

CAPSTONE PORTFOLIO

Intranet For HRDC Warming Shelter

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ESOF 423 Group 4 Portfolio

Section 1: Program (Tyler)

Github link: <https://github.com/423S25/repo4>

Link to our project: <https://hrdc.fly.dev/>

The links above show the combined efforts and collaboration of Group 4 throughout the semester. Our software was built with a focus on creating a functional, user-friendly intranet platform for the HRDC. At the start of the project, an HRDC team member expressed a clear need for a centralized system that could bring together scattered resources for employees and volunteers. Their previous method of connecting staff and volunteers to resources was inefficient and relied on the assumption that they already knew how to navigate google drive and calendar. This expectation often led to increased demand on the HRDC staff for support. Additionally, the HRDC wanted an easy way to communicate announcements and provide support to those trying to locate important information and documents.

Our desire to help the HRDC solve these issues evolved into a Staff Intranet with a host of features tailored to their needs. The site includes an editable announcements system, a document repository, a support ticket submission page, and a dynamic calendar. Each of these features was created to make communication smoother, reduce confusion, and give staff and volunteers one easy place to find what they need. The announcements system helps share updates quickly, the document repository makes it easier to find important files, the support form allows users to request help, and the calendar keeps everyone aware of upcoming events. By bringing these tools together in one place, our intranet helps HRDC work more efficiently and makes finding resources much easier for everyone..

Section 2: Teamwork

Team Member 1

Team member 1 primarily focused on project management (i.e. assigning tasks and ensuring deadlines were met). As for created content, they made the Support and Calendar pages, designed retrospectives, submitted issues on the Github Repo, showcased a mockup of the home page, and programmed the announcements functionality for the intranet. Additionally, the majority of the collaboration with Krista was done through team member 1.

As for percentage of time on the project, team member 1 probably accounted for 20% of the work on the Intranet.

Team Member 2

As one of the developers on the team, I mostly focused on the backend logic and functionality of our website. I was responsible for setting up everything involving Google APIs. I worked with Firebase to set up user sign-in and authentication. I also set up databases within Firebase where we were able to store data from the website, like our announcements and user roles. I also added integration with Google Drive so that users could access necessary files and documentation from within the site. Within our pages themselves, I set up the logic to show or hide content based on a user's given role, and I added the functionality for features like creating announcements, creating new accounts, changing user roles, and viewing documents from the Drive. I worked with our designer to make sure all these additions fit the HRDC styling appropriately. I also managed hosting the site, which involved setting up virtual machines and changing configurations with fly.io to get our site up and running for the world to see.

Team Member 3

As the designer on the team, I focused on creating the prototype for the developers to refer to when making the site layout, which received changes when needed. So that the developers were kept in the loop on the design revisions. I also designed the sitemap using Krista's notes. I used the notes to separate the needed content into pages for the website. I also designed and developed the first iteration of the nav bar, which was changed later on. I also designed icons and logo SVGs. The all white HRDC logo is an SVG that I shared with all groups outside of my own as well. Lastly, I created the styles for the global CSS so that the developers had access to the colors and typeface styles in the style guide for implementation on the webpage.

Team Member 4

My role within the team primarily encompassed support for both design-related tasks and auxiliary project management responsibilities. During most class sessions, I was responsible for documenting key discussion points and tracking upcoming project deadlines. In the absence of the lead designer, I provided interim design guidance and addressed minor design-related inquiries, with all input subject to later review and approval by the lead designer. Additionally, I was tasked with assembling the project documentation and creating the user manual for the final release deliverable.

Team Member 5

My role primarily focused on backend development, specifically implementing the search feature functionality, part of the announcements page functionality, and part of the navigation bar. Using the style guide created by the team's designer, I also contributed significantly to the frontend development. I helped bring the website visuals to life by implementing global styles and formatting on each page. Additionally, I tested various UI elements to improve usability for both PC and mobile users. My work contributed to both the core functionality and the overall user experience of the intranet. My contributions to this project accounted for about 20% of the total project workload.

Section 3: Design Pattern (Tyler)

One design pattern we used in our project was the Module Pattern, which focuses on organizing code into reusable, self-contained units with a single responsibility. This pattern is evident in the way we structured our "src" directory. We separated our files into various folders such as pages, components, and api. This allows each part of the application to be developed and maintained independently. Reusable UI elements were placed in the components folder, while api related files were grouped in an api folder under pages.

A large part of our file structure was guided by the next.js, which uses many elements of the module design pattern. All of our site pages were organized within the pages directory, where each file becomes a route in the application due to next.js. Our project's file structure reflects the core of the Module Pattern by separating responsibilities across clearly defined folders and files. This allows individual parts of our project to be updated or used without impacting unrelated code.

In addition to structuring our code with the Module Pattern, we used Tailwind CSS, which aligns perfectly with this approach. Tailwind allowed us to apply styling directly within the components files, eliminating the need for separate css files. This keeps the styling of each file component self contained and independent.

Our navigation bar component is a specifically good example of the module design pattern. By keeping its code within a dedicated file in the components folder, we ensure encapsulation. It is easily imported across multiple pages, demonstrating its reusability. Additionally, the Navbar code is self-sufficient and has a single responsibility.

Section 4: Technical Writing

All User Documentation for this Capstone Project can be found [here](#)
All Developer Documentation for this Capstone Project can be found [here](#)

Section 5: UML (Nate designs, devs edit)

Pre-Dev Sitemap:

<https://www.figma.com/board/OR7idpVglZRDnxXx7lInL4/HRDC-sitemap?node-id=0-1&t=GmkURM58bMwtfzsn-1>

UML Current Sitemap:

https://lucid.app/lucidchart/c6a97cb6-8049-4bdc-84c7-bfb9f70a0223/edit?viewport_loc=-376%2C-137%2C3330%2C1881%2C0_0&invitationId=inv_085cd81f-2f3f-4219-9427-7b47247ebd4c

Section 6: Design Trade-offs (Michael)

A critical decision made during the early development phase involved determining how the application would manage and organize the client's existing documents. The client specified a need for software capable of structuring and accessing a collection of important files that were currently stored in an existing google drive owned by the client.

During the initial brainstorming sessions, the team discussed the feasibility of building a custom backend database from scratch to serve as the core of the document management system. While this approach would have provided flexibility in data organization, and custom user interface integration, it introduced substantial complexity. The task raised concerns related to development time, long-term maintainability, cost implications, and increased onboarding effort for the client.

To balance functionality with maintainability and scalability, the group decided to leverage the client's existing Google Drive. By integrating Google Drive APIs and using plugins, we were able to create a solution that streamlined development time, improved system security by relying on Google's established infrastructure, and significantly simplified client adoption.

This streamlined integration ensured the application remained lightweight, easily maintainable, and aligned with real-world deployment constraints.

Section 7: Software development life cycle model (Dylan)

Our team used the agile method to develop our HRDC Intranet project. The agile method acts as an interactive and incremental approach to software development. It involves breaking up the project into multiple small sections called sprints. Agile allows for a lot of flexibility and collaboration, as we could focus on our immediate goals for the sprint rather than detailing our entire project in detail from day one.

Using the Agile method has both positive and negative aspects to it. When starting our project, things felt very chaotic because we started development without a clear end goal or final structure in place. While it was liberating to start working immediately, this meant that we had to frequently revisit and revise parts of the project we had previously completed, which was frustrating at times. Along with this, finding a good pace was difficult. We didn't want to overload ourselves early on, but we also didn't want to push everything off till the last sprint. To help manage this, we created a burndown chart. We used the burndown chart to track work units before and after each sprint so we could plan ahead more effectively and balance our workload. It was also very beneficial for us to have clear representations of our tasks outlined, which helped our group stay organized and on track without stepping on each other's toes. Because of the nature of Agile, our codebase was constantly changing. To further handle and organize this, we used test-based continuous integration. Github features like branches, test issues, and version control were crucial for keeping our team organized and stopping us from uploading broken

code. With test-based continuous integration, every new addition had to pass automated tests before it was merged into the main branch of our project.

Our sprints were biweekly in length, each one had a specific goal along with a certain release (alpha, beta, feature, candidate, etc...). This meant that we were constantly reviewing what we had done and were making constant tweaks and changes. This was both useful and necessary for the type of project we were doing. Since we were building this for a real local company, the HRDC, they were able to give us feedback after almost every sprint. As a group, we were able to take this feedback and integrate it into the next sprint. This immediate feedback also prevented us from spending time on aspects that weren't actually needed or would require further adjustments. There were many times in the project where we thought certain features would be useful to the HRDC, but upon showing Krista, our client, she quickly bat down the ideas and put us back on track to what the HRDC actually needed.

In class was where we were truly able to practice the Agile method. In each of our labs, we held a daily standup scrum meeting. These were short, structured discussions that allowed each team member to discuss what they had done and what they were planning to complete next. We also discussed whole project changes and important roadblocks during this time. These brief meetings helped us address challenges promptly and kept everyone in the loop of what was going on while also giving everyone a sense of accountability. Overall, the Agile method revolves around adaptability and constant communication and is a great tool for software development, especially when working on small team projects.

Intranet Software

Developer Documentation
V1.0.0

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HRDC EMPLOYEE INTRANET DEVELOPER INFO & RESOURCES



SOURCE CODE

Obtaining Source Code

1. Visit <https://github.com/423S25/repo4>
2. Clone the repository to your local machine
Git clone <your chosen repo name>

How to Build

- Visit this documentation: <https://nextjs.org/docs/app/getting-started/installation>
- Install NextJS
- Visit this documentation: <https://flask.palletsprojects.com/en/stable/installation/>
- Install these npm modules
- npm install lucide-react
- npm install next

Gain access as to the GitHub as a contributor

Speak to your superiors to be added

FRAMEWORK DOCUMENTATION

NEXT.JS documentation	https://nextjs.org/docs
Tailwind CSS documentation	https://v2.tailwindcss.com/docs
Fly.io documentation	https://fly.io/docs/

STRUCTURE

Directory Structure:

Documentation

- Developer Doc
- User Doc
- UML
 - UML documents

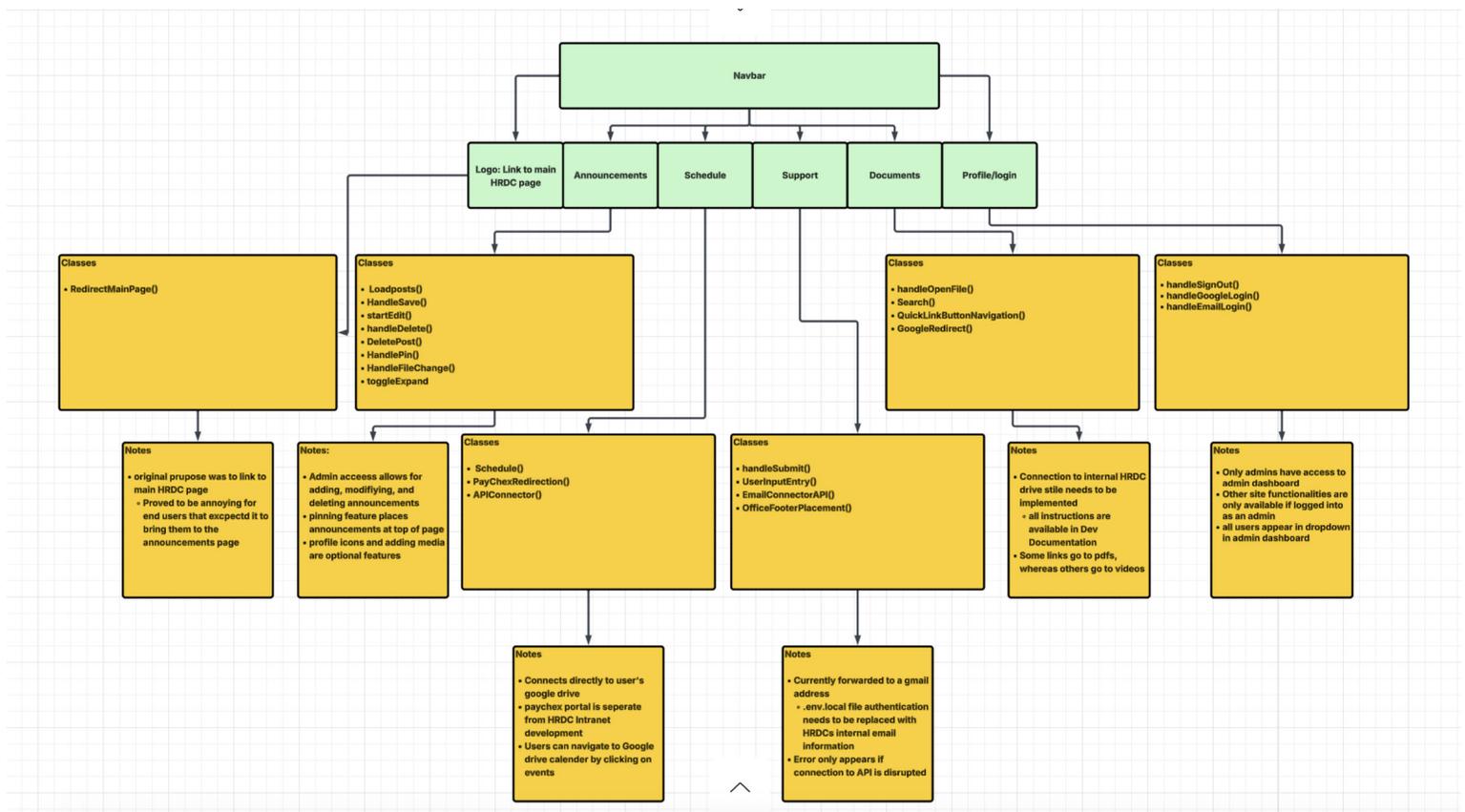
Site

- Design
 - Images
 - Styles
 - Frameworks

docs

- NextJS
- HTML
- Misc. Code

CLASS DIAGRAM





TESTING

How to Test:

DO NOT push to Github before testing

After saving your changes, access the website <https://hrdc.fly.dev/> via flask

Test your feature to ensure it doesn't negatively impact other areas.

Have team members review your changes.

Push afterwards

Automated Build and Test:

1. Access project repository
2. Run automated test suite
 - Available through Github Actions tab
3. View passed/failed tests
 - Failed tests have error terminals that you can view

Debugging and Issues

Current Bugs will be tracked through Github Issues

TESTING PROTOCOL AND METHODS

Cross-Browser Testing

- Ensure compatibility and functionality across various browsers and devices.
- Manual testing on: Firefox (Windows), Edge (Windows), Chrome (Windows), iPhone Chrome (Mobile)
- Verify layout, functionality, and responsiveness across different browsers and devices.

Integration Testing

- Validate the integration of new features and changes with existing codebase.
- Feature branching: Create separate branches for new features or changes.
- Testing before committing to main: Thoroughly test new features or changes before merging with the main branch.
- Manual testing of integrated features to ensure seamless functionality.

Black-Box Testing

- Identify issues and bugs through exploratory testing.
- Manually explore the website, attempting to break or identify issues.
- Verification of expected behavior and identification of unexpected issues.

Automated Testing with GitHub

- Automate testing and validation of code changes.
- Utilize GitHub Actions for automated testing.
- Create a .yaml file to define automated tests and workflows.
- Integration with GitHub Issues for tracking and resolving identified issues.



TICKETING EMAIL CHANGES

Changing the Support Ticket Email Configuration

This section explains how to change the email address where support tickets are sent from a Gmail account to your custom domain (@thehrdc.org).

Current Configuration

The ticketing system is currently configured to use Gmail for sending support tickets. The system uses the following environment variables:

- EMAIL_USER: The email username/address
- EMAIL_PASS: The email password or app password
- EMAIL_HOST: The email server host (currently set to Gmail's SMTP server)
- EMAIL_PORT: The port used for email connections
- EMAIL_SECURE: Boolean to indicate if secure connection is required
- GOOGLE_API_KEY: API key for Google services

Steps to Change Email Configuration

1. Update Environment Variables

Modify your .env file with the following changes:

```
# Change from Gmail to your domain
EMAIL_USER=support@thehrdc.org      # Replace with your preferred email address
EMAIL_PASS=your_new_password        # Set the password for your domain email
EMAIL_HOST=mail.thehrdc.org         # Replace with your domain's mail server
EMAIL_PORT=587                      # Common port for SMTP (confirm with your email
provider)
EMAIL_SECURE=true                   # Set to true if using SSL/TLS
```

If using a different email provider than your current domain host, you may need additional



TICKETING EMAIL CHANGES

configuration. Consult with your email provider if this is the case.

2. Testing the Configuration

After updating the environment variables:

- Restart the server

- Submit a test ticket through the form

- Verify that the email is received at the new address

- Check that confirmation/failed messages appear after ticket submission

4. Troubleshooting Common Issues

Authentication errors: Verify your username and password are correct

Connection timeout: Check that EMAIL_HOST and EMAIL_PORT are correct

SSL/TLS issues: Adjust EMAIL_SECURE as needed

Firewall issues: Ensure your server can connect to the email provider

Note

Keep the GOOGLE_API_KEY variable even if you are not using gmail, it is necessary for the functionality of the search, calendar, and drive features.



ADDING FILES TO GOOGLE DRIVE

Search Feature - Adding Files

Find (or create) your target folder in Drive

Go to <https://drive.google.com/> and sign in with the Google account that owns your folder.

Navigate to the folder you want your app to search.

In your browser's address bar you'll see a URL like:
<https://drive.google.com/drive/folders/1Kf4QwSSCj03NeD4L38RtML3HP67xYcu8>

Copy everything after `/folders/` – that's your folder ID.

Tell your app about that folder

In your `.env.local`, add the following, changing the ID to match yours:
`GOOGLE_DRIVE_FOLDER_ID=1Kf4QwSSCj03NeD4L38RtML3HP67xYcu8`

Then restart your dev server: `npm run dev`

Share the folder with your service account

Because your API calls authenticate as a service account, that account needs permission on the folder:

In Drive, right-click the folder and choose Share.

Paste your service account email (for example:
`hrdc-745@advance-copilot-457622-a0.iam.gserviceaccount.com`)

Grant it Viewer access.



ADDING FILES TO GOOGLE DRIVE

Upload files into that folder

Drag & drop files onto the folder in the Drive UI, or click New File upload.

When the upload finishes, your Next.js API call will include them.

Verify in your app

Open your search page and click the “ ” button (or submit an empty search) to run `loadAllFiles()`.

You should now see every file you added.



FEATURE RELEASE

How to Release a Version:

Consult your PM

After consulting, speak with your clients about the changes

Learn what they are satisfied/dissatisfied with

Update documentation to reflect changes

Push new version to Github

(Optionally) Create blog release overviewing new features



FURTHER QUESTIONS AND SUPPORT

TROUBLESHOOTING AND SUPPORT

For internal assistance, contact the support team at [HRDC IT team]

For Developer support, contact loganschuman406@gmail.com.

GOOGLE DRIVE HELP AND SUPPORT

<https://support.google.com/drive/?hl=en#topic=14940>

GOOGLE FIREBASE DOCUMENTATION

<https://firebase.google.com/docs>

FRAMEWORK DOCUMENTATION/SUPPORT

NEXT.JS documentation

<https://nextjs.org/docs>

Tailwind CSS documentation

<https://v2.tailwindcss.com/docs>

Fly.io documentation

<https://fly.io/docs/>

TEST LOGIN DETAILS

email: Test@TestEmail.com

password: Testpassword12!

GOOGLE FIREBASE

email: hrdcticketing@gmail.com

password: enP1None!



Intranet Software

User Documentation
V1.0.0

Logan Schuman
Michael James
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HRDC EMPLOYEE INTRANET USER DOCUMENTATION





OVERVIEW

Overview

The HRDC Intranet is a user-friendly platform designed to streamline access to files stored in a Google Drive repository. It includes a homepage with a search bar, profile login, and the HRDC logo for straightforward navigation.

Web Address

<https://hrdc.fly.dev>

TEST LOGIN DETAILS

email: Test@TestEmail.com
password: Testpassword12!

GOOGLE FIREBASE

email: hrdcticketing@gmail.com
password: enP1None!

TROUBLESHOOTING AND SUPPORT

For internal assistance, contact the support team at [HRDC IT team]
For Developer support, contact loganschuman406@gmail.com.



CONTENTS

Overview

HRDC User Documentation

Features

How to Use

Navigation

Documents

Admin Privileges



FEATURES

Employee Announcements

Important announcements can be posted directly on the homepage, ensuring they are immediately visible to all users upon login. This central placement helps keep everyone informed about critical updates, upcoming events, or policy changes without the need to navigate through multiple pages. By highlighting announcements on the homepage, communication becomes more efficient and accessible.

Document Search

The home page includes a search bar where users can input keywords to look up files in Google Drive. Files are named in the format: year month file_name (e.g., 2024 03 Financial_Report). The search function filters results based on the entered keywords.

Quick Links Section

The documents tab includes a "Quick Links" section for easy access to important features:

- Important Files: Direct access to crucial documents.
- Modify Documents: Allows users to edit or update existing documents.
- User Privileges: Displays and manages user roles and access levels.
- Document Directory: Provides an organized listing of all available documents.

Employee Profile Creation

In the top right of the navigation bar, users are able to click on the silhouette icon to create a profile. If they already have a profile created they are able to login to their profile through this icon. If they are already logged in, users can view their profile and they are also able to logout.



FEATURES

Schedule and Time Off Request

The Schedule tab serves as a central hub for essential company dates, including deadlines, meetings, and holiday schedules. Additionally, it offers a convenient feature that allows employees to request time off directly, streamlining both planning and communication across the organization.

Support

Easily create a support ticket that goes directly to a supervisor.



HOW TO USE

BASIC USER FEATURES INSTRUCTIONS

1. Searching for Files:

- The Document tab allows users to type relevant keywords into the search bar. (e.g., 2024 03 Financial_Report)
- Press “Enter” or click the search button to display matching files.
- Click on a file from the search results to open or download it.

2. User Log In:

- Click on the profile icon in the top right corner.
- Choose between Google sign-in or username/password login.
- Follow the on-screen prompts to authenticate.

3. Creating a new account:

- Click the profile icon in the top right corner. below the login button underneath the email and password input fields choose the option to create an account.
- Fill in your email address, choose a password and confirm your password.
- Click “create account” and your account will be processed and you will be taken to your account details page.



HOW TO USE

BASIC USER FEATURES INSTRUCTIONS CONTINUED

4. Schedule:

- The schedule tab displays important company dates. Logged in users are also able to submit time off requests through the built in submission form to be approved by supervisors.

5. Paychecks and Paystubs:

Through the Schedule tab, scroll to the bottom to find the link to paystubs login. login with your credentials to view your paystub account details.

6. Support Tickets:

Using the Support tab, create a support request by filling out the three fields displayed on the page. Briefly state your issue, provide your email and give a brief summary of your request or issue in the message field. Submit the ticket and a supervisor will follow up with you as soon as they can.

6. Returning to the Home Page:

Click on the HRDC logo at any time to go back to the main search page.

7. Creating an announcement

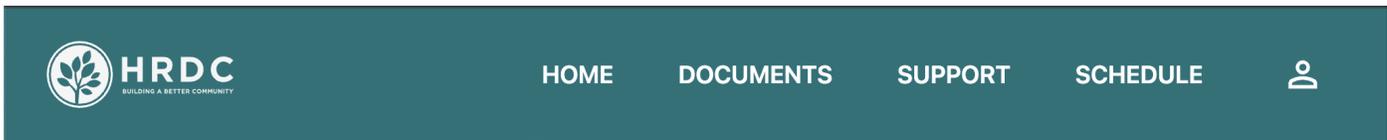
From the home screen, click the icon with a white "+ New Post" in the bottom left of the screen. Title your post, and say what your announcement is in the input field. click "post" to view your post.



NAVIGATION

The navigation bar for the adapts to the users device based on if the user is viewing the application on a computer screen or a mobile device screen.

DESKTOP VIEW - full navbar



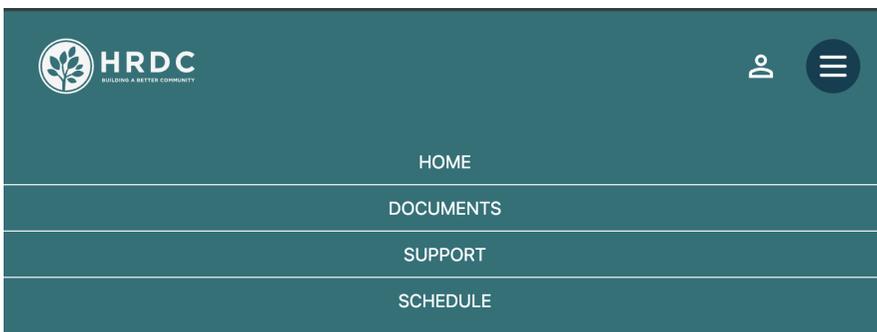
MOBILE VIEW - dropdown navbar

On mobile devices the app will display the navigation bar in a dropdown menu format. Click the three stacked lines in the right hand corner to see the full menu options.

condensed dropdown menu



expanded dropdown menu



Click the three stacked lines icon to display the full dropdown menu

DOCUMENTS

DOCUMENTS TAB

Accessing Employee Handbook

In the pinned priority links section there is a direct link to the HRDC employee handbook. This will open a new tab with a browser viewable version of the handbook be available.

Document Search

Underneath the priority links you will find the document search feature. In the input field, type the name of your document or a keyword related to what you are looking for and click the blue search button to the right of the search bar. The results of your search will be listed below in the results section.

PRIORITY LINKS

EMPLOYEE HANDBOOK

FIND A DOCUMENT

search input field ○

Photos

Search

search results ○

Results

×

Photos from event on april 12

∨

ADMIN

FEATURES OF ACCOUNTS MARKED WITH ADMIN PRIVILEGES

View your privileges:

- log in with your email and password
- click on the profile icon in the top right
- click on my profile

From your admin dashboard you will see your privileges listed in green boxes.

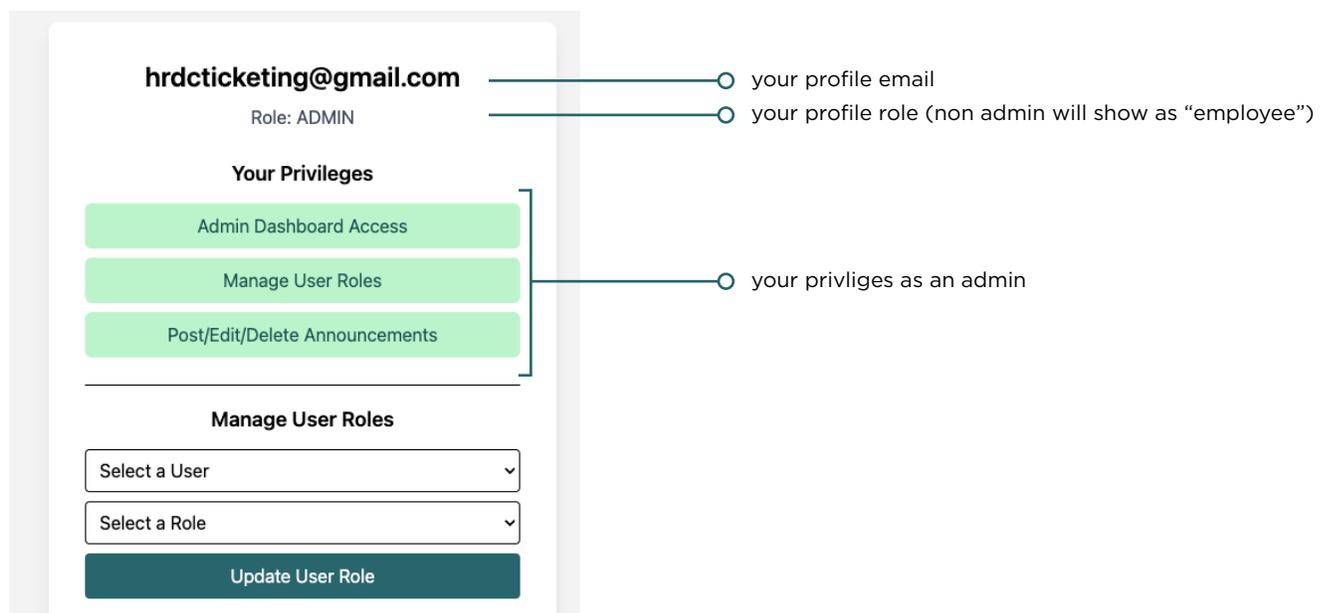


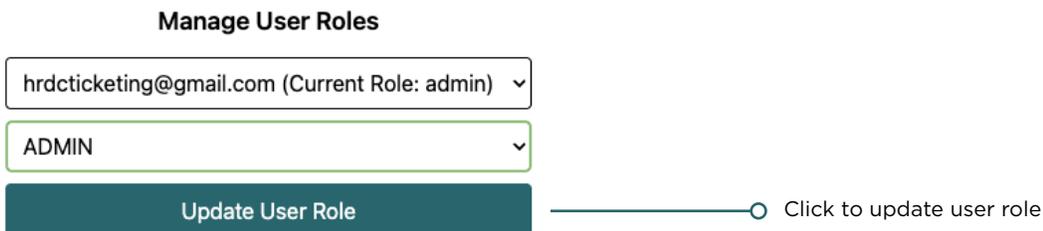
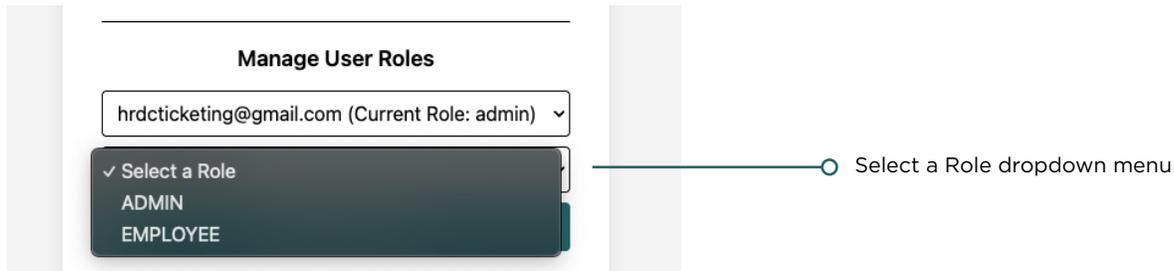
figure 1. Example Admin dashboard.

ADMIN

FEATURES OF ACCOUNTS MARKED WITH ADMIN PRIVILEGES

Managing a user's role :

while logged in as an admin account, go to your profile page. under your privileges find the manage users role section. from here you can select a user account from the “select a user” dropdown menu. Then, from the “select a role” dropdown menu you can either give a user account admin privileges or switch them back to the role of employee. click the “update user role” button to save changes.



ADMIN

FEATURES OF ACCOUNTS MARKED WITH ADMIN PRIVILEGES

Editing and Deleting Announcements :

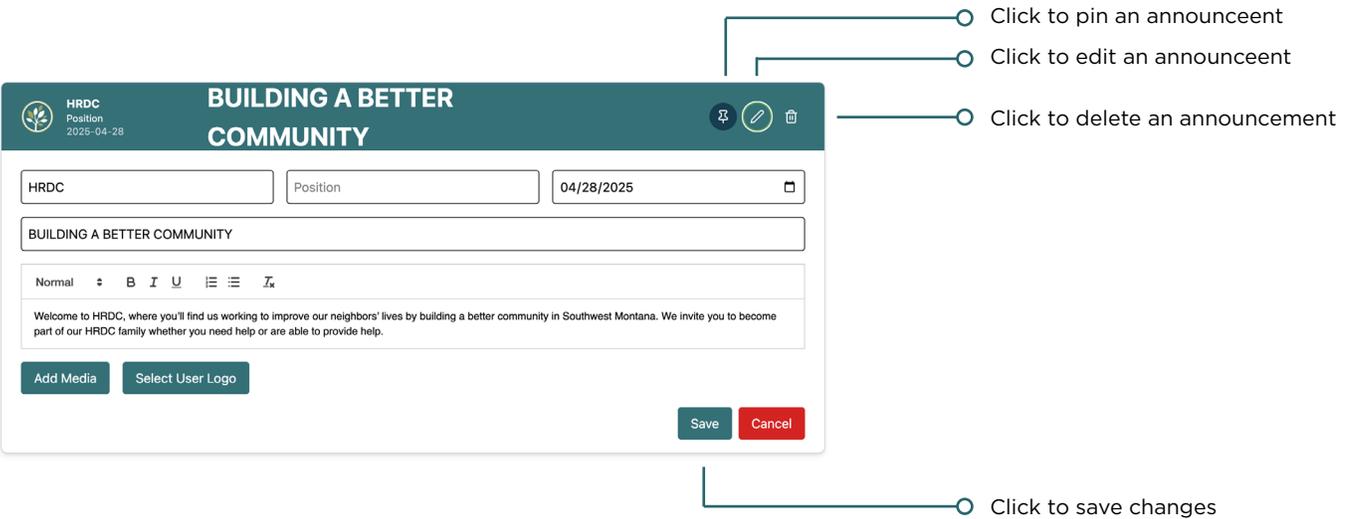
While logged in as an admin account, go to the home page. From the home page you will see that you have the ability to edit and delete announcement posts with admin privileges.

To Make an Edit:

- Click on the pen icon edit button
- An edit window will open at the top of the page, make your changes
- Click “update post” to save your changes to the announcement

To Delete an Announcement post:

- Click on the trash can icon to delete post
- The announcement post will be deleted.



The screenshot shows the HRDC announcement edit interface. At the top, there is a header with the HRDC logo and the text 'BUILDING A BETTER COMMUNITY'. Below the header, there are input fields for 'HRDC', 'Position', and a date '04/28/2025'. The main content area contains a text editor with a rich text toolbar (Normal, Bold, Italic, Underline, List, Link) and a preview of the announcement text: 'Welcome to HRDC, where you'll find us working to improve our neighbors' lives by building a better community in Southwest Montana. We invite you to become part of our HRDC family whether you need help or are able to provide help.' At the bottom of the editor, there are buttons for 'Add Media' and 'Select User Logo'. At the very bottom, there are 'Save' and 'Cancel' buttons. Callouts with lines pointing to icons in the top right corner of the editor indicate: 'Click to pin an announcement' (pin icon), 'Click to edit an announcement' (pen icon), 'Click to delete an announcement' (trash can icon), and 'Click to save changes' (Save button).