

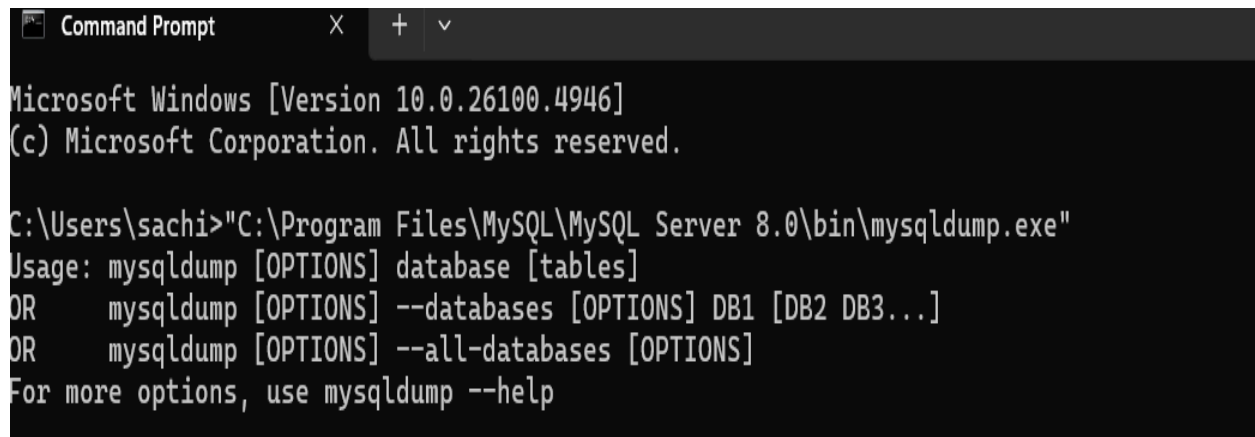
# AUTOMATING DATABASE BACKUPS WITH SHELL SCRIPT

## 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



```
Command Prompt
Microsoft Windows [Version 10.0.26100.4946]
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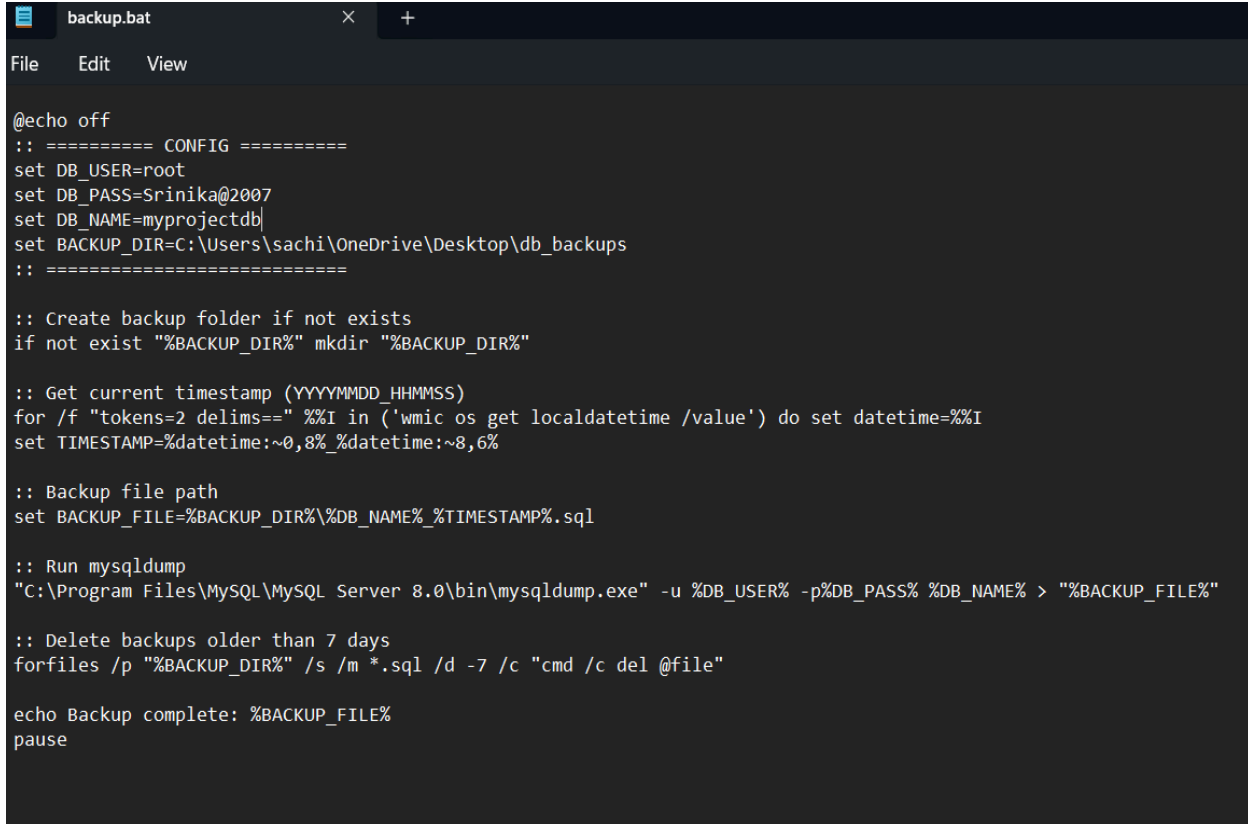
C:\Users\sachi>"C:\Program Files\MySQL\MySQL Server 8.0\bin\mysqldump.exe"
Usage: mysqldump [OPTIONS] database [tables]
OR      mysqldump [OPTIONS] --databases [OPTIONS] DB1 [DB2 DB3...]
OR      mysqldump [OPTIONS] --all-databases [OPTIONS]
For more options, use mysqldump --help
```

## 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



```
@echo off
:: ===== CONFIG =====
set DB_USER=root
set DB_PASS=Srinika@2007
set DB_NAME=myprojectdb
set BACKUP_DIR=C:\Users\sachi\OneDrive\Desktop\db_backups
:: =====

:: Create backup folder if not exists
if not exist "%BACKUP_DIR%" mkdir "%BACKUP_DIR%"

:: Get current timestamp (YYYYMMDD_HHMMSS)
for /f "tokens=2 delims==" %I in ('wmic os get localdatetime /value') do set datetime=%I
set TIMESTAMP=%datetime:~0,8%_datetime:~8,6%

:: Backup file path
set BACKUP_FILE=%BACKUP_DIR%\%DB_NAME%_%TIMESTAMP%.sql

:: Run mysqldump
"C:\Program Files\MySQL\MySQL Server 8.0\bin\mysqldump.exe" -u %DB_USER% -p%DB_PASS% %DB_NAME% > "%BACKUP_FILE%"

:: Delete backups older than 7 days
forfiles /p "%BACKUP_DIR%" /s /m *.sql /d -7 /c "cmd /c del @file"

echo Backup complete: %BACKUP_FILE%
pause
```

## Step 4: Test It

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

```
C:\Users\sachi>C:\Users\sachi\OneDrive\Desktop\backup.bat
mysqldump: [Warning] Using a password on the command line interface can be insecure.
ERROR: No files found with the specified search criteria.
Backup complete: C:\Users\sachi\OneDrive\Desktop\db_backups\myprojectdb_20250907_202140.sql
Press any key to continue . . .
```

## Step 5: Automate with Task Scheduler

As I am working on windows i did not use cron job instead i used task scheduler 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

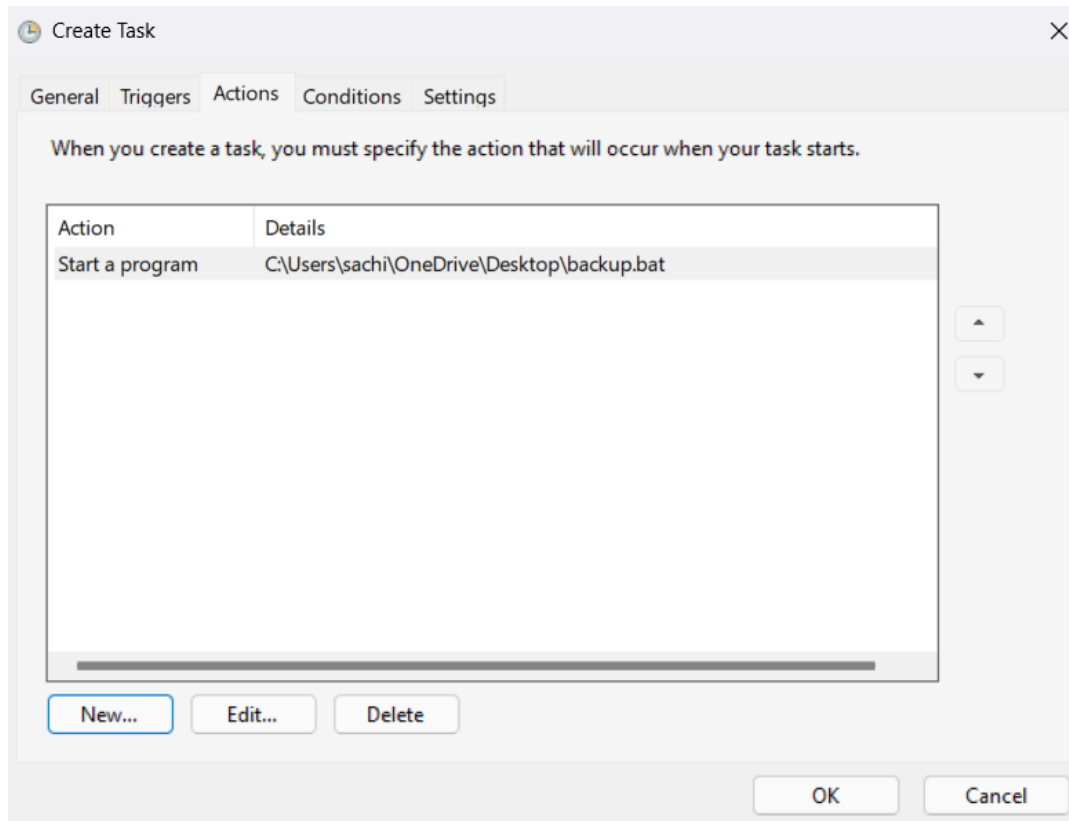
When you create a task, you can specify the conditions that will trigger the task.

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
-