AUTOMATING DATABASE BACKUPS WITH SHELL SCRIPT

🎯 Project Objective

The objective of this project is to design and implement an automated database backup solution using shell scripting. The system should reliably create backups of the database at scheduled intervals, store them in a secure location, and reduce manual intervention.

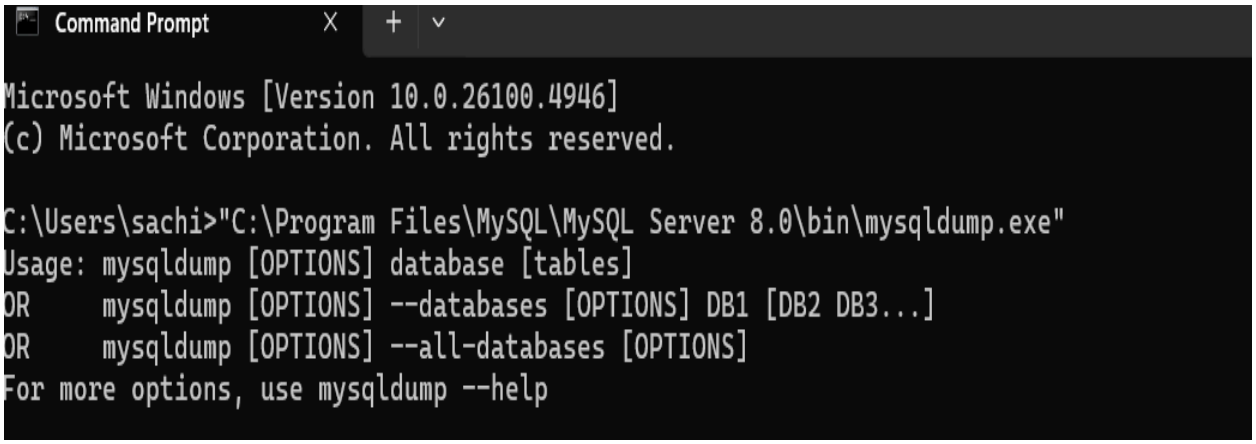
STEP 1:-INSTALL MYSQL

-Install MySQL Server (or just the client).

-Locate the bin folder (e.g. C:\Program Files\MySQL\MySQL Server 8.0\bin).

-Inside, you should see mysqldump.exe.

-Test in CMD

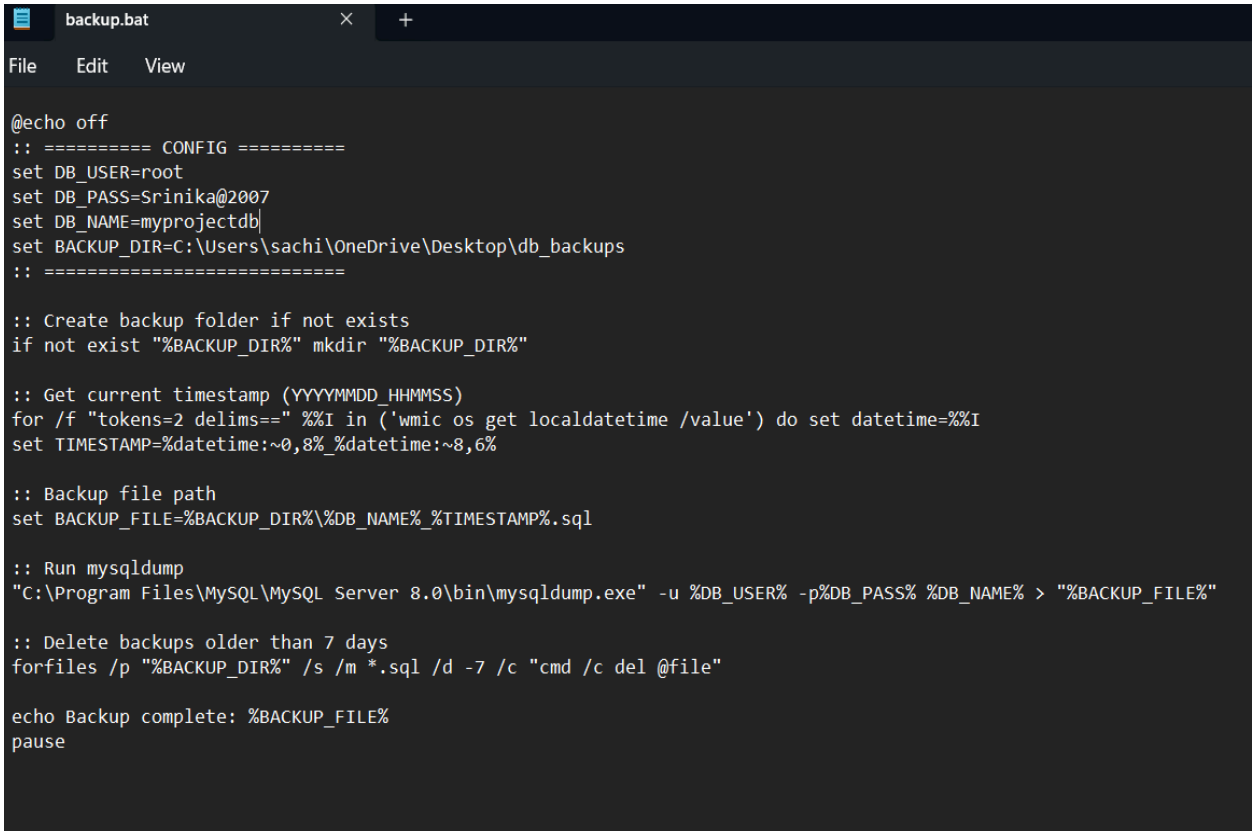


Step 2: Create a Backup Folder

I created a folder name db_backups where backups will be stored

Step 3: Write the Batch File

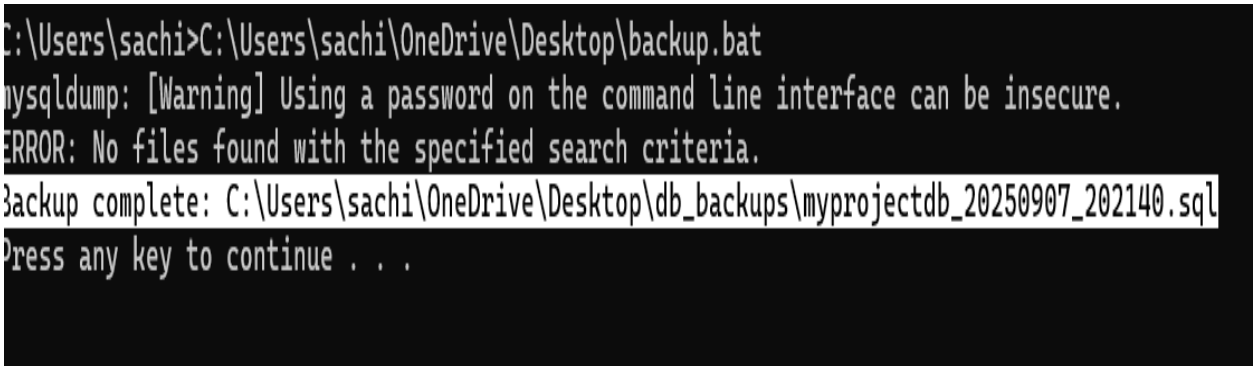
I wrote a batch file and saved it as backup.bat in the type all files



Step 4: Test It

1. Open CMD

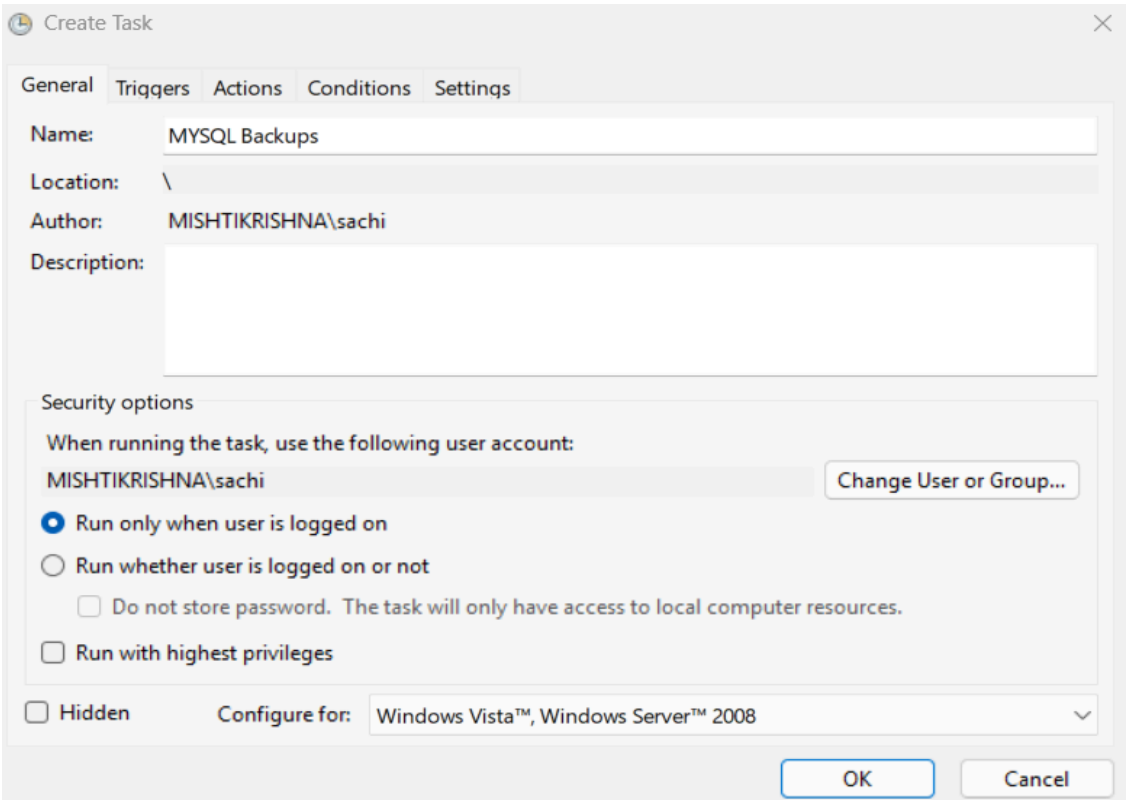
2. Run : C:\Users\sachi\OneDrive\Desktop\backup.bat

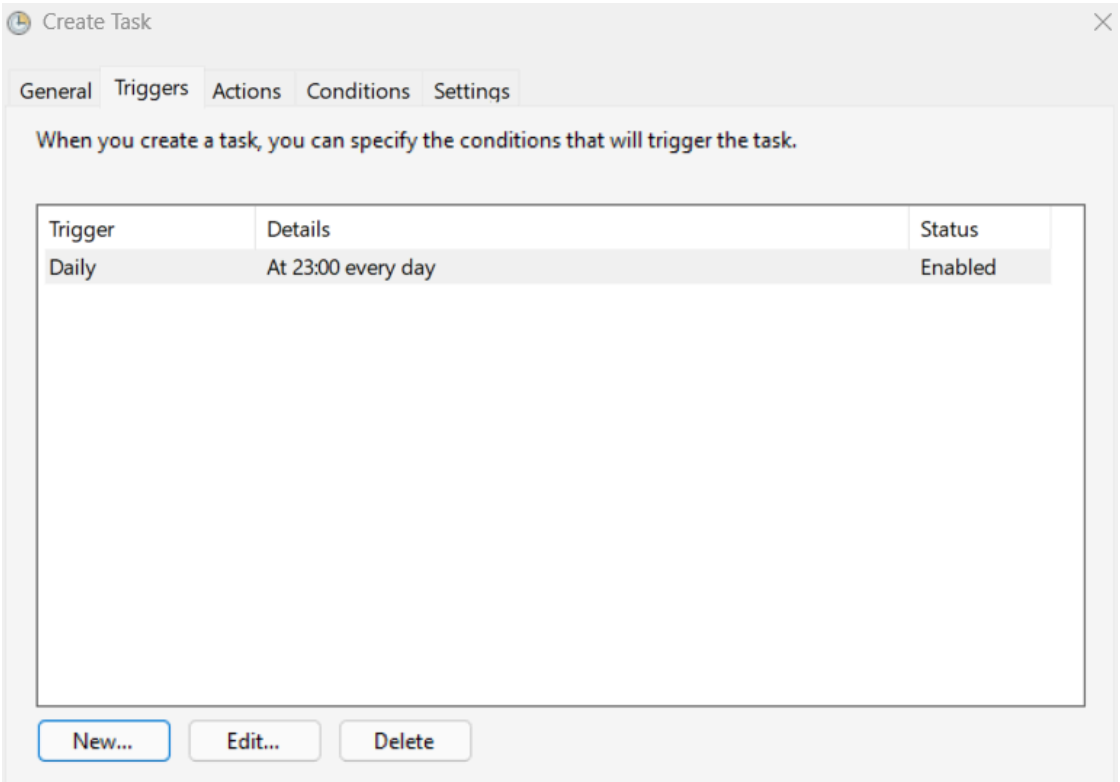


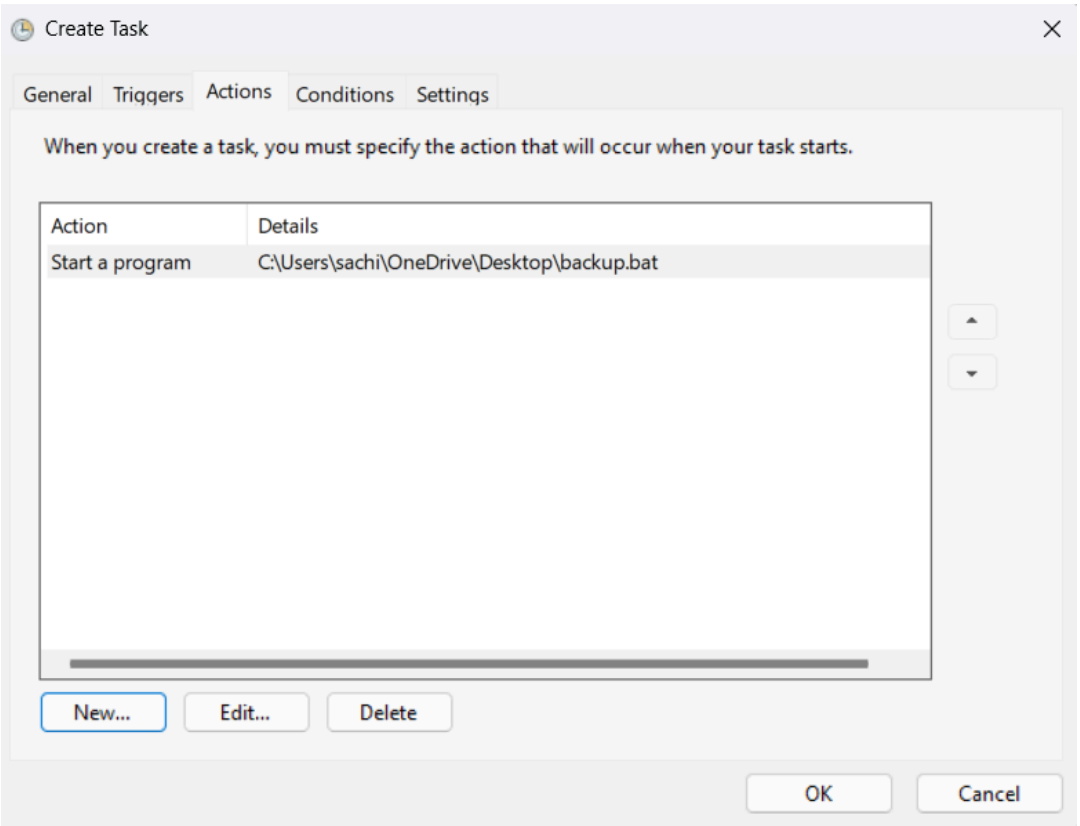
Step 5: Automate with Task Scheduler

As I am working on windows i did not use cron job instead i used task schedular to automate database backups

1. Open **Task Scheduler** (Win + S → search it).
2. **Create Task** → Name: *MySQL Backup*.
3. **Triggers** → New → Daily (or every X hours).
4. **Actions** → New → Program/script:

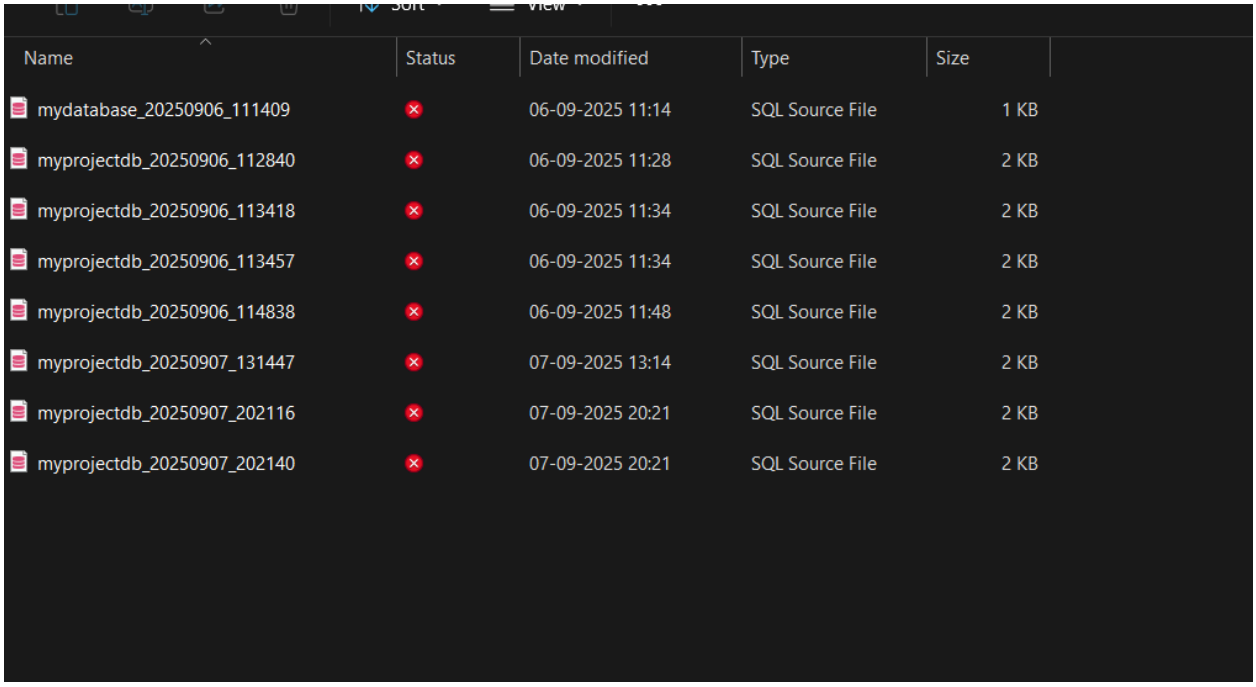

Create Task
General
Triggers
Actions
Conditions
Settings
Name:
MYSQL Backups
Location:
\
Author:
MISHTIKRISHNA\sachi
Description:
Security options
When running the task, use the following user account:
MISHTIKRISHNA\sachi
Change User or Group...
Run only when user is logged on
Run whether user is logged on or not
Do not store password. The task will only have access to local computer resources.
Run with highest privileges
Hidden
Configure for:
Windows Vista™, Windows Server™ 2008
OK
Cancel


Create Task
General
Triggers
Actions
Conditions
Settings
When you create a task, you can specify the conditions that will trigger the task.
Trigger
Details
Status
Daily
At 23:00 every day
Enabled
New...
Edit...
Delete



Step 6: Verify Automation

- The task runs at the scheduled time then:
- `db_backups` folder should have new backup files
- Old backups (older than 7 days) will be deleted automatically.



Name	Status	Date modified	Type	Size
mydatabase_20250906_111409	✕	06-09-2025 11:14	SQL Source File	1 KB
myprojectdb_20250906_112840	✕	06-09-2025 11:28	SQL Source File	2 KB
myprojectdb_20250906_113418	✕	06-09-2025 11:34	SQL Source File	2 KB
myprojectdb_20250906_113457	✕	06-09-2025 11:34	SQL Source File	2 KB
myprojectdb_20250906_114838	✕	06-09-2025 11:48	SQL Source File	2 KB
myprojectdb_20250907_131447	✕	07-09-2025 13:14	SQL Source File	2 KB
myprojectdb_20250907_202116	✕	07-09-2025 20:21	SQL Source File	2 KB
myprojectdb_20250907_202140	✕	07-09-2025 20:21	SQL Source File	2 KB

ERRORS FACED AND SOLUTIONS

Unknown Database (‘mydatabase’ not found)

- **Cause: Tried to back up a database (`mydatabase`) that did not exist.**
- **Fix: Created a new database `myprojectdb` using:**

  CREATE DATABASE myprojectdb;

`mysql` or `mysqldump` not recognized in CMD

- **Cause:** MySQL was not added to the Windows PATH environment variable.

- **Fix:** Navigated to MySQL's `bin` folder manually or updated PATH so commands could run from anywhere.

Key Takeaways

1. **Database backups are essential**
    - Regular backups prevent data loss due to system crashes, accidental deletion, or corruption.
2. **Automation saves time**
    - Instead of manually running commands every day, batch scripting and Task Scheduler ensure backups run automatically on schedule.
3. **Windows supports scripting too**
    - Even though batch files are simple compared to Linux shell scripts, they can effectively handle MySQL backups.
4. **Integration with Task Scheduler**
    - Automating through Task Scheduler makes the process hands-free and reliable.
5. **Error handling is important**
    - The project shows that missing files, wrong credentials, or wrong DB names can cause errors → debugging teaches

you how MySQL and CMD interact.

6. **Hands-on with MySQL**
    - You learned to:
        - Log into MySQL (`mysql -u root -p`)
        - Create databases (`CREATE DATABASE myprojectdb;`)
        - View databases (`SHOW DATABASES;`)
        - Export databases using `mysqldump`
7. **Practical skills gained**
    - Windows Command Prompt basics
    - Writing batch scripts
    - Managing MySQL databases
    - Scheduling automated tasks
