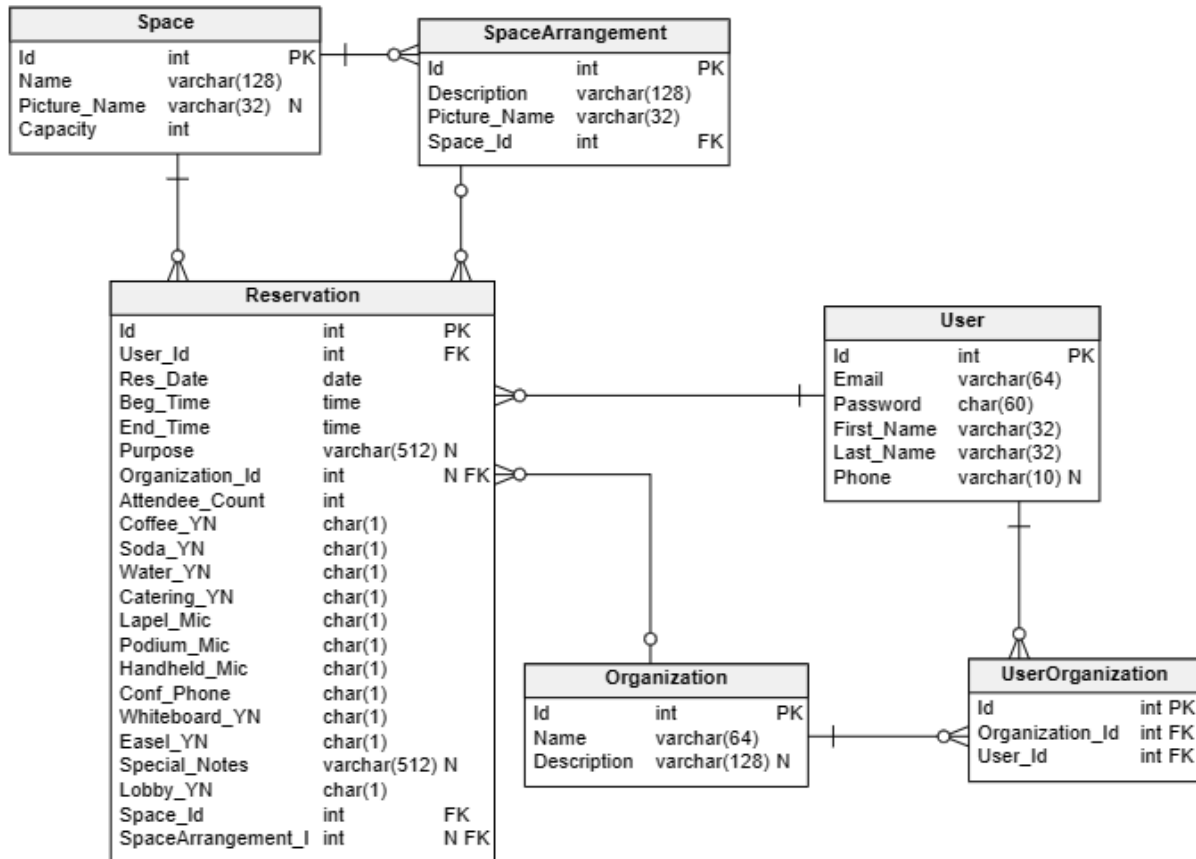# Diocese of Joliet Room Scheduler Database Design

November 12, 2023

Here is a proposed design for the backend database for the Diocese of Joliet Room Scheduler application, Roomie. We decided on a design that favors simplifying the application code over minimizing storage requirements.

Here is code to build this database in MySQL:

```
-- Table: Organization
CREATE TABLE Organization (
    Id int NOT NULL AUTO_INCREMENT,
    Name varchar(64) NOT NULL,
    Description varchar(128) NULL,
    CONSTRAINT Organization_pk PRIMARY KEY (Id)
);

-- Table: Reservation
CREATE TABLE Reservation (
    Id int NOT NULL AUTO_INCREMENT,
    User_Id int NOT NULL,
```

```sql
    Res_Date date NOT NULL,
    Beg_Time time NOT NULL,
    End_Time time NOT NULL,
    Purpose varchar(512) NULL,
    Organization_Id int NULL,
    Attendee_Count int NOT NULL,
    Coffee_YN char(1) NOT NULL DEFAULT 'N',
    Soda_YN char(1) NOT NULL DEFAULT 'N',
    Water_YN char(1) NOT NULL DEFAULT 'N',
    Catering_YN char(1) NOT NULL DEFAULT 'N',
    Lapel_Mic char(1) NOT NULL DEFAULT 'N',
    Podium_Mic char(1) NOT NULL DEFAULT 'N',
    Handheld_Mic char(1) NOT NULL DEFAULT 'N',
    Conf_Phone char(1) NOT NULL DEFAULT 'N',
    Whiteboard_YN char(1) NOT NULL DEFAULT 'N',
    Easel_YN char(1) NOT NULL DEFAULT 'N',
    Special_Notes varchar(512) NULL,
    Lobby_YN char(1) NOT NULL DEFAULT 'N',
    Space_Id int NOT NULL,
    SpaceArrangement_Id int NULL,
    CONSTRAINT Reservation_pk PRIMARY KEY (Id)
);

-- Table: Space
CREATE TABLE Space (
    Id int NOT NULL AUTO_INCREMENT,
    Name varchar(128) NOT NULL,
    Picture_Name varchar(32) NULL,
    Capacity int NOT NULL,
    CONSTRAINT Space_pk PRIMARY KEY (Id)
);

-- Table: SpaceArrangement
CREATE TABLE SpaceArrangement (
    Id int NOT NULL AUTO_INCREMENT,
    Description varchar(128) NOT NULL,
    Picture_Name varchar(32) NOT NULL,
    Space_Id int NOT NULL,
    CONSTRAINT SpaceArrangement_pk PRIMARY KEY (Id)
);

-- Table: User
CREATE TABLE User (
    Id int NOT NULL AUTO_INCREMENT,
    Email varchar(64) NOT NULL,
    Password char(60) NOT NULL,
    First_Name varchar(32) NOT NULL,
    Last_Name varchar(32) NOT NULL,
    Phone varchar(10) NULL,
    CONSTRAINT User_pk PRIMARY KEY (Id)
);

-- Table: UserOrganization
CREATE TABLE UserOrganization (
    Id int NOT NULL AUTO_INCREMENT,
```

```sql
    Organization_Id int NOT NULL,
    User_Id int NOT NULL,
    CONSTRAINT UserOrganization_pk PRIMARY KEY (Id)
);

-- foreign keys
-- Reference: Reservation_Organization (table: Reservation)
ALTER TABLE Reservation ADD CONSTRAINT Reservation_Organization FOREIGN KEY
Reservation_Organization (Organization_Id)
    REFERENCES Organization (Id);

-- Reference: Reservation_Space (table: Reservation)
ALTER TABLE Reservation ADD CONSTRAINT Reservation_Space FOREIGN KEY Reservation_Space (Space_Id)
    REFERENCES Space (Id);

-- Reference: Reservation_SpaceArrangement (table: Reservation)
ALTER TABLE Reservation ADD CONSTRAINT Reservation_SpaceArrangement FOREIGN KEY
Reservation_SpaceArrangement (SpaceArrangement_Id)
    REFERENCES SpaceArrangement (Id);

-- Reference: Reservation_User (table: Reservation)
ALTER TABLE Reservation ADD CONSTRAINT Reservation_User FOREIGN KEY Reservation_User (User_Id)
    REFERENCES User (Id);

-- Reference: SpaceArrangement_Space (table: SpaceArrangement)
ALTER TABLE SpaceArrangement ADD CONSTRAINT SpaceArrangement_Space FOREIGN KEY
SpaceArrangement_Space (Space_Id)
    REFERENCES Space (Id);

-- Reference: UserOrganization_Organization (table: UserOrganization)
ALTER TABLE UserOrganization ADD CONSTRAINT UserOrganization_Organization FOREIGN KEY
UserOrganization_Organization (Organization_Id)
    REFERENCES Organization (Id);

-- Reference: UserOrganization_User (table: UserOrganization)
ALTER TABLE UserOrganization ADD CONSTRAINT UserOrganization_User FOREIGN KEY
UserOrganization_User (User_Id)
    REFERENCES User (Id);

-- End of file.
```