

Overview:

In this task, a shell script named **backup_manager.sh** to automate file backups from a specified source directory to a backup directory. The script also filters files based on their extension, performs the backup, and generates a summary report.

Tasks:

1. Script Creation (backup_manager.sh):

- The script was created to perform automated file backup.
- **Task1:** It accepts three command-line arguments: source directory, backup directory, and file extension for filtering files.

2. Globbing & File Filtering:

- **Task2:** The script uses **globbing** to filter and identify files in the source directory that match the specified extension (e.g., .txt).
- **Task3:** Export is used to set an environment variable BACKUP_COUNT, which tracks the total number of files backed up during the script execution.
- **Task4:** Stores 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.

3. File Backup and Overwriting:

- **Task5:** It checks if the backup directory exists, and if not, it creates it.
- If a file already exists in the backup directory with the same name, it only overwrites it if the source file is newer.

4. Report Generation:

- **Task6:** After performing the backup, the script generates a summary report (backup_report.log) that contains:
 - The total number of files backed up.
 - The total size of the files.
 - Details of each file backed up, including name, size, and last modification timestamp.

Files Involved:

- **backup_manager.sh**: The shell script to automate backups.
- **source/**: The directory containing demo files.
- **backup/**: The directory where the backup of files is stored.
- **backup_report.log**: The log file containing backup summary and file details.

OUTPUTS:

```
(base) sakthi-kumar-s@sakthi-kumar-s-VirtualBox:~$ mkdir -p /home/sakthi-kumar-s/source
(base) sakthi-kumar-s@sakthi-kumar-s-VirtualBox:~$ ls
backup_manager.sh  miniconda3  Pictures  source
Desktop           Music       Public    Templates
Documents         myenv      Sakthikumar  Videos
Downloads         my-jupyter-env  snap      'vscode'
(base) sakthi-kumar-s@sakthi-kumar-s-VirtualBox:~$ echo "This is a text file" > /home/sakthi-kumar-s/source/file1.txt
echo "Another text file" > /home/sakthi-kumar-s/source/file2.txt
echo "This is an image file" > /home/sakthi-kumar-s/source/image.jpg
echo "This is a PDF file" > /home/sakthi-kumar-s/source/document.pdf
echo "This is a CSV file" > /home/sakthi-kumar-s/source/data.csv
(base) sakthi-kumar-s@sakthi-kumar-s-VirtualBox:~$ chmod +x backup_manager.sh
(base) sakthi-kumar-s@sakthi-kumar-s-VirtualBox:~$ ./backup_manager.sh "/home/sakthi-kumar-s/source" "/home/sakthi-kumar-s/backup" ".txt"
Files to be backed up:
  file1.txt - 20 bytes - Last Modified: 2025-01-27 17:05:29
  file2.txt - 18 bytes - Last Modified: 2025-01-27 17:05:29
Backup Summary:
Total files processed: 2
Total size of files backed up: 38 bytes
Backup directory: /home/sakthi-kumar-s/backup

File Details:
file1.txt - 20 bytes - Last Modified: 2025-01-27 17:05:29
file2.txt - 18 bytes - Last Modified: 2025-01-27 17:05:29
(base) sakthi-kumar-s@sakthi-kumar-s-VirtualBox:~$ ls
backup      Downloads  my-jupyter-env  snap      'vscode'
backup_manager.sh  miniconda3  Pictures        source
Desktop     Music      Public          Templates
Documents   myenv     Sakthikumar     Videos
(base) sakthi-kumar-s@sakthi-kumar-s-VirtualBox:~$ cat /home/sakthi-kumar-s/backup/backup_report.log
Backup Summary:
Total files processed: 2
Total size of files backed up: 38 bytes
Backup directory: /home/sakthi-kumar-s/backup

File Details:
file1.txt - 20 bytes - Last Modified: 2025-01-27 17:05:29
file2.txt - 18 bytes - Last Modified: 2025-01-27 17:05:29
(base) sakthi-kumar-s@sakthi-kumar-s-VirtualBox:~$ mv /home/sakthi-kumar-s/source ~/Sakthikumar/Linux_Assessment/Module3/
mv /home/sakthi-kumar-s/backup ~/Sakthikumar/Linux_Assessment/Module3/
mv /home/sakthi-kumar-s/backup_manager.sh ~/Sakthikumar/Linux_Assessment/Module3/
(base) sakthi-kumar-s@sakthi-kumar-s-VirtualBox:~$
```