**Archiving, Compression & Automation in Linux**

**Archiving & Compression**

1. Create an uncompressed archive of the **/etc** directory and store it as **/home/student/etc\_backup.tar**.
2. Create a gzip-compressed archive of the **/var/log** directory and save it as **/home/student/logs.tar.gz.**
3. Create a bzip2-compressed archive of **/usr/share/doc** and save it as **/home/student/docs.tar.bz2**.
4. Create an xz-compressed archive of **/boot** and save it as /home/student**/boot\_backup.tar.xz**.
5. View the contents of **/home/student/logs.tar.gz** without extracting it.
6. Extract the archive **/home/student/etc\_backup.tar** into the **/tmp/etc**\_restore directory.
7. From the archive **/home/student/docs.tar.bz2**, extract only the file README into **/home/student/extracted\_files**.
8. List the contents of **/home/student/boot\_backup.tar.xz** showing details like permissions, owners, and size.
9. Create an archive of **/var/log** and store it **as /home/student/mixed\_backup.tar**, then compress it separately using the gzip command.
10. Extract all files from **/home/student/logs.tar.gz** into the current user’s home directory.

**Automation with at**

1. Schedule a task that creates a file **/home/student/message.txt** with the content Backup completed at 11:30 PM today.
2. Schedule a system shutdown to occur at 4:00 PM tomorrow.
3. Schedule a job to create a compressed backup of **/etc** as **/home/student/etc**\_nightly.tar.gz at 2:00 AM the next day.
4. Schedule a task that writes System maintenance done into **/home/student/maintenance.log** at 8:00 AM on December 1st.
5. Display all jobs currently scheduled with the at command.
6. Remove the at job with job ID 3.

**Automation with cron**

1. Schedule a cron job to run every day at 7:00 PM that creates a compressed archive of**/etc as /home/student/daily\_backup.tar.gz.**
2. Schedule a cron job to run every Saturday at 5:00 PM that creates a compressed archive of **/var/log as /home/student/sat\_backup.tar.gz.**
3. Schedule a cron job to append the line Weekly check completed into **/home/student/weekly.log** every Monday at 9:00 AM.
4. Schedule a cron job to run at midnight on the first day of every month that creates a compressed archive **of /home/student as /home/student/monthly\_home.tar.gz.**
5. Schedule a cron job to run every 10 minutes that appends the line Task running into **/home/student/cron\_test.log.**
6. List all cron jobs created by the current user.