Question 5 [6 Points]

Create a shell script sync.sh to compare two directories dirA and dirB.Your script should:

 • List files present only in dirA • List files present only in dirB

• For files with the same name in both directories, check whether their contents matchDo NOT copy or modify files.Use diff, cmp, or checksum techniques.

Scirpt:

```bash
1    #!/bin/bash
2
3    # Check if both directories exist
4    if [ ! -d "dirA" ] || [ ! -d "dirB" ]; then
5        echo "Error: dirA and/or dirB do not exist."
6        exit 1
7    fi
8
9    echo "Files only in dirA:"
10   echo "---------------------"
11   ls dirA | grep -Fxv -f <(ls dirB)
12
13   echo ""
14   echo "Files only in dirB:"
15   echo "---------------------"
16   ls dirB | grep -Fxv -f <(ls dirA)
17
18   echo ""
19   echo "Comparing common files:"
20   echo "------------------------"
21
22   # Loop through files in dirA
23   for file in dirA/*
24   do
25       filename=$(basename "$file")
26
27       # Check if same file exists in dirB
28       if [ -f "dirB/$filename" ]; then
29           # Compare contents
30           if cmp -s "dirA/$filename" "dirB/$filename"; then
31               echo "$filename : SAME content"
32           else
33               echo "$filename : DIFFERENT content"
34           fi
35       fi
36   done
37       ⌘L to chat, ⌘K to generate
```

Explanation:

if [! -d "dirA"] || [! -d "dirB"]; then :

This check if the created directory exist in the folder.

for file in dirA/*

for : loop keyword

do : loop body starts

if cmp -s "dirA/$filename" "dirB/$filename"; then

cmp : comprae two files byte by byte

-s : silent mode

done : ends the loop

The script compares directory contents using filename comparison and verifies file integrity using the cmp cmd without modifying any files

Output:

```
sudhanshu@Sudhanshus-MacVati Question5 % ls
sync.sh
sudhanshu@Sudhanshus-MacVati Question5 % mkdir dirA dirB
sudhanshu@Sudhanshus-MacVati Question5 % ls
dirA    dirB    sync.sh
sudhanshu@Sudhanshus-MacVati Question5 % echo "Hello" > dirA/a.txt
echo "Hello" > dirB/a.txt

echo "Different" > dirA/b.txt
echo "Changed" > dirB/b.txt

echo "Only in A" > dirA/onlyA.txt
echo "Only in B" > dirB/onlyB.txt
sudhanshu@Sudhanshus-MacVati Question5 % chmod +x sync.sh
sudhanshu@Sudhanshus-MacVati Question5 % ./sync.sh
sudhanshu@Sudhanshus-MacVati Question5 % ls
dirA    dirB    sync.sh
sudhanshu@Sudhanshus-MacVati Question5 % chmod +x sync.sh
sudhanshu@Sudhanshus-MacVati Question5 % ./sync.sh
sudhanshu@Sudhanshus-MacVati Question5 % cat sync.sh
sudhanshu@Sudhanshus-MacVati Question5 % chmod +x synch.sh
chmod: synch.sh: No such file or directory
sudhanshu@Sudhanshus-MacVati Question5 % ls
dirA    dirB    sync.sh
sudhanshu@Sudhanshus-MacVati Question5 % chmod +x sync.sh
sudhanshu@Sudhanshus-MacVati Question5 % ./sync.sh
Files only in dirA:
---------------------
onlyA.txt

Files only in dirB:
---------------------
onlyB.txt

Comparing common files:
-------------------------
a.txt : SAME content
b.txt : DIFFERENT content
sudhanshu@Sudhanshus-MacVati Question5 %
```