University of British Columbia, Vancouver
Department of Computer Science

CPSC 304 Project Cover Page

Milestone #: _____1__

Date: ____July 10 2024_____

Group Number: ___23_____

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By typing our names and student numbers in the above table, we certify that the work in the attached assignment was performed solely by those whose names and student IDs are included above. (In the case of Project Milestone 0, the main purpose of this page is for you to let us know your e-mail address, and then let us assign you to a TA for your project supervisor.)

In addition, we indicate that we are fully aware of the rules and consequences of plagiarism, as set forth by the Department of Computer Science and the University of British Columbia

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Domain of the application:

The application domain of our project in Public Facility Management and Maintenance.

This application is designed to assist in managing the allocation of budgets, maintenance of electronic devices, scheduling of events in rooms and buildings, and overall maintenance requests within a university or similar large institution.

Aspect modeled by the database:

The database models 3 aspects of the facility management domain, which are user management, maintenance management, and budget management:

User Management:

The database categorizes users into different types: Manager, Event Organizer, Staff Member, and other users, each with specific roles and permissions

Managers can add budgets, add devices to rooms, and perform budget allocation for different time periods.

Event Organizers can create, modify, and delete events in rooms, as well as find suitable rooms based on the number of attendees and required devices.

Staff Members can create servicing contracts for maintenance requests, manage these requests, and remove them once completed.

Maintenance Management:

The database keeps track of devices in rooms, including maintenance schedules and periods.

Users can submit maintenance requests specifying the issue, description, and severity.

Staff Members can view, sort, and filter maintenance requests by severity, and find devices that need maintenance based on the time elapsed since the last maintenance.

Budget Management:

The database allows Managers to allocate budgets for various time periods.

It tracks the usage of devices and calculates the energy cost associated with their use.

Managers can analyze budget requirements based on energy costs for different dates and durations.

Event Management:

Event Organizers can find rooms based on the number of attendees and the availability of necessary devices like projectors.

They can manage the scheduling of events, ensuring that rooms and resources are properly allocated.

Real-Life Application Examples:

Maintenance Requests: A user submits a maintenance request for a projector in a lecture hall. The Staff Member checks the database, finds the request, and assigns a servicing contract to a company. Once the repair is completed, the request is marked as completed and removed from the active list.

Event Scheduling: An Event Organizer needs a room for a seminar with 50 attendees and requires a projector and sound system at a particular time. They use the database to find and book a suitable room that meets these requirements.

Budget Allocation: A Manager analyzes the energy consumption of devices over the past month. They notice that certain periods have higher energy usage and allocate a higher budget for those times to ensure sufficient resources are available.

Database Functionality

Submit and Manage Maintenance Requests:

- Users can submit maintenance requests for rooms and devices, specifying the issue, description, and severity.
- Staff members can view, sort, and filter maintenance requests by severity and date, and assign servicing contracts to resolve issues.
- The status of maintenance requests can be updated, and completed requests can be removed from the active list.

Manage Budgets and Energy Usage:

- Managers can allocate budgets for different time periods based on energy usage and device maintenance needs.
- The database will track the usage of devices, calculate energy costs, and provide insights into periods requiring higher budget allocations.

Schedule and Organize Events:

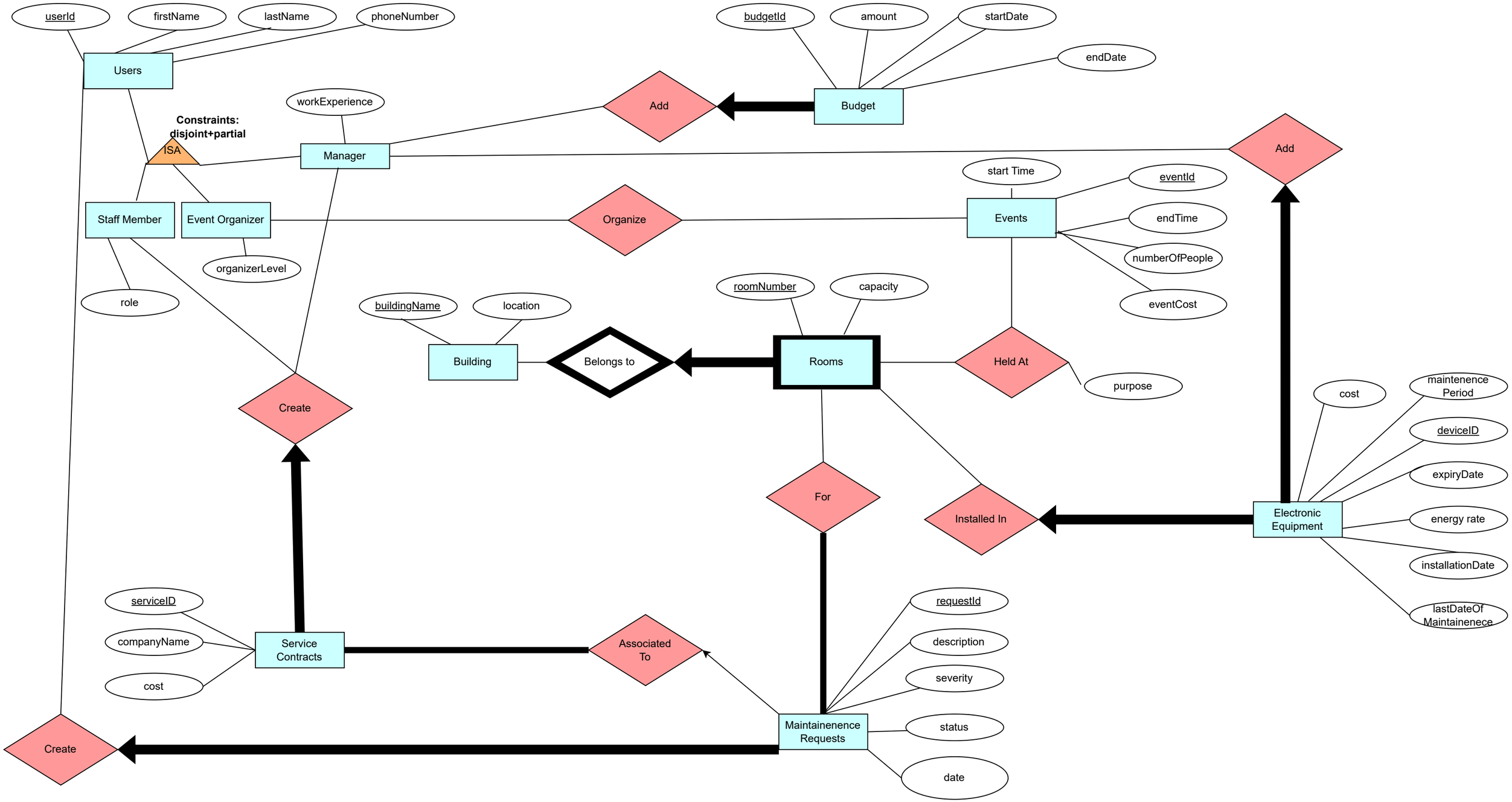
- Event organizers can find and book rooms based on the number of attendees and the availability of required devices such as projectors and sound systems.
- Events can be created, modified, or deleted, ensuring efficient room and resource utilization.

Application Platform

Oracle from the CS machines along with JDBC (Java/ Oracle). We will be programming in Java.

ER Diagram:

(PTO)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budgetId
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Budget
Add
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Constraints:
disjoint+partial
ISA
Manager
Add
start Time
eventId
endTime
numberOfPeople
eventCost
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Staff Member
Event Organizer
Organize
organizerLevel
role
roomNumber
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buildingName
location
Building
Belongs to
Rooms
Held At
purpose
Create
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lastDateOf
Maintainenece
For
Installed In
Electronic
Equipment
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companyName
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Contracts
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