

## Design

The project follows the MVC pattern.

**Model:** The User and Frit model files reside in /models and are based on Mongoose schema models.

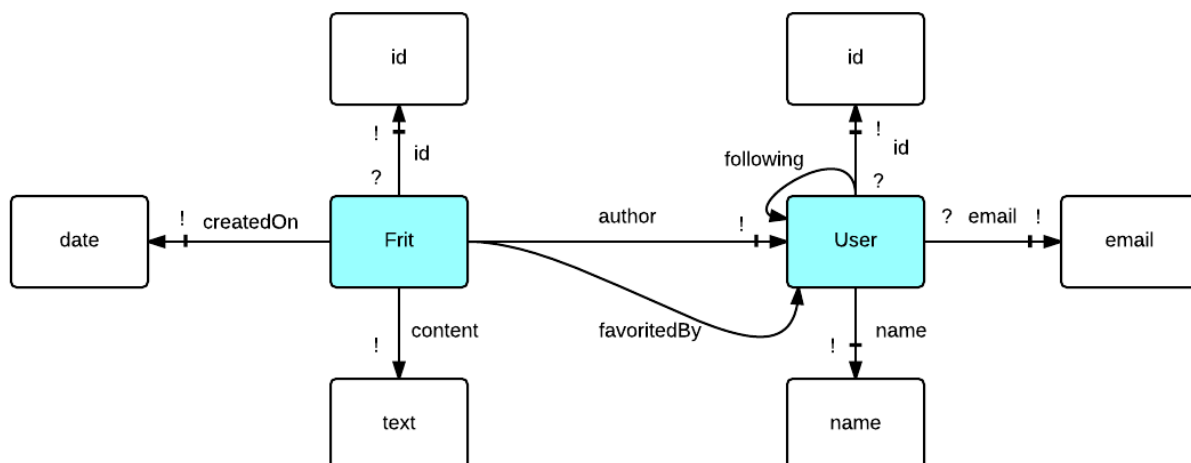
**View:** The view consists of the EJS files in /model, the client-side JavaScript in /public/javascript, and the CSS file in /public/stylesheets.

**Controller:** The routes in /routes make up the controllers.

**Tech Stack:** Mongoose for database management, EJS for templating, Express-Session for cookies, Bootstrap and Font-Awesome for UI, Underscore for input sanitation, Bcrypt for password encryption

**Overview:** When the user accesses the site, if they are logged in (have userId in cookies), it immediately redirects them to their feed. Otherwise, it directs them to the login screen, where they either login or register, and then get redirected to their feed. Each Frit can only be modified or deleted by the user that posted it (based on the user's email – which is unique to the system). The user can post new Frits here, view other Frits, modify or delete existing Frits, or logout (deletes cookies and redirects to login page). The user can also follow other users, favorite other Frits and filter their feed by: all Frits, only Frits from users they follow, or only favorited Frits. My extra feature is favoriting.

## Model



**User** represents the users of Fritter.

- **Id:** string, unique identifier, not human-readable
- **Email:** string, used to log in, unique
- **Name:** string, used for display purposes only
- **Following:** list of user ids that user is following

**Frit** represents a single piece of communication made by a user.

- **Id:** string, unique identifier, not human-readable
- **Content:** string of the textual content of the Frit, can be changed
- **CreatedOn:** date on which the Frit was posted
- **Author:** user id of the user that created the Frit
- **FavoritedBy:** list of user ids of the users that favorited this Frit

## Challenges

1. What module to use to connect MongoDB to Node: I was deciding between Node-mongodb-native, Monk, and Mongoose. I choose Mongoose because it is an ORM and abstracts out database queries into more human-understandable object functions. It also helped me create my model, which came in handy when I started adding more complicated relationships.
2. Schema design of Frit: I could've made each Frit just an entry in my User schema, or created a Frit schema and connected it "relationally" to its User. I chose the latter because my Frit object could have a lot of metadata that would make it difficult and clunky to manipulate as just a series of fields in User.
3. Schema design of the User: I could've just made email the unique identifier and gotten rid of id entirely, but in case I decide to allow changing of emails in the future, I want to hold on something that can definitely never change.
4. Where to put favorites: I could've either put a list of favorited Frits in the User model, or put a list of users that favorited the Frit in the Frit model. I decided on the latter because it would require extra work if a Frit were deleted to remove it from the User model.

5. User authentication: I had the option of OpenID, username-password, and cookies. I opted to use email-password for user accounts because emails are unique and would result in less frustration (duplicates are still checked for). I also used cookies so users would stay logged in. I hash all passwords using Bcrypt for security.
6. How to prevent modification of a Frit by users that are not the author of the Frit: I could create a separate view with only editable Frits, or I could display all Frits, but only have editing buttons next to those that are editable. I decided to do the latter, matching the Frit's author's email against the logged in user's email (these are unique) to determine if the Frit is editable. This option is the most convenient solution for the user because everything is in one place.

## Grading Directions

1. My User model/schema doesn't hold references to its Frits to avoid redundancy (Frits know who they belong to). But it does provide [methods](#) that query and sort those Frits, returning a list of Frits with populated information about the User model (using Mongoose's populate) to prevent further queries to retrieve that information.
2. I separated the pure HTML/EJS files from the [javascript/jquery](#) manipulating the view to prevent clutter and to separate concerns: the HTML/EJS dictate what is displayed, the javascript/jquery make the pages pretty and responsive, but are not vital for grasping what is going on in the pages.
3. Instead of having a file for every route or one file with all the routes, I bunched grouped routes and created [UserController](#) and [FritController](#) that have methods to respond to gets and posts, with a main [routes](#) file to control what gets called when. This improves readability and allows for [sharing of common code](#) within the controllers.
4. I used cookies to automatically [redirect](#) already logged in users to their feed to prevent them from having to re-login. Similarly, if they are not logged in, [the feed redirects](#) them to the login page. This prevents users from seeing pages they aren't allowed to see yet, and manages the page flow for them so they don't have to memorize URLs to get to different pages.

5. I have checks in both [model](#) and [view](#) so that the necessary and valid things get added to the database. I also have nice error handling for the [login](#) and [Frit editing](#) pages. There are [placeholders](#) that are filled with error and success messages if there are any.
6. To filter Frits, I added [classes](#) in the view to each Frit representing different things to filter by, and would then [add/remove](#) the hidden class (hides elements) to the appropriate elements with jquery to filter without reloading the page or querying the database. This made filtering very quick and also required less logic and coding, and I can add more things to filter by very easily.