**API Algorithms**

**Add Subject Code**

1. Check the SUBJECT table if subject code already exists and isActive=1.
2. If subject code exists the parameter subject code is incorrect.
3. Else Add the subject code in SUBJECT table.

**Modify Subject Name**

1. Check the SUBJECT table if subject code already exists and isActive=1.
2. If subject code does not exist parameter subject code is incorrect.
3. Else Modify the name in SUBJECT table.

**Delete Subject Code**

1. Check the SUBJECT table if subject code already exists and isActive=1.
2. If subject code does not exist parameter subject code is incorrect.
3. Else change isActive to 0.

**Addition of a Chapter**

1. Check the SUBJECT table if subject code already exists and isActive=1.
2. If subject code does not exist parameter subject code is incorrect.
3. Check the TEACHER table if username already exists and isActive=1.
4. Check SUBJECT\_UNDER\_TEACHER table if that teacher has that subject.
5. Check if Chapter Name is already available

**Explanation:**

REGEXP is regular expression operator in SQL which checks if a value matches a regular expression.

LOWER is a function in SQL which converts a string to lower case. (I have used it to perform a case insensitive search)

XP is a function in “library.php”. This takes a string as a parameter and returns a regular expression pattern for that string.

Example: $exp = XP(“Newton Loves Apple”). Now the strings like

“ newton loves apple ”,

“ newton loves apple” will match the expression $exp.

But “Newton Loves Apple” will not match the expression $exp.

LOL this string was parameter of XP. Actually, this string contains ‘N’, ‘L’, ‘A’ three uppercase characters and XP uses lowercase characters to build the expression. This is the reason we need to use LOWER in SQL.

“new ton loves apple” will also not match $exp. This is the main difference between using noSpace and using XP.

1. If chapter already exists in database do not add it.
2. If all the above tests are passed, we are ready to put the chapter in database. Make sure the column noOfQues in table CHAPTER has default value 0.

**Chapter name modification**

1. Check the CHAPTER table if id exists and isActive=1.
2. If id does not exist parameter id is incorrect.
3. **Check if new chapter name is already available in the database.**
4. **If new chapter name is available do not modify it.**
5. If all the above tests are passed, we are ready to modify the chapter.

**Deletion of chapter**

1. Check the CHAPTER table if id exists and isActive=1.
2. If id does not exist parameter id is incorrect.
3. If all the parameters are correct set isActive = ‘0’.

**Add a question**

1. Check the CHAPTER table if chapterId already exists and isActive=1.
2. If chapterId does not exist parameter chapterId is incorrect.
3. **Now Stop here. We have to check some other things also.**
4. Go to CHAPTER table with chapterId and retrieve subjectID and teacherId.
5. Check if subjectID is valid and teacherId is valid.
6. Check the SUBJECT\_UNDER\_TEACHER if Teacher has that subject.
7. If all the above tests are passed, we are sure that subject, teacher, chapter all are valid.
8. Now proceed to add the question.

**Modify a question**

1. Check if Question id is valid.
2. Delete the Question. (I am joking. Set isActive to 0)
3. Insert a new Question.