**Redgate Flyway**

**Why Flyway & What it Solves:**

Flyway is based on the concept of "migrations," which are scripts that modify the database schema. These migrations are versioned and executed in sequence (Incremental order).

* **Migration Scripts**: Each migration script is versioned, usually with a name like V1\_\_Initial\_schema.sql, V2\_\_Add\_column.sql, etc.
* **Flyway Locations**: The migrations are stored in a specific directory. The default directory is db/migration, but it can be customized.
* **Flyway Metadata Table**: Flyway keeps track of the migrations applied to a database in a table called flyway\_schema\_history. This table stores the version, description, and checksum of each applied migration.

**Core Flyway commands**

**a. flyway migrate**

**Purpose**: This command applies all the pending migrations to the database.

**Syntax :** flyway migrate

**Description :** Flyway will look at the database and apply any migration scripts that have not yet been executed, based on their version numbers.

**b. flyway clean**

**Purpose**: This command drops all objects (tables, views, etc.) in the schema. **Use with caution** as it can delete all data.

**Syntax** : flyway clean

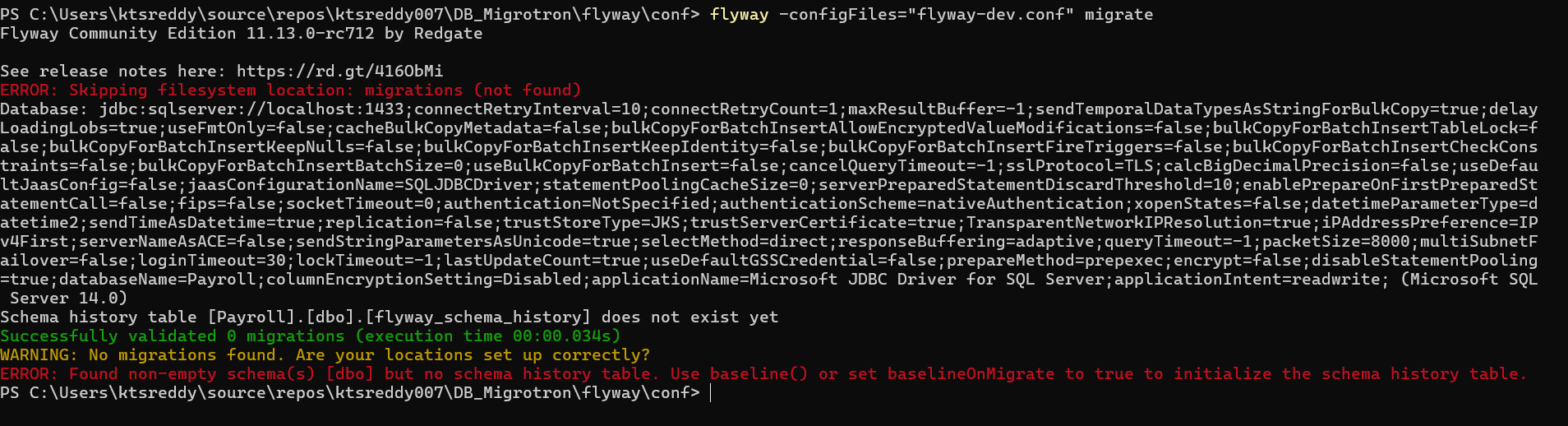
**Description**: It's usually used in development or testing environments where you want to reset the database. **It's irreversible**, so don't use it in production without proper backups.

**Setting up Flyway Migration on Existing DB Schema :**

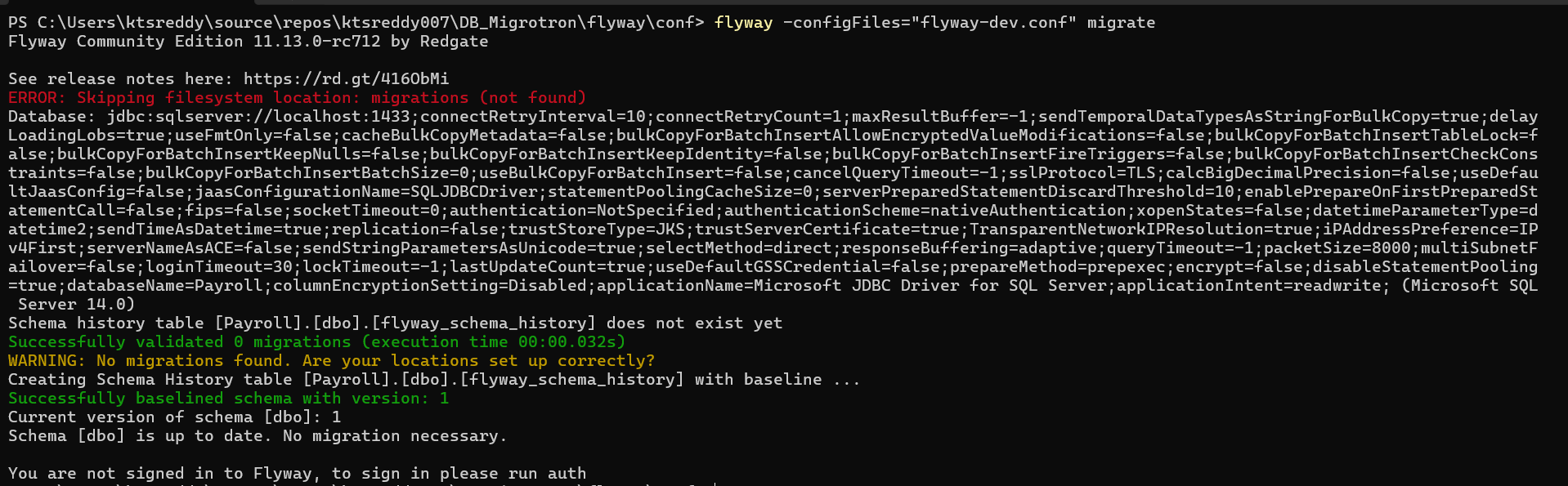
To make flyway recognize that the DB has existing schema and need to create a fresh SchemaHistory table we need to keep below parameter to true in conf file.

**flyway.baselineOnMigrate=true**

Below is the screenshot when we keep the parameter to **false**



After Setting up to **true** we get below output where its creating schema history table .



**Flyway does not load .env files by default (Like secrets and others which are fetched from env file)**

We would get below error



To avoid above follow below process

**Option 1: Manually set env variables in the shell (PowerShell in our case)**

Before running Flyway, set the required environment variables manually:

$env:DB\_NAME=" Give ur original value here "

$env:DB\_USER="Give ur original value here"

$env:DB\_PASS=" Give ur original value here "

Than run - flyway -configFiles="flyway-dev.conf" info

Below Error is a Checksum mismatch error .



The error you're encountering is related to a **checksum mismatch** in Flyway's schema history table (typically named flyway\_schema\_history). This means that the checksum of the migration script in the database **does not match** the checksum of the migration file you are trying to run.

**Error Explanation:**

* **Migration version 2** has been applied to your database.
* The checksum of the migration script that was applied (470051026) does **not match** the checksum of the migration script that Flyway is trying to apply now (-554499142).

This usually happens when:

* The migration file has been modified after it was initially applied (i.e., you edited the script).
* The migration script has changed in a way that alters its checksum, but the schema history table still holds the old checksum.

**Solution Options:**

**1. Revert Changes to the Migration File:**

If you unintentionally changed the migration file after it was applied to the database, and you want to preserve the old script, **revert the file to its original state** so the checksum matches the previously applied one.

You can:

* Roll back the changes you made to the migration script (e.g., undo code changes in the migration SQL file).
* Ensure the script is exactly the same as it was when it was first executed.

**2. Run Flyway Repair (Recommended if you want to update the history):**

If you’ve intentionally changed the migration file, you need to let Flyway know that the script has been updated.

The command flyway repair will:

* **Update** the checksum in the schema history table (flyway\_schema\_history) to match the new checksum.
* **Preserve the migration version** without reapplying it.

**Steps to fix it:**

1. Ensure your migration script is in the desired final state (the updated version).
2. Run the repair command to correct the schema history:

flyway repair

This will update the stored checksum in the flyway\_schema\_history table so that Flyway doesn't try to reapply the migration or complain about the checksum mismatch.

**3. Delete the Migration from the Schema History (Advanced):**

If you're certain the migration script should be reapplied (perhaps after a bug fix or significant change), you can manually delete the migration entry from the flyway\_schema\_history table. **Be cautious with this approach**, as deleting the wrong entry can cause data inconsistencies.

**Steps to manually remove the entry**:

1. Query the flyway\_schema\_history table to locate the row for version 2.
2. Delete that specific entry.