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## Topic

Make a Rest API for the given requirement in Java.

## Important:

Every 15 minutes, the code needs to be pushed to the Git. No excuse!

A video of the working system with commentary is required to be sent!

## Assumptions

1. Availability of database

## Requirements

2. The API FetchNextNumber shall take a CategoryCode as parameter in JSON
3. Search a table where CategoryCode and value are stored and fetch value. [No result shall be considered as 0 value]
4. Update the table with a number such that it is:
  - a. greater than the fetched Value
  - b. sum of the individual digits become 1 [for example if fetched number is 10, then the next number should be 19 as  $1+9 = 10 \Rightarrow 1+0 = 1$ ]
  - c. the number is the smallest next available number
  - d. While calculating the next number, introduce a delay of 5 seconds overall to the minimum.[simulating other processing]
5. The return value is in JSON with OldValue and NewValue
6. API shall be simultaneously executed by multi users and the outcome should be unique.

## Example System

Api: <http://localhost:8080/FetchNextNumber/> >> Fetches the available number and next number.

## Non-Functional Features to Incorporate

1. Database data persistence so that even if the application is restarted the number is permanently stored.
4. Unit Testing for a robust system.

## Git Usage

Project submission shall be done via pushing your codebase to Github.

1. Commit often with descriptive messages (we may look into your commit history).

## Mandatory files of your github repo's root folder

1. Minimal usage guide and features implemented, as guide.txt file.
2. (Design/Architectural) (Patterns/decisions) used, as decisions.txt file.

## Extensibility?

Any additional features implemented, should be clearly stated in guide.txt and will be added as bonus points for your project.

## Checklist

- Diagrammed the database schema.
- Completed a minimal working model with documentation of the required features.
- Perform unit testing.
- Create and Push guide.txt
- Create and Push decisions.txt
- Upload and Push database\_schema.png
- Work on adding more features if time permits.