

### 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 finishUse `&`, `wait`, `$$`, and `$!` variables.

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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
```