Weather Vault ®
CS340
Group106
Developers
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Project Step 2: ERD & Schema (Draft)

a) Fixes based on Feedback from Step 1:

1. Our project idea has changed slightly. We have revised our Overview to reflect this.
2. Our new project proposal has addressed the comments made by our marker. Our changes add:
    a. how many users use our website on a daily basis
    b. how often weather data is updated.
3. Our descriptions concerning the entities in the overview are now more thorough and direct.
4. Entity names are now consistent throughout the project.
5. Creating the intersection table for M:M relationships that contain the FKs of the relationship as well as add PKs for each of your entities

b) Project Outline and Database Outline - Updated Version:

Overview:

The *Weather Vault* ® website is designed for people moving to another city in the US and concerned about change of climate.

The User enters a desired climate into the *Weather Vault ®.* The WeatherVault and the UserVault entities are queried, then retrieve and display a list of all matching cities and profiles of certified guides are displayed. After the User selects a *guide* the User receives the guide's contact information (email, first name, last name).

Becoming a *Weather Vault* ® guide is a process initiated by a User by selecting the "become a *Weather Vault* ® guide" option on the website. Upon receipt of a request the information is reviewed and if granted, the "isGuide" attribute is switched to true..

Weather Vault ® currently has 25,000 daily active users and updates its weather and User's locations daily. We have recently announced establishing an IPO and are expecting an increase in our user-base to about 1,000,000 daily users. It is expected that our heads of software design will be rebuilding and reorganizing the database system to handle the projected load.

Entities (tables) we plan to implement on our project:

User
UserVault
WeatherVault
LocationVault

Developer Roles:

Lei Dai: Commander of WeatherVault and LocationVault
Dov Sherman: Head of design for the UserVault entity and its incoming and outgoing relationships.

Database Outline (in words):

User: a user which stores their location

- userID: INT, auto_increment, unique, not NULL, PRIMARY_KEY
- lastName: VARCHAR, not NULL
- firstName: VARCHAR, not NULL
- email: VARCHAR, not NULL
- zipCode: VARCHAR, not NULL
- **Relationship**: A **1:M** relationship between *UserVault* and *User* with userID as a FK inside UserVault.

UserVault: Contains all the User as well as their corresponding climate information.

- userID: INT, not NULL, FOREIGN_KEY
- climate: VARCHAR
- temperature: DECIMAL
- isGuide: TINYINT
- **Relationship:** A **1:M** relationship between *Uservault* and *User* with userID as FK

WeatherVault: Stores the weather information associated with each *User*.

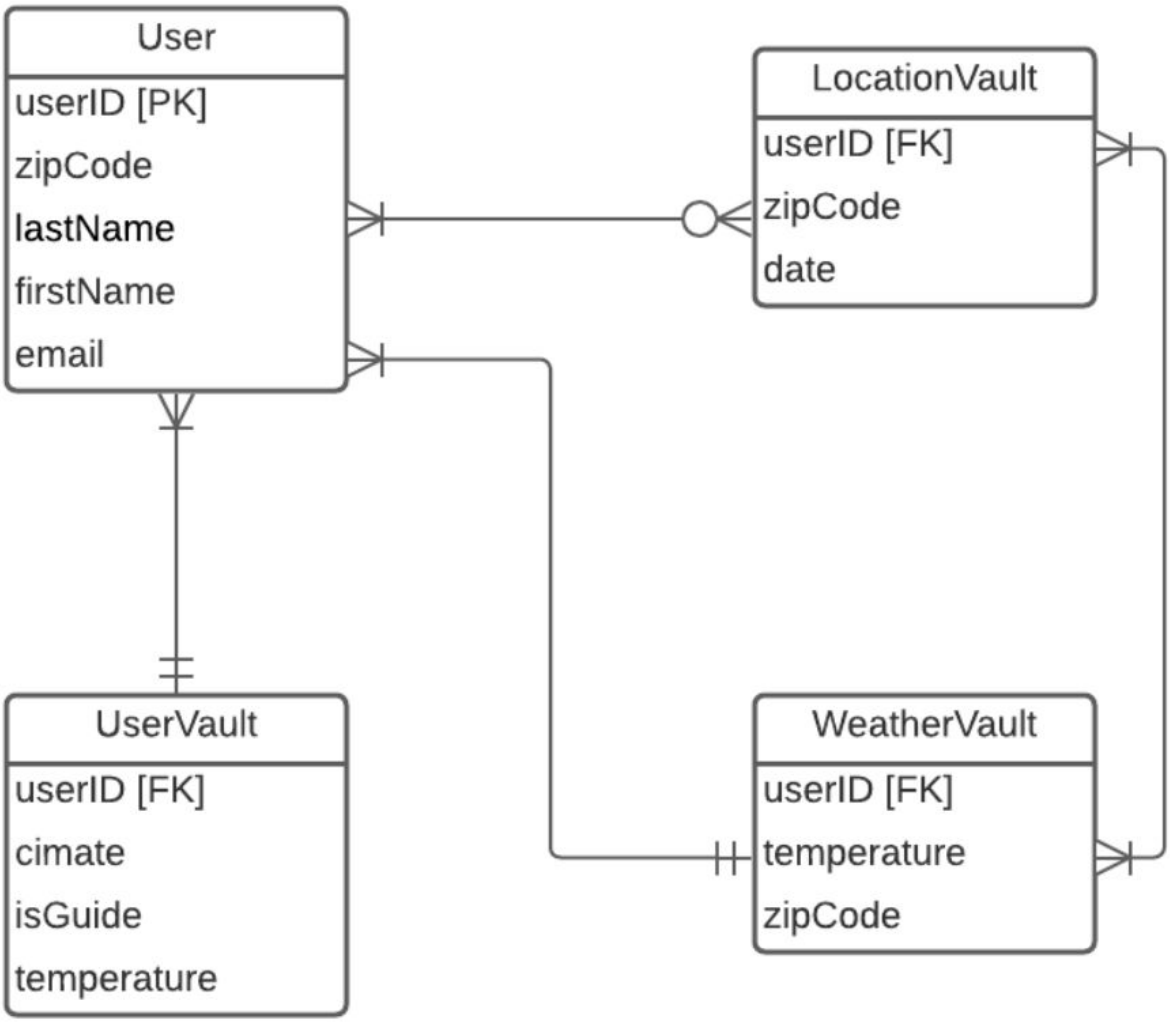
- userID: FK, INT, NOT NULL
- temperature: DECIMAL
- humidity: DECIMAL
- climate: VARCHAR
- zipCode: VARCHAR

Relationship: A **M:M** relationship between *Weathervault* and *User* with userID as a FK inside *WeatherVault* and a relationship between WeatherVault and LocationVault with zipCode.

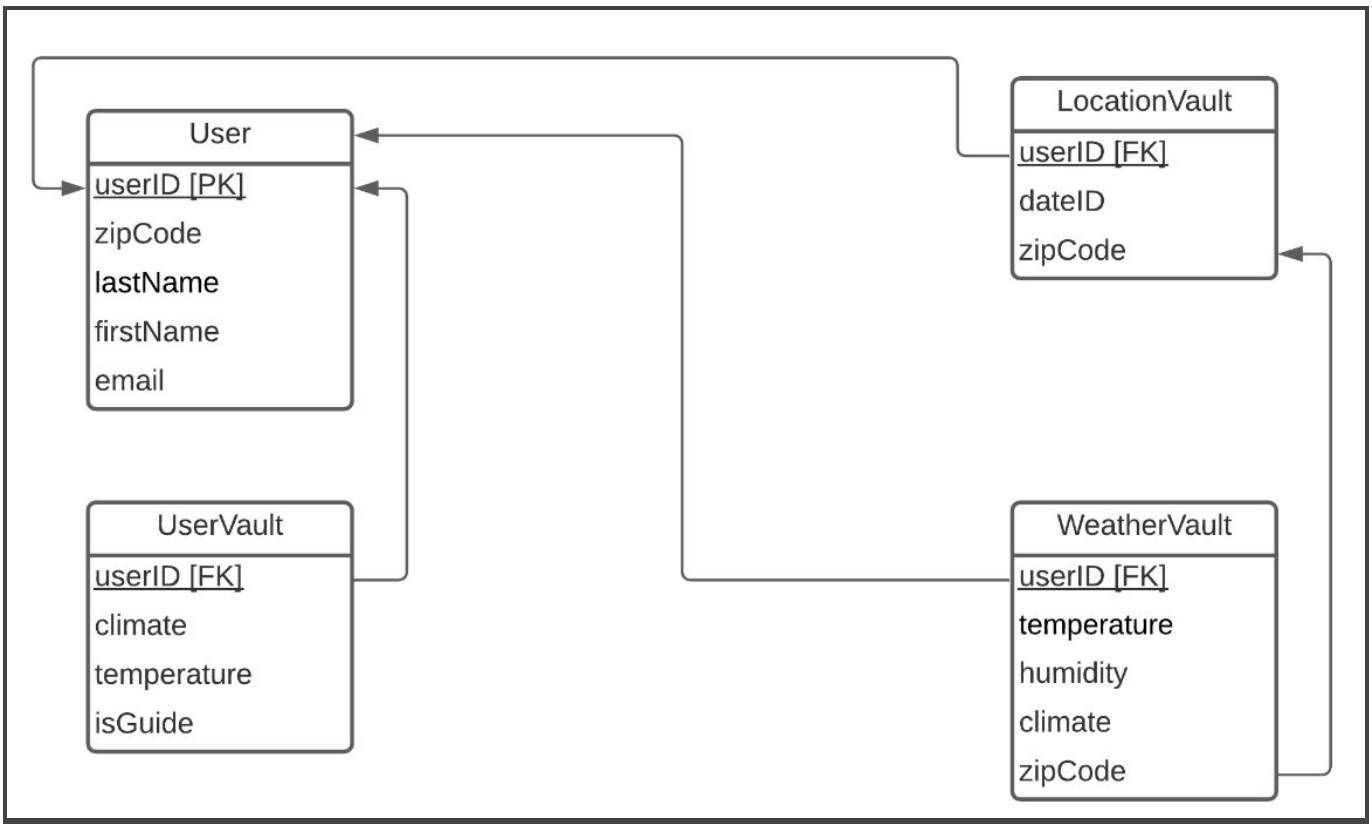
LocationVault: Stores the history of all *Users'* locations.

userID: FK, INT
dateID: DATE, NOT NULL
zipCode: VARCHAR
Relationship: A **M:M** between many *Users* to many *zipCodes*.

c) Entity-Relationship Diagram:



d) Schema:


User
userID [PK]
zipCode
lastName
firstName
email
LocationVault
userID [FK]
dateID
zipCode
UserVault
userID [FK]
climate
temperature
isGuide
WeatherVault
userID [FK]
temperature
humidity
climate
zipCode