

Industry Level Shell Scripting Project Structure and Scripts

Project Structure

Industry standard folder structure used in companies:

```
monitoring-project/
|
|   config/
|       └── config.conf
|
|   scripts/
|       ├── ram_monitor.sh
|       ├── disk_monitor.sh
|       ├── log_archive.sh
|       └── user_management.sh
|
|   logs/
|       └── monitor.log
|
└── main.sh
```

Config File

Central configuration file for thresholds and settings:

```
RAM_THRESHOLD=500
DISK_THRESHOLD=80
LOG_DIR=/var/log
ARCHIVE_DIR=/archive
EMAIL=admin@example.com
LOG_FILE=../logs/monitor.log
```

RAM Monitoring Script

Script to monitor RAM and log status:

```
#!/bin/bash
source ../config/config.conf

FREE_RAM=$(free -m | awk '/Mem:/ {print $4}')

if [ $FREE_RAM -lt $RAM_THRESHOLD ]
then
```

```
    echo "$(date) LOW RAM: $FREE_RAM MB" >> $LOG_FILE
else
    echo "$(date) RAM OK: $FREE_RAM MB" >> $LOG_FILE
fi
```

Disk Monitoring Script

Script to monitor disk usage:

```
#!/bin/bash
source ../config/config.conf

USAGE=$(df -h / | awk 'NR==2 {print $5}' | sed 's/%//')

if [ $USAGE -gt $DISK_THRESHOLD ]
then
    echo "$(date) DISK ALERT: $USAGE%" >> $LOG_FILE
fi
```

Log Archive Script

Script to archive old logs:

```
#!/bin/bash
source ../config/config.conf

find $LOG_DIR -name "*.log" -mtime +7 -exec gzip {} \;
echo "$(date) Logs Archived" >> $LOG_FILE
```

User Management Script

Script to create users safely:

```
#!/bin/bash

USERNAME=$1

if id "$USERNAME" &>/dev/null
then
    echo "User exists"
else
    useradd $USERNAME
    echo "User created"
fi
```

Main Script

Script to run all monitoring scripts:

```
#!/bin/bash

cd scripts

./ram_monitor.sh
./disk_monitor.sh
./log_archive.sh
```

Cron Job Automation

Automate execution every 5 minutes:

```
crontab -e

*/5 * * * * /path/main.sh
```