Gregg Ramirez-Urbina

CSC 4710 Database Systems

Term Project

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Sample Gym Database Report

Introduction:

In this report the objectives, scope, design and implementation of the database and interactive user interface created for this project will be reviewed and broken down. The inspiration for this project came from that I have spent plenty of time at gyms as both an employee and a member. These facilities need to have an quick and efficient way to store and update data in order to minimize costs and time required by employees to input and retrieve data.

Scope:

The scope for this project fits that of a single stand-alone gym but can easily be integrated for a franchise. All that is required is to add a new attribute for each entity that stores the location to where each element belongs to.

Implementation:

In order to implement the database, I utilized MySQL Workbench to construct a Schema comprised of seven tables: members, guest, employees, classes, equipment, maintenance and payroll. The members, guest and employees tables stored the names, ID numbers, and dates of birth for each of them respectively. While the ‘members’ table also includes each members’ membership and start date. The ‘employees’ table includes each employees position and hire date. And the ‘guest’ includes whether the guest has a valid waiver on file.

The class table contains information for each class for that month including: time, id\_number, instructor, required membership and class name. The instructor attribute contains the name of the instructor from among the employees whose position is instructor.

The equipment table contains information about every piece of equipment within the gym and status of whether the equipment is functional. If the equipment is ‘down’ or in need of maintenance then it will appear on the maintenance table where an employee can be assigned to repair it.

The last table, ‘payroll,’ is utilized to determine how much each employee should be paid each week. This table includes each employees id number, wage, weekly hours, and amount they earned that week.

The interface created to interact with the database utilized Python3 and its tkinter tools. It enables employees to add and remove members from the database, as well as lookup any members information.

Entity Relation Diagram:

Equipment

Teaches

Class

Member

Guest

Employee

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Maintains

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Conclusion:

The database layout and design were very convenient and easy to read as well as easy to edit. So, I believe they completed their objective even though the interface still needs to have more features before it is ready for real world application.