**Database Utility Tool Documentation**

**Overview**

The Database Utility Tool is a command-line and web-based application designed to handle backup and restore operations for databases. It supports PostgreSQL, MySQL, and MariaDB, providing functionalities such as full backups, table-specific backups, scheduled backups, and point-in-time restores.

**Features**

* **Backup and Restore** for entire databases or specific tables.
* **Command-line** and **Web Application** modes.
* **Cron-based scheduling** for automatic backups.
* **Supports PostgreSQL, MySQL**.
* **Point-in-time Restore (PITR)** for specific date recovery.

**Installation**

1. Clone the repository:
2. git clone :
3. cd databaseutilities
4. Install dependencies:
5. go mod tidy
6. Build the application:
7. go build -o dbutility

**Command-line Usage**

**Flags**

* -a, --applicationtype: **(Required)** application or commandline
* -d, --dbtype: Database type (postgres, mysql, mariadb)
* -u, --username: Database username
* -p, --password: Database password
* -H, --host: Database host
* -o, --port: Database port
* -n, --dbname: Database name
* -t, --tables: List of tables (optional)
* -e, --actiontype: backup or restore
* -r, --date: Date for point-in-time restore
* -i, --inputfile: Input file for restore
* -y, --outputfile: Output file for backup
* -s, --schedule: Cron expression for scheduled backups

**Examples**

**Full Backup**

dbutility -a commandline -d postgres -u user -p pass -H localhost -o 5432 -n mydb -e backup -y backup.sql

**Restore Backup**

dbutility -a commandline -d postgres -u user -p pass -H localhost -o 5432 -n mydb -e restore -i backup.sql

**Backup Specific Tables**

dbutility -a commandline -d mysql -u root -p pass -H localhost -o 3306 -n salesdb -e backup -t users,orders -y tables\_backup.sql

**Scheduled Backup (Daily at Midnight)**

dbutility -a commandline -d postgres -u user -p pass -H localhost -o 5432 -n mydb -e backup -s "0 0 \* \* \*"

**Point-in-Time Restore**

dbutility -a commandline -d postgres -u user -p pass -H localhost -o 5432 -n mydb -e pittest -r "2024-03-15 10:30:00"

**Web Application Mode**

Start the web application:

dbutility -a application -d postgres -u user -p pass -H localhost -o 5432 -n mydb

Access the application via: [http://localhost:8080](http://localhost:8080/)

**Error Handling**

* **Invalid credentials**: Ensure username/password are correct.
* **Connection issues**: Verify host and port.
* **File errors**: Ensure input/output file paths are valid.
* **Permission denied**: Run with appropriate permissions or check directory paths.

**Logging**

Logs are saved to logs/databaseutility.log. Example log entries:

INFO: Database Utility Starts

INFO: Starting full backup of database mydb

INFO: Database backup completed successfully to backup.sql

ERROR: Failed to connect to the database: connection refused

**Future Enhancements**

* Support for more databases (e.g., SQLite, Oracle).
* Incremental backups.
* Parallel table backups.
* Encryption for backup files.

**License**

This project is licensed under the MIT License.

**Author**

* **Yohan**
* **Email: yjirage@gmail.com**
* **GitHub: https://github.com/YohanJirage**