ADS ISE 2

PRN: 22510097

Name: Viraj Patil.

Batch: T5

Subject: Advanced Database lab.

Q1) How to take backup of MySQL databases? What are the different tools?

Before

Answer:

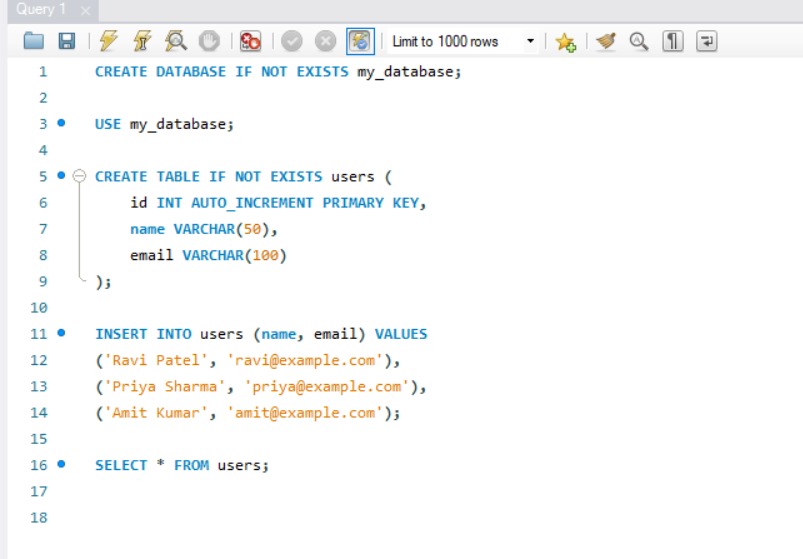
**Method 1: Back up MySQL Database Using mysqldump**

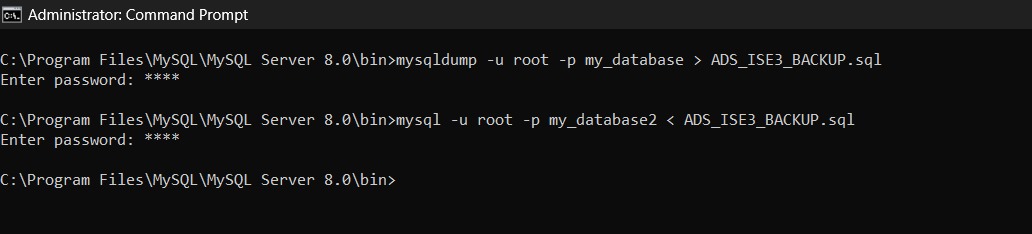
1. mysqldump is the native MySQL backup solution. It allows the user to create a backup with a single command. The syntax is:

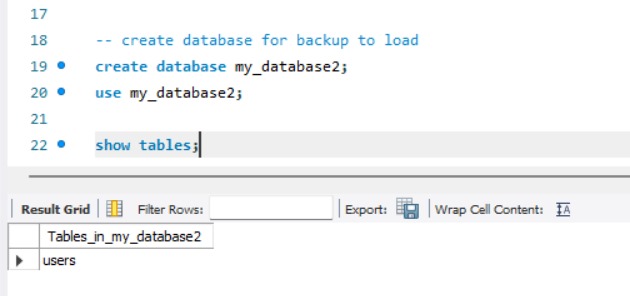
**Query:** mysqldump -u username -p dbname > backup.sql

1. Replace username with your MySQL username.
2. dbname is the database name you want to back up.
3. Replace backup.sql with the desired name for the backup file.

Screenshots:







Q2) What are the API available in MySQL to take backup from any language platform like Python / C#.Net / Java.

Answer:

**Python Code:**

import subprocess

def backup\_mysql\_database(

    mysql\_dump\_path, hostname, username, password, database, output\_file\_path

):

    # Construct the command

    command = [

        mysql\_dump\_path,

        f"--host={hostname}",

        f"--user={username}",

        f"--password={password}",

        database,

    ]

    # Redirect output to file

    with open(output\_file\_path, "w") as output\_file:

        # Start the process

        process = subprocess.Popen(command, stdout=output\_file, stderr=subprocess.PIPE)

        # Wait for process to complete

        \_, error\_output = process.communicate()

        exit\_code = process.wait()

        if exit\_code != 0:

            raise RuntimeError(

                f"Failed to execute mysqldump command. Exit code: {exit\_code}, Error: {error\_output.decode('utf-8')}"

            )

if \_\_name\_\_ == "\_\_main\_\_":

    mysql\_dump\_path = "C:\\Program Files\\MySQL\\MySQL Server 8.0\\bin\\mysqldump"

    hostname = "localhost"

    username = "root"

    password = "1111"

    database = "my\_database"

    output\_file\_path = "ADS\_ISE2.sql"

    try:

        backup\_mysql\_database(

            mysql\_dump\_path, hostname, username, password, database, output\_file\_path

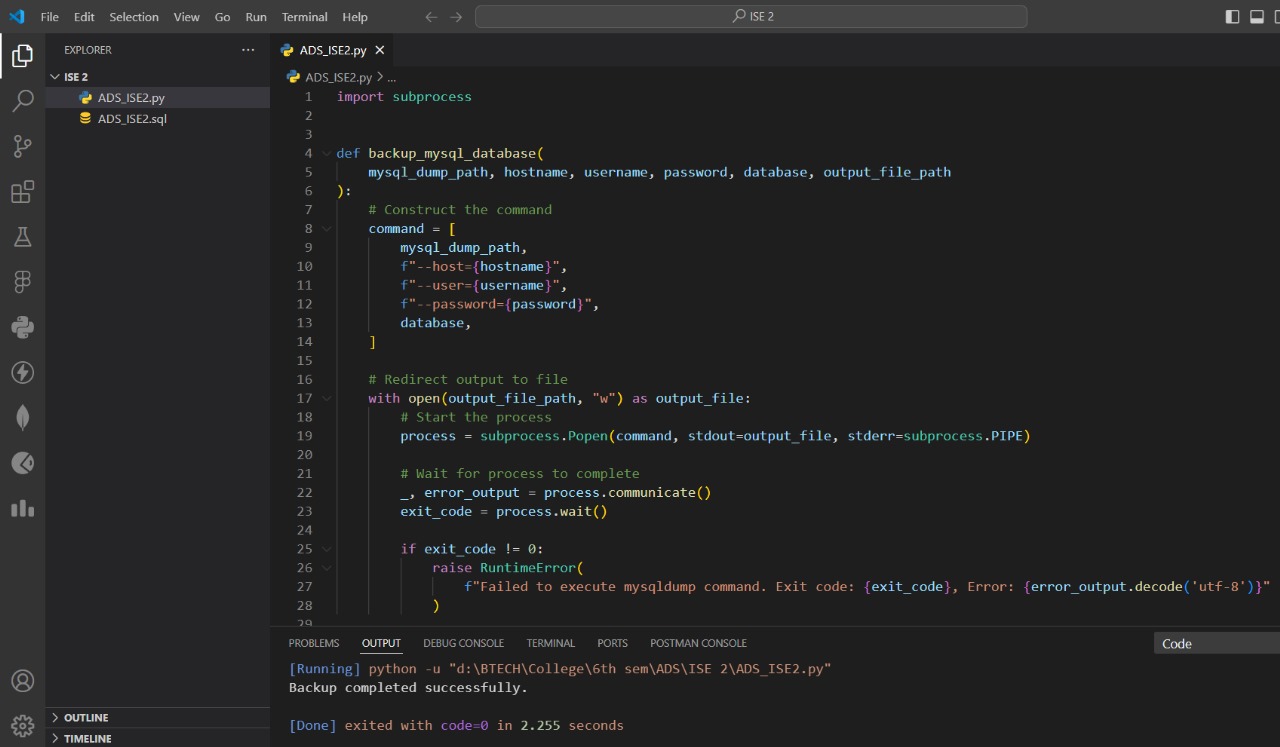
        )

        print("Backup completed successfully.")

    except Exception as e:

        print("Error:", e)

Output:



Q3) How to schedule a particular task in MySQL or in Python / C#.Net /Java ? Use case : IoT data needs to be dumb in MySQL database afterevery one hour.

**Python Code:**

import pymysql

import schedule

import time

# Define the connection parameters

main\_connection\_params = {

    "host": "localhost",

    "user": "root",

    "password": "1111",

    "database": "ads\_ise",

}

# Execute SQL statement to insert IoT data

def dump\_iot\_data():

    try:

        # Connect to MySQL database

        with pymysql.connect(\*\*main\_connection\_params) as connection\_main:

            with connection\_main.cursor() as cursor\_main:

                # Fetch data from lot\_data table

                sql\_lot\_data = "SELECT timestamp, value, location, status FROM lot\_data"

                cursor\_main.execute(sql\_lot\_data)

                lot\_data = cursor\_main.fetchall()

                # Insert data into iot\_data\_table

                for data in lot\_data:

                    timestamp, value, location, status = data

                    sql\_insert = "INSERT INTO iot\_data\_table (timestamp, value, location, status) VALUES (%s, %s, %s, %s)"

                    cursor\_main.execute(

                        sql\_insert, (timestamp, value, location, status)

                    )

        print("IoT data dumped into the database successfully")

    except Exception as e:

        print(f"Error: {e}")

# Define the scheduler

def schedule\_task():

    # Schedule the dump\_iot\_data function to run every 10 seconds

    schedule.every(10).seconds.do(dump\_iot\_data)

    # Run the scheduler

    while True:

        schedule.run\_pending()

        time.sleep(1)

# Start the scheduler

schedule\_task()

