Day 5 Assignments

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-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_Assignment$ touch myfile.txt
#making shell script in vi editor named checkFileCurrDir
sayan-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_Assignment$ vi checkFileCurrDir.sh
#changing privileges to access the file
sayan-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_Assignment$ chmod 777 checkFileCurrDir.sh
#printing the file content on terminal with line numbers
sayan-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_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-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_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-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_Assignment$ sudo apt install vim

#making shell script in vim editor named checkOddEven

sayan-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_Assignment$ vim checkOddEven.sh

#changing privileges to access the file

sayan-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_Assignment$ chmod 777 checkOddEven.sh

#printing the file content on terminal with line numbers

sayan-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_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-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_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-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_Assignment$ vim countLine.sh
#making a new dummy file names myfile2
sayan-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_Assignment$ touch myfile2.txt
#adding some content to dummy file myfile
sayan-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_Assignment$ cat >> myfile.txt
Helllo
This is Sayan Kumar Muhuri
This is myfile
^C
#adding some content to dummy file myfile2
sayan-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_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-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_Assignment$ chmod 777 countLine.sh
#printing the file content on terminal with line numbers
sayan-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_Assignment$ nl countLine.sh
     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-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day _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-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day _Assignment$ vim makingDir.sh

#changing privileges to access the file

sayan-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day _Assignment$ chmod 777 makingDir.sh

#printing the file content on terminal with line numbers

sayan-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day _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-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_Assignment$ ./makingDir.sh

#checking if "TestDir" directory is created

sayan-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_Assignment$ ls

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

#changing directory to TestDir

sayan-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_Assignment$ cd TestDir/

#checking if the files have been created or not

sayan-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_Assignment/TestDir$ ls -lS

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-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_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-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_Assignment$ vim makingDir.sh

#printing the file content on terminal with line numbers

sayan-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_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-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_Assignment$ rm -r TestDir/

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

sayan-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_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-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day
_Assignment$ ls
checkFileCurrDir.sh  checkOddEven.sh  countLine.sh  makingDir.sh  myfile2.txt  myfile.txt
TestDir
#changing directory to TestDir
sayan-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day
_Assignment$ cd TestDir/
#checking if the files have been created or not
sayan-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day
_Assignment/TestDir$ ls -lS
total 40
-rw-rw-r-- 1 sayan-kumar-muhuri sayan-kumar-muhuri 11 May 17 00:52 File10.txt
-rw-rw-r-- 1 sayan-kumar-muhuri sayan-kumar-muhuri 10 May 17 00:52 File1.txt
-rw-rw-r-- 1 sayan-kumar-muhuri sayan-kumar-muhuri 10 May 17 00:52 File2.txt
-rw-rw-r-- 1 sayan-kumar-muhuri sayan-kumar-muhuri 10 May 17 00:52 File3.txt
-rw-rw-r-- 1 sayan-kumar-muhuri sayan-kumar-muhuri 10 May 17 00:52 File4.txt
-rw-rw-r-- 1 sayan-kumar-muhuri sayan-kumar-muhuri 10 May 17 00:52 File5.txt
-rw-rw-r-- 1 sayan-kumar-muhuri sayan-kumar-muhuri 10 May 17 00:52 File6.txt
-rw-rw-r-- 1 sayan-kumar-muhuri sayan-kumar-muhuri 10 May 17 00:52 File7.txt
-rw-rw-r-- 1 sayan-kumar-muhuri sayan-kumar-muhuri 10 May 17 00:52 File8.txt
-rw-rw-r-- 1 sayan-kumar-muhuri sayan-kumar-muhuri 10 May 17 00:52 File9.txt
#running the script again to check whether error is handled or not
sayan-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day
_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-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day
_Assignment$ vim printLogs.sh
#changing privileges to access the file
sayan-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day
_Assignment$ chmod 777 printLogs.sh
#printing content of files with line numbers

```
     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-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_Assignment$ touch logs.txt

#adding content to the logs.txt

sayan-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_Assignment$ code logs.txt

#printing content of the logs.txt file

sayan-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day_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-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day
_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-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day
_Assignment$ vim replaceText.sh
```
#changing privileges for access permission
```
sayan-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day
_Assignment$ chmod 777 replaceText.sh
```
#printing the content of script with line numbers
```
sayan-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day
_Assignment$ nl replaceText.sh
     1    #!/bin/bash

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

#printing the content of logs.txt
```
sayan-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day
_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-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day _Assignment$ ./replaceText.sh
#printing the content of newlogs.txt
sayan-kumar-muhuri@sayan-kumar-muhuri-VirtualBox:~/Desktop/asCmd/Assignements/5_Day _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
```