**Assignment: Database Design and Development for ABC Primary School Management System**

You are tasked with designing and implementing a database system for **ABC Primary School** to manage the teaching process effectively. The system should handle academic years, instructors, students, courses, semesters, and associated activities such as attendance and grading.

**System Details:**

* The school operates a 5-year academic system.
* Each academic year includes multiple courses, and some courses may span multiple years.
* Instructors may teach courses across different academic years, while students are limited to courses within their current academic year during the same semester.
* Both instructors’ and students’ courses change each semester.
* Only one semester is active at any given time.
* Classes consist of groups of students, and instructors may teach multiple classes for the same course, with class assignments varying each semester.
* Attendance and exam marks are managed at the class level.

**Assignment Requirements:**

1. **Database Schema Design**

* Create a database schema to represent the described system.
* Identify and define all entities, relationships, and constraints required to store and manage the data.

1. **Stored Procedures for Instructors and Students Management**

* Define stored procedures to **add** and **update** instructor and student data.
* Consider and implement all necessary restrictions (e.g., unique constraints, data validation).

1. **Batch Deletion of Instructors**

* Create a stored procedure to delete multiple instructors in a single operation.

1. **Search Stored Procedure for Instructors**

* Implement a stored procedure to search for non-deleted instructors using the following criteria:
  + Instructor name
  + Instructor email
  + Instructor code
  + Mobile number
  + Specific course in a specific semester
  + Specific class in a specific semester
* The procedure should return the following data:
  + Instructor name
  + Instructor email
  + Instructor code
  + Number of courses they teach in the current semester
  + Number of classes they teach in the current semester
  + And any other important data

1. **Attendance Management Stored Procedure**

* Implement a stored procedure to record attendance for all students in a specific class on a specific date.
* Attendance options: **Absent**, **Present**, **late** (store the late duration in minutes).

1. **Attendance Retrieval Stored Procedure**

* Create a stored procedure to retrieve attendance records for a specific combination of **Date**, **Class**, and **Course**.
* The procedure should clearly indicate which students were **Absent**, **Present**, or **Late and their late minutes**.

1. **user Defined Functions**

* When implementing stored procedures, ensure to utilize **user-defined functions (UDFs)** to modularize logic and avoid redundancy.

**Expectations and Deliverables:**

1. **Database Schema:**
   * **SQL** scripts for creating the schema, including tables, relationships, and constraints.
2. **Stored Procedures and Functions:**
   * **SQL** scripts for all required stored procedures and functions.
3. **View: (**if Exists**)**
   * **SQL** script for the instructor courses view.
4. **Testing:**
   * Provide test data and scripts to demonstrate the functionality of your procedures and functions.
5. **Documentation:**
   * Briefly explain the design decisions for your schema and the logic for each procedure or function.

Good luck!