Write a bash script **Icbackup.sh** that runs <u>continuously in the background</u> and performs the following operations:

STEP 1 Create a **complete backup** of all files found in the <mark>entire directory tree</mark> rooted at /home/username by tarring all such files into **cb****.tar stored** at **~/home/backup/cbw24**
- 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 all files in the entire directory tree rooted at /home/username that were **newly created or modified (only)** after **STEP 1**
- If there are any newly created/modified files **after STEP1**, create a tar file of those files (only): ib****.tar at **~/home/backup/ib24** 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 all files in the entire directory tree rooted at /home/username that were **newly created or modified (only)** after **STEP 2**
- If there are any newly created/modified files **after STEP 2**, create a tar file of those files (only): ib****.tar at **~/home/backup/ib24** 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 a **differential backup** of all files in the entire directory tree rooted at /home/username that were **newly created or modified (only)** after **STEP 1**
- If there are any newly created/modified files **after STEP1**, create a tar file of those files (only): db****.tar at **~/home/backup/db24** 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 an **incremental backup** of all files in the entire directory tree rooted at /home/username that were **newly created or modified (only)** after **STEP 4**
- If there are any newly created/modified files **after STEP 4**, create a tar file of those files (only): ib****.tar at **~/home/backup/ib24** 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)

(PROCEED TO STEP 1)   //Continuous loop

Fig. 1.0 backup.log (sample)

```
Wed 20 Mar 2024 06:16:08 PM EDT   cbw24-1.tar was created

Wed 20 Mar 2024 06:18:08 PM EDT   ibw24-1.tar was created

Wed 20 Mar 2024 06:20:08 PM EDT   No changes-Incremental backup was not created

Wed 20 Mar 2024 06:22:08 PM EDT   dbw24-1.tar was created

Wed 20 Mar 2024 06:24:08 PM EDT   ibw24-2.tar was created

Wed 20 Mar 2024 06:26:08 PM EDT   cbw24-2.tar was created

Wed 20 Mar 2024 06:28:08 PM EDT   ibw24-3.tar was created

Wed 20 Mar 2024 06:30:08 PM EDT   ibw24-4.tar was created

Wed 20 Mar 2024 06:32:08 PM EDT   dbw24-2.tar was created

Wed 20 Mar 2024 06:34:08 PM EDT   ibw24-5.tar was created

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Note: 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. A4W24.zip (that contains Icbackup.sh and backup.log)
2. 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