$ bash failure_success.sh
1
rps@rps-virtual-machine:~/ayelet$ bash failure_success.sh
1
rps@rps-virtual-machine:~/ayelet$ cat failure_success.sh
#!/usr/bin/env bash
result=$(($RANDOM % 2))
if [ $result -eq 0 ]
then
        true
        echo "$?"
else
        false
        echo "$?"
fi
rps@rps-virtual-machine:~/ayelet$
```

Exercise 3: Write a shell script called `file_checker.sh` that checks if a file exists or not. The script take in a file name as an argument and try to run `cat` on that file. The script should then check the exit code of the `cat` command to determine if the file exists or not. If the file exists, the script should print `File exists!`. If the file does not exist, the script should print `File does not exist!`.

Bonus: change the script to suppress the actual output of `cat` and only include your script's output (e.g. `File exists!` or `File does not exist!`).

```
rps@rps-virtual-machine:~$ vim file_checker.sh
rps@rps-virtual-machine:~$ sh file_checker.sh
Usage: file_checker.sh <filename>
rps@rps-virtual-machine:~$ sh file_checker.sh file.txt
File does not exist!
rps@rps-virtual-machine:~$ ls
1               data            file_management.sh  hi.s        long-text.txt  Pictures    test3.sh        welcome_class
add             data_archive1   hello               historycommand.txt  message.txt  project     test4.sh        welcome.cpp
add_class       Desktop         hello_class         history.txt     ntest_sh    Public      test5.sh        welcome.i
add.cpp         Documents       hello.cpp           hold.sh         Music       report.sh   test6.sh        welcome.s
add.i           Downloads       hello.i             linux           my          snap        test.sh         world
add.s           example.txt     hello.s             list            mydir       success.sh  test_sh         world.cpp
ayelet          exe1.sh         hi                  list1           my_folder   Templates   user_report.txt world.i
backup_data.sh  exercises       hi.cpp              list3           my_folder.sh  test1.sh  Videos          world.s
backup.tar.gz   file_checker.sh  hi.i               log.sh          new_sf      test2.sh    welcome
rps@rps-virtual-machine:~$ sh file_checker.sh
Usage: file_checker.sh <filename>
rps@rps-virtual-machine:~$ vim file_checker.sh
rps@rps-virtual-machine:~$ sh file_checker.sh history.txt
File exists!
rps@rps-virtual-machine:~$ sh file_checker.sh file_checker.sh
File exists!
rps@rps-virtual-machine:~$ cat file_checker.sh
#!/bin/bash

if [ $# -ne 1 ]; then
        echo "Usage: $0 <filename>"
        exit 1
fi
FILE="$1"
if cat "$FILE" > /dev/null 2>&1; then
        echo "File exists!"
else
        echo "File does not exist!"
fi
rps@rps-virtual-machine:~$
```

```
rps@rps-virtual-machine:~$ vim file_exist.sh
rps@rps-virtual-machine:~$ bash file_exist.sh text.sh
cat: text.sh: No such file or directory
file doesnt exists !
rps@rps-virtual-machine:~$ bash file_exist.sh test3.sh
#/bin/bin/env bash
num=10
if [ $num -gt 50 ]
then
        message="hello world"
        echo $message
else
        echo "hello"
fi
file exists !
rps@rps-virtual-machine:~$ cat file-exists.sh
cat: file-exists.sh: No such file or directory
rps@rps-virtual-machine:~$ cat file-exist.sh
cat: file-exist.sh: No such file or directory
rps@rps-virtual-machine:~$ cat file_exist.sh
#!/usr/binenv bash
cat $1
if [ $? -eq 0 ]
then
        echo "file exists !"
else
        echo "file doesnt exists !"
fi
rps@rps-virtual-machine:~$ vim file_exist1.sh
rps@rps-virtual-machine:~$ bash file_exist1.sh test.t
cat: test.txt: No such file or directory
cat: test.txt: No such file or directory
file doesnt exist
rps@rps-virtual-machine:~$ cat file_exist1.sh
#!/usr/bin/env bash
cat $1 && echo "file exist!"
cat $1 || echo "file doesnt_exist"
rps@rps-virtual-machine:~$
```

Write a shell script called

timely_greeting

  .sh that greets

you based on the current time. The script should call the

date

command, extract the current hour (look into using

%H) and then print

the following greeting based on the time.

If it is between 5AM (05:00) and 12PM (12:00):

Good morning!

  If it is between 12PM (12:00) and 6PM (18:00):

Good afternoon!

  If it is between 6PM (18:00) and 5AM (5:00):

Good night!

```
rps@rps-virtual-machine:~$ vim timely_greeting.sh
rps@rps-virtual-machine:~$ bash timely_greeting.sh
Good afternoon!
rps@rps-virtual-machine:~$ cat timely_greeting.sh
#!/bin/bash

hour=$(date +%H)
if [ $hour -ge 05 ] && [ $hour -lt 12 ]; then
        echo "Good morning!"
elif [ $hour -ge 12 ] && [ $hour -lt 18 ]; then
echo "Good afternoon!"
else
        echo "Good night!"
fi
rps@rps-virtual-machine:~$
```

Write a code in shell perform operations Extend the script to include Addition, Subtraction, Multiplication and division operations, and handle division by zero appropriately.

```
rps@rps-virtual-machine:~$ vim timely_greeting.sh
rps@rps-virtual-machine:~$ vim operations.sh
rps@rps-virtual-machine:~$ bash operations.sh
Enter fist integer:
3
Enter Second integer:
5
Choose the operation you want to perform: add, subtract, multiply, divide
add
The sum of 3 and 5 is: 8
rps@rps-virtual-machine:~$ bash operations.sh
Enter fist integer:
4
Enter Second integer:
6
Choose the operation you want to perform: add, subtract, multiply, divide
divide
The quotient of 4 and 6 is: 0
```

```bash
#!/bin/bash
add(){
        echo "The sum of $1 and $2 is: $(( $1 + $2 ))"
}
subtract(){
        echo "The difference between $1 and $2 is: $(( $1 - $2 ))"
}
multiply(){
        echo "The Product of $1 and $2 is $(( $1 * $2 ))"
}
divide(){
        if [ $2 -eq 0 ];then
                echo "Error: Division by zero is not allowed."
        else
                echo "The quotient of $1 and $2 is: $(( $1 / $2 ))"
        fi
}
echo "Enter fist integer:"
read num1

echo "Enter Second integer:"
read num2

echo "Choose the operation you want to perform: add, subtract, multiply, divide"
read operation

if [ "$operation" == "add" ]; then
        add $num1 $num2
elif [ "$operation" == "subtract" ]; then
        subtract $num1 $num2
elif [ "$operation" == "multiply" ]; then
        multiply $num1 $num2
elif [ "$operation" == "divide" ]; then
        divide $num1 $num2
else
        echo "Invalid operation. Please choose 'add', 'subtract', 'multiply', 'divide'
fi
rps@rps-virtual-machine:~$
```

Title: Create, Write, and Read Files Using Shell Script

Objective:

Develop a shell script that can create a file, write user-provided content into the file, and then read and display the content of the file.

```
rps@rps-virtual-machine:~$ cat file_operations.sh
#!/bin/bash
create_or_clear_file() {

> $filename

if [ ! -e $filename ]; then
        echo "Failed to create the file $filename."
        exit 1
fi

echo "File $filename created successfully."
}

echo "Enter the filename:"
read filename

create_or_clear_file

echo "Enter the content to write into the file (type 'EOF' on a new line to finis
while IFS= read -r line
do
        if [ "$line" == "EOF" ]; then
                break
        fi
        echo "$line" >> $filename
done
echo "The content of the file $filename is:"
cat $filename

rps@rps-virtual-machine:~$ █
```

```
rps@rps-virtual-machine:~$ bash file_operations.sh
Enter the filename:
hi
File hi created successfully.
Enter the content to write into the file (type 'EOF' on a new line to finish):
hello world
welcome to unix
EOF
The content of the file hi is:
hello world
welcome to unix
```