

Square Enix Tech Test

The process table holds a history of all processes. A process can have the following status':

- RUNNING
- PAUSED
- COMPLETE

A new process can be created if all other processes in the table have the status 'COMPLETE'

Schema

Process
- ID Integer PK
- Status VARCHAR(50)
- Created At Timestamp

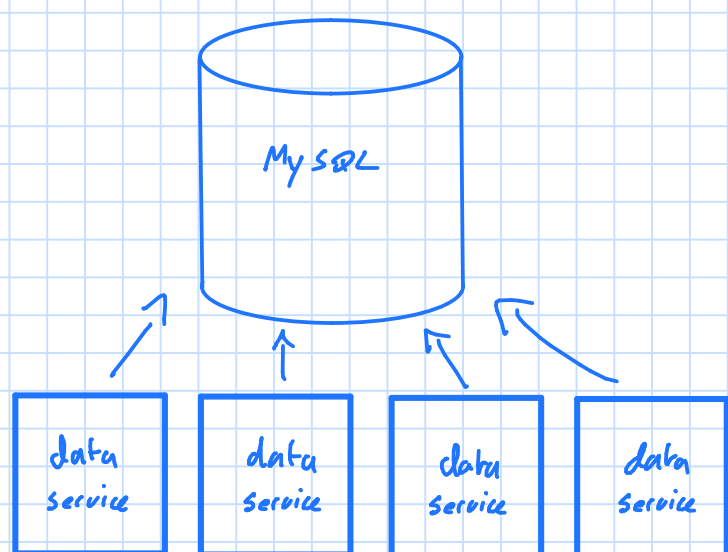
Element
- ID Integer PK
- Data VARCHAR(50)
- Created At Timestamp

ProcessElement
- Process id Integer FK
- Element id Integer FK

Each row in the ProcessElement table represents a relationship between a process and an element and indicates that an element has been successfully processed as part of the respective process.

Elements represent an arbitrary entity that has a data field which will be processed. I have chosen to convert this field to uppercase for the purposes of this exercise.

Architecture



- When the 'start' endpoint is called a service locks the process table and creates a new row with the process status set to 'RUNNING' and unlocks the table.
- Each service instance polls the process table for a process with the status RUNNING. Once discovered, a service instance will query and lock batches of rows in the Element table that are unlocked and have not been processed as part of the current + created before process, process them and persist the current process them. Each service will do this until there are no elements remaining that have not been processed as part of the current process.
- If there are no more elements left to process as part of the current process and there are no locked rows in the element table then an instance will lock the process table, update its status to COMPLETE and unlock the table.