

Module 3 Assessment Solution:

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arjjun-g@arjjun-g-VMware-Virtual-Platform: ~/assignment3
arjjun-g@arjjun-g-VMware-Virtual-Platform:~$ cd assignment3
arjjun-g@arjjun-g-VMware-Virtual-Platform:~/assignment3$ nano backup_manager.sh

arjjun-g@arjjun-g-VMware-Virtual-Platform:~/assignment3$ mkdir source backup
arjjun-g@arjjun-g-VMware-Virtual-Platform:~/assignment3$ ls
backup  backup_manager.sh  source
arjjun-g@arjjun-g-VMware-Virtual-Platform:~/assignment3$ chmod +x backup_manager.sh
arjjun-g@arjjun-g-VMware-Virtual-Platform:~/assignment3$ ls
backup  backup_manager.sh  source
```

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arjjun-g@arjjun-g-VMware-Virtual-Platform:~/assignment3$ echo "Hey My name is Arjjun G" > source/a.txt
arjjun-g@arjjun-g-VMware-Virtual-Platform:~/assignment3$ echo "I'm a Mechatronics Engineer" > source/b.txt
arjjun-g@arjjun-g-VMware-Virtual-Platform:~/assignment3$ echo "I got placed at embedUR" > source/c.log
arjjun-g@arjjun-g-VMware-Virtual-Platform:~/assignment3$ cat source/a.txt
Hey My name is Arjjun G
```

```
arjjun-g@arjjun-g-VMware-Virtual-Platform: ~/assignment3
arjjun-g@arjjun-g-VMware-Virtual-Platform:~/assignment3$ ls
backup  backup_manager.sh  source
arjjun-g@arjjun-g-VMware-Virtual-Platform:~/assignment3$ cat backup_manager.sh
#!/bin/bash

if [ "$#" -ne 3 ]; then
    echo "Usage: $0 <source_directory> <backup_directory> <file_extension>"
    exit 1
fi

SOURCE_DIR="$1"
BACKUP_DIR="$2"
EXTENSION="$3"

export BACKUP_COUNT=0

if [ ! -d "$SOURCE_DIR" ]; then
    echo "Error: Source directory does not exist."
    exit 1
fi
```

```
#!/bin/bash

if [ "$#" -ne 3 ]; then
    echo "Usage: $0 <source_directory> <backup_directory> <file_extension>"
    exit 1
fi

SOURCE_DIR="$1"
BACKUP_DIR="$2"
EXTENSION="$3"

export BACKUP_COUNT=0

if [ ! -d "$SOURCE_DIR" ]; then
    echo "Error: Source directory does not exist."
    exit 1
fi

if [ ! -d "$BACKUP_DIR" ]; then
    mkdir -p "$BACKUP_DIR"
    if [ $? -ne 0 ]; then
        echo "Error: Failed to create backup directory."
        exit 1
    fi
fi

shopt -s nullglob

files=("$SOURCE_DIR"/*"$EXTENSION")

if [ ${#files[@]} -eq 0 ]; then
    echo "No files with extension $EXTENSION found in source directory."
    exit 1
fi

echo "Files to be backed up:"

TOTAL_SIZE=0

for file in "${files[@]"; do
    size=$(stat -c %s "$file")
    echo "$(basename "$file") - $size bytes"
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TOTAL_SIZE=$((TOTAL_SIZE + size))
done
echo "-----"
for file in "${files[@]"; do
    base_name=$(basename "$file")
    dest_file="$BACKUP_DIR/$base_name"

    if [ -f "$dest_file" ]; then
        if [ "$file" -nt "$dest_file" ]; then
            cp "$file" "$dest_file"
            BACKUP_COUNT=$((BACKUP_COUNT + 1))
        fi
    else
        cp "$file" "$dest_file"
        BACKUP_COUNT=$((BACKUP_COUNT + 1))
    fi
done
export BACKUP_COUNT
REPORT_FILE="$BACKUP_DIR/backup_report.log"
{
    echo "Backup Summary Report"
    echo "-----"
    echo "Total files processed : ${#files[@]}"
    echo "Total files backed up : $BACKUP_COUNT"
    echo "Total size backed up : $TOTAL_SIZE bytes"
    echo "Backup directory path : $BACKUP_DIR"
    echo "Backup completed on : $(date)"
} > "$REPORT_FILE"
echo "Backup completed successfully."
echo "Report saved to $REPORT_FILE"

```

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arjjun-g@arjjun-g-VMware-Virtual-Platform: ~/assignment3
arjjun-g@arjjun-g-VMware-Virtual-Platform:~/assignment3$ ./backup_manager.sh source backup .txt

Files to be backed up:
a.txt - 24 bytes
b.txt - 28 bytes
-----
Backup completed successfully.
Report saved to backup/backup_report.log
arjjun-g@arjjun-g-VMware-Virtual-Platform:~/assignment3$

arjjun-g@arjjun-g-VMware-Virtual-Platform:~/assignment3$ cd backup
arjjun-g@arjjun-g-VMware-Virtual-Platform:~/assignment3/backup$ ls
a.txt backup_report.log b.txt
arjjun-g@arjjun-g-VMware-Virtual-Platform:~/assignment3/backup$ cat backup_report.log
Backup Summary Report
-----
Total files processed : 2
Total files backed up : 2
Total size backed up : 52 bytes
Backup directory path : backup
Backup completed on : Mon Feb 2 07:46:37 PM IST 2026
arjjun-g@arjjun-g-VMware-Virtual-Platform:~/assignment3/backup$
```

This Assignment is done by Arjjun G