UTM
UNIVERSITI TEKNOLOGI MALAYSIA

Faculty of Computing

SECD2523-06 – DataBase

STUDENT MANAGEMENT SYSTEM

PHASE 2

CONCEPTUAL DESIGN

SECTION : 06

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1. Introduction

Recently there are a lot of students enrolling in different universities every year, because of their high ranking and reputation. And from that the students expect an efficient and high level of management. The university system may use an inefficient database system or a file-based approach which will make it difficult to maintain the growing volume of students' information recorded. And this requires a new system that uses the database approach to maintain the student's information efficiently and effectively. An effective student management system is the base of providing quality services for the different students and makes it easier for the different faculties to maintain and manipulate this information. From that the development of a new student management system will be effective, it will enhance the overall processing and retrieval of information, reduce data redundancy and the overall student registration experience.

2. Data Flow Diagram

3. Data & Transaction Requirement

3.1 Proposed business rule:

Student:

1. Enrolls at the university.
2. View the courses.
3. Drop courses.
4. Pay tuition fees.

Staff at faculty:

1. Registers students at the specified faculty.
2. Manage students' issues regarding courses.
3. Update courses and their information.

3.2 Proposed data & transactional:

Student:

This table will include students' matric number as a primary key, students name, address, list of courses, degree, faculty name as a foreign key to link to Faculty table and transaction ID to link to Transaction table.

The student can enroll at the university, pay the tuition fees, be registered by the faculty and view and drop courses.

Faculty:

This table will include faculty name as a primary key, a multivalued matric number containing the registered students matric numbers in the faculty and it is used as a foreign key and a department number.

The faculty can register students, update the course information and it is managed by the university.

University:

This table has information about the university. It contains university name, university address, university rank and faculty names inside it and it is used as a foreign key to link the faculty table.

The students can enroll at the university and the university manages its faculties.

Course:

This table contains course code used as a primary key, faculty name used as a foreign key, course name, section number and credit hours.

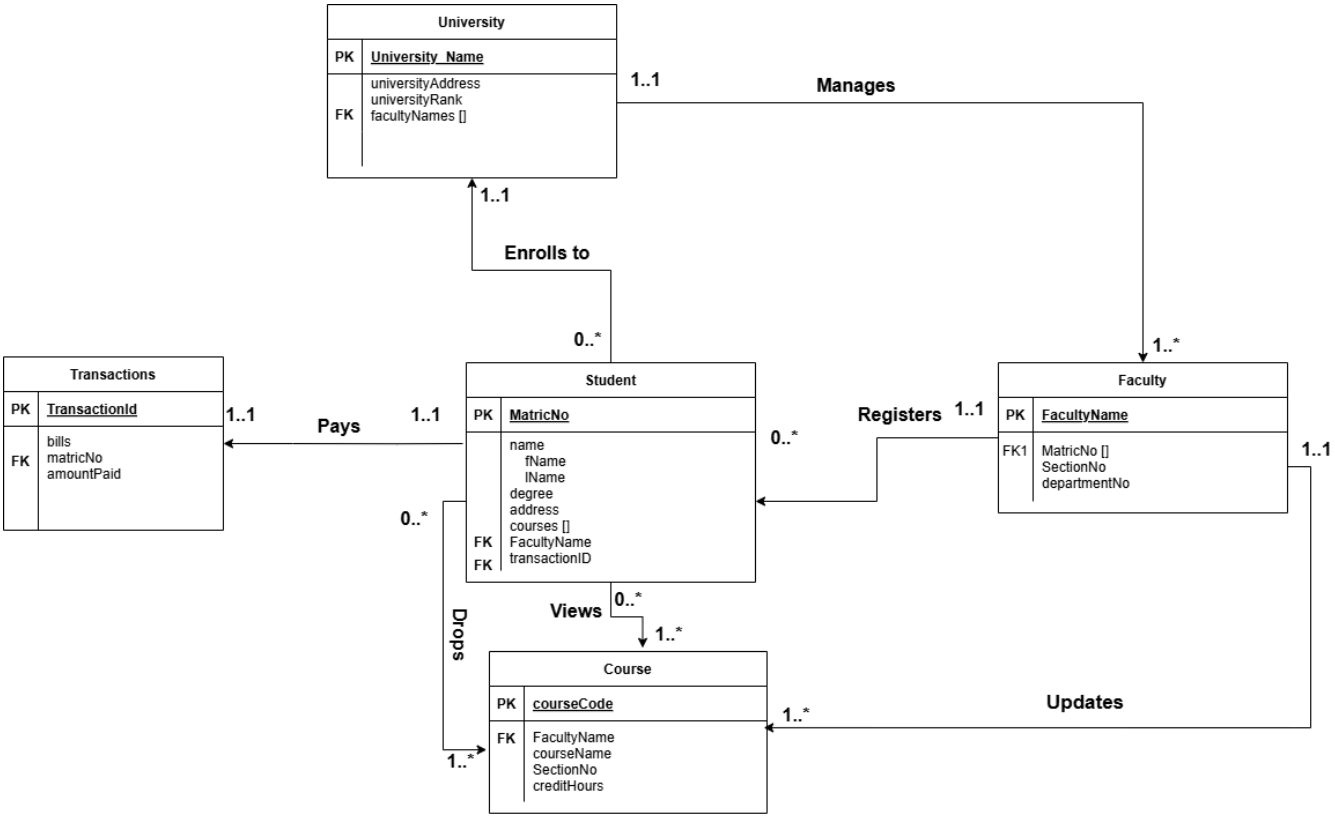
This table is accessed by the Student and Faculty, it can be viewed and deleted by the students from their registered courses and updated by the Faculty.

Transactions:

This table contains the transaction id as a primary key, amountPaid, bills, and matric number to link to the Student table.

This table is accessed by students which can pay the tuition fees.

4. Database Conceptual Design



5. Data Dictionary

6. Benefit and summary of the proposed system

6.1 Benefits

- General understanding of the system
- What entities the system deals with

- Demonstration of entities attributes
- The relationship of the entities
- A concept of how the entities interact with the system
- The complexity is the system
- Implementation of the system graphically

6.2 Summary