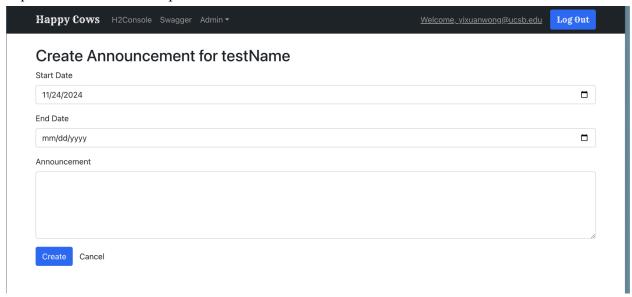
Release Notes: happycows, f24-12

The Happy Cows app has gained new features, has been cleared of many bugs both in terms of UI appearance and feature functionality, and has been bolstered with developer-friendly backend features that will make further development easy. Announcements now actually show up on the Play page based on their start and end date and admins can easily create new ones on the frontend. The Play page looks a lot more professional now with cleaner descriptions and table appearances and functional sorting and page scrolling. Backend operations for course rosters and Announcements have been added/refactored, so further development on these features will have a lot of support and almost no more backend work should have to be done.

Features added in version happycows-f24-12

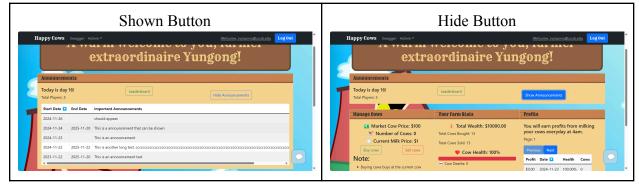
"Create Announcement" Page

Admins can now create announcements with a simple form. Added Create Announcement Page and modified the form to take in regular date format "mm-dd-YYYY" instead of ISO format for ease of use. The form also auto-populates the Start Date with the current date and no longer requires commonsId as input.



The information of the announcement is shown on the Play Page.

The announcements are sorted by decreasing EndDate order, and only the announcements that current date within StartDate and EndDate are shown. A button is also added, so that when it is clicked, the announcement will be hidden and it will not be so crowded.

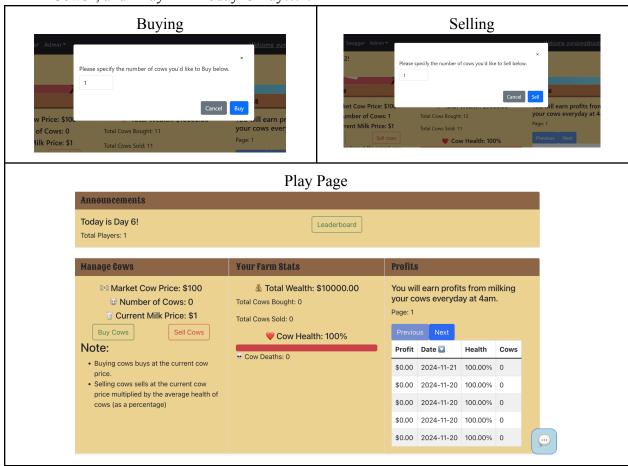


Bug fixes and UI/UX Improvements

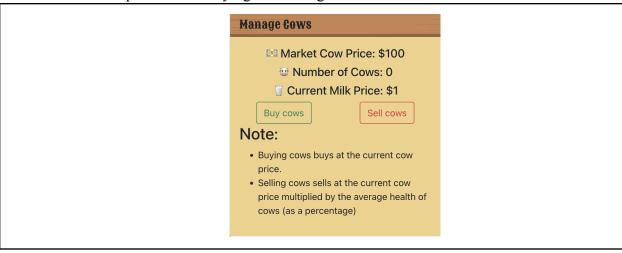
• The "Mattanjah de Vries" link on the footer is replaced with the actual Professor About Page



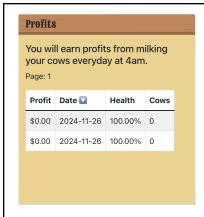
• Fixed capitalization for "Buy" and "Sell" buttons, "cows" in "Buy Cows" and "Sell Cows", and "Day" in "Today is Day...".



• Made the explanation of buying and selling cows neater.



• Previously the "Previous" and "Next" buttons in the Profits column persisted no matter what page you were on, now they dynamically appear based on page number. If you are not on the last page, the "Next" button will appear. If you are not on the first page, the "Previous" button will appear. If there is only one page, no buttons appear.

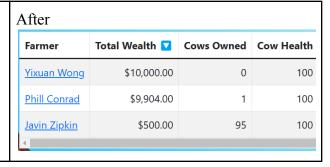






• The leaderboard now properly sorts by wealth. Before, it incorrectly ranked users with wealth less than \$1000.



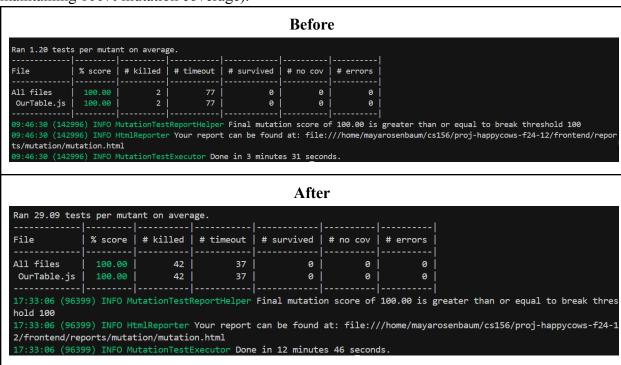


For Developers

OurTable.js Testing (OurTable.test.js file modified)

Modified OurTable.test.js so developers can test OurTable.js for line/branch coverage and mutations at a much faster rate. This will allow developers to test modifications made to the Leaderboard (OurTable.js) with much higher level efficiency. The runtime for mutation coverage sped up by about 9 minutes (see below).

Higher efficiency for testing as well (29 tests per mutant vs. 1.20 tests per mutant while still maintaining 100% mutation coverage).



These modifications also yield 100% line/branch coverage (see below):

```
Test Suites: 68 passed, 68 total
Tests: 315 passed, 315 total
Snapshots: 0 total
Time: 14.26 s, estimated 22 s
Ran all test suites.
```

Announcements "Put" Operation Refactored

One of the broken CRUD operations for Announcements was Put. Swagger and testing revealed that it did not return proper error messages for different errors. It instead threw an error 400 "Bad Request" even in situations where this did not apply, such as a forbidden request error. The tests for Put were unrealistic and hid these issues. Both the operation and the tests have been remedied, and Put now appears the same for both Announcements and Commons. In a future

update, developers should find it significantly easier to implement and test the Edit page for announcements.

Creating Courses and being able to use post, get all and delete operations

The get-all, the post and delete operation are created for Courses. By creating these, an admin can choose to list all courses, add and delete any course.



Creating Students and Being Able to Upload Student Roster

The get-all operation and the post-operation are created for Students. By creating these, an Administrator can upload a course roster to a specific course to add all students to a course.

