

Question 8 [6 Points]

Create a shell script `bg_move.sh` that accepts a directory path.

- Move each file in the directory into a subdirectory named `backup/`
- Perform each move operation in the background
- Display the PID of each background process
- Wait for all background processes to finish Use `&`, `wait`, `$$`, and `$_` variables.

Script:

\$ bg_move.sh ×

Question8 > \$ bg_move.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 directory path."
6      exit 1
7  fi
8
9  dir="$1"
10
11 # Check if directory exists
12 if [ ! -d "$dir" ]; then
13     echo "Error: Directory does not exist."
14     exit 1
15 fi
16
17 # Create backup directory if it doesn't exist
18 mkdir -p "$dir/backup"
19
20 echo "Script PID: $$"
21 echo "Starting background move operations..."
22
23 # Loop through files in directory
24 for file in "$dir"/*
25 do
26     # Skip backup directory itself
27     if [ "$(basename "$file")" = "backup" ]; then
28         continue
29     fi
30
31     # Move file in background
32     mv "$file" "$dir/backup/" &
33
34     # Print PID of background process
35     echo "Moving $(basename "$file") in background. PID: $!"
36 done
37
38 # Wait for all background processes to complete
39 wait
40
41 echo "All background move operations completed."
42
```

⌘L to chat, ⌘K to generate

Explanation :

The script moves files into a backup directory using background processes, prints the PID of each job using \$!, and synchronizes execution using wait

Output:

```
● sudhanshu@Sudhanshus-MacVati Question8 % ls
bg_move.sh
● sudhanshu@Sudhanshus-MacVati Question8 % mkdir testdir
● sudhanshu@Sudhanshus-MacVati Question8 % touch testdir/file1.txt testdir/file2.txt testdir/file3.txt

● sudhanshu@Sudhanshus-MacVati Question8 % chmod +x bg_move.sh
● sudhanshu@Sudhanshus-MacVati Question8 % ./bg_move.sh testdir
Script PID: 3125
Starting background move operations...
Moving file1.txt in background. PID: 3131
Moving file2.txt in background. PID: 3134
Moving file3.txt in background. PID: 3137
All background move operations completed.
● sudhanshu@Sudhanshus-MacVati Question8 % ls testdir
backup
● sudhanshu@Sudhanshus-MacVati Question8 % ls testdir/backup
file1.txt      file2.txt      file3.txt
○ sudhanshu@Sudhanshus-MacVati Question8 %
```

⌘K to generate command