

# DAY- 3 LSP Assignment


## A. File Management:

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



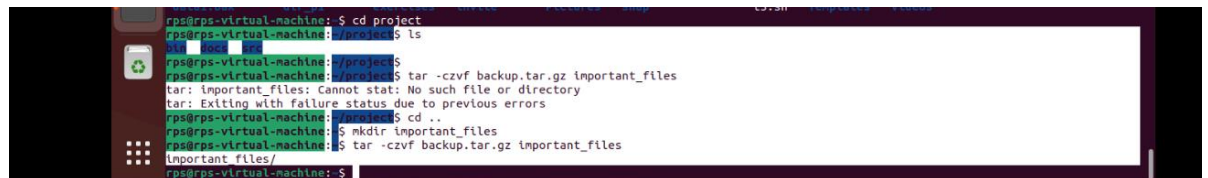
```
rps@rps-virtual-machine:~$ touch file_{1..10}.txt
rps@rps-virtual-machine:~$ for f in *.txt; do mv "$f" "${f%.txt}.bak"; done
rps@rps-virtual-machine:~$ rm *.bak
rm: cannot remove 'data1.bak': Is a directory
rps@rps-virtual-machine:~$ ls
.  Desktop  Downloads  hello  hello1.cpp  hello2.cpp  pi.sh  sales_backup.sql  t1.sh  t2.sh  t3.sh  t4.sh  t5.sh  t6.sh  t7.sh  t8.sh  t9.sh  test3.sh  test4.sh  test5.cpp  test5.sh
..  file_1  file_2  file_3  file_4  file_5  file_6  file_7  file_8  file_9  file_10  file_11  file_12  file_13  file_14  file_15  file_16  file_17  file_18  file_19  file_20  file_21  file_22  file_23  file_24  file_25  file_26  file_27  file_28  file_29  file_30  file_31  file_32  file_33  file_34  file_35  file_36  file_37  file_38  file_39  file_40  file_41  file_42  file_43  file_44  file_45  file_46  file_47  file_48  file_49  file_50  file_51  file_52  file_53  file_54  file_55  file_56  file_57  file_58  file_59  file_60  file_61  file_62  file_63  file_64  file_65  file_66  file_67  file_68  file_69  file_70  file_71  file_72  file_73  file_74  file_75  file_76  file_77  file_78  file_79  file_80  file_81  file_82  file_83  file_84  file_85  file_86  file_87  file_88  file_89  file_90  file_91  file_92  file_93  file_94  file_95  file_96  file_97  file_98  file_99  file_100
data1.bak  data2.bak  data3.bak  data4.bak  data5.bak  data6.bak  data7.bak  data8.bak  data9.bak  data10.bak  data11.bak  data12.bak  data13.bak  data14.bak  data15.bak  data16.bak  data17.bak  data18.bak  data19.bak  data20.bak  data21.bak  data22.bak  data23.bak  data24.bak  data25.bak  data26.bak  data27.bak  data28.bak  data29.bak  data30.bak  data31.bak  data32.bak  data33.bak  data34.bak  data35.bak  data36.bak  data37.bak  data38.bak  data39.bak  data40.bak  data41.bak  data42.bak  data43.bak  data44.bak  data45.bak  data46.bak  data47.bak  data48.bak  data49.bak  data50.bak  data51.bak  data52.bak  data53.bak  data54.bak  data55.bak  data56.bak  data57.bak  data58.bak  data59.bak  data60.bak  data61.bak  data62.bak  data63.bak  data64.bak  data65.bak  data66.bak  data67.bak  data68.bak  data69.bak  data70.bak  data71.bak  data72.bak  data73.bak  data74.bak  data75.bak  data76.bak  data77.bak  data78.bak  data79.bak  data80.bak  data81.bak  data82.bak  data83.bak  data84.bak  data85.bak  data86.bak  data87.bak  data88.bak  data89.bak  data90.bak  data91.bak  data92.bak  data93.bak  data94.bak  data95.bak  data96.bak  data97.bak  data98.bak  data99.bak  data100.bak
file_1  file_2  file_3  file_4  file_5  file_6  file_7  file_8  file_9  file_10  file_11  file_12  file_13  file_14  file_15  file_16  file_17  file_18  file_19  file_20  file_21  file_22  file_23  file_24  file_25  file_26  file_27  file_28  file_29  file_30  file_31  file_32  file_33  file_34  file_35  file_36  file_37  file_38  file_39  file_40  file_41  file_42  file_43  file_44  file_45  file_46  file_47  file_48  file_49  file_50  file_51  file_52  file_53  file_54  file_55  file_56  file_57  file_58  file_59  file_60  file_61  file_62  file_63  file_64  file_65  file_66  file_67  file_68  file_69  file_70  file_71  file_72  file_73  file_74  file_75  file_76  file_77  file_78  file_79  file_80  file_81  file_82  file_83  file_84  file_85  file_86  file_87  file_88  file_89  file_90  file_91  file_92  file_93  file_94  file_95  file_96  file_97  file_98  file_99  file_100
rps@rps-virtual-machine:~$ cd file_1
bash: cd: file_1: No such file or directory
rps@rps-virtual-machine:~$ ls -l
total 196
-rw-rw-r-- 1 rps rps  0 Jul 18 16:06 .
drwxrwxr-x 2 rps rps 4096 Jul 18 14:17 Desktop
-rw-rw-r-- 1 rps rps 113 Jul 18 14:17 Downloads
drwxrwxr-x 2 rps rps 4096 Jul 18 14:43 file_1
drwxrwxr-x 2 rps rps 4096 Jul 17 12:17 file_2
drwxr-xr-x 3 rps rps 4096 Jul 16 21:21 file_3
drwxrwxr-x 2 rps rps 4096 Jul 17 09:31 file_4
```

2. Organize files into a specific directory structure.



```
rps@rps-virtual-machine:~$ mkdir -p project/{src,bin,docs}
rps@rps-virtual-machine:~$ mv *.c project/src/
mv: cannot stat '*.c': No such file or directory
rps@rps-virtual-machine:~$ touch file1.c
rps@rps-virtual-machine:~$ touch file2.out
rps@rps-virtual-machine:~$ touch file2.txt
rps@rps-virtual-machine:~$ mv *.c project/src/
rps@rps-virtual-machine:~$ mv *.out project/bin/
rps@rps-virtual-machine:~$ mv *.txt project/docs/
rps@rps-virtual-machine:~$ ls
.  Desktop  Downloads  hello  hello1.cpp  hello2.cpp  pi.sh  sales_backup.sql  t1.sh  t2.sh  t3.sh  t4.sh  t5.sh  t6.sh  t7.sh  t8.sh  t9.sh  test3.sh  test4.sh  test5.cpp  test5.sh
..  file_1  file_2  file_3  file_4  file_5  file_6  file_7  file_8  file_9  file_10  file_11  file_12  file_13  file_14  file_15  file_16  file_17  file_18  file_19  file_20  file_21  file_22  file_23  file_24  file_25  file_26  file_27  file_28  file_29  file_30  file_31  file_32  file_33  file_34  file_35  file_36  file_37  file_38  file_39  file_40  file_41  file_42  file_43  file_44  file_45  file_46  file_47  file_48  file_49  file_50  file_51  file_52  file_53  file_54  file_55  file_56  file_57  file_58  file_59  file_60  file_61  file_62  file_63  file_64  file_65  file_66  file_67  file_68  file_69  file_70  file_71  file_72  file_73  file_74  file_75  file_76  file_77  file_78  file_79  file_80  file_81  file_82  file_83  file_84  file_85  file_86  file_87  file_88  file_89  file_90  file_91  file_92  file_93  file_94  file_95  file_96  file_97  file_98  file_99  file_100
data1.bak  data2.bak  data3.bak  data4.bak  data5.bak  data6.bak  data7.bak  data8.bak  data9.bak  data10.bak  data11.bak  data12.bak  data13.bak  data14.bak  data15.bak  data16.bak  data17.bak  data18.bak  data19.bak  data20.bak  data21.bak  data22.bak  data23.bak  data24.bak  data25.bak  data26.bak  data27.bak  data28.bak  data29.bak  data30.bak  data31.bak  data32.bak  data33.bak  data34.bak  data35.bak  data36.bak  data37.bak  data38.bak  data39.bak  data40.bak  data41.bak  data42.bak  data43.bak  data44.bak  data45.bak  data46.bak  data47.bak  data48.bak  data49.bak  data50.bak  data51.bak  data52.bak  data53.bak  data54.bak  data55.bak  data56.bak  data57.bak  data58.bak  data59.bak  data60.bak  data61.bak  data62.bak  data63.bak  data64.bak  data65.bak  data66.bak  data67.bak  data68.bak  data69.bak  data70.bak  data71.bak  data72.bak  data73.bak  data74.bak  data75.bak  data76.bak  data77.bak  data78.bak  data79.bak  data80.bak  data81.bak  data82.bak  data83.bak  data84.bak  data85.bak  data86.bak  data87.bak  data88.bak  data89.bak  data90.bak  data91.bak  data92.bak  data93.bak  data94.bak  data95.bak  data96.bak  data97.bak  data98.bak  data99.bak  data100.bak
file_1  file_2  file_3  file_4  file_5  file_6  file_7  file_8  file_9  file_10  file_11  file_12  file_13  file_14  file_15  file_16  file_17  file_18  file_19  file_20  file_21  file_22  file_23  file_24  file_25  file_26  file_27  file_28  file_29  file_30  file_31  file_32  file_33  file_34  file_35  file_36  file_37  file_38  file_39  file_40  file_41  file_42  file_43  file_44  file_45  file_46  file_47  file_48  file_49  file_50  file_51  file_52  file_53  file_54  file_55  file_56  file_57  file_58  file_59  file_60  file_61  file_62  file_63  file_64  file_65  file_66  file_67  file_68  file_69  file_70  file_71  file_72  file_73  file_74  file_75  file_76  file_77  file_78  file_79  file_80  file_81  file_82  file_83  file_84  file_85  file_86  file_87  file_88  file_89  file_90  file_91  file_92  file_93  file_94  file_95  file_96  file_97  file_98  file_99  file_100
rps@rps-virtual-machine:~$ cd project
```

3. Back up or archive important files.



```
rps@rps-virtual-machine:~$ cd project
rps@rps-virtual-machine:~/project$ ls
.  Desktop  Downloads  hello  hello1.cpp  hello2.cpp  pi.sh  sales_backup.sql  t1.sh  t2.sh  t3.sh  t4.sh  t5.sh  t6.sh  t7.sh  t8.sh  t9.sh  test3.sh  test4.sh  test5.cpp  test5.sh
..  file_1  file_2  file_3  file_4  file_5  file_6  file_7  file_8  file_9  file_10  file_11  file_12  file_13  file_14  file_15  file_16  file_17  file_18  file_19  file_20  file_21  file_22  file_23  file_24  file_25  file_26  file_27  file_28  file_29  file_30  file_31  file_32  file_33  file_34  file_35  file_36  file_37  file_38  file_39  file_40  file_41  file_42  file_43  file_44  file_45  file_46  file_47  file_48  file_49  file_50  file_51  file_52  file_53  file_54  file_55  file_56  file_57  file_58  file_59  file_60  file_61  file_62  file_63  file_64  file_65  file_66  file_67  file_68  file_69  file_70  file_71  file_72  file_73  file_74  file_75  file_76  file_77  file_78  file_79  file_80  file_81  file_82  file_83  file_84  file_85  file_86  file_87  file_88  file_89  file_90  file_91  file_92  file_93  file_94  file_95  file_96  file_97  file_98  file_99  file_100
data1.bak  data2.bak  data3.bak  data4.bak  data5.bak  data6.bak  data7.bak  data8.bak  data9.bak  data10.bak  data11.bak  data12.bak  data13.bak  data14.bak  data15.bak  data16.bak  data17.bak  data18.bak  data19.bak  data20.bak  data21.bak  data22.bak  data23.bak  data24.bak  data25.bak  data26.bak  data27.bak  data28.bak  data29.bak  data30.bak  data31.bak  data32.bak  data33.bak  data34.bak  data35.bak  data36.bak  data37.bak  data38.bak  data39.bak  data40.bak  data41.bak  data42.bak  data43.bak  data44.bak  data45.bak  data46.bak  data47.bak  data48.bak  data49.bak  data50.bak  data51.bak  data52.bak  data53.bak  data54.bak  data55.bak  data56.bak  data57.bak  data58.bak  data59.bak  data60.bak  data61.bak  data62.bak  data63.bak  data64.bak  data65.bak  data66.bak  data67.bak  data68.bak  data69.bak  data70.bak  data71.bak  data72.bak  data73.bak  data74.bak  data75.bak  data76.bak  data77.bak  data78.bak  data79.bak  data80.bak  data81.bak  data82.bak  data83.bak  data84.bak  data85.bak  data86.bak  data87.bak  data88.bak  data89.bak  data90.bak  data91.bak  data92.bak  data93.bak  data94.bak  data95.bak  data96.bak  data97.bak  data98.bak  data99.bak  data100.bak
file_1  file_2  file_3  file_4  file_5  file_6  file_7  file_8  file_9  file_10  file_11  file_12  file_13  file_14  file_15  file_16  file_17  file_18  file_19  file_20  file_21  file_22  file_23  file_24  file_25  file_26  file_27  file_28  file_29  file_30  file_31  file_32  file_33  file_34  file_35  file_36  file_37  file_38  file_39  file_40  file_41  file_42  file_43  file_44  file_45  file_46  file_47  file_48  file_49  file_50  file_51  file_52  file_53  file_54  file_55  file_56  file_57  file_58  file_59  file_60  file_61  file_62  file_63  file_64  file_65  file_66  file_67  file_68  file_69  file_70  file_71  file_72  file_73  file_74  file_75  file_76  file_77  file_78  file_79  file_80  file_81  file_82  file_83  file_84  file_85  file_86  file_87  file_88  file_89  file_90  file_91  file_92  file_93  file_94  file_95  file_96  file_97  file_98  file_99  file_100
rps@rps-virtual-machine:~/project$ tar -czvf backup.tar.gz important_files
tar: important_files: Cannot stat: No such file or directory
tar: Exiting with failure status due to previous errors
rps@rps-virtual-machine:~/project$ cd ..
rps@rps-virtual-machine:~$ mkdir important_files
rps@rps-virtual-machine:~$ tar -czvf backup.tar.gz important_files
important_files/
rps@rps-virtual-machine:~$
```

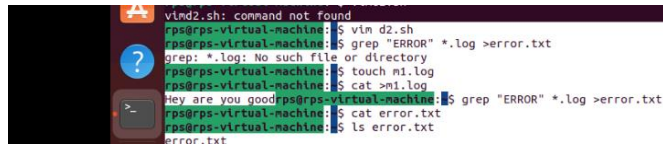
## B. Text Processing:

1. Search and replace text within a group of files.



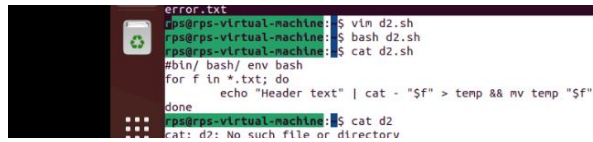
```
important_files/
rps@rps-virtual-machine:~$ vim d1.sh
rps@rps-virtual-machine:~$ bash d1.sh
sed: can't read *.txt: No such file or directory
rps@rps-virtual-machine:~$ touch example1.txt
rps@rps-virtual-machine:~$ bash d1.sh
rps@rps-virtual-machine:~$ cat >example1.txt
This is an example of shell scripting
rps@rps-virtual-machine:~$ vim d1.sh
rps@rps-virtual-machine:~$ bash d1.sh
rps@rps-virtual-machine:~$ cat d1.sh
# use sed for search and replace
for f in *.txt; do
    sed -i 's/oldtext/newtext/g' "$f"
done
```

2. Extract specific information from log files or data sets.



```
vim d2.sh: command not found
rps@rps-virtual-machine:~$ vim d2.sh
rps@rps-virtual-machine:~$ grep "ERROR" *.log > error.txt
grep: *.log: No such file or directory
rps@rps-virtual-machine:~$ touch m1.log
rps@rps-virtual-machine:~$ cat >m1.log
Hey are you goodrps@rps-virtual-machine:~$ grep "ERROR" *.log > error.txt
rps@rps-virtual-machine:~$ cat error.txt
rps@rps-virtual-machine:~$ ls error.txt
error.txt
```

3. Format text files in a particular way.



```
error.txt
rps@rps-virtual-machine:~$ vim d2.sh
rps@rps-virtual-machine:~$ bash d2.sh
rps@rps-virtual-machine:~$ cat d2.sh
#!/bin/bash/ env bash
for f in *.txt; do
    echo "Header text" | cat - "$f" > temp && mv temp "$f"
done
rps@rps-virtual-machine:~$ cat d2
cat: d2: No such file or directory
```

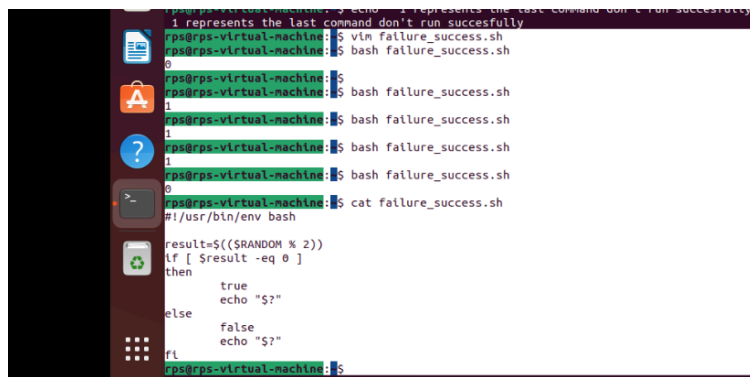
### C. Practise codes.

1. To check if the previous command has been executed successfully or not ?



```
rps@rps-virtual-machine:~$ ls
.      .vscode  backup  d1.sh    d2.sh    error.txt  hello  hello1.cpp  hello.cpp  important_files  m1.log  myddi7  pi.sh  project  sales_backup.sql  t4.sh  t5.sh  t6.sh  t7.sh  t8.sh  t9.sh  test3.sh  test4.sh  test5.cpp  test.sh
..     Desktop  backup.tar.gz  desktop  download  example1.txt  hello1  hello1.cpp  hello.cpp  important_files  m1.log  myddi7  pi.sh  project  sales_backup.sql  t4.sh  t5.sh  t6.sh  t7.sh  t8.sh  t9.sh  test3.sh  test4.sh  test5.cpp  test.sh
rps@rps-virtual-machine:~$ echo $?
0
rps@rps-virtual-machine:~$ echo " 0 represents the command run successfully"
0 represents the command run successfully
rps@rps-virtual-machine:~$ lp
lp: Error - No default destination.
rps@rps-virtual-machine:~$ echo $?
1
rps@rps-virtual-machine:~$ echo " 1 represents the last command don't run successfully"
1 represents the last command don't run successfully
rps@rps-virtual-machine:~$
```

2. Shell script to check the command is successful or not ?



```
rps@rps-virtual-machine:~$ echo " 1 represents the last command don't run successfully"
1 represents the last command don't run successfully
rps@rps-virtual-machine:~$ vim failure_success.sh
rps@rps-virtual-machine:~$ bash failure_success.sh
0
rps@rps-virtual-machine:~$ bash failure_success.sh
1
rps@rps-virtual-machine:~$ bash failure_success.sh
1
rps@rps-virtual-machine:~$ bash failure_success.sh
1
rps@rps-virtual-machine:~$ cat failure_success.sh
#!/usr/bin/env bash
result=$((RANDOM % 2))
if [ $result -eq 0 ]
then
    true
    echo "$?"
else
    false
    echo "$?"
fi
rps@rps-virtual-machine:~$
```

3. To check whether a file exists or not .

```
rpss@rpss-virtual-machine:~$ echo "to check wheather file exists or not !"
to check wheather file exists or not !
rpss@rpss-virtual-machine:~$ cat file_exist.sh
#!/usr/bin/env bash

cat $1 && echo " file exists"
cat $1 || echo " file does'nt exist"
rpss@rpss-virtual-machine:~$ cat file_exist1.sh
#!/usr/bin/env bash

cat $1
if [ $? -eq 0 ]
then echo "file exist"
else
    echo "file don't exist "
fi
rpss@rpss-virtual-machine:~$
```

#### 4. Note –

- a. **\$\$** is the PID of the current process.
- b. **\$?** is the return code of the last executed command.
- c. **\$#** is the number of arguments in **\$\***
- d. **\$\*** is the list of arguments passed to the current process

#### 5. Code for file\_exist in shell

```
rpss@rpss-virtual-machine:~$ cp file_exist.sh file_exist2.sh
rpss@rpss-virtual-machine:~$ vim file_exist2.sh
rpss@rpss-virtual-machine:~$ bash file_exist2.sh
^C
rpss@rpss-virtual-machine:~$ cat file_exist2.sh
#!/usr/bin/env bash

cat $1 &> /dev/null && echo "file exist"
cat $1 &>> /dev/null || echo "file doesn't exist"
rpss@rpss-virtual-machine:~$ ^[[2-3-
```

#### 6. Code //

```
rpss@rpss-virtual-machine:~$ vim l1stall.sh
rpss@rpss-virtual-machine:~$ bash l1stall.sh
ls: cannot access '/home/rps/socket': No such file or directory
rpss@rpss-virtual-machine:~$ vim l1stall.sh
rpss@rpss-virtual-machine:~$ bash l1stall.sh
ls: cannot access '/home/rps/socket': No such file or directory
rpss@rpss-virtual-machine:~$ ./l1stall.sh
bash: ./l1stall.sh: Permission denied
rpss@rpss-virtual-machine:~$ cat l1stall.sh
#!/usr/bin/env bash

for element in $(ls ~/socket)
do
    echo "Desktop file $element"
done
rpss@rpss-virtual-machine:~$
```

#### Note :

1. In order to compare **numbers** in a bash script, use the following:

a **-eq** b for checking if a is equal to b

a **-ne** b for checking if a is not equal to b

a **-gt** b for checking if a is greater than b

2.

In order to compare **strings** in a bash script, use the following:

`s1 = s2` for checking if `s1` is equal to `s2`

`s1 != s2` for checking if `s1` is not equal to `s2`

`s1 < s2` for checking if `s1` is less than `s2` by lexicographical order

`s1 > s2` for checking if `s1` is greater than `s2` by lexicographical order

`-n s1` for checking if `s1` has a length greater than 0

`-z s1` for checking if `s1` has a length of 0

## Assignment

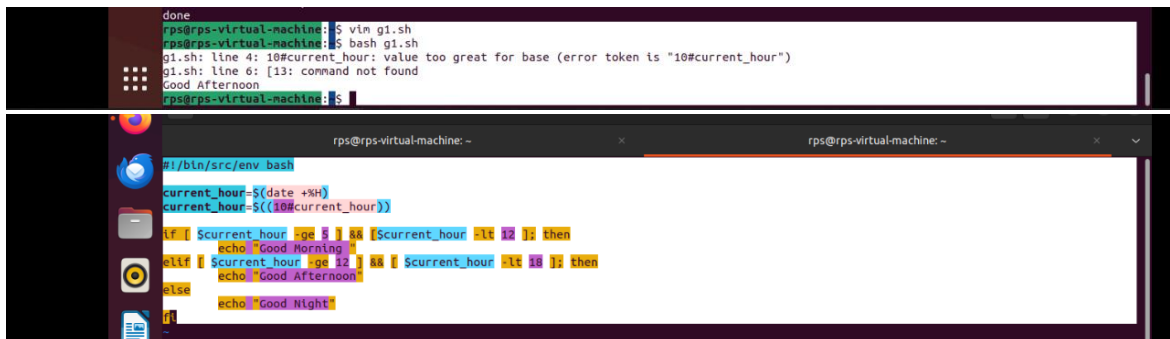
### TASK -2

1. 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!

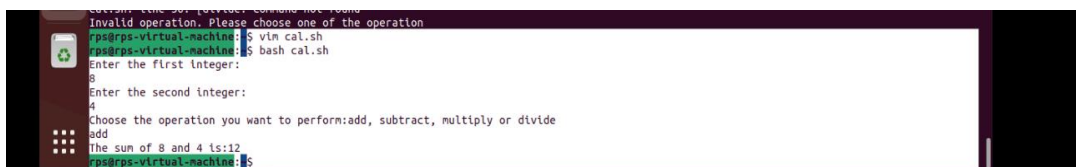


```
done
rps@rps-virtual-machine:~$ vim g1.sh
rps@rps-virtual-machine:~$ bash g1.sh
g1.sh: line 4: 10#current_hour: value too great for base (error token is "10#current_hour")
g1.sh: line 6: [13: command not found
Good Afternoon
rps@rps-virtual-machine:~$
```

```
#!/bin/sh
current_hour=$(date +%H)
current_hour=$((10#$current_hour))

if [ $current_hour -ge 5 ] && [ $current_hour -lt 12 ]; then
    echo "Good Morning"
elif [ $current_hour -ge 12 ] && [ $current_hour -lt 18 ]; then
    echo "Good Afternoon"
else
    echo "Good Night"
fi
```

2. The script to include addition, subtraction, multiplication and division operations, and handle division by zero appropriately.



```
Invalid operation. Please choose one of the operation
rps@rps-virtual-machine:~$ vim cal.sh
rps@rps-virtual-machine:~$ bash cal.sh
Enter the first integer:
8
Enter the second integer:
4
Choose the operation you want to perform:add, subtract, multiply or divide
add
The sum of 8 and 4 is:12
rps@rps-virtual-machine:~$
```

```
rps@rps-virtual-machine: ~
#Function to perform addition
add() {
    echo "The sum of $1 and $2 is: $(( $1 + $2 ))"
}

#Function to perform subtraction
subtract() {
    echo "The difference of $1 and $2 is: $(( $1 - $2 ))"
}

#Function to perform multiplication
multiply() {
    echo "The multiplication of $1 and $2 is: $(( $1 * $2 ))"
}

#Function to perform division
divide() {
    if [ $2 -ne 0 ] ; then
        echo "The division of $1 and $2 is: $(( $1 / $2 ))"
    else
        echo "Division by zero is not allowed"
    fi
}

#Main script
echo "Enter the first integer:"
read num1

echo "Enter the second integer:"
read num2

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

if [ "$operation" == "add" ] ; then
    add $num1 $num2
elif [ "$operation" == "subtract" ] ; then
    subtract $num1 $num2
elif [ "$operation" == "multiply" ] ; then
    multiply $num1 $num2
fi
```

### 3. 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.

```
ft
rps@rps-virtual-machine: ~
rps@rps-virtual-machine: ~$ mv cfile.sh file_manager.sh
rps@rps-virtual-machine: ~$ chmod +x file_manager.sh
rps@rps-virtual-machine: ~$ ./file_manager.sh
bash: ./file_manager.sh: /bin/bash: bad interpreter: Not a directory
rps@rps-virtual-machine: ~$ bash file_manager.sh
Enter content to write to file:
Hey ! How are you doing jlmmy?
file_manager.sh: line 11: echoFile content:: command not found
Hey ! How are you doing jlmmy?
rps@rps-virtual-machine: ~$ cat file_manager.sh
#!/bin/bash/ env bash

#Create a file
touch myfile.txt

echo "Enter content to write to file: "
read content

echo "$content"> myfile.txt
echo "File content:"
cat myfile.txt
rps@rps-virtual-machine: ~$
```