

COMP 8567  
Summer 2023  
Assignment 4  
Due: Aug/4/2023

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

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

(2 minutes interval)

**STEP 2** Create an **incremental backup** of only those .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 .txt files since the previous complete backup, create a tar file of those text files (only): **ib\*\*\*\*\*.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 .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 .txt files since the previous incremental backup, create a tar file of those text files (only): **ib\*\*\*\*\*.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 .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 .txt files since the previous incremental backup, create a tar file of those text files (only): **ib\*\*\*\*\*.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 5** Create a **complete backup** of all the **.txt files (only)** found in the entire directory tree rooted at /home/username by tarring all the .txt files into **cb\*\*\*\*\*.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)

(2 minutes Interval)

(PROCEED TO STEP 2 )

//Continuous loop

**Fig. 1.0** backup.log (sample)

```
Wed 19 Jul 2023 06:16:08 PM EDT  cb20001.tar was created

Wed 19 Jul 2023 06:18:08 PM EDT  ib10001.tar was created

Wed 19 Jul 2023 06:20:08 PM EDT  No changes-Incremental backup was not created

Wed 19 Jul 2023 06:22:08 PM EDT  ib10002.tar was created

Wed 19 Jul 2023 06:24:08 PM EDT  cb20002.tar was created

Wed 19 Jul 2023 06:26:08 PM EDT  ib10003.tar was created

Wed 19 Jul 2023 06:28:08 PM EDT  ib10004.tar was created

Wed 19 Jul 2023 06:30:08 PM EDT  No changes-Incremental backup was not created

Wed 19 Jul 2023 06:32:08 PM EDT  cb20003.tar was created

Wed 19 Jul 2023 06:34:08 PM EDT  ib10005.tar was created

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**Note:** Typically in practical scenarios, one can normally 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. backup.zip (that contains backup.sh and backup.log)
2. backup.txt (copy of backup.sh with a .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.
- Incorrect submission of files/purported inadvertent submission of empty files, or absence of any file/link/requirement as outlined in the submission Instructions will be deemed as a missed assignment and will be assigned a mark of zero.
- 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.