Project Proposal: Gmail Clone

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Tools

UI Libraries

- Bootstrap
- SCSS

Frontend Libraries

- Angular
- RxJs
- NgRx

Backend Technologies & Libraries

- Node.js
- Express
- bcrypt.js
- mongoose
- joi

Features

1. **Auth** (register, log in, log out)
   - users authenticated with JWT
   - input fields sanitized and validated
   - token stored as cookie on client for persistent login
   - delete client cookie and maintain blacklist for logout

2. **Email List**: users should be able to scroll through emails
   1. Maximum 50 emails in list, each displayed as a row. Use left/right buttons for pagination.
   2. Each row should have:
      - button to star email
      - checkbox to mark emails to do one of:
        - deletion

- tagging with label
- mark as read/unread

3. **Email Sidebar**: displays a list of labels (by default: inbox, starred, sent, trash).
   1. Has a '+' button to create new labels. Each custom label should have option to:
      - create label
      - delete label
      - edit label name
   2. clicking on a label will update the email list component to show only emails with that label (default: inbox label is selected)

4. **Compose Email**: a form to create a new email from User A to User B, C, D.

   To narrow the scope of the project I will not be using any email protocols, just storing and retrieving emails with a non-relational database.
   - form will create new email belonging to User A with 'sent' label
   - form will create new email belonging to recipient Users with 'inbox' label

Models

Relationships

- Each user can have many emails.
- Each email can have one sender, many recipients, one owner (owner can be sender and/or recipient).
- Each user related to an email will have their own copy of that email (that they can freely delete and modify labels without affecting other users).

Entities

User:

- email: string, required, unique
- password: string, required
- emails: [ref(Email)], default: `[]`

Email:

- subject: string, default: "no subject"
- body: string, default: "no body"
- sender: string, required
- owner: ref(User), required
- recipients: [string], required
- labels: [string], default: `["inbox"]`