

Assignment 4 - Question 1

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Course: PROG8850 - Database Automation

1.1) Tool Overview and Comparison

We are comparing two tools: Flyway and Liquibase.

Flyway

- Lightweight database migration tool.
- Uses SQL-based version control.
- Easy to integrate with CI/CD tools.
- Supports most popular databases like MySQL, PostgreSQL, Oracle.

Liquibase

- Flexible and advanced tool for database changes.
- Supports XML, YAML, JSON and SQL formats.
- Great for managing large database schemas.
- Supports rollback of changes easily.

Comparison Table

Feature	Flyway	Liquibase	
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Ease of Use	Easy	Medium	
CI/CD Integration	Very Easy	Easy	
Supported Databases	Most Major DBs	Most Major DBs	

1.2) Integration Strategy

To integrate Flyway or Liquibase into a CI/CD pipeline:

- Use GitHub Actions to run migrations after each push.
- For Flyway: use SQL files and run them using `flyway migrate`.
- For Liquibase: use changelog files in YAML/XML and use `liquibase update` command.
- Always include automated tests to validate changes.