School Performance Measurement K-12th

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Problem Definition:

School education is an important and fundamental aspect of a student's life. It sets the base for the growth of a student. Having said that, schools find it hard to produce expected results. The results do not match the target set by the institution. There are many factors such as fast-changing technologies associated with this. The schools have to be proactive in upgrading themselves to the changes. In order to achieve this, the schools have to set up a performance measurement mechanism which will use defined standards to provide a quantifiable rating of various attributes associated. The school can analyze the rating and work towards improvising their system. Also, from the student's perspective they have little awareness about the importance of subjects and lack perspective on opportunities after schooling based on the subject stream they choose. To address these challenges, our aim is to create an application that provides extensive insights into the scope of performance improvement for the schools and contributes to the development of the students. The application will derive ratings for the attributes like subjects and their stream, faculty and teaching methods. The school can utilize them for devising a long-term academic plan to create an impactful environment.

Problem solution:

The application we create will help the school officials to get information on Graduated students who are studying Bachelor's degree from a particular stream, the pass percentage comparison using historical data, the count of students opting a particular stream and the student gender ratio for every stream. The data will be gathered for every stream offered in the school. This data can be analyzed and deliverables can be set for the further course of action. The students can understand the demand, reviews and structure of a subject stream before selecting a major.

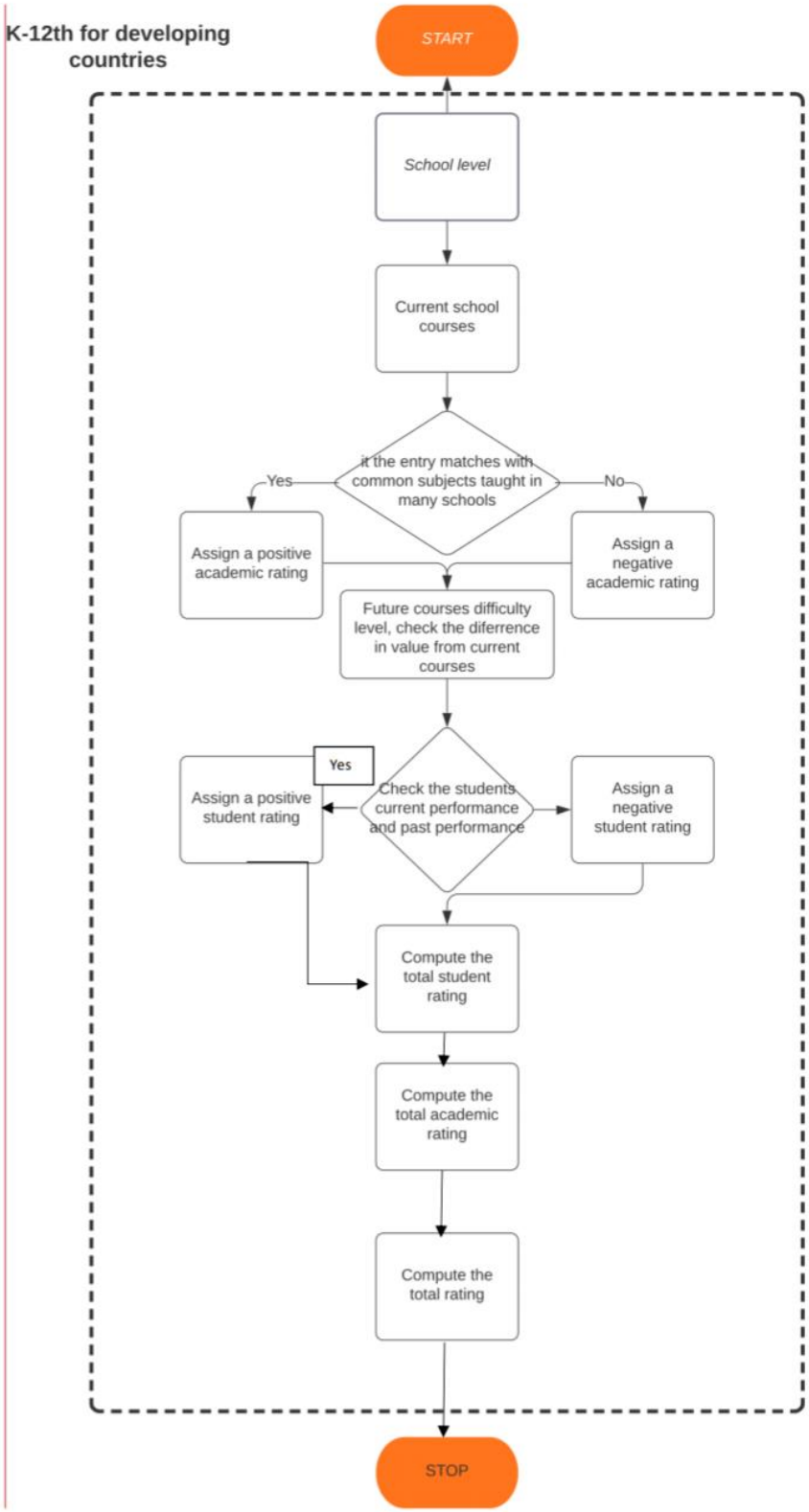
Rating process:

Below are the different criteria used to rate a subject offered in the school

- ✓ ***Current courses taught*** : The purpose of this method is to compare the courses which are taught in various schools in the city in order to check if the coursed are according to the trend followed by other schools and thus keeping the courses updated. . The weightage for this criterion is 10%.
- ✓ ***Number of students opting for Bachelor study*****:** The purpose of school education is to provide a strong base, opportunities available to the students based on which they can decide to pursue a Bachelor's degree in the subject of their interest. Hence this is considered to be an important factor in determining the rating of a subject. The subject feedback class has a method – getStudentsStudyingBachelors() which calculates the number of students pursuing a Bachelor's degree and thus we get the courses taken by the student were useful and so we can keep them in syllabus and courses student did not take will be discarded when compared on large scale. The weightage for this criterion is 30%.
- ✓ ***Number of faculty assigned to a particular subject***: This will guide the students to decide the availability of faculty per year in a particular subject. If there are enough faculty for a subject, the students can get a more personalized training. We have a method – getFacultyCount() to determine the available faculty count. The weightage for this criterion is 10%.
- ✓ ***Number of students enrolled in a subject*****:** This contributes to 30% of the rating criterion. The method – getSubjectPopularity() provides the count of students enrolled in a subject. The school can increase the number of staffs, plan for additional training sessions and introduce innovative structure based on the student enrollment count and also the school gets popular subjects in the course and match it with the subjects taken by student which are pursuing graduation thus keeping the subjects aligned to trend and popularity.
- ✓ ***Performance history of student*****:** The method – getStudentAggregatePercentage() provides the aggregate score of a student. The school officials can utilize this to compare current student performance with history. They can introduce focused trainings to improvise the student's ability. This contributes to 20% of the rating criterion.

This all percentage can be combined and subjects with highest percentage can thus the syllabus can be updated accordingly.

Flow Diagram:



UML Class Diagram: