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Module 3 Assessment

Scenario:

Automating file backup and reporting to the system. Create a shell script called **backup_manager.sh** that performs the following tasks incorporating the concepts suggested.

Requirements:

1. Command-line Arguments and Quoting:

The script must accept three arguments:

- **Source directory:** A directory containing files to back up.
- **Backup directory:** The destination where files will be backed up.
- **File extension:** A specific file extension to filter (e.g., .txt).

```
./backup_manager.sh "/home/user/source" "/backup" ".txt"
```

2. Globbing:

The script should use globbing to find all files in the source directory matching the provided file extension.

3. Export Statements:

Use `export` to set an environment variable **BACKUP_COUNT**, which tracks the total number of files backed up during the script execution.

4. Array Operations:

Store the list of files to be backed up in an array.

Print the names of these files along with their sizes before performing the backup.

5. Conditional Execution:

- If the backup directory does not exist, create it. If creation fails, exit with an error.
- If the source directory is empty or contains no files matching the extension, exit with a message.
- If a file already exists in the backup directory with the same name, only overwrite it if it is older than the source file (compare timestamps).

6. Output Report:

After the backup, generate a summary report displaying:

- Total files processed.
- Total size of files backed up.
- The path to the backup directory.

The report should be saved in the backup directory as **backup_report.log**

```
boss@boss:~/Documents$ chmod +x ./backup_manager.sh
boss@boss:~/Documents$ ls dir1
f1.txt  f2.txt  f3.txt  file_link.txt  filtered_log.txt  large.txt  new_config.txt
boss@boss:~/Documents$ ./backup_manager.sh dir1 dir2
Usage: ./backup_manager.sh <source_directory> <backup_directory> <file_extension>
boss@boss:~/Documents$ ./backup_manager.sh dir1 dir2 .txt
Processing f1.txt (0 bytes)
Copying dir1/f1.txt to dir2/f1.txt.
Processing f2.txt (0 bytes)
Copying dir1/f2.txt to dir2/f2.txt.
Processing f3.txt (0 bytes)
Copying dir1/f3.txt to dir2/f3.txt.
Processing file_link.txt (16 bytes)
Copying dir1/file_link.txt to dir2/file_link.txt.
Processing filtered_log.txt (727 bytes)
Copying dir1/filtered_log.txt to dir2/filtered_log.txt.
Processing large.txt (14 bytes)
Copying dir1/large.txt to dir2/large.txt.
Processing new_config.txt (98 bytes)
Copying dir1/new_config.txt to dir2/new_config.txt.
Backup Report - Tue Feb 10 10:54:54 AM IST 2026
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Source Directory: dir1
Backup Directory: dir2
Total Files Processed: 7
Total Size of Files Backed Up: 855 bytes
```