



Design Review

SUBMERGE

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Overview

- Objective
- Value
- Customer Requirements
- The Development Process
- Goals and Focus
- Potential Risks
- Validation Approach
- Project Schedule and Budget

Objective

1. Finish the web utility we were given so that its functional and allows students to make reservations for machines using billing codes.
2. Authenticate UI students and faculty.
3. Additionally, the interface should be visually appealing and easy to understand how to use it.

Value

For engineering students, having access to machines to complete assignments is important. What can become difficult is when students don't know when they can use machines or if machines are currently being used. The problem is students need to physically go into the machine shop to see what machines are being used or if they are available.

We plan to have a fully functional web interface where ME students can easily schedule times to use equipment. The webpage should be easy to understand and have no problems working for the next couple of years.

Customer Requirements

- The web utility will allow students to make reservations for machines with billing codes and allow administrators to manage billing codes and perform other administrative tasks as needed.
- The lifetime of the web utility will be long term without requiring any maintenance or updates on the administrative end.
- The web utility will be able to control the power state of machines based on reservations made by the user through the use of external hardware, software, or both.
- The web utility will be user friendly and intuitive in design.

Current Software and Platforms



The Development Process

- Fix existing bugs
- Add missing core functionalities
- Improve existing functionalities (if time permits)
- Implement secure authentication method for users
- Demonstrate full website functionality on temporary server
- Migrate website to University of Idaho server

How the Website Looks Now

The screenshot shows a web browser window with the URL `me-machineshop.herokuapp.com/areserve`. The browser's address bar and tabs are visible at the top. A dark notification box in the center of the page displays the message: "me-machineshop.herokuapp.com says Not a valid reservation time." with "Cancel" and "OK" buttons.

The main content area is titled "Machine Shop" and contains two steps:

Step 1. Reserve Time on a Machine
Click and drag on the calendar to reserve time on a given machine below. You may only make one reservation at a time.

< Oct 1, 2020 > [Day] [Week] [Month]

Machine	12am	1am	2am	3am	4am	5am	6am	7am	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm
Lathe 1 (GJ 102)						■												
Computer																		
3D Printer																		
Remote Login PC																		
Sindoh #1																		

Step 2. Reservation Information
Billing Code *
1

RESERVE

Uofl Branding

Incorporate
these colors
into the GUI.

PRIDE GOLD
Pantone 3514 C
CMYK 0-27-100-0
RGB 241-179-0
#F1B300

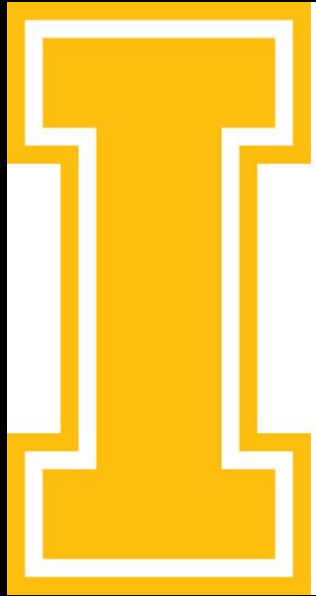
SILVER
CMYK 0-0-0-50
RGB 128-128-128
#808080

WHITE
CMYK 0-0-0-0
RGB 255-255-255
#FFFFFF

BLACK
CMYK 20-20-20-100
RGB 25-25-25
#191919

METALLIC GOLD
PMS Metallic 871
Do not convert to CMYK, RGB or HEX

UofI Branding - Logos



University of Idaho
College of Engineering

Goals and Focus

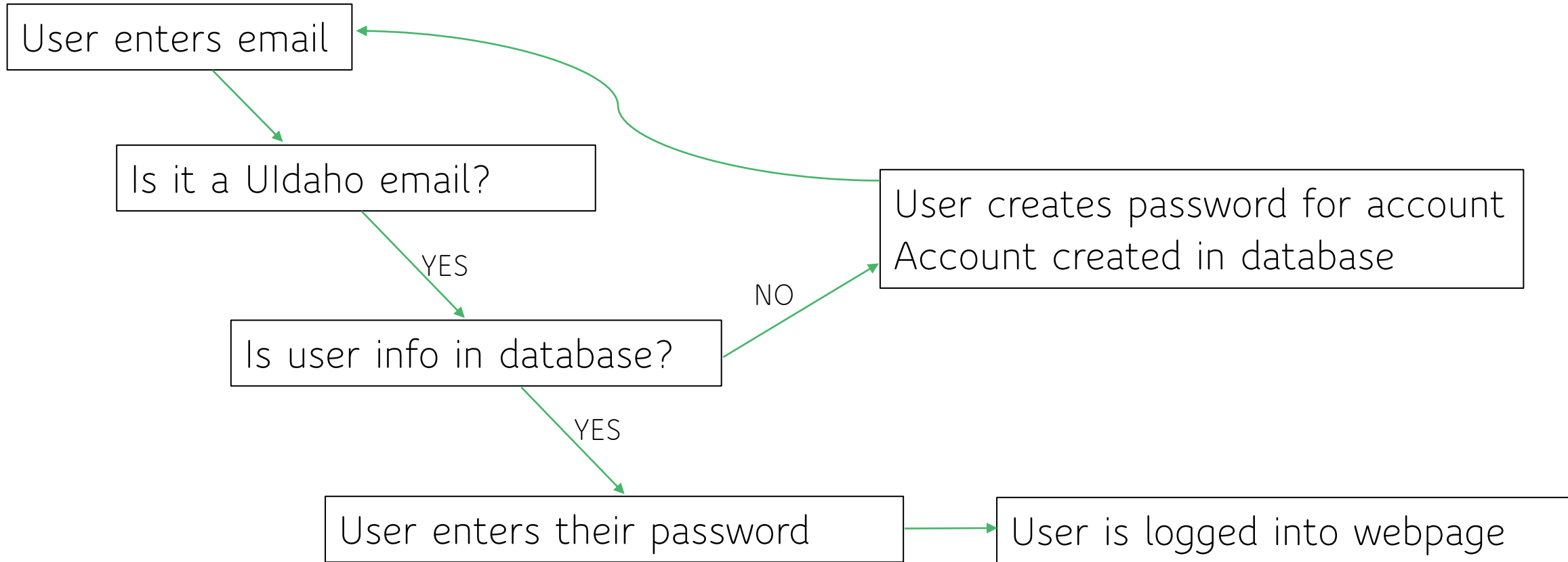
- Design
 - Focus on improving existing structure
 - Make changes/additions if necessary (e.g. feature does not work well)
- Authentication
 - Demonstrate functionality on external server
 - Plan to migrate to University of Idaho server in the future

Here we want
to add a way
for users to
make
accounts.

← BACK TO HOME

Admin Login:	email
E-mail: admin@uidaho.edu	<hr/>
Password: password	password
	<hr/>
Graduate Login:	<input type="button" value="LOGIN"/>
E-mail: grad@uidaho.edu	
Password: password	
Undergraduate Login:	
E-mail: undergrad@uidaho.edu	
Password: password	

Conceptual Login System



Current Reservation system

Make a Reservation

Step 1. Reserve Time on a Machine

Click and drag on the calendar to reserve time on a given machine below. You may only make one reservation at a time.

< Nov 16, 2020 >

Machine	12am	1am	2am	3am	4am	5am	6am	7am	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm	6pm
Lathe 1 (GJ 102)																			
Computer																			
3D Printer																			
Remote Login PC																			
Sindoh #1																			

- Click and drag to reserve
- Does not work on smartphones



Step 2. Reservation Information

Graduate Student *

Billing Code *

RESERVE

Conceptual New Reservation System

Select date and time to reserve a machine. You may only make one reservation at a time

Current machine availability:

< Nov 13, 2020 >

Resource Name	12am	1am	2am	3am	4am	5am	6am	7am	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm	6pm	7pm
Machine 1																				
Machine 2											Busy									
Machine 3														B...						

Select a date:
--/--/---- x 📅

Select a machine:
▼

Start Time:
▼

End Time:
▼

Graduate Student Name *

Billing Code *

RESERVE

View-Only Overview of Current Bookings

Date selector with calendar pop-up

Dropdown selection (smartphone friendly)

Conceptual New Reservation System

Select date and time to reserve a machine. You may only make one reservation at a time


Current machine availability:

< Nov 13, 2020 >

Resource Name	12am	1am	2am	3am	4am	5am	6am	7am	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm
Machine 1																	
Machine 2																	
Machine 3																	
Machine 3																	

Select a date:

--/--/----

× 

« ‹ November 2020 › »

MON	TUE	WED	THU	FRI	SAT	SUN
26	27	28	29	30	31	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	1	2	3	4	5	6



Calendar pop-up date selector

Graduate Student Name *

Billing Code *

RESERVE

Potential Risks with the project

- Misuse of website by external parties
 - Only allow users with UIdaho emails to use the service
 - Blocked/Read-only status utility for admins
- Free or Open-Source platforms becoming Pay to Use.
- Authentication and Encryption
 - Hashing of passwords
 - Integration with current University of Idaho authentication

The Validation Approach

- Only users with Uldaho emails should be able to create accounts
- Multiple users should be able to use the website concurrently
- Users should be able to view their schedule
- Admins should have control of billing codes and admin tasks
- User login credentials should be stored securely
- Website should function indefinitely without updates

Project Schedule and Budget

Project Schedule:

12/20 - Ability to create and save reservations, have good feedback when making reservations, visually show reservations on the calendar, change status of user to view only/blocked.

3/1 - Ability to authenticate users, have UI branding, change sidebar buttons so they are visually easier to understand, put website on UI server, switch database management to a permanent solution.

5/25 - Project Expo

Budget: None



Questions?
