SYRACUSE UNIVERSITY

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IST 659-Project Design Repo

1. Project Summary

The project is on designing a centralized database for Syracuse University Students for Community Safety (SCS) which handles the security of the residential halls. The RSA is responsible to monitor public halls by checking student ID cards and ensuring that an unauthorized person cannot enter residential halls. It keeps a track of visitors who enter the residential halls by recording their details.

There are students who work in RSA employed by the SCS for shifts. However, there are certain times when a student wants to drop a particular shift, in this case, they have to come to the SCS office and inform them in advance. A book is maintained in which every week, the shifts which are put for substitution are entered. Another student who wishes to take up the shift can visit the SCS office and pick up shifts. However, this entire process is done manually and consumes time, also, in times where a person might be ill or is unable to visit the office faces problems. In order to solve this problem, an automated system for maintaining shifts can be adopted which will be efficient for the entire process.

There is a vast amount of data which is difficult to maintain as the records include numerous students, shift of halls and time schedule. Students maintain a schedule of their shifts that they have to maintain and thus there is need for a structured format to maintain the records. The information fields include employee details, their type, schedule and payroll. This will help to reduce the time required for the manual storage and make the system easier to use.

As mentioned, a centralized solution for maintaining a database for all the employees, locations and shifts will be beneficial. Another person who wants to pick up a shift can access this system and pick up a shift as per his requirement. It will also be useful for the SCS who can keep a track of the employees. The proposed solution will be called subitup and will include functions for dropping shifts along with specifying the reason for the same. It will also have option to pick up the shift for another employee. It does not include a function for registering for the RSA and giving the exam online as physical verification of the employee is essential. The proposed solution is a centralized repository containing information about all the employees, their shifts, halls, payroll, managers.

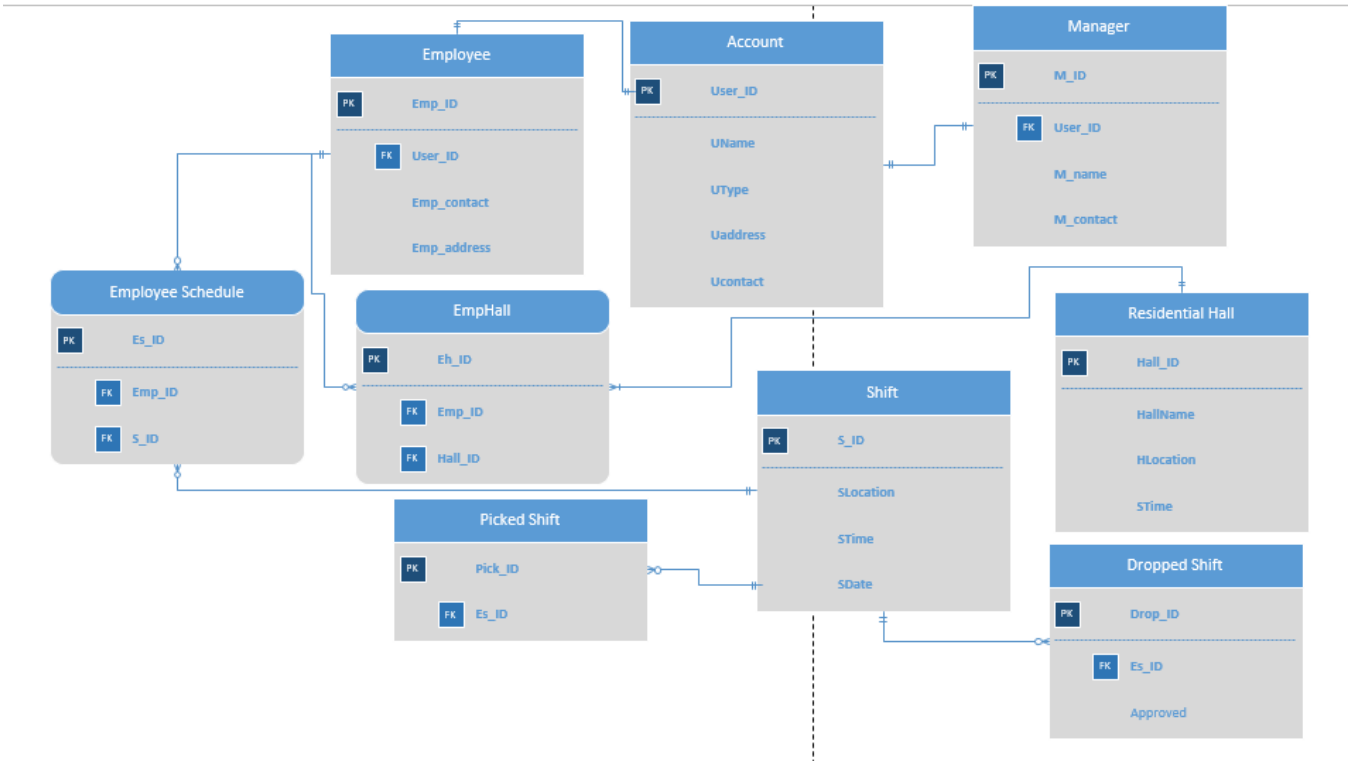
The report has design modules which specifies the summary report, entity tables, relational data model, business rules and data questions which are necessary for the development of any module. It includes entity relationship diagram (ERD) including all the entities, attributes and relation between the participating entities and the major issues. It also answers all the major data questions and the business rules

2. Entity and Attribute Table:

Objects	Description
1. Account	Specifies whether employee or manager
a. User_ID	Primary key for identification of user
b. UName	Name of user
c. Utype	Type of the user
d. Ucontact	Contact of the user
e. Uaddress	Address of the user
2. Residential Halls	Specifies the hall in the university
a. Hall_ID	Primary key for the hall
b. HallName	Name of the hall
c. HLocation	Location of the hall
d. STime	Time of the Shift
3. Employee	
a. Emp_ID	Primary key for employee
b. User_ID	Foreign key for identifying employee
c. Emp_contact	Contact of the employee
d. Emp_address	Employee address
4. Employee Schedule	Schedule of the employee
a. Es_ID	Surrogate key for employee schedule
b. Emp_ID	Foreign key identifies employee
c. S_ID	Foreign key identifies shift
5. Manager	The manager who supervises the shifts
a. M_ID	Primary key for identifying managers
b. User_ID	Foreign key specifies user
c. M_name	Name of the employer
d. M_contact	Contact of the manager
6. Shift	The shift of the employees
a. S_ID	Primary key for shift
b. SLocation	Location of shift
c. STime	Time of the shift
d. SDate	Date of the shift
7. EmpHall	The hall where employees work
a. Eh_ID	Surrogate key for employee hall
b. Emp_ID	Foreign key specifies employee

c. Hall_ID	Foreign key specifies hall
8. Picked Shift	The shifts which are picked
a. Pick_ID	Primary key for picked shift
b. Es_ID	Surrogate key specifies Employee schedule
9. Dropped Shift	The shifts which are dropped
a. Drop_ID	Primary key for dropped shift
b. Es_ID	Surrogate key specifies Employee schedule
c. Approved	Specifies if approved or not by manager

3. Relational Data Model:



4. Business Rules:

1) An employee needs to pick one-night shift.
2) Every user must be a student, employee or manager.
3) Once a shift has been dropped, the same student cannot pick it.
4) A student cannot be free of the shift till someone else picks it.
5) It is allowed to drop a shift till a week prior to the shift day.

6) A student is allowed to work a maximum of 20 hours per week.
7) Whatever maybe the job of the student, the hours worked for a student is maintained in a single database.
8) It is allowed to have a sick call prior to four hours of the shift.
9) An employee is not allowed to have a no-show without informing the managers in any situation.

5. Major data questions:

1) How many employees are working at a particular hall?
2) What are the shift timings for a particular employee?
3) How many employees are working at a hall at a particular time?
4) What are the number of hours a particular employee is working?
5) Is the reason for dropping a shift valid?
6) Has the student arrived for his shift?
7) Is the student receiving the pay for the number of hours he is working?
8) Has the person who picked up the shift arrived for the shift?