

## Ass\_6

### Assignment 1

Ensure the script checks if a specific file (e.g., myfile.txt) exists in the current directory. If it exists, print "File exists", otherwise print "File not found".

#making a dummy file for search

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ touch myfile.txt
```

#making shell script in vi editor named checkFileCurrDirw

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ vi checkFileCurrDir.sh
```

#changing privileges to access the file

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ chmod 777 checkFileCurrDir.sh
```

#printing the file content on terminal with line numbers

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ nl checkFileCurrDir.sh
1      #!/bin/bash
```

```
2      filename="myfile.txt"
```

```
3      if [ -e "$filename" ]; then
```

```
4          echo "File exist"
```

```
5      else
```

```
6          echo "File not found"
```

```
7      fi
```

#running the script to check dummy file exists or not

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ ./checkFileCurrDir.sh
File exist
```

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### Assignment 2

Write a script that reads numbers from the user until they enter '0'. The script should also print whether each number is odd or even.

#installing vim to make easier edit in the file

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ sudo apt install vim
```

#making shell script in vim editor named checkOddEven

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ vim checkOddEven.sh
```

#changing privileges to access the file

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ chmod 777 checkOddEven.sh
```

#printing the file content on terminal with line numbers

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ nl checkOddEven.sh
1  #!/bin/bash
```

```
2  num=1
3  while [ "$num" -ne 0 ]
4  do
5      echo "Enter a number, "0" to stop the execution"
6      read num
7      if [ "$num" -eq 0 ]; then
8          break
9      else
10         if [ $(num % 2) -e 0 ]; then
11             echo "even"
12         else
13             echo "odd"
14         fi
15     fi
16 done
```

#running the script to check odd even

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ ./checkOddEven.sh
```

Enter a number, 0 to stop the execution

23

odd

Enter a number, 0 to stop the execution

1

odd

Enter a number, 0 to stop the execution

2

even

Enter a number, 0 to stop the execution

0

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## Assignment 3

Create a function that takes a filename as an argument and prints the number of lines in the file. Call this function from your script with different filenames.

#making shell script in vim editor named countLines

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ vim countLine.sh
```

#making a new dummy file names myfile2

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ touch myfile2.txt
```

#adding some content to dummy file myfile

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
Hello
This is Sayan Kumar Muhuri
This is myfile
^C
```

#adding some content to dummy file myfile2

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ cat >> myfile2.txt
Hello
This is Ashlesha Gaikwad
This is mmyfile
I am a certified Dietician
Thank you
Oh by the way this is myfile2
^C
```

#changing privileges to access the file

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ chmod 777 countLine.sh
```

#printing the file content on terminal with line numbers

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
1  #!/bin/bash

2  countLine(){
3      local filename="$1"
4      if [ -e "$filename" ]; then
5          local count=0;
```

```

6         while IFS= read -r line;
7         do
8             ((count++))
9         done < "$filename"
10        echo "Number of lines are : $count"
11    else
12        exit 1
13    fi
14 }

```

```

15 countLine "myfile.txt"
16 countLine "myfile2.txt"

```

#running the script count number of lines for different files

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
```

```
_Assignment$ ./countLine.sh
```

```
Number of lines are : 3
```

```
Number of lines are : 6
```

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## Assignment 4

Write a script that creates a directory named TestDir and inside it, creates ten files named File1.txt, File2.txt, ... File10.txt. Each file should contain its filename as its content (e.g., File1.txt contains "File1.txt").

#making shell script in vim editor named makingDir.sh

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
```

```
_Assignment$ vim makingDir.sh
```

#changing privileges to access the file

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
```

```
_Assignment$ chmod 777 makingDir.sh
```

#printing the file content on terminal with line numbers

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
```

```
_Assignment$ nl makingDir.sh
```

```

1  #!/bin/bash

2  makeFile(){
3      cd TestDir/
4          for((i=1;i<=10;i++))
5          do
6              filename="File$i.txt"
7              echo "$filename" > "$filename"

```

```
8         done
9     }

10    if [ -d "TestDir" ]; then
11        exit 1
12    else
13        mkdir TestDir
14        makeFile
15    fi
```

#running the script to make "TestDir" directory and 10 Files with content in them

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
```

#checking if "TestDir" directory is created

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
```

```
_Assignment$ ls
```

```
checkFileCurrDir.sh checkOddEven.sh countLine.sh makingDir.sh myfile2.txt myfile.txt
TestDir
```

#changing directory to TestDir

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
```

#checking if the files have been created or not

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
```

```
total 40
```

```
-rw-rw-r-- 1 sayan-kumar-muhuri sayan-kumar-muhuri 11 May 16 02:15 File10.txt
-rw-rw-r-- 1 sayan-kumar-muhuri sayan-kumar-muhuri 10 May 16 02:15 File1.txt
-rw-rw-r-- 1 sayan-kumar-muhuri sayan-kumar-muhuri 10 May 16 02:15 File2.txt
-rw-rw-r-- 1 sayan-kumar-muhuri sayan-kumar-muhuri 10 May 16 02:15 File3.txt
-rw-rw-r-- 1 sayan-kumar-muhuri sayan-kumar-muhuri 10 May 16 02:15 File4.txt
-rw-rw-r-- 1 sayan-kumar-muhuri sayan-kumar-muhuri 10 May 16 02:15 File5.txt
-rw-rw-r-- 1 sayan-kumar-muhuri sayan-kumar-muhuri 10 May 16 02:15 File6.txt
-rw-rw-r-- 1 sayan-kumar-muhuri sayan-kumar-muhuri 10 May 16 02:15 File7.txt
-rw-rw-r-- 1 sayan-kumar-muhuri sayan-kumar-muhuri 10 May 16 02:15 File8.txt
-rw-rw-r-- 1 sayan-kumar-muhuri sayan-kumar-muhuri 10 May 16 02:15 File9.txt
```

#checking the content of file to see if content is same as filename

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
```

```
_Assignment/TestDir$ cat File1.txt
```

```
File1.txt
```

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## Assignment 5

**Modify the script to handle errors, such as the directory already existing or lacking permissions to create files.**

**Add a debugging mode that prints additional information when enabled.**

#editing existing shell script in vim editor named makingDir.sh

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ vim makingDir.sh
```

#printing the file content on terminal with line numbers

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ nl makingDir.sh
 1  #!/bin/bash
```

```
 2  set -x
```

```
 3  makeFile(){
 4  mkdir TestDir
 5  cd TestDir/
 6      for((i=1;i<=10;i++))
 7      do
 8          filename="File$i.txt"
 9          echo "$filename" > "$filename"
10      done
11  }
```

```
12  handleError(){
13      echo "Directory already exist"
14      exit 1
15  }
```

```
16  trap 'handleError' ERR
```

```
17  makeFile
```

#removing TestDir that was present due to earlier script

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ rm -r TestDir/
```

#running the script to make "TestDir" directory and 10 Files with content in them

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ ./makingDir.sh
+ trap handleError ERR
+ makeFile
+ mkdir TestDir
+ cd TestDir/
```

```
+ (( i=1 ))  
+ (( i<=10 ))  
+ filename=File1.txt  
+ echo File1.txt  
+ (( i++ ))  
+ (( i<=10 ))  
+ filename=File2.txt  
+ echo File2.txt  
+ (( i++ ))  
+ (( i<=10 ))  
+ filename=File3.txt  
+ echo File3.txt  
+ (( i++ ))  
+ (( i<=10 ))  
+ filename=File4.txt  
+ echo File4.txt  
+ (( i++ ))  
+ (( i<=10 ))  
+ filename=File5.txt  
+ echo File5.txt  
+ (( i++ ))  
+ (( i<=10 ))  
+ filename=File6.txt  
+ echo File6.txt  
+ (( i++ ))  
+ (( i<=10 ))  
+ filename=File7.txt  
+ echo File7.txt  
+ (( i++ ))  
+ (( i<=10 ))  
+ filename=File8.txt  
+ echo File8.txt  
+ (( i++ ))  
+ (( i<=10 ))  
+ filename=File9.txt  
+ echo File9.txt  
+ (( i++ ))  
+ (( i<=10 ))  
+ filename=File10.txt  
+ echo File10.txt  
+ (( i++ ))  
+ (( i<=10 ))
```

#checking if "TestDir" directory is created

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ ls
```

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
TestDir
```

#changing directory to TestDir

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ cd TestDir/
```

#checking if the files have been created or not

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment/TestDir$ ls -ls
```

```
total 40
```

```
-rw-rw-r-- 1 sayan-mridha sayan-mridha 11 May 17 00:52 File10.txt
```

```
-rw-rw-r-- 1 sayan-mridha sayan-mridha 10 May 17 00:52 File1.txt
```

```
-rw-rw-r-- 1 sayan-mridha sayan-mridha 10 May 17 00:52 File2.txt
```

```
-rw-rw-r-- 1 sayan-mridha sayan-mridha 10 May 17 00:52 File3.txt
```

```
-rw-rw-r-- 1 sayan-mridha sayan-mridha 10 May 17 00:52 File4.txt
```

```
-rw-rw-r-- 1 sayan-mridha sayan-mridha 10 May 17 00:52 File5.txt
```

```
-rw-rw-r-- 1 sayan-mridha sayan-mridha 10 May 17 00:52 File6.txt
```

```
-rw-rw-r-- 1 sayan-mridha sayan-mridha 10 May 17 00:52 File7.txt
```

```
-rw-rw-r-- 1 sayan-mridha sayan-mridha 10 May 17 00:52 File8.txt
```

```
-rw-rw-r-- 1 sayan-mridha sayan-mridha 10 May 17 00:52 File9.txt#running the script
again to check whether error is handled or not
```

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ ./makingDir.sh
```

```
+ trap handleError ERR
```

```
+ makeFile
```

```
+ mkdir TestDir
```

```
mkdir: cannot create directory 'TestDir': File exists
```

```
+ cd TestDir/
```

```
+ (( i=1 ))
```

```
+ (( i<=10 ))
```

```
+ filename=File1.txt
```

```
+ echo File1.txt
```

```
+ (( i++ ))
```

```
+ (( i<=10 ))
```

```
+ filename=File2.txt
```

```
+ echo File2.txt
```

```
+ (( i++ ))
```

```
+ (( i<=10 ))
```

```
+ filename=File3.txt
```

```
+ echo File3.txt
```

```
+ (( i++ ))
```

```
+ (( i<=10 ))
```

```
+ filename=File4.txt
```



```
+ echo File4.txt
+ (( i++ ))
+ (( i<=10 ))
+ filename=File5.txt
+ echo File5.txt
+ (( i++ ))
+ (( i<=10 ))
+ filename=File6.txt
+ echo File6.txt
+ (( i++ ))
+ (( i<=10 ))
+ filename=File7.txt
+ echo File7.txt
+ (( i++ ))
+ (( i<=10 ))
+ filename=File8.txt
+ echo File8.txt
+ (( i++ ))
+ (( i<=10 ))
+ filename=File9.txt
+ echo File9.txt
+ (( i++ ))
+ (( i<=10 ))
+ filename=File10.txt
+ echo File10.txt
+ (( i++ ))
+ (( i<=10 ))
```

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## Assignment 6

**Given a sample log file, write a script using grep to extract all lines containing "ERROR". Use awk to print the date, time, and error message of each extracted line.**

#making shell script in vim named printLogs

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ vim printLogs.sh
```

#changing privileges to access the file

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ chmod 777 printLogs.sh
```

#printing content of files with line numbers

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
```

```
_Assignment$ nl printLogs.sh
```

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

```
2  grep "ERROR" "logs.txt" | awk '{print $1, $2, $4}'
```

```
#creating a dummy log file with 30 logs in the format of date-time-ERROR-message
```

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
```

```
_Assignment$ touch logs.txt
```

```
#adding content to the logs.txt
```

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
```

```
_Assignment$ code logs.txt
```

```
#printing content of the logs.txt file
```

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
```

```
_Assignment$ cat logs.txt
```

```
2024-05-17 08:00:00 INFO System_startup
```

```
2024-05-17 08:01:12 INFO User_login:user1
```

```
2024-05-17 08:02:45 WARN Disk_space_low
```

```
2024-05-17 08:03:55 ERROR Failed_to_load_configuration_file
```

```
2024-05-17 08:04:20 INFO Configuration_file_reloaded
```

```
2024-05-17 08:05:34 INFO User_logout:user1
```

```
2024-05-17 08:06:50 ERROR Unable_to_connect_to_database
```

```
2024-05-17 08:07:30 INFO Attempting_to_reconnect_to_database
```

```
2024-05-17 08:08:55 INFO Database_connection_established
```

```
2024-05-17 08:09:10 WARN High_memory_usage_detected
```

```
2024-05-17 08:10:25 INFO Scheduled_backup_started
```

```
2024-05-17 08:11:50 ERROR Backup_failed:Disk_write_error
```

```
2024-05-17 08:12:05 INFO Backup_retry_initiated
```

```
2024-05-17 08:13:40 INFO User_login:admin
```

```
2024-05-17 08:14:30 INFO System_update_check_started
```

```
2024-05-17 08:15:50 WARN System_update_available
```

```
2024-05-17 08:16:10 INFO User_logout:admin
```

```
2024-05-17 08:17:25 INFO User_login:user2
```

```
2024-05-17 08:18:50 ERROR User_authentication_failed:user2
```

```
2024-05-17 08:19:05 INFO User_login:user2
```

```
2024-05-17 08:20:30 WARN Unauthorized_access_attempt_detected
```

```
2024-05-17 08:21:45 INFO Security_scan_started
```

```
2024-05-17 08:22:55 ERROR Security_scan_failed:Timeout
```

```
2024-05-17 08:23:10 INFO Security_scan_restarted
```

```
2024-05-17 08:24:25 WARN High_CPU_usage_detected
```

```
2024-05-17 08:25:50 INFO User_login:user3
```

```
2024-05-17 08:26:05 INFO User_logout:user3
```

```
2024-05-17 08:27:20 INFO System_shutdown_initiated
```

```
2024-05-17 08:28:45 ERROR System_shutdown_failed:Active_connections
```

```
#running the script to output in the format of date hour message.
```

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ ./printLogs.sh
2024-05-17 08:03:55 Failed_to_load_configuration_file
2024-05-17 08:06:50 Unable_to_connect_to_database
2024-05-17 08:11:50 Backup_failed:Disk_write_error
2024-05-17 08:18:50 User_authentication_failed:user2
2024-05-17 08:22:55 Security_scan_failed:Timeout
2024-05-17 08:28:45 System_shutdown_failed:Active_connections
```

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## Assignment 7

Create a script that takes a text file and replaces all occurrences of "old\_text" with "new\_text". Use sed to perform this operation and output the result to a new file.

#creating a script in vim named replaceText.sh

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ vim replaceText.sh
```

#changing privileges for access permission

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ chmod 777 replaceText.sh
```

#printing the content of script with line numbers

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ nl replaceText.sh
1  #!/bin/bash
```

```
2  sed 's/INFO/NOTIF/g' logs.txt > newlogs.txt
```

#printing the content of logs.txt

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ cat logs.txt
2024-05-17 08:00:00 INFO System_startup
2024-05-17 08:01:12 INFO User_login:user1
2024-05-17 08:02:45 WARN Disk_space_low
2024-05-17 08:03:55 ERROR Failed_to_load_configuration_file
2024-05-17 08:04:20 INFO Configuration_file_reloaded
2024-05-17 08:05:34 INFO User_logout:user1
2024-05-17 08:06:50 ERROR Unable_to_connect_to_database
2024-05-17 08:07:30 INFO Attempting_to_reconnect_to_database
2024-05-17 08:08:55 INFO Database_connection_established
2024-05-17 08:09:10 WARN High_memory_usage_detected
2024-05-17 08:10:25 INFO Scheduled_backup_started
```

```
2024-05-17 08:11:50 ERROR Backup_failed:Disk_write_error
2024-05-17 08:12:05 INFO Backup_retry_initiated
2024-05-17 08:13:40 INFO User_login:admin
2024-05-17 08:14:30 INFO System_update_check_started
2024-05-17 08:15:50 WARN System_update_available
2024-05-17 08:16:10 INFO User_logout:admin
2024-05-17 08:17:25 INFO User_login:user2
2024-05-17 08:18:50 ERROR User_authentication_failed:user2
2024-05-17 08:19:05 INFO User_login:user2
2024-05-17 08:20:30 WARN Unauthorized_access_attempt_detected
2024-05-17 08:21:45 INFO Security_scan_started
2024-05-17 08:22:55 ERROR Security_scan_failed:Timeout
2024-05-17 08:23:10 INFO Security_scan_restarted
2024-05-17 08:24:25 WARN High_CPU_usage_detected
2024-05-17 08:25:50 INFO User_login:user3
2024-05-17 08:26:05 INFO User_logout:user3
2024-05-17 08:27:20 INFO System_shutdown_initiated
2024-05-17 08:28:45 ERROR System_shutdown_failed:Active_connections
2024-05-17 08:29:10 INFO System_shutdown_completed
```

#running the script to change the INFO to NOTIF

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ ./replaceText.sh
```

#printing the content of newlogs.txt

```
sayan-mridha@sayan-mridha-VirtualBox:~/Desktop/asCmd/Ass_6
_Assignment$ cat newlogs.txt
2024-05-17 08:00:00 NOTIF System_startup
2024-05-17 08:01:12 NOTIF User_login:user1
2024-05-17 08:02:45 WARN Disk_space_low
2024-05-17 08:03:55 ERROR Failed_to_load_configuration_file
2024-05-17 08:04:20 NOTIF Configuration_file_reloaded
2024-05-17 08:05:34 NOTIF User_logout:user1
2024-05-17 08:06:50 ERROR Unable_to_connect_to_database
2024-05-17 08:07:30 NOTIF Attempting_to_reconnect_to_database
2024-05-17 08:08:55 NOTIF Database_connection_established
2024-05-17 08:09:10 WARN High_memory_usage_detected
2024-05-17 08:10:25 NOTIF Scheduled_backup_started
2024-05-17 08:11:50 ERROR Backup_failed:Disk_write_error
2024-05-17 08:12:05 NOTIF Backup_retry_initiated
2024-05-17 08:13:40 NOTIF User_login:admin
2024-05-17 08:14:30 NOTIF System_update_check_started
2024-05-17 08:15:50 WARN System_update_available
2024-05-17 08:16:10 NOTIF User_logout:admin
2024-05-17 08:17:25 NOTIF User_login:user2
2024-05-17 08:18:50 ERROR User_authentication_failed:user2
```

2024-05-17 08:19:05 NOTIF User\_login:user2  
2024-05-17 08:20:30 WARN Unauthorized\_access\_attempt\_detected  
2024-05-17 08:21:45 NOTIF Security\_scan\_started  
2024-05-17 08:22:55 ERROR Security\_scan\_failed:Timeout  
2024-05-17 08:23:10 NOTIF Security\_scan\_restarted  
2024-05-17 08:24:25 WARN High\_CPU\_usage\_detected  
2024-05-17 08:25:50 NOTIF User\_login:user3  
2024-05-17 08:26:05 NOTIF User\_logout:user3  
2024-05-17 08:27:20 NOTIF System\_shutdown\_initiated  
2024-05-17 08:28:45 ERROR System\_shutdown\_failed:Active\_connections  
2024-05-17 08:29:10 NOTIF System\_shutdown\_completed