Student Activities Office Management System

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Benyaich Rim

El Alami Aymane

CSC 3326 01

Pr. Nasser Assem

Al Akhawayn University

Objectives

1) Create events planned by clubs.

2) Manage all the clubs' members.

3) The SAO Advisor can have a follow up of all activities organized by clubs.

Feasibility Study

What are the current problems?

Every event proposal and form that is given to the Student Activity Office is entered manually and using sheets. Thus, anything could get lost or destroyed resulting in gone information for good.

How will the proposed system help?

Our system's primary role is to be able to make proposals for events and generate a schedule that would allow a follow up of all activities, in addition to the club members and some additional features required by the client.

Users?

Presidents of Clubs that would enter information about the clubs, their members and activities, and members of the SAO responsible for the administration such as the Advisor and the Officer.

Schedule?

We'll be working on the project throughout the whole semester.

Requirements' Specification

I. Non-Functional Requirements

- Clear and simple to use Graphical User Interface.
- Multiple accounts: SAO board account so that they would manually confirm the information about events (Schedule) and an account for Clubs presidents in order to show the planned activities and other details concerning the club.

II.   Functional Requirements

- The Software should be able to provide digital forms for the president clubs for different types of activities.
- The Software should also be able to generate a schedule of the week, updating itself each time an event is entered (handling exceptions such as already taken spots).
- The Software should also keep track of the clubs members and the numbers of activities organized to have proof of the most active clubs (To whom prices would be offered)

Project Management Plan:

1. Dates and Tasks.
    - Project Proposal: Feb 7th, 2020
    - Meeting with client: First week
    - Design: Second week
    - Project Mid Term Report: Mar 18th, 2020
    - Implementation of the Project: April 12th, 2020
    - Project Final Report, April 29th, 2020

2. Who is working on what?

Everything related will be worked on in teams. Aymane having a deeper understanding about the SAO work and needs, it will be easier to talk to the department and get detailed specifications and accurates need,

3. Procedures that should be followed to meet the requirements

The specifications and requirements will always be feedbacked from the department, we also try to get some feedback from the club leaders and the active members. As a team, we will be working using github to work together easier.

Entity Relationship Diagram

Business Rules

These are the business rules followed by the teams as constraints:
- A student can be a member of many clubs.
- A club has a minimum of 10 students.
- A club can organize many events.
- An event cannot take place without the approval of a SAO Officer and the SAO Office.
- Each club has 4 members considered the board.
- Each club has a balance and it gets subtracted from after each event.

Normalization

In order to normalize, we begin with a 1 NF where each cell contains a single value and each record is unique. At first it is not the case, as shown below.

ClubId	ClubName	StudId	StudFName	StudLName	Year	Sem
1	Computer Science for Innovation	25469	Rim	Benyaich	2020	Spring
1	Computer Science for Innovation	67632	Aymane	El Alami	2020	Spring

1	Computer Science for Innovation	65814	Kenza	Benyaich	2020	Spring
1	Computer Science for Innovation	69584	Imane	Chkoukout	2019	Fall
2	ACM	69588	Sara	Berrada	2019	Fall
2	ACM	25496	Rim	Benyaich	2019	Fall
2	ACM	67632	Aymane	El Alami	2020	Spring
3	Japanese Club	98563	Hamza	Slaoui	2019	Fall
3	Japanese Club	12369	Kaoutar	Arhlane	2019	Fall
4	Choir	67632	Aymane	El Alami	2020	Spring
4	Choir	25496	Rim	Benyaich	2020	Spring
4	Choir	69584	Imane	Chkoukout	2019	Fall

In order to move from the table above to a 1 NF we need to take off redundancies and define a primary key. We agreed in the team to go for a composite primary key holding both the club and the student Ids.
We get, then, the following dependency diagram:

ClubId	ClubName	StudId	StudFName	StudLName	Year	Sem

Now moving on to the 2 NF, here are the sub dependencies:

StudId -> StudFName, StudLName

ClubId -> ClubName

In order to get rid of them, we will proceed to a splitting of our table into three tables.

Table Student

StudId	StudFName	StudLName

We decided not to put the email as an attribute as it can be generated using the ID and appending to it "@aui.ma".

Table Member

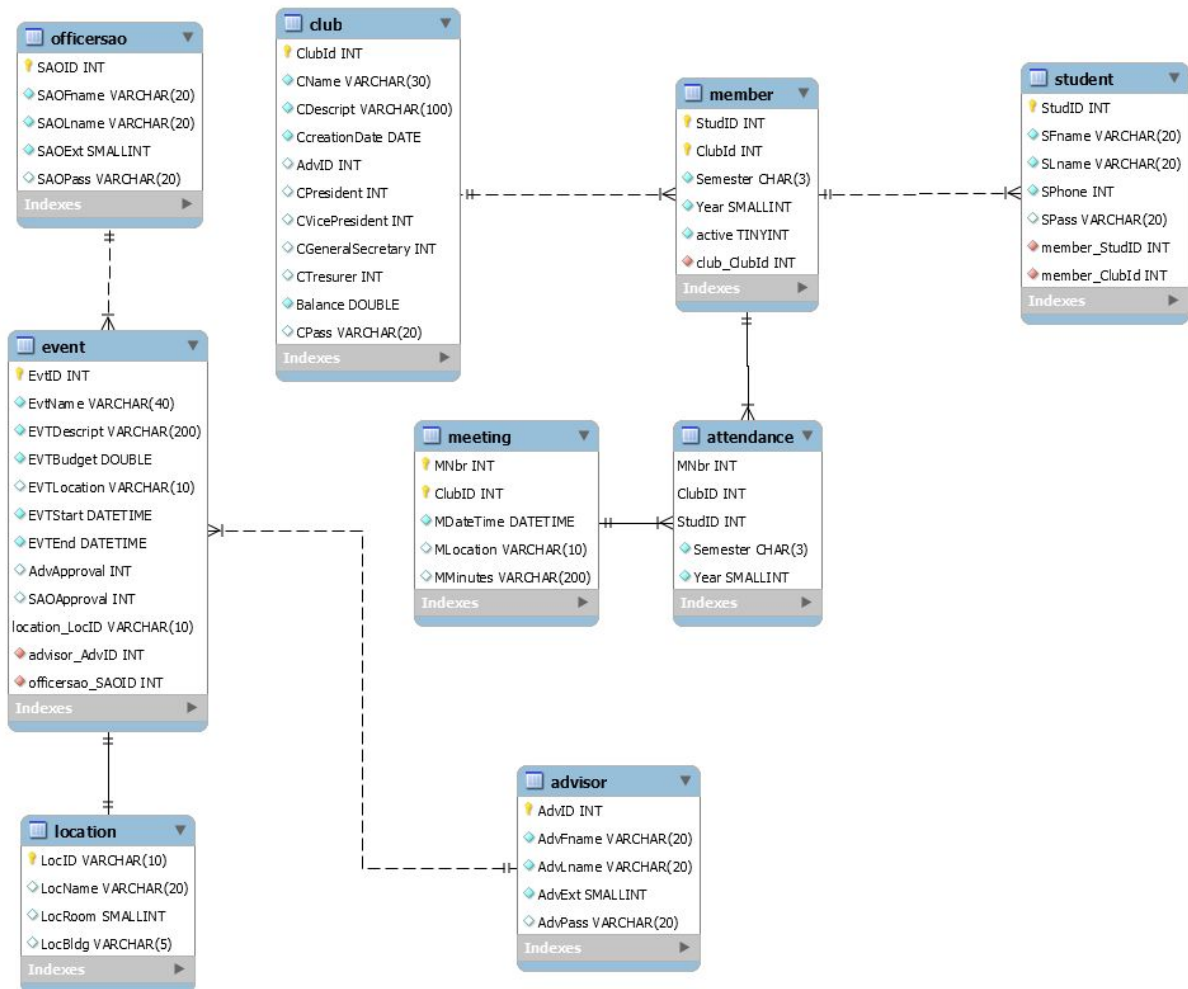| ClubId	StudId	Year	Sem

Table Club

ClubId	ClubName

We, now, eliminated all partial dependencies and can say that our tables are in fourth normal form as we will show in our ER Diagram..

Entity Relationship Diagram

Data Dictionary and Tables Definition

Data Dictionary

- Student: StudID, FullName, Phone, password
- Member(is_member): StudID, ClubID, Active, Year, Semester
- Club: Club ID, Club Name, Description, Advisor, password, balance, President, VP, General Secretary, Treasurer
- Advisor: AdvID, Adv Name, Ext, password
- Event: EvtID, EvtName, description, budget, Location, startdate, enddate, adv_APD, SAO_APD
- Location: Location ID, LocationName, Room, Blg

- SAO Officer: SAO_ID, SAO_Name, ext, password,
- Meeting: *MeetingID*, ClubID, date, locationID, MeetiinMinutes
- Attendance: StudID, MeetingID, ClubID, semester, year

Tables Definition

- Student: Table student contains the information about the students that can be part of one or more clubs.
- Member: Bridge table between the student and club that represents a list of the different members of a specific club.
- Club: Table containing club information such as Name or description.
- Advisor: Table that contains information about the clubs' advisors since every club has to have one and only one.
- Event: Table that contains the different information about a certain event that is either organized by a club or a SAO officer.
- Meeting: Table that represents the information about the meetings held by a club during the semester.
- Attendance: Bridge table between meeting and member that allows the club board or the SAO officer to keep track of who attended each meeting.
- SAO Officer: This entity describes a SAO officer and gives valuable information such as the rank (president, events coordinator, financial affairs coordinator...).
- Location: Every event has a location and this table has information about every location (room, building, etc..).

MySQL

Creation and Population of the Database + Queries

The creation and population of the database in addition to the queries will all be found attached in an independent SQL file with the report.