

COMP 8567
Fall 2023
Assignment 4
Due: Dec/6/2023

Write a bash script **A4F23.sh** that runs continuously in the background and performs the following operations:

STEP 1 Create a **complete backup** of all the **.C and .txt files (only)** found in the **entire directory tree** rooted at /home/username by tarring all the .C files into **cb0****.tar** stored at **~/home/backup/cb**

- Update backup.log with the timestamp and the name of the tar file (See Fig.1.0 for file naming)
- **Note: Naming conventions of the backup files must be followed as per Fig 1.0**

(2 minutes interval)

STEP 2 Create an **incremental backup** of only those **.C and .txt files** in the entire directory tree rooted at /home/username that were **newly created or modified (only)** since the previous complete backup.

- If there are any newly created/modified .C and .txt files since the previous complete backup, create a tar file of those files (only): **ib1****.tar** at **~/home/backup/ib** and update backup.log with the timestamp and the name of the tar file (see Fig. 1.0 for logging and the file naming)
- Else update backup.log with the timestamp and a message (See Fig.1.0)

(2 minutes interval)

STEP 3 Create an **incremental backup** of only those .C and .txt files in the entire directory tree rooted at /home/username that were **newly created or modified (only)** since the previous incremental backup.

- If there are any newly created/modified .C and .txt files since the previous incremental backup, create a tar file of those text files (only): **ib1****.tar** at **~/home/backup/ib** and update backup.log with the timestamp and the name of the tar file (see Fig. 1.0 for logging and the file naming)
- Else update backup.log with the timestamp and a message (See Fig.1.0)

(2 minutes interval)

STEP 4 Create an **incremental backup** of only those .C and .txt files in the entire directory tree rooted at /home/username that were **newly created or modified (only)** since the previous incremental backup.

- If there are any newly created/modified .C and .txt files since the previous incremental backup, create a tar file of those text files (only): **ib1****.tar** at **~/home/backup/ib** and update backup.log with the timestamp and the name of the tar file (see Fig. 1.0 for logging and the file naming)
- Else update backup.log with the timestamp and a message (See Fig.1.0)

(2 minutes Interval)

(PROCEED TO STEP 1)

//Continuous loop

Fig. 1.0 backup.log (sample)

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Wed 15 Nov 2023 06:16:08 PM EDT  cb00001.tar was created

Wed 15 Nov 2023 06:18:08 PM EDT  ib10001.tar was created

Wed 15 Nov 2023 06:20:08 PM EDT  No changes-Incremental backup was not created

Wed 15 Nov 2023 06:22:08 PM EDT  ib10002.tar was created

Wed 15 Nov 2023 06:24:08 PM EDT  cb00002.tar was created

Wed 15 Nov 2023 06:26:08 PM EDT  ib10003.tar was created

Wed 15 Nov 2023 06:28:08 PM EDT  ib10004.tar was created

Wed 15 Nov 2023 06:30:08 PM EDT  No changes-Incremental backup was not created

Wed 15 Nov 2023 06:32:08 PM EDT  cb00003.tar was created

Wed 15 Nov 2023 06:34:08 PM EDT  ib10005.tar was created

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Note: Typically in practical scenarios, one can expect a weekly complete backup and a daily incremental backup (or could also be differential backup) of files.

Submission Instructions:

You need to submit the following:

1. A4F23.zip (that contains A4F23.sh and backup.log)
2. A4F23.c and .txt (copy of A4F23.sh with a .C and .txt extension)
3. Zoom/Google Drive recording link explaining the following (not more than 15 minutes)
 - Overall working of the code and various modules (around 8-9 minutes)
 - Execution of the code under various inputs/conditions as per the requirements of the assignment (around 6-7 minutes)
 - Other form of links/MP4 files will NOT be acceptable.

- Include the link in the COMMENTS section.

Note:

- You are required to follow the Submission Instructions carefully and email the instructor reasonably ahead of the submission deadline in case of any questions.
- After your submission, you will be able to view the Turnitin similarity report that compares your submission with all the remaining submissions in the section/all the sections of the course.