

BSF Database Design

Basic Design Concepts

- BSFGlossary
 - Although we are design a Chinese version of BSF app, I want to keep the database design as generic as possible and allow it to extend to other language when needed.
 - BSFGlossary is a table contains the basic terms used in the applications/reports such different positions (e.g. Area Supervisor, Teaching Leader, Group Leader), standard form selections (e.g. Single, Married, Widow). This table will have different translations for the same terms, so when we switch the UI to different language, we don't need to make too much database change.
- Each table has primary key and typically are managed by the auto generated integer with the exception with lesson table and question table as they have predefined sequences.
- Foreign key constraint is modeled and it is indicated by (FK) suffix
- All Boolean columns are represented by bit data type.

Design Area 1: BSF Area Management

- Two tables are used here: Area and AreaStaff
- Area represents each BSF area. We should be able to get the initial values from Michael
- AreaStaff represents the staff members for each area. So it got foreign key from area and foreign key for each person with specific positions. The position is a foreign key the specific position description in BSFGlossary table. StartDate represent when the person starts that position.
- Development Notes: these two tables would likely prepopulated and not used in the initial end user UX implemtation

Design Area 2: Class Management

- Three tables are used here: Class, ClassStaff, Group
- Class represents a list of class under a specific area. ClassType is a foreign key from the BSFGlossary to indicate whether it is Evening Men class or evening Women class, etc. It also describes the main weekly meeting day (e.g. Monday), time (e.g. 7pm), and location. It also describes the leaders meeting info.
- ClassStaff is similar to AreaStaff, it describes all the positions in each Class (TL, CL, GL, etc).
- Group represents a list of group within each class. There are also fields to represent the group meeting room, whether it is a Satellite Group. For Satellite group, additional info are stored for their location and meeting time.

Design Area 3: Lesson Management

- Three tables are used here: Study, Lesson, Question
- Study represents the highest level of BSF study for each class year.
- Lesson represents all the lessons within each study. In this case we also store the lesson title and bible verses in English, Simplified Chinese and Complex Chinese. The Bible verses are just the index not the full text such as John 1:1-18. There are also separate links for notes if they are available.
- Question represent all the questions within each lesson. Again the reference verses are represented in English, Simplified Chinese, and Complex Chinese. If multiple verses are used, I would recommend to stored multiple index as a string with semicolon as the delimiter, such as Mark 6:34-44;John 6:35,63. The application will need to parse the string and display different referenced verses.

Design Area 4: Lesson Administration

- Two tables are used here: LessonTracker and Attendance
- LessonTracker stores the planned date for each lesson and whether the lesson is skipped or not. When a lecture is recorded, it stores the audio and/or video links.
- The PlannedStartDate can be used by the User UX to determine which lessons should not be displayed to the end users.
- Attendance represents the attendance record for each member. When a new member is added to a group, the program will prepopulate all attendance table for that member with default attendance field “IsAttended” set to false. When the actual attendance event is recorded, it will change “IsAttended” to true if the member attended the lesson.

Design Area 5: Member Registration

- Five tables are used here: Member, MemberChild, Church, Group, BSFGlossary
- Member table is the main table with most of the member info. BSFGlossary is referenced here for Marriage condition, and Preferred Language.
- Church represents the predefined a set of know church for member to select from.
- MemberChild provides a one-to-many options for member to enter multiple children.
- Initially when the user registered, the registrationdate is captured. But no group is assigned yet. When the class admin assigns a group, it records the GroupAssignedDate. (this moves the new member to approved status)