

Question 2 [6 Points]

You are given a log file containing entries in the format:

YYYY-MM-DD HH:MM:SS LEVEL MESSAGE

Example:

2025-01-12 10:15:22 INFO System started

2025-01-12 10:16:01 ERROR Disk not found

2025-01-12 10:16:45 WARNING High memory usage

2025-01-12 10:17:10 ERROR Network timeout

Requirements:

1. The script must accept the log file name as a command-line argument.
2. Validate that the file exists and is readable.
3. Count and display:
 - Total number of log entries
 - Number of INFO, WARNING, and ERROR messages
4. Display the most recent ERROR message.
5. Generate a report file named logsummary_<date>.txt.
6. Handle errors gracefully with meaningful messages.

Answer

```
Question2 > $ log_analyze.sh
```

```
1  #!/bin/bash
2
3  # Check if exactly one argument is provided
4  if [ $# -ne 1 ]; then
5      echo "Error: Please provide exactly one log file as argument."
6      exit 1
7  fi
8
9  logfile="$1"
10
11 # Check if file exists
12 if [ ! -e "$logfile" ]; then
13     echo "Error: Log file does not exist."
14     exit 1
15 fi
16
17 # Check if file is readable
18 if [ ! -r "$logfile" ]; then
19     echo "Error: Log file is not readable."
20     exit 1
21 fi
22
23 # Count total log entries
24 total_entries=$(wc -l < "$logfile")
25
26 # Count log levels
27 info_count=$(grep "INFO" "$logfile" | wc -l)
28 warning_count=$(grep "WARNING" "$logfile" | wc -l)
29 error_count=$(grep "ERROR" "$logfile" | wc -l)
30
31 # Get most recent ERROR message
32 recent_error=$(grep "ERROR" "$logfile" | tail -n 1)
33
34 # Get today's date
35 today=$(date +%Y-%m-%d)
36
37 # Report file name
38 report_file="logsummary_${today}.txt"
39
40 # Write report
41 {
42     echo "Log Summary Report - $today"
43     echo "-----"
44     echo "Total log entries: $total_entries"
45     echo "INFO messages: $info_count"
46     echo "WARNING messages: $warning_count"
47     echo "ERROR messages: $error_count"
48     echo ""
49     echo "Most recent ERROR message:"
50     echo "$recent_error"
51 } > "$report_file"
52
53 # Display summary to user
54 echo "Log analysis completed successfully."
55 echo "Report generated: $report_file"
56
```

I have already explained the basics in the previous answer 1.

logfile="\$1" : Store the log file name in a variable called logfile.

if [! -e "\$logfile"]; then : If the file does NOT exist

info_count=\$(grep "INFO" "\$logfile" | wc -l) : Count INFO log messages

recent_error=\$(grep "ERROR" "\$logfile" | tail -n 1) : Get the most recent ERROR messages

today=\$(date +%Y-%m-%d) : Print today's date in required format.

The script parses a log file using grep and wc ,extracts the most recent ERROR using tail, and generates a dated summary report with proper validation.

Output from the terminal:

```
grep: logrite: No such file or directory
● sudhanshu@Sudhanshus-MacVati Question2 % date +%Y-%m-%d
2026-02-05
● sudhanshu@Sudhanshus-MacVati Question2 % nano test.log
● sudhanshu@Sudhanshus-MacVati Question2 % ls
~$estion 2.docx log_analyze.sh Question 2.docx test.log
● sudhanshu@Sudhanshus-MacVati Question2 % cat test.log
2025-01-12 10:15:22 INFO System started
2025-01-12 10:16:01 ERROR Disk not found
2025-01-12 10:16:45 WARNING High memory usage
2025-01-12 10:17:10 ERROR Network timeout
● sudhanshu@Sudhanshus-MacVati Question2 % chmod +x log_analyze.sh
● sudhanshu@Sudhanshus-MacVati Question2 % ./log_analyze.sh test.log
Log analysis completed successfully.
Report generated: logsummary_2026-02-05.txt
● sudhanshu@Sudhanshus-MacVati Question2 % ls
~$estion 2.docx          logsummary_2026-02-05.txt      test.log
log_analyze.sh           Question 2.docx
● sudhanshu@Sudhanshus-MacVati Question2 % cat logsummary_2026-02-05.txt
Log Summary Report – 2026-02-05
-----
Total log entries:        4
INFO messages:           1
WARNING messages:         1
ERROR messages:          2

Most recent ERROR message:
2025-01-12 10:17:10 ERROR Network timeout
○ sudhanshu@Sudhanshus-MacVati Question2 %
```