CELEBAL TECHNOLOGIES

Problem Statement:

A college needs to develop a system to allocate Open Elective Subjects to its respective students. The way the system would work is that each student is allowed 5 choices with the respective preference, where number 1 indicates the first preference, number 2 indicates second preference and so on, the subjects are supposed to be allotted on the basis of the Student's GPA, which means the student with the students with the highest GPAs are allotted the subject they want. Every subject has a limited number of seats so if a subject has 60 seats and all of them are filled then the student would not be allotted his first preference but instead second would be checked, if the second preference is full as well then the third preference would be checked, this process would be repeated till the student is allotted a subject of his/her choice. If in case all the preferences that the student has selected are already full, then the student would be considered as unallotted and would be marked so.

For example, Mohit has filled his 5 choices with the respective preferences and they are as following:

The below table has the subject to student mapping with the preference

Note: StudentId and SubjectId are foreign keys in this table.

Constraints: A single Student cannot select the same subject twice.

The below table has the subject to student mapping with the preference

Note: StudentId and SubjectId are foreign keys in this table.

Constraints: A single Student cannot select the same subject twice.

StudentId	SubjectId	Preference
159103036	PO1491	1
159103036	PO1492	2
159103036	PO1493	3
159103036	PO1494	4
159103036	PO1495	5

(Table Name: StudentPreference)

The below table has the details of subjects such as Subject Id, Subject name, and the maximum number of seats

Note: SubjectId is the primary key for this table

SubjectId	SubjectName	MaxSeats	RemainingSeats
PO1491	Basics of Political Science	60	2
PO1492	Basics of Accounting	120	119
PO1493	Basics of Financial Markets	90	90
PO1494	Eco philosophy	60	50
PO1495	Automotive Trends	60	60

(Table Name: SubjectDetails)

The below table has the student Details such as StudentId, StudentName, GPA and their Branch:

Note: StudentId is the primary key for this table

StudentId	StudentName	GPA	Branch	Section
159103036	Mohit Agarwal	8.9	CCE	A
159103037	Rohit Agarwal	5.2	CCE	A
159103038	Shohit Garg	7.1	CCE	B
159103039	Mrinal Malhotra	7.9	CCE	A
159103040	Mehreet Singh	5.6	CCE	A
159103041	Arjun Tehlan	9.2	CCE	B

(Table Name: StudentDetails)

Final Resultant Table if the student has been allotted to a subject:

SubjectId	StudentId
PO1491	159103036

(Table Name: Allotments)

Final Resultant Table if the student is unallotted:

StudentId
159103036

(Table Name: UnallotedStudents)

Your Task is to write a Stored Procedure to assign all the students to a respective subject according the above stated workflow.