-- CREATE USER 'newuser'@'localhost' IDENTIFIED BY 'password';

CREATE USER IF NOT EXISTS gatechUser@localhost IDENTIFIED BY 'gatech123';

DROP DATABASE IF EXISTS `cs6400\_sp23\_team098`;

SET default\_storage\_engine=InnoDB;

SET NAMES utf8mb4 COLLATE utf8mb4\_unicode\_ci;

CREATE DATABASE IF NOT EXISTS cs6400\_ sp23\_team098

DEFAULT CHARACTER SET utf8mb4

DEFAULT COLLATE utf8mb4\_unicode\_ci;

USE cs6400\_ sp23\_team098;

GRANT SELECT, INSERT, UPDATE, DELETE, FILE ON \*.\* TO 'gatechUser'@'localhost';

GRANT ALL PRIVILEGES ON `gatechuser`.\* TO 'gatechUser'@'localhost';

GRANT ALL PRIVILEGES ON `cs6400\_ sp23\_team098`.\* TO 'gatechUser'@'localhost';

FLUSH PRIVILEGES;

-- Tables

CREATE TABLE Household (  
Email varchar(250) NOT NULL,  
Square\_footage int NOT NULL,  
Home\_type char(50) NOT NULL,  
Cool\_setting int NULL,  
Heat\_setting int NULL,  
Zip\_code int NOT NULL,  
PRIMARY KEY (Email)  
);

CREATE TABLE Utility (  
Email varchar(250) NOT NULL,  
Utility char(250) NOT NULL,  
PRIMARY KEY (Email, Utility),  
FOREIGN KEY (Email) REFERENCES Household (Email)  
);

CREATE TABLE Appliance (  
Email varchar(250) NOT NULL,  
Appliance\_order\_num int NOT NULL UNIQUE,  
Appliance\_type char(250) NOT NULL,  
Model\_name varchar(250) NULL,  
Manufacturer\_name varchar(250) NOT NULL,

BTU\_rating int NOT NULL,  
PRIMARY KEY (Email, Appliance\_order\_num),  
FOREIGN KEY (Email) REFERENCES Household (Email)  
);

CREATE TABLE Air\_Conditioner (  
Email varchar(250) NOT NULL,  
Appliance\_order\_num int NOT NULL,  
Energy\_efficiency\_ratio float NOT NULL,  
PRIMARY KEY (Email, Appliance\_order\_num),  
FOREIGN KEY (Email) REFERENCES Appliance (Email),  
FOREIGN KEY (Appliance\_order\_num) REFERENCES Appliance (Appliance\_order\_num)  
);

CREATE TABLE Heater (  
Email varchar(250) NOT NULL,  
Appliance\_order\_num int NOT NULL,  
heater\_energy\_source char(250) NOT NULL,  
PRIMARY KEY (Email, Appliance\_order\_num),  
FOREIGN KEY (Email) REFERENCES Appliance (Email),  
FOREIGN KEY (Appliance\_order\_num) REFERENCES Appliance (Appliance\_order\_num)  
);

CREATE TABLE Heat\_Pump (  
Email varchar(250) NOT NULL,  
Appliance\_order\_num int NOT NULL,  
seasonal\_efficiency\_ratio float NOT NULL,  
heat\_performance\_factor float NOT NULL,  
PRIMARY KEY (Email, Appliance\_order\_num),  
FOREIGN KEY (Email) REFERENCES Appliance (Email),  
FOREIGN KEY (Appliance\_order\_num) REFERENCES Appliance (Appliance\_order\_num)  
);

CREATE TABLE Water\_Heater (  
Email varchar(250) NOT NULL,  
Appliance\_order\_num int NOT NULL,  
Capacity float NOT NULL,  
Current\_temp\_setting int NULL,  
BTU\_rating int NOT NULL,  
waterheater\_energy\_source char(250) NOT NULL,  
PRIMARY KEY (Email, Appliance\_order\_num),  
FOREIGN KEY (Email) REFERENCES Household (Email),  
FOREIGN KEY (Appliance\_order\_num) REFERENCES Appliance (Appliance\_order\_num)  
);

CREATE TABLE Power\_Generator (  
Email varchar(250) NOT NULL,  
Power\_order\_num int NOT NULL,  
Generation\_type char(50) NOT NULL,  
Battery\_storage int NULL,  
Avg\_kwh int NOT NULL,  
PRIMARY KEY (Email, Power\_order\_num),  
FOREIGN KEY (Email) REFERENCES Household (Email)  
);

CREATE TABLE Manufacturer (  
Name varchar(250) NOT NULL,  
PRIMARY KEY (Name)  
);

CREATE TABLE PostalCode (  
Zip\_code int NOT NULL,  
City char(250) NOT NULL,  
State char(50) NOT NULL,  
Latitude float NOT NULL,  
Longitude float NOT NULL,  
PRIMARY KEY (Zip\_code)  
);

CREATE TABLE Household\_Type (  
HomeType varchar(250) NOT NULL,  
PRIMARY KEY (Name)  
);

CREATE TABLE Appliance\_Type (  
Appl\_type varchar(250) NOT NULL,  
PRIMARY KEY (Name)  
);

CREATE TABLE Heater\_Energy\_Resource\_Type (  
Heater\_Energy\_Type varchar(250) NOT NULL,  
PRIMARY KEY (Name)  
);

CREATE TABLE Water\_Heater\_Energy\_Resource\_Type (  
WaterHeater\_Energy\_Type varchar(250) NOT NULL,  
PRIMARY KEY (Name)  
);

CREATE TABLE Power\_Generation\_Type (  
Power\_geo\_type varchar(250) NOT NULL,  
PRIMARY KEY (Name)  
);

-- Constraints Foreign Keys: FK\_ChildTable\_childColumn\_ParentTable\_parentColumn

ALTER TABLE Utility

ADD CONSTRAINT fk\_Utility\_email\_ household \_email FOREIGN KEY (email) REFERENCES `household` (email);

ALTER TABLE Appliance

ADD CONSTRAINT fk\_Appliance\_email\_ household \_email FOREIGN KEY (email) REFERENCES ` household ` (email);

ADD CONSTRAINT fk\_Appliance\_ManufacturerName\_Manufacturer\_name FOREIGN KEY (Manufacturer\_Name) REFERENCES Manufacturer (name);

ADD CONSTRAINT fk\_Appliance\_Appliance\_Type\_Appliance\_Type\_App\_Type FOREIGN KEY (Appliance\_Type) REFERENCES Appliance\_Type (Appl\_Type);

ALTER TABLE PowerGeneration

ADD CONSTRAINT fk\_PowerGeneration\_email\_ household\_email FOREIGN KEY (email) REFERENCES household (email);

ADD CONSTRAINT fk\_PowerGeneration\_Generation\_Type\_ Power\_Generation\_Type\_Power\_Gen\_Type FOREIGN KEY (Generation\_Type) REFERENCES Power\_Generation\_Type (Power\_Gen\_Type);

ALTER TABLE `AirConditioner`

ADD CONSTRAINT fk\_AirConditioner\_suemail\_suappl\_order\_num\_Appliance\_email\_Appl\_order-num FOREIGN KEY (su\_email, su\_ Appl\_order\_num) REFERENCES Appliance (email, Appl\_order\_num);

ALTER TABLE `Heater`

ADD CONSTRAINT fk\_Heater\_suemail\_suappl\_order\_num\_Appliance\_email\_Appl\_order-num FOREIGN KEY (su\_email, su\_ Appl\_order\_num) REFERENCES Appliance (email, Appl\_order\_num);

ADD CONSTRAINT fk\_Heater\_Energy\_Source\_Heater\_Energy\_Source\_Type\_Heater\_energy\_type FOREIGN KEY (Energy\_Source) REFERENCES Heater\_Energy\_Source\_Type (Heater\_energy\_type);

ALTER TABLE `Heat\_pump`

ADD CONSTRAINT fk\_Heat\_pump\_suemail\_suappl\_order\_num\_Appliance\_email\_Appl\_order-num FOREIGN KEY (su\_email, su\_ Appl\_order\_num) REFERENCES Appliance (email, Appl\_order\_num);

ALTER TABLE `Water\_heater`

ADD CONSTRAINT fk\_ Water\_heater \_suemail\_suappl\_order\_num\_Appliance\_email\_Appl\_order-num FOREIGN KEY (su\_email, su\_ Appl\_order\_num) REFERENCES Appliance (email, Appl\_order\_num);

ADD CONSTRAINT fk\_Water\_heater\_Energy\_Source\_Water\_Heater\_Energy\_Source\_Type\_WaterHeater\_Energy\_Type FOREIGN KEY (Energy\_Source) REFERENCES Water\_Heater\_Energy\_Source\_Type (WaterHeater\_Energy\_Type);

Not sure if these four are necessary, at lease one appliance and power generation in the list:

ALTER TABLE `AirConditioner`

ADD CONSTRAINT fk\_AirConditioner\_suemail\_suappl\_order\_num\_Appliance\_email\_Appl\_order-num FOREIGN KEY (su\_email, su\_ Appl\_order\_num) REFERENCES Appliance (email, Appl\_order\_num) ON DELETE CASCADE;

ALTER TABLE `Heater`

ADD CONSTRAINT fk\_Heater\_suemail\_suappl\_order\_num\_Appliance\_email\_Appl\_order-num FOREIGN KEY (su\_email, su\_ Appl\_order\_num) REFERENCES Appliance (email, Appl\_order\_num) ON DELETE CASCADE;

ALTER TABLE `Heat\_pump`

ADD CONSTRAINT fk\_Heat\_pump\_suemail\_suappl\_order\_num\_Appliance\_email\_Appl\_order-num FOREIGN KEY (su\_email, su\_ Appl\_order\_num) REFERENCES Appliance (email, Appl\_order\_num) ON DELETE CASCADE;

ALTER TABLE `Water\_heater`

ADD CONSTRAINT fk\_ Water\_heater \_suemail\_suappl\_order\_num\_Appliance\_email\_Appl\_order-num FOREIGN KEY (su\_email, su\_ Appl\_order\_num) REFERENCES Appliance (email, Appl\_order\_num) ON DELETE CASCADE;

ALTER TABLE Appliance

ADD CONSTRAINT fk\_Appliance\_email\_Household\_email FOREIGN KEY (email) REFERENCES Household (email) ON DELETE CASCADE,

ALTER TABLE PowerGeneration

ADD CONSTRAINT fk\_PowerGeneration\_email\_ household\_email FOREIGN KEY (email) REFERENCES household (email) ON DELETE CASCADE;