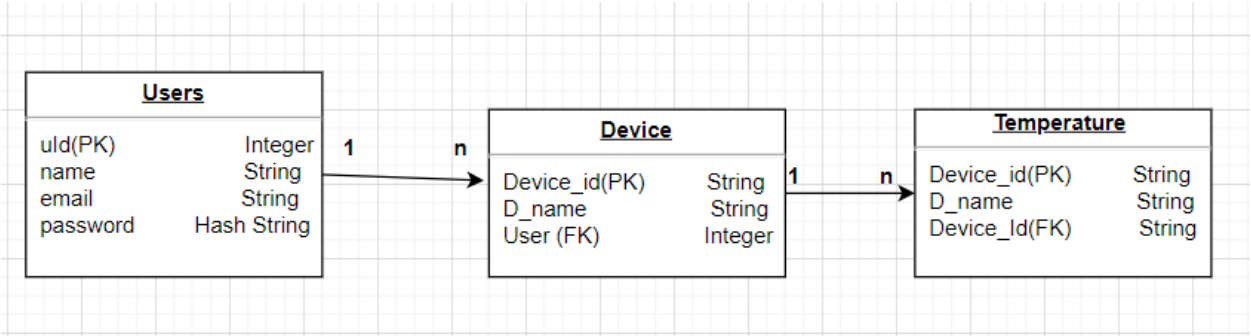
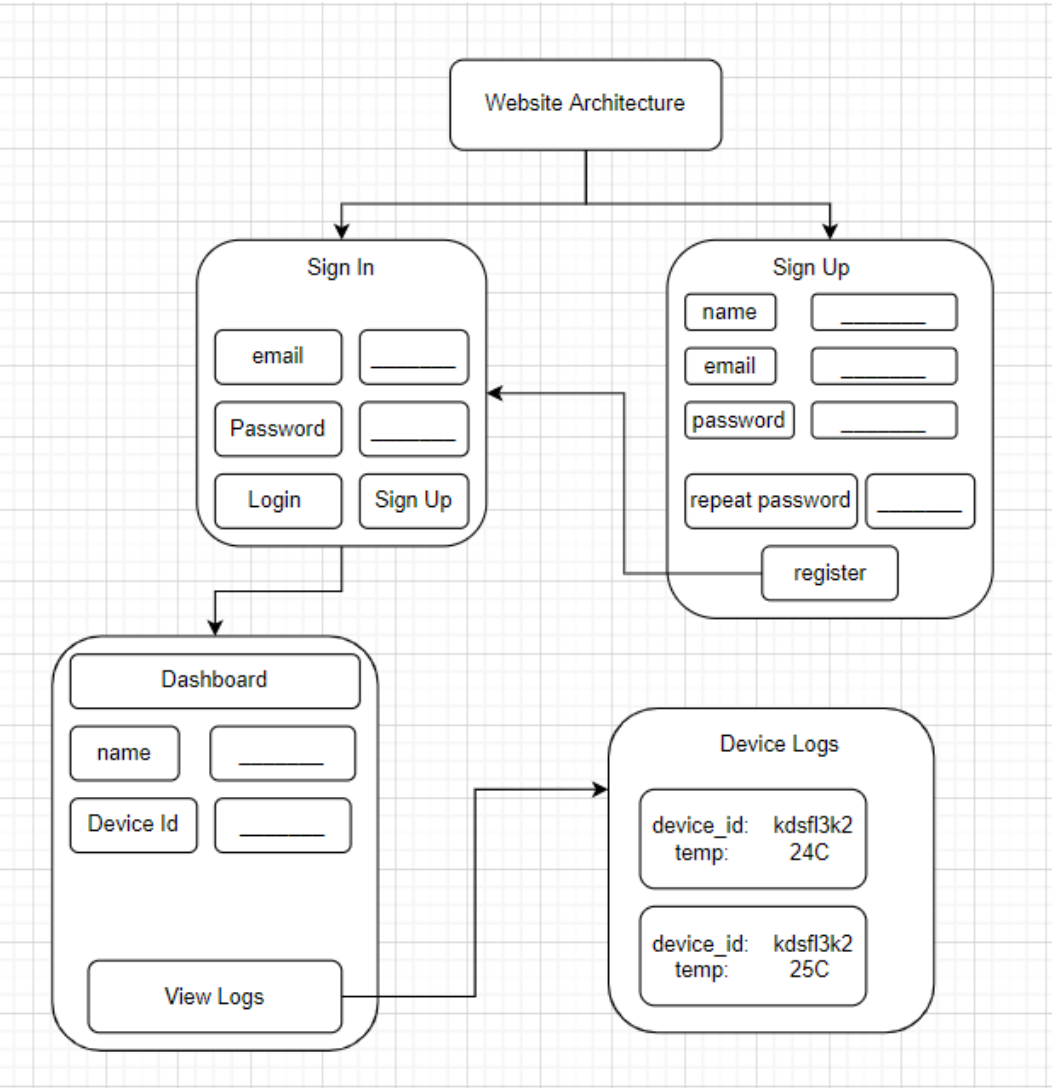
Architecture Design Decision

Database Architecture Design Choice



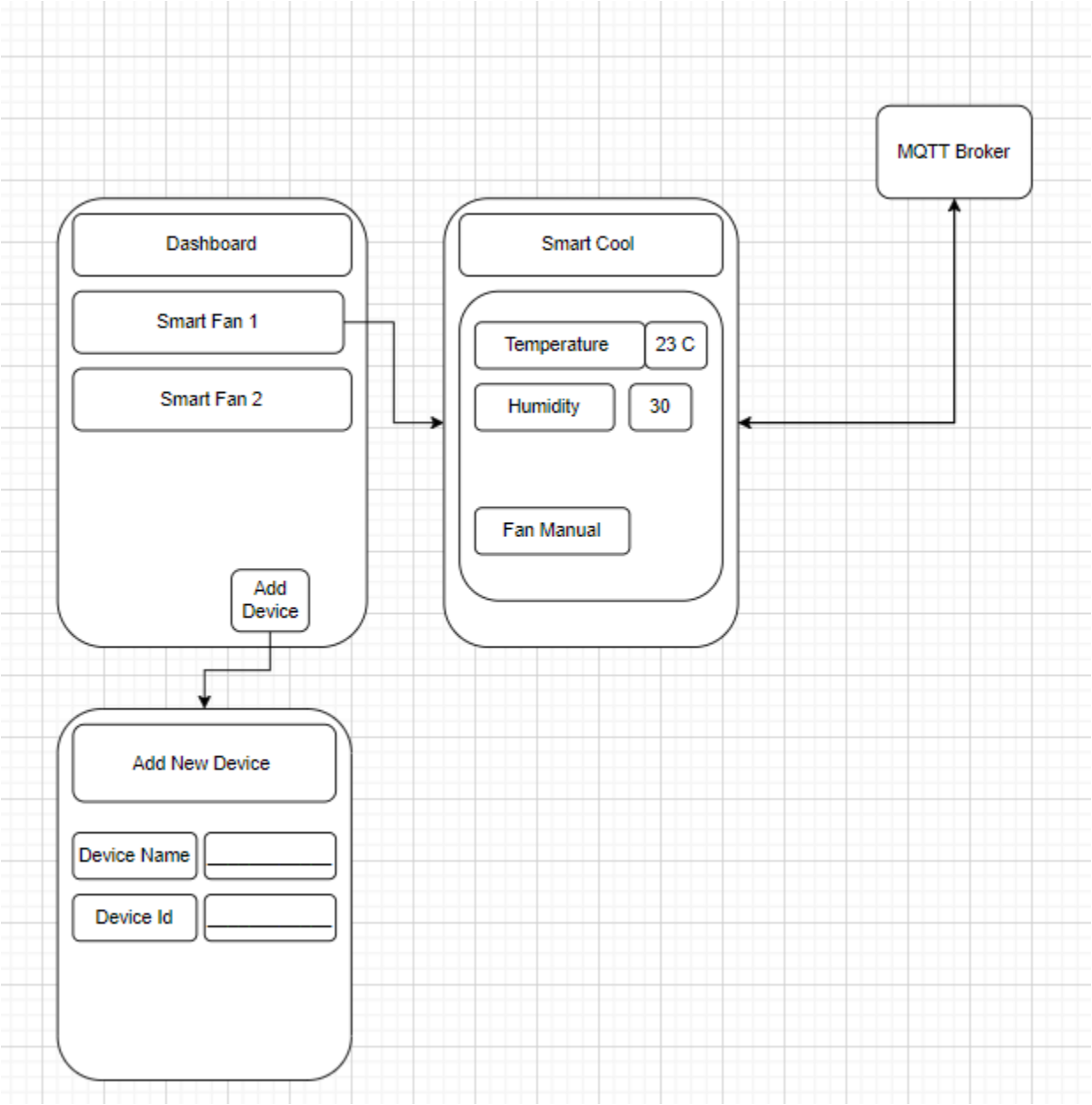
The database architecture consists of 3 tables. The first table is used for authentication. It stores the user ID as a primary key, the user's name, password and email address. After a user is registered in the first table, the second table stores the device's information. The device ID is used as a primary key and the user ID is stored as a foreign key. This allows one user to access multiple devices without information getting mixed together. The device ID primary key is also used in the temperature table to store the temperatures per device. The database was created using SQLite. We found SQLite to be very easy to maintain and performed well with no cases of false information.

Website Architecture Design Choice



The website initializes with a login/register page where the user must enter their name, email and password. The sign in page confirms the matching password is correct and then once you register, the user information is stored in the database seen above. The user is then sent to their user specific dashboard where they can add the device they wish to view temperature information on. When the user clicks on view logs where each device specific temperature is displayed. We chose to use a django framework over PHP as we were facing numerous errors and difficulties associated with the PHP language thus changing to a django framework allowed us to more effectively deploy what we envisioned.

Mobile Architecture Design Choice



The mobile application consists of 3 screens. The user begins on the dashboard where they are able to view their active devices. The user is then able to add a new device which will be added into the database. The user can view each device's temperature and humidity by selecting a device from the dashboard where a MQTT broker gives the application the sensor information from the device. We chose to use MQTT since we all were more familiar using it, and we found there to be no complications regarding performance issues so we felt comfortable with that decision.