Data Model & DB Design

CS 157A - Team 11

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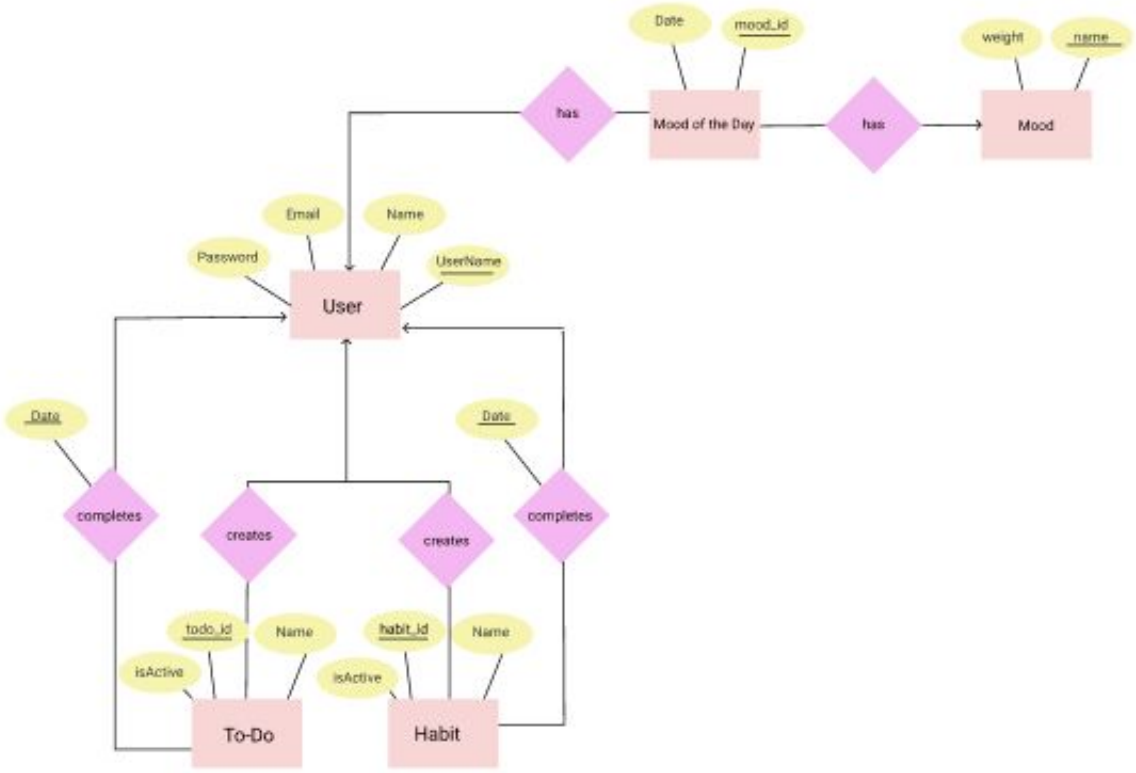
E/R Diagram



Entity Set and Relationships

- User creates Habits
    - A user will be registered with the site and be able to create a habit tracker by setting habits that they want to accomplish every day. Habits include mostly daily or weekly recurring tasks, such as things you find enjoyable, responsibilities, or things you want to do (like stretch in the morning, write blog post, exercise).
- User creates To Do’s
    - A user will be registered with the site and be able to create a habit tracker with a todo list by setting to-do’s that they want to complete by the end of the month that they can add

and delete as they wish. A to-do would be full of spontaneous tasks that arise. The user will complete a certain amount of to do's on each date.

- User completes Habits
    - The user will complete a certain amount of habits on each date. We will know which habits the user completed when the user checks off a habit. The user can choose to stop tracking a habit but it will be stored in the database as inactive.
- User completes To Do's
    - The user will complete a certain amount of to do's on each date. We will know which to do's the user completed when the user checks off a to do. The user can choose to stop tracking a to do but it will be stored in the database as inactive.
- User has a Mood of the Day
    - On each date, the user selects what their mood was (happy, stressed, sad, tired, etc). A report will be generated at the end of the month comparing the dates that the user's had bad moods with dates that they didn't complete habits.
- Mood of the Day has a Mood
    - When analyzing the user, we can score the month or week by mood's weight -- happy would be 3 points, sad/stressed/nervous would be 0 points, and neutral would be 1 point.

Database Schema and Tables

Users(<u>username</u>: String, <u>email:</u> String, <u>password:</u> String, name: String)

Name	Username	Password	Email
Clarke Walker	clarke.w	Love000	Clarke.walker@gmail.com
Meredith Grey	meredith.gray	Love100	Meredith.grey@gmail.com
Alex Karev	alex.karev	Love200	Alex.karev@gmail.com
Isobel Stevens	Izzy123	Love300	Izzy123@gmail.com
George O'Malley	georgie	Love400	georgie41@gmail.com
Steve Harrington	stevie01	Love500	steve01@gmail.com
Stephen King	scaremaster	Spook100	scaremaster@gmail.com
Jack Murphy	jacktheripper	Kill100	jackther@gmail.com
Michael Myers	mike.meyers	Kill200	mikey@gmail.com
Josephine Lockehart	josiepoo	Love600	josiepoo@gmail.com

Tony Stark	iamironman	Love3000	tony.stark@gmail.com
Arya Stark	nofacewoman	Kill300	agirlhasnoname@gmail.com
Steve Rogers	captmurica	Just100	americasass@gmail.com
Peter Parker	friendlyspider	Cute100	idontfeelgood@gmail.com
Natasha Romanoff	blackwidow	Kill400	shouldvebeenhawkeye@gmail.com

MoodOfTheDay(mood_id: int, date: Date, mood_name: String(Foreign Key))

mood_id	Date	mood_name (Foreign Key)
1	10/1/2019	happy
2	10/2/2019	sad
3	10/3/2019	usual
4	10/4/2019	productive
5	10/5/2019	sad
6	10/6/2019	usual
7	10/7/2019	happy
8	10/8/2019	tired
9	10/9/2019	usual
10	10/10/2019	excited
11	10/11/2019	angry
12	10/12/2019	usual
13	10/13/2019	productive
14	10/14/2019	happy
15	10/15/2019	usual

Mood(weight: int, name: String)

Weight	Name
3	happy
3	productive
3	excited
1	neutral/usual
0	sad
0	angry
0	stressed
0	tired
3	happy
3	productive
3	excited
1	neutral/usual
0	sad
0	angry
0	stressed
0	tired

UserHasMoodOfTheDay(mood_id: int (Foreign Key), username: String (Foreign Key))

mood_id	Username
1	clarke.w
2	clarke.w
3	alex.karev
4	Izzy123
5	georgie
6	stevie01

7	scaremaster
8	jacktheripper
9	mike.meyers
10	josiepoo
11	iamironman
12	nofacewoman
13	captmurica
14	friendlyspider
15	clarke.w

Habits(habit_id: int, name: String, isActive: Boolean)

Habit_ID	Name	isActive
1	Exercise	True
2	Floss	True
3	Sleep for 7-9 hours	True
4	Meditate	True
5	Take Vitamins	True
6	No Junk Food	True
7	Exercise	True
8	Exercise	True
9	Floss	True
10	Sleep for 7-9 hours	True
11	Meditate	True
12	Meditate	True
13	No Junk Food	False

14	Exercise	True
15	Sleep for 7-9 hours	False

Todos(todo_id: int, name: String, isActive: Boolean)

Todo_id	Name	isActive
1	HW1 CS157a	True
2	HW2 CS157a	True
3	HW3 CS157a	True
4	HW4 CS157a	True
5	HW5 CS157a	True
6	HW6 CS157a	True
7	Send Package	True
8	Go DMV	True
9	HW1 CS122	True
10	HW2 CS122	True
11	HW3 CS122	True
12	HW4 CS122	True
13	HW5 CS122	True
14	HW1 CS100W	True
15	HW2 CS100W	True

UserCreateTodos(todo_id: int (Foreign Key), username: String (Foreign Key))

Todo_id	Username
1	clarke.w
2	clarke.w

3	alex.karev
4	Izzy123
5	georgie
6	stevie01
7	scaremaster
8	jacktheripper
9	mike.meyers
10	josiepoo
11	iamironman
12	nofacewoman
13	captmurica
14	friendlyspider
15	clarke.w

UserCreatesHabits(habit_id: int (Foreign Key), username: String (Foreign Key))

Habit_ID	Username
1	clarke.w
2	clarke.w
3	alex.karev
4	Izzy123
5	georgie
6	stevie01
7	scaremaster
8	jacktheripper
9	mike.meyers
10	josiepoo

11	iamironman
12	nofacewoman
13	captmurica
14	friendlyspider
15	clarke.w

UserCompleteHabits(habit_id: int (Foreign Key), username: String (Foreign Key), Date: Date)

habit_id	username	Date
1	clarke.w	10/1/2019
2	clarke.w	10/1/2019
1	clarke.w	10/2/2019
1	clarke.w	10/3/2019
1	clarke.w	10/4/2019
1	clarke.w	10/5/2019
1	clarke.w	10/6/2019
1	clarke.w	10/7/2019
1	clarke.w	10/8/2019
2	clarke.w	10/2/2019
1	clarke.w	10/8/2019
3	clarke.w	10/1/2019
4	clarke.w	10/1/2019
1	alex.karev	10/1/2019
2	alex.karev	10/1/2019

UserCompleteTodos(habit_id: int (Foreign Key), user_name: String (Foreign Key), Date: Date)

todo_id	user_name	Date

1	clarke.w	10/1/2019
2	clarke.w	10/1/2019
1	clarke.w	10/2/2019
1	clarke.w	10/3/2019
1	clarke.w	10/4/2019
1	clarke.w	10/5/2019
1	clarke.w	10/6/2019
1	clarke.w	10/7/2019
1	clarke.w	10/8/2019
2	clarke.w	10/2/2019
1	clarke.w	10/8/2019
3	clarke.w	10/1/2019
4	clarke.w	10/1/2019
1	alex.karev	10/1/2019
2	alex.karev	10/1/2019

MySQL

We also added mysql file into GitHub so that we can get the same tables and contents by executing the file.

```
CREATE TABLE users (
    user_name VARCHAR(255) NOT NULL PRIMARY KEY,
    name VARCHAR(255),
    email VARCHAR(255)
);
CREATE TABLE todos (
    id INT AUTO_INCREMENT NOT NULL PRIMARY KEY,
    name VARCHAR(255) NOT NULL,
    is_active Boolean NOT NULL
);
CREATE TABLE habits (
    id INT AUTO_INCREMENT NOT NULL PRIMARY KEY,
    name VARCHAR(255) NOT NULL,
    is_active Boolean NOT NULL
);
CREATE TABLE users_completes_habits (
    habit_id INT NOT NULL,
    user_name VARCHAR(255) NOT NULL,
    completed_date Date NOT NULL,
    FOREIGN KEY (habit_id) REFERENCES habits(id),
    FOREIGN KEY (user_name) REFERENCES users(user_name),
    PRIMARY KEY (habit_id, user_name, completed_date)

);
CREATE TABLE users_completes_todos (
    todo_id INT NOT NULL,
    user_name VARCHAR(255) NOT NULL,
    completed_date Date NOT NULL ,
    FOREIGN KEY (todo_id) REFERENCES todos(id),
    PRIMARY KEY (todo_id, user_name, completed_date)
);
CREATE TABLE moods (
    name VARCHAR(255) NOT NULL PRIMARY KEY,
    weight INT NOT NULL
);
CREATE TABLE moods_of_the_day (
    mood_id INT AUTO_INCREMENT NOT NULL PRIMARY KEY,
    date Date NOT NULL,
    mood_name VARCHAR(255) NOT NULL,
    FOREIGN KEY (mood_name) REFERENCES moods(name)
);
```

```sql
CREATE TABLE users_moods (
    mood_id INT NOT NULL,
    user_name VARCHAR(255) NOT NULL,
    FOREIGN KEY (mood_id) REFERENCES moods_of_the_day(mood_id),
    FOREIGN KEY (user_name) REFERENCES users(user_name),
    PRIMARY KEY (mood_id, user_name)
);

CREATE TABLE users_habits (
    habit_id INT NOT NULL,
    user_name VARCHAR(255) NOT NULL,
    FOREIGN KEY (user_name) REFERENCES users(user_name),
    FOREIGN KEY (habit_id) REFERENCES habits(id),
    PRIMARY KEY (habit_id, user_name)
);
CREATE TABLE users_todos (
    user_name VARCHAR(255) NOT NULL,
    todo_id INT NOT NULL,
    FOREIGN KEY (user_name) REFERENCES users(user_name),
    FOREIGN KEY (todo_id) REFERENCES todos(id),
    PRIMARY KEY (todo_id, user_name)
);
```

```
mysql> show tables;
+-----------------------+
| Tables_in_test        |
+-----------------------+
| habits                |
| moods                 |
| moods_of_the_day      |
| todos                 |
| users                 |
| users_completes_habits |
| users_completes_todos |
| users_habits          |
| users_moods           |
| users_todos           |
+-----------------------+
10 rows in set (0.00 sec)
```