

CASE BACKGROUND

ABC education provider is planning to automate the manual process for fees management, unit enrolment, and student performance. In this project, I will help them with database implementation by creating stored functions and stored procedures to handle scenarios involving fees management, unit enrolment, and student performance. Business rules that are relevant to your tasks are provided below.

Business Rules:

BR1. A unit can only be registered in if seats are available, and the student is not already enrolled in the same unit in the same semester.

BR2. A student must have paid all outstanding fees¹ from previous semester² before they can register for a new unit.

BR3. Students can enrol in up to 6 units per semester, with no more than 2 advanced-level units.

BR4. If a student drops out after the no-penalty deadline, a dynamic penalty fee (i.e., \$600 penalty for advanced units and \$400 otherwise) based on the unit level is charged.

BR5. A student's overall performance, reflected by their average grade across all completed units, determines their eligibility for enrolling in advanced-level units.

BR6. If a student has an unpaid balance from previous semester or has received a score below 50 marks in more than 2 units, they will not be allowed to register for any advanced-level unit.

1. For students with no outstanding fees, the status will be marked as "paid". If there are any outstanding fees (such as tuition fee, late unit enrolment fee, dropped unit penalty), the status will be marked as "unpaid".
2. "previous semester" does not necessary refer to the immediate previous semester.

Task 2:

Write a stored function that determines a student's total outstanding balance, including payment for late penalty and dropped units.

Task 3:

Write a stored procedure that implements business rules BR6, BR2, BR4 such that the following requirements are met:

1. Prevent students with an outstanding balance or more than 2 failed units from enrolling in advanced-level units (BR6),
2. Enforce the unit registration based on outstanding balance from previous semester (BR2),
3. Automatically apply a penalty for dropped units, if dropped after the no-penalty deadline (BR4),
4. Error handler must be implemented to handle exceptions