**Project Documentation: Code Renewal Services**

**1. Introduction**

Code Renewal Services is a versatile Spring Boot project designed to handle periodic updates of various coding systems, including ICD, CPT, Medicines, Pharmacies, Allergies, and others. The project provides two modes of operation: API-based initiation and standalone automated processing. It aims to streamline the process of reading and processing updated code files, synchronizing the changes with existing coding tables, and ensuring data integrity through verification and analysis.

**2. Workflow Overview**

The following steps outline the workflow of the code renewal process:

**Step 1: File Uploading**

- This method retrieves(csv file) the updated coding system file from the S3 bucket.

- It reads the file's content and prepares it for further processing.

**Step 2: File Processing**

- The File Processing method takes the content of the file obtained in Step 1 and inserts it into a temporary table.

- The temporary table holds the updated codes until they are synchronized with the existing coding table.

**Step 3: Analysis**

- The Analysis method examines the additions, deletions, and updates present in the new file.

- It calculates statistics such as the total number of additions, deletions, and updates for reporting purposes.

**Step 4: Synching**

- The Synching process updates the existing coding table with the changes found in the temporary table.

- It ensures that the coding table reflects the latest code updates.

**Step 5: Verification**

- Verification cross-checks the newly updated codes in the coding table against the content of the file once again.

- It ensures the accuracy and consistency of the updated codes.

**Step 6: Complete**

- The Complete method provides an overview of the entire code renewal process.

- It includes a summary of the changes made, statistics, and any relevant information about the success or failure of the process.

**3. Project Modes**

Code Renewal Services offers two modes of operation:

**- API-based Initiation:**

- In this mode, the project exposes APIs that allow external systems to trigger the code renewal process.

- External systems can send requests to the specific API endpoints, providing the necessary information to initiate the update for a particular coding system.

- The API-based initiation allows for flexibility and integration with other systems.

**- Standalone Automated Processing**:

- In this mode, the project operates autonomously, periodically checking the designated S3 bucket for new code updates.

- A predefined schedule triggers the automated process at regular intervals (e.g., daily, weekly, or monthly).

- When new code updates are detected in the S3 bucket, the project automatically initiates the code renewal workflow without requiring external intervention.

**4. Abstract Class: CodeRenewalAbstract**

- The CodeRenewalAbstract class serves as a blueprint for each coding system's implementation.

- It defines the abstract methods that each coding system must implement to support the code renewal process.

- The abstract methods include:

- fileUploading()

- fileProcessing()

- analysis()

- synching()

- verification()

- complete()

**5. Implementation for Each Coding System**

- For each coding system (ICD,CPT,Medicines,Allergies,Pharmacies etc.), a separate class should be created that extends the CodeRenewalAbstract class.

- Each class should provide the implementation for the abstract methods specific to that coding system.

- This allows for a modular and extensible design, enabling the addition of new coding systems in the future.

**6. Conclusion**

The Code Renewal Services project offers flexibility and automation for managing code updates in various coding systems. Whether initiated through APIs or operated as a standalone automated process, the project streamlines