KEOGH'S PORTS PITCH

Presented by

πTech.

Basic Understanding

Basic Understanding

- You want a software that provides the optimal amount of moves to:
  - load/unload ships **[a]**
  - balance ships **[a]**
- The software will provide step by step instructions **[b]**
- The manifest, along with a transfer list, will be sent to the operator at least 15 minutes before the ship arrives **[c]**
- After loading/unloading or balancing a ship, we will send an updated manifest to the captain **[d]**
- The log will record every atomic event with a timestamp **[e]**
- If the crane operator notices a significant difference in container weight, they should address it through a comment in the log **[f]**
- We will provide yearly logs to the appropriate party **[g]**

Assumptions

Assumptions

- The software will ask for confirmation for each step **[h]**
- The software will provide a time estimate for each step **[i]**
- The software will provide a total time estimate for each operation **[j]**
- The software will deem a ship balanced when total mass of left and right side are within 10% of each other **[k]**
- The software will resume operation upon power outages **[l]**
- The software does not have to account for truck/ship delays **[m]**
- The software can select any one of duplicate containers **[n]**
- Containers can be temporarily stacked to a maximum height of 10 **[o]**
- The crane will operate at the same speed, regardless of container weight **[p]**
- The true container weight will be unknown until the crane picks it up **[q]**
- A ship may only be loaded/unloaded or balanced, but never both **[r]**
- Every ship layout will always be symmetrical **[s]**

Assumptions

- Every ship is of the X2 class **[t]**
- Only one ship can be served at a time **[u]**
- Multiple ships can be served in a day **[v]**
- All employees are in good health and speak basic english **[w]**
- All employees undergo strict security measures before entering the work area **[x]**
- Only one employee will be operating the software at a time **[y]**
- The crane operator is responsible for receiving instructions from the captain, indicating whether the ship requires transferring or balancing **[z]**
- The crane operator is responsible for manually inputting transfer list instructions **[A]**
- The manifest provided by the captain will always be 100% accurate **[B]**
- The log will display time stamps in the ISO 8601 standard format without seconds and milliseconds **[C]**
- All machines will have at least 2GB of ram and 50GB of storage **[D]**

Stakeholders

Stakeholders

Direct Users:

a. Operators

b. Manager

Non-direct users:

a. Head Office Staffs

b. Ship Captains

c. Program Developers

d. Truck Drivers

e. Special Truck Drivers

f. Cargo Owners

g. Homeland Security

h. Insurance Companies

Inputs

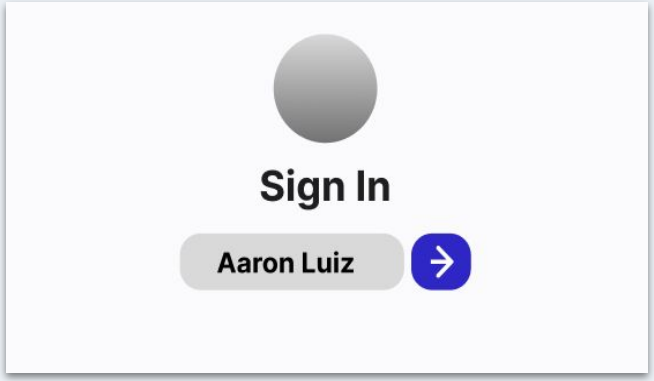
Inputs: The Manifest

- **Ship Manifest**
  - Full container list, including the name, weight, and position of each container
  - Captain of incoming ship is responsible for providing an accurate manifest through email
  - The operator must upload the manifest through the home page
  - **Format**
    - Received as a plain ".txt" file
    - One line per container
    - Each row has 3 comma separated fields `[01,04], {00643}, Amazon 64834 Snap-on tools`

Position on ship	Container weight	Container name
• Position coordinates [X, Y] where bottom left is [01, 01] • This field must NOT be empty • Example: [01, 04] would be the bottom most container, fourth from the left	• Total weight of the container in kg 00432 → 432kg • Value must be between 00000 and 99999 • Weight may slightly vary from reality due to external factors such as rain on top of container	• Name of the container, typically includes the company, items in container, additional note • Will be "**NAN**" if slot does not exist for that ship • Will be "**UNUSED**" if slot is empty

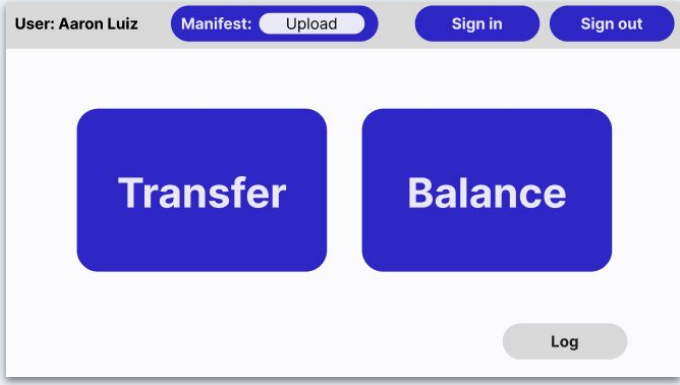
Inputs: Sign In

- **Operator name field**
  - The name of the operator entered during login
  - Receives ASCII text
  - Input must be at least 1 character and less than 256 characters
  - Entry is limited to only Latin characters and spaces
  - Entry must not start with a space
- **Enter button**
  - Verifies validity of input according to defined format conditions
    - If valid, logs sign in event and grants access to the home page
    - If invalid, displays a descriptive error message instructing the user to try again



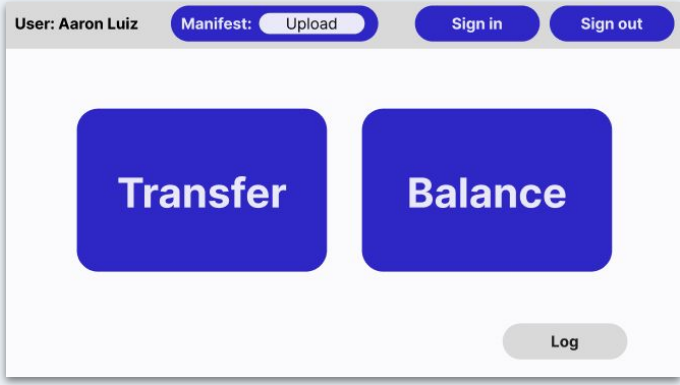
Inputs: Home page

- **Manifest upload button**
  - Opens the file selection interface where the operator can select the manifest to work on
  - Available only on the homepage, if no manifest is currently uploaded
- **Sign out button**
  - Signs out the current user and returns to the sign in page
  - Available only if the user is logged in



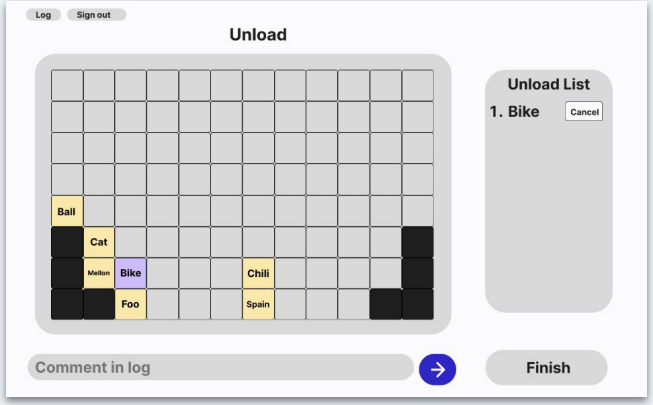
Inputs: Home page

- **Transfer button**
  - Navigates the user to the **transfer** page where the user can access load/unload operations take place
  - If pressed before a manifest is uploaded, will instruct the user to upload a manifest first
- **Balance button**
  - Navigates the user to the **balance** page where the balancing operation takes place
  - If pressed before a manifest is uploaded, will instruct the user to upload a manifest first
- **Log button**
  - Opens the log interface where the user can view the most recent log entries and add comments



Inputs: Transfer (Staging)

- **Grid cell**
  - Each cell represents a location on the ship
    - Black cells are non-existent on the current ship's design. Represents **NAN** rows on the manifest
    - Gray cells are unused on the current. Represents **UNUSED** rows on the manifest
    - Colored cells have containers on them, they can be unloaded
  - In the unload staging process, clicking a colored cell that has a container will highlight it and add the respective container to the unload list
  - Clicking an already selected cell will unselect it, remove the highlight and remove the container from the unload list



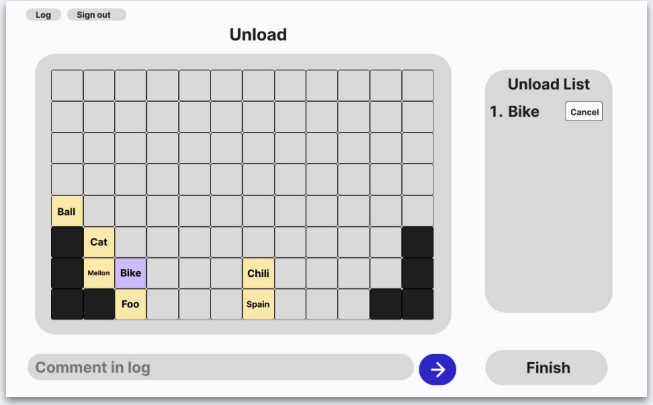
SeaweedOUTBOUND.txt - Notepad

File Edit Format View Help

[01, 01], {00000}, NAN
[01, 02], {00000}, NAN
[01, 03], {00000}, NAN
[01, 04], {00300}, Ball
[01, 05], {00070}, Hawaiian Pizza
[01, 06], {00000}, UNUSED
…
[02, 02], {00500}, Mellon
[02, 03], {00100}, Cat
[03, 01], {00000}, UNUSED
…

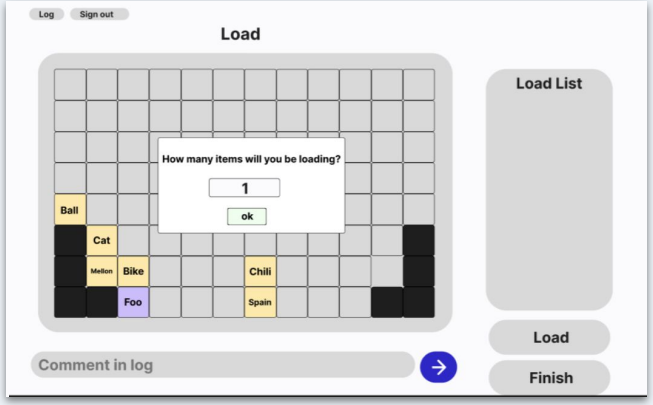
Inputs: Transfer (Staging)

- **Finish button**
  - Finalizes the list of containers to be **transferred**, and begins the next step; optimal sequence calculation
  - An operator must only press this after:
    - All containers to unload have been selected
    - All containers to load have been entered



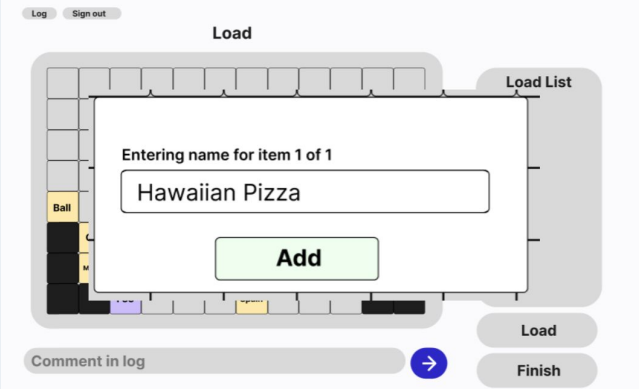
Inputs: Transfer (Load setup)

- **Number of items field**
  - When loading items, the software will first ask how many items the user would like to upload
  - This field can only receive an integer entry
  - If entry is valid the software will check if the ship has enough space
  - If there is enough space, the software will prompt the operator to enter the names of containers to be loaded
  - If the number entered is higher than available spaces, the software will display an error message indicating that there is not enough space



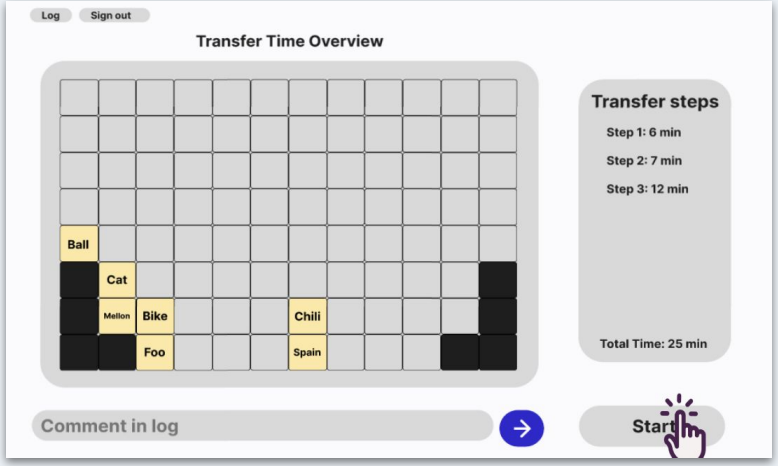
Inputs: Transfer (Load setup)

- **Container name field**
  - The name of the container to be loaded
  - Receives ASCII text
  - Input must be at least 1 character and less than 256 characters
  - Entry must not start with a space
- **Add button**
  - Finalizes the container entry requirements and adds the container to the the transfer queue



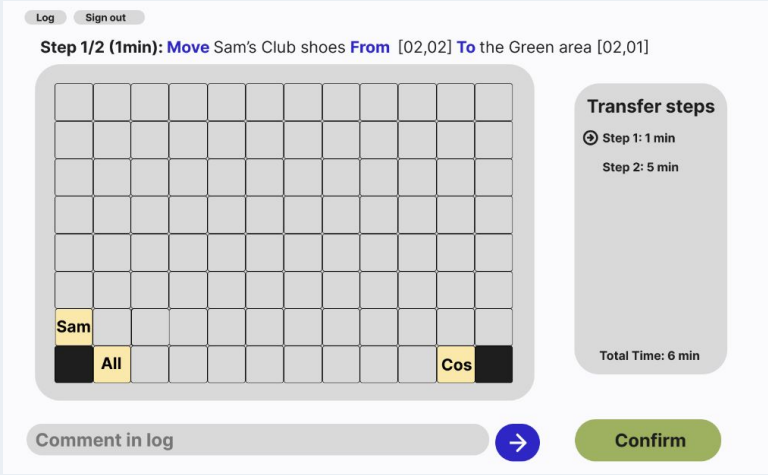
Inputs: Transfer (Steps overview)

- **Start button**
  - When the operator is ready to begin moving containers, this button kicks off the transfer process by showing instructions of step 1
  - The operator must press this after all steps suggested by the software had been reviewed



Inputs: Transfer (Step)

- **Confirm button**
  - After the operator successfully completes a step they must press **Confirm** to move to the next step

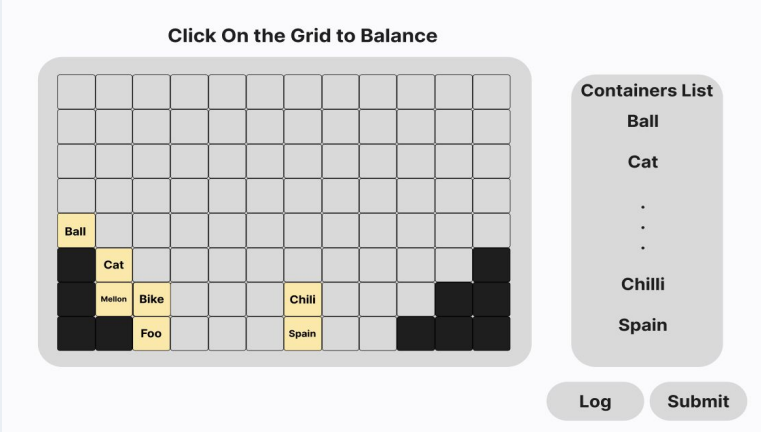


Inputs: Log Comments

- **Input box**
  - Receives ASCII text to be appended to the log file with a timestamp
  - Example input: “Container XYZ seems to be heavier than what is on the manifest by 20kg”
- **Enter button**
  - Will finalize the comment addition action and append what is in the **input box** to the log with a timestamp
- **Back button**
  - Navigates the user back to where they accessed the log from

Inputs: Balance

- **Submit button**
  - Finalizes the list of containers to be **balanced**, and begins the next step; optimal sequence calculation



Outputs

Outputs: Transfer

- **Optimal Steps**
  - **Description:** Specific steps to complete transfer session
  - **Responsible Party:** Crane Operator
  - **Format:**
    - Displayed on transfer screen in plain english
    - First screen is an overview of the steps and time to completion
    - Latter screens are steps one by one with options to comment on and confirm steps
- **Time to Completion**
  - **Description:** Estimated time to complete transfer session
  - **Responsible Party:** Crane Operator
  - **Format:**
    - Displayed on the overview screen of the transfer steps
    - Latter screens will display time to completion for each specific step

Outputs: Transfer

- **Outbound Manifest**
  - **Description:** Full container list, including the name, weight, and position of each container
  - **Responsible Party:** Captain of Ship
  - **Format:**
    - Received text file
    - One line per container
    - Each row has 3 comma separated fields (position on ship, container weight, container name)
- **Log**
  - **Description:** Tracks all events during work sessions
  - **Responsible Party:** Administration
  - **Format:**
    - ASCII Text
    - One line per event prefixed with a datetime in ISO Format (YYYY-MM-DD HH:MM)

Outputs: Transfer

- **Notifications**
  - **Description:** Pop up modals or toasts confirming the progress of a task
  - **Responsible Party:** Crane Operator
  - **Format:**
    - Display on screen as a pop up
    - Notification text will be in plain english

Outputs: Balance

- **Optimal Steps**
  - **Description:** Specific steps to complete balance session
  - **Responsible Party:** Crane Operator
  - **Format:**
    - Displayed on transfer screen in plain english
    - First screen is an overview of the steps and time to completion
    - Latter screens are steps one by one with options to comment on and confirm steps
- **Time to Completion**
  - **Description:** Estimated time to complete balance session
  - **Responsible Party:** Crane Operator
  - **Format:**
    - Displayed on the overview screen of the transfer steps
    - Latter screens will display time to completion for each specific step

Outputs: Balance

- **Outbound Manifest**
  - **Description:** Full container list, including the name, weight, and position of each container
  - **Responsible Party:** Captain of Ship
  - **Format:**
    - Received text file
    - One line per container
    - Each row has 3 comma separated fields (position on ship, container weight, container name)
- **Log**
  - **Description:** Tracks all events during work sessions
  - **Responsible Party:** Administration
  - **Format:**
    - ASCII Text
    - One line per event prefixed with a datetime in ISO Format (YYYY-MM-DD HH:MM)

Outputs: Balance

- **Notifications**
  - **Description:** Pop up modals or toasts confirming the progress of a task
  - **Responsible Party:** Crane Operator
  - **Format:**
    - Display on screen as a pop up
    - Notification text will be in plain english

Signing In,
Balancing a Ship

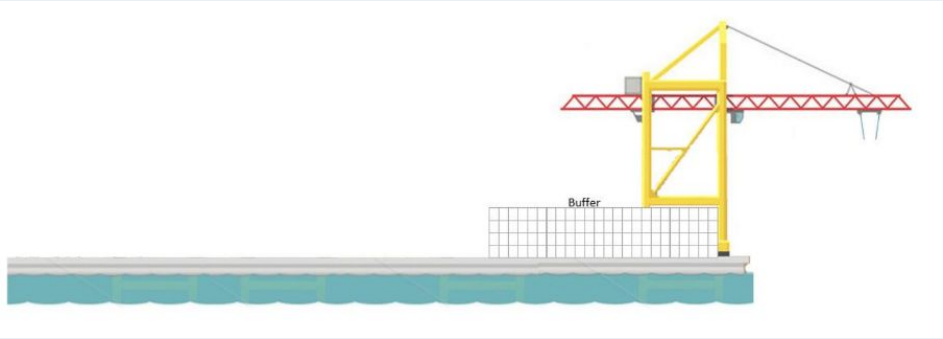
Scenario 1

Scenario 1-1

- **Name:** Aaron Luiz
- **Age:** 24
- **Position:** Crane Operator
- **Education:** High School Graduate
- Aaron Luiz is an avid soccer fan and loves to keep up with multiple leagues.
- He has worked at Long Beach Port for 2 years as a crane operator.

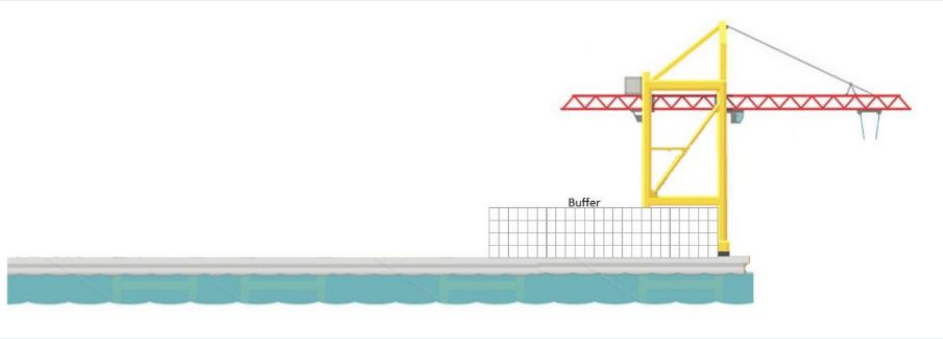
Scenario 1-2

- Aaron is clocked in and in the cabin, he has been there since the start of his shift at 8:00am
- There are no ships or trucks at the port
- It is 12:05pm



Scenario 1-3

- It is 12:30pm and Aaron gets a call from the head office;
- The head office says “The Torch will be there around around 2:30. This ship is balance only.”



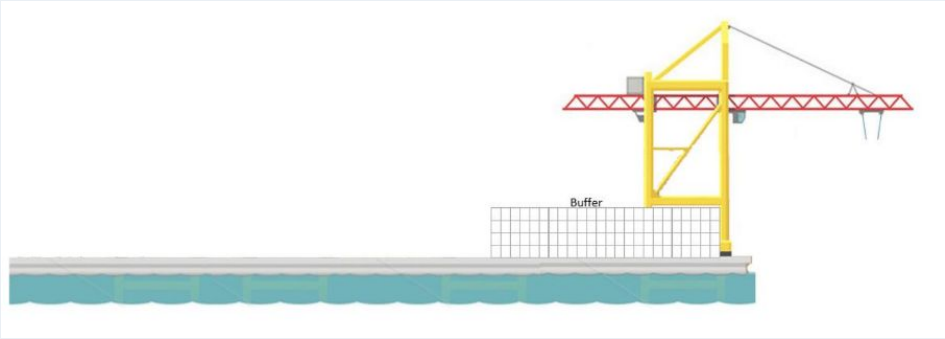
Scenario 1-4

- At 2:15, Aaron gets an email from the Captain of the Torch. It includes the manifest, TorchCaptainRamirez.txt

TorchCaptainRamirez.txt - Notepad

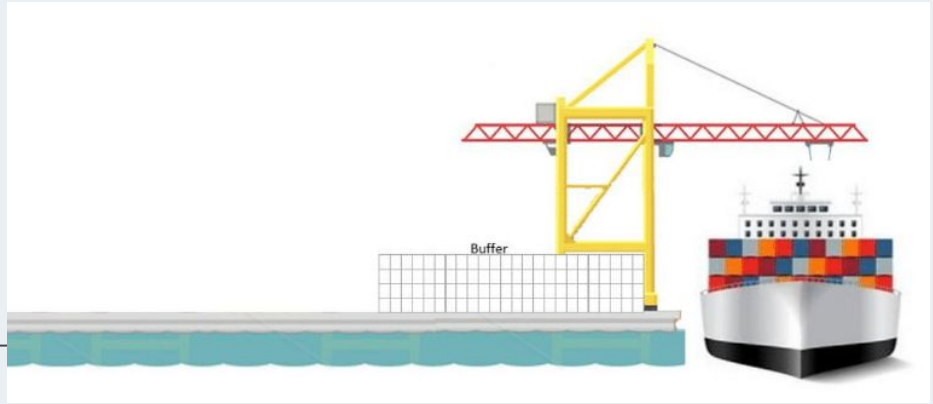
File Edit Format View Help

[01, 01], {00000}, NAN
[01, 02], {10000}, Alligator pickup truck
[01, 03], {00000}, UNUSED
[01, 04], {00000}, UNUSED
…
[01, 11], {03000}, Costco tables
…
[02, 02], {14000}, Sam’s Club shoes
…



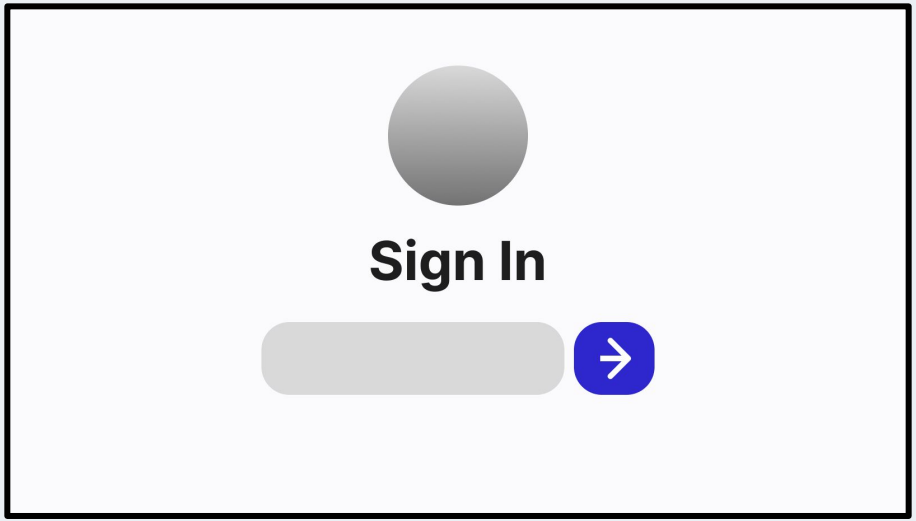
Scenario 1-5

- At 2:37pm, a ship docks, presumably the Torch



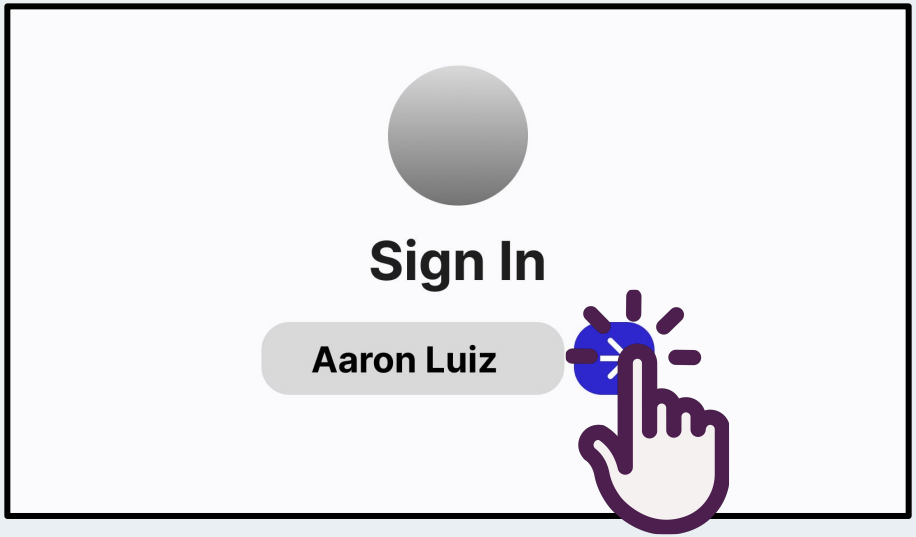
Scenario 1-6 Signing In

Sign In Page



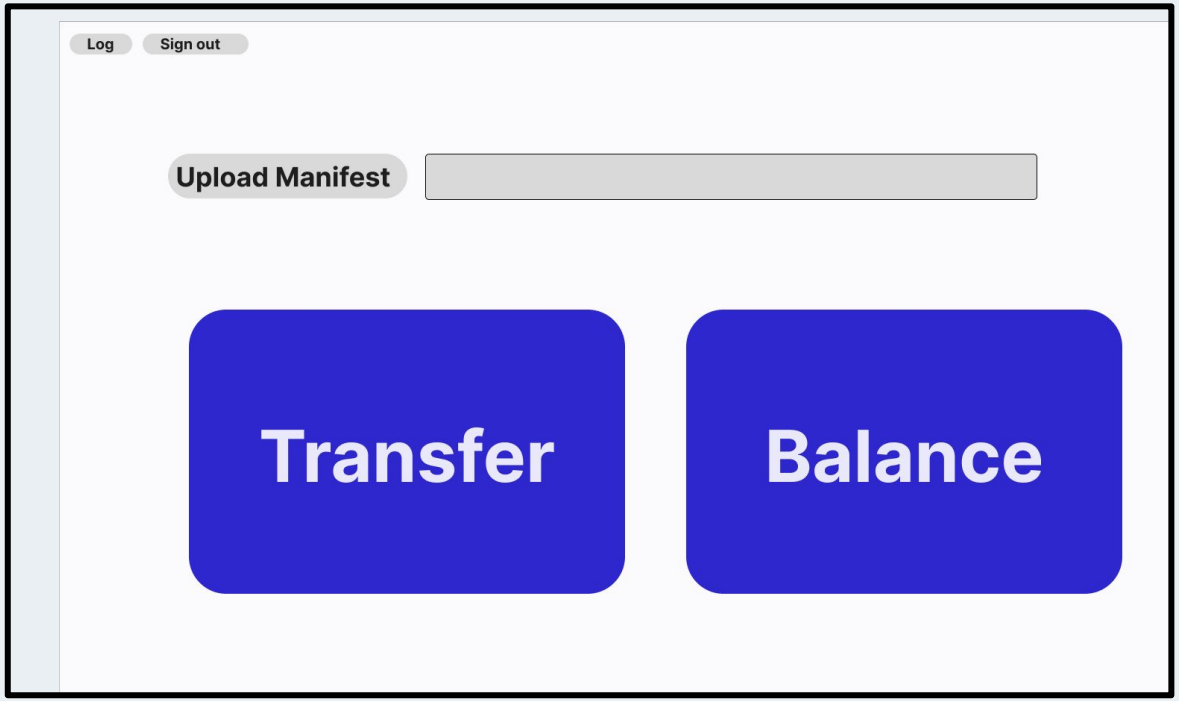
Scenario 1-7 Signing In

Sign In Page



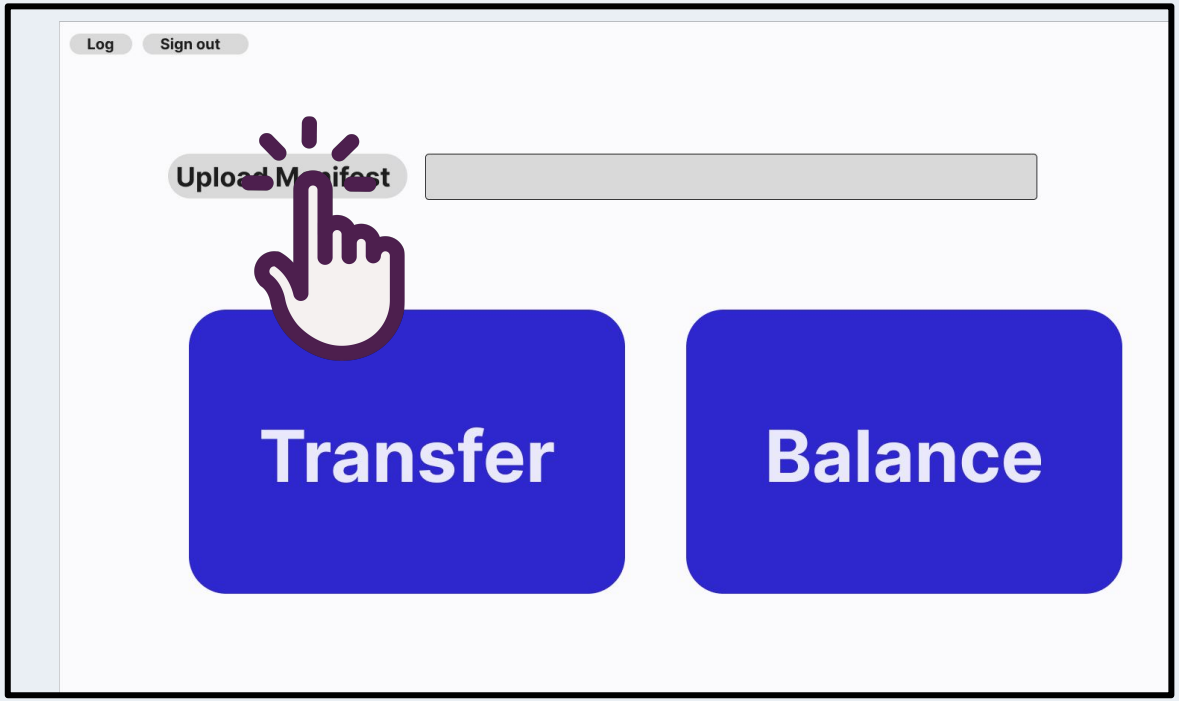
Scenario 1-8 Main Menu

Main Menu Page



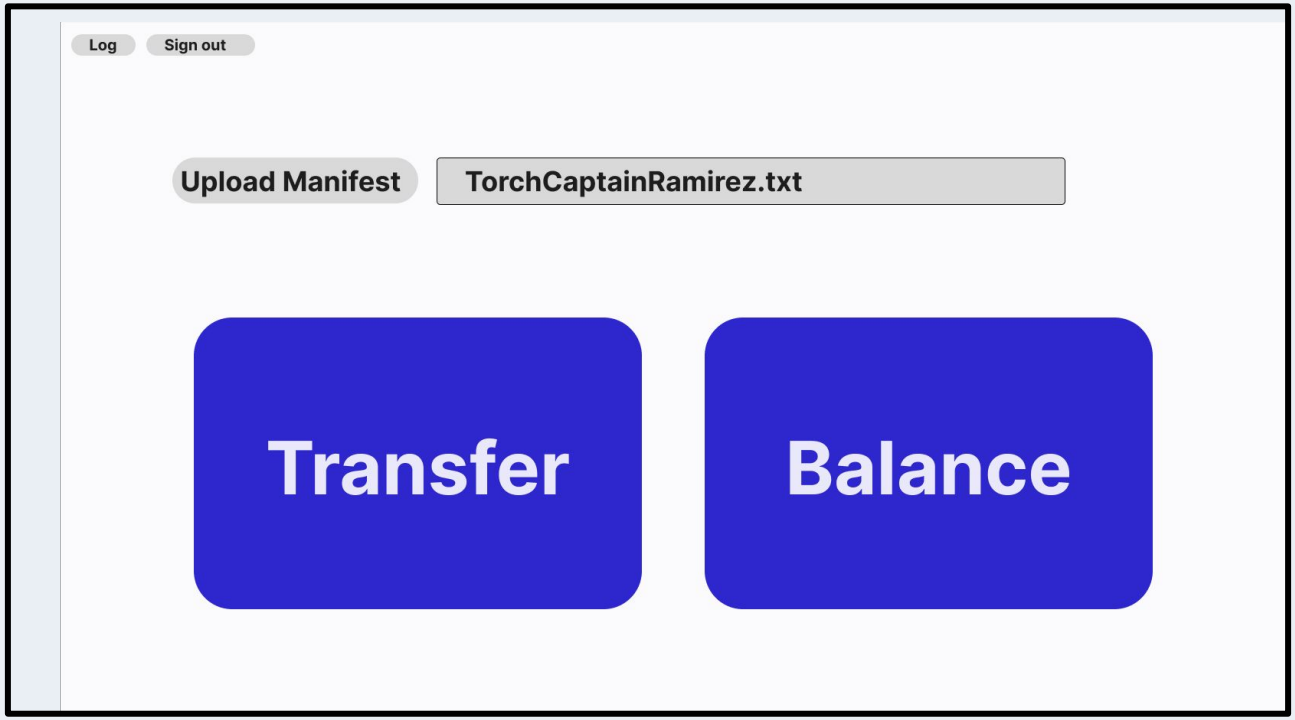
Scenario 1-9 Uploading Manifest

Main Menu Page



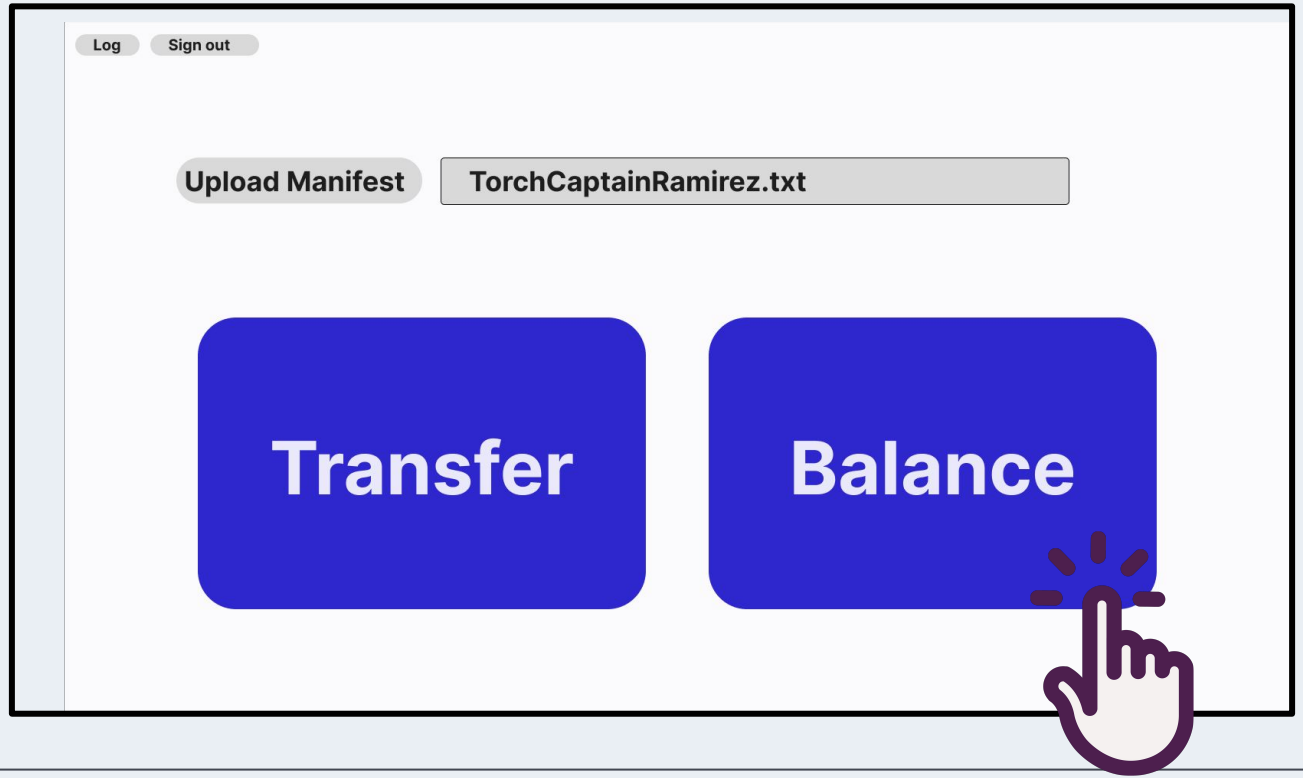
Scenario 1-10 Uploading Manifest

Main Menu Page



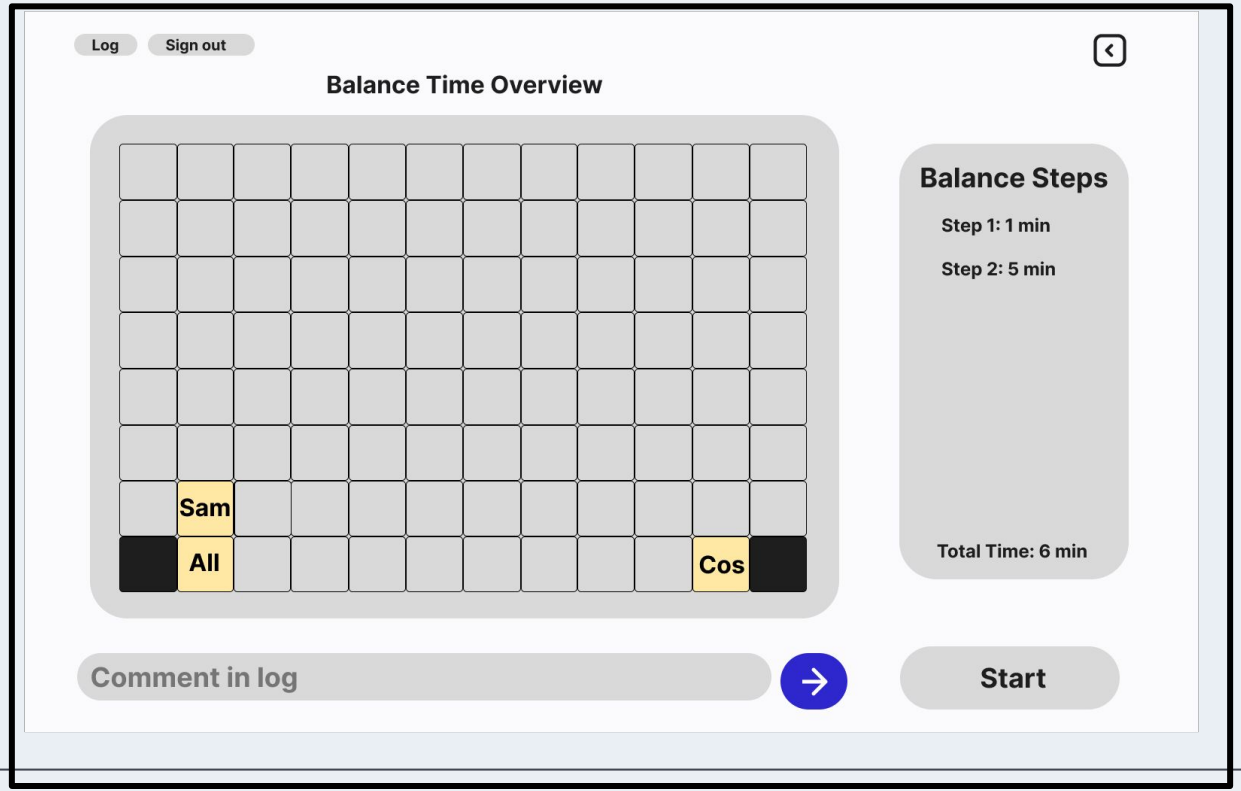
Scenario 1-11 Selecting Operation

Main Menu Page



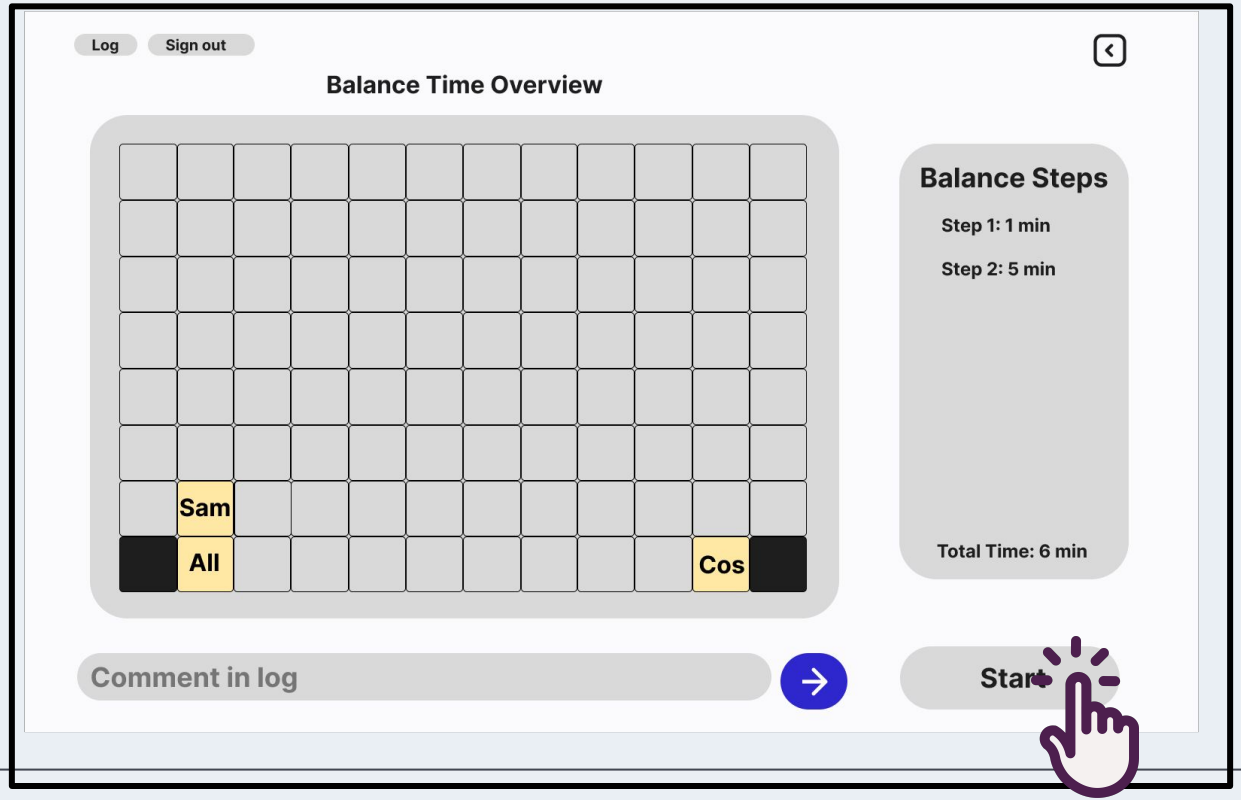
Scenario 1-12 Balance Steps

Balance Page



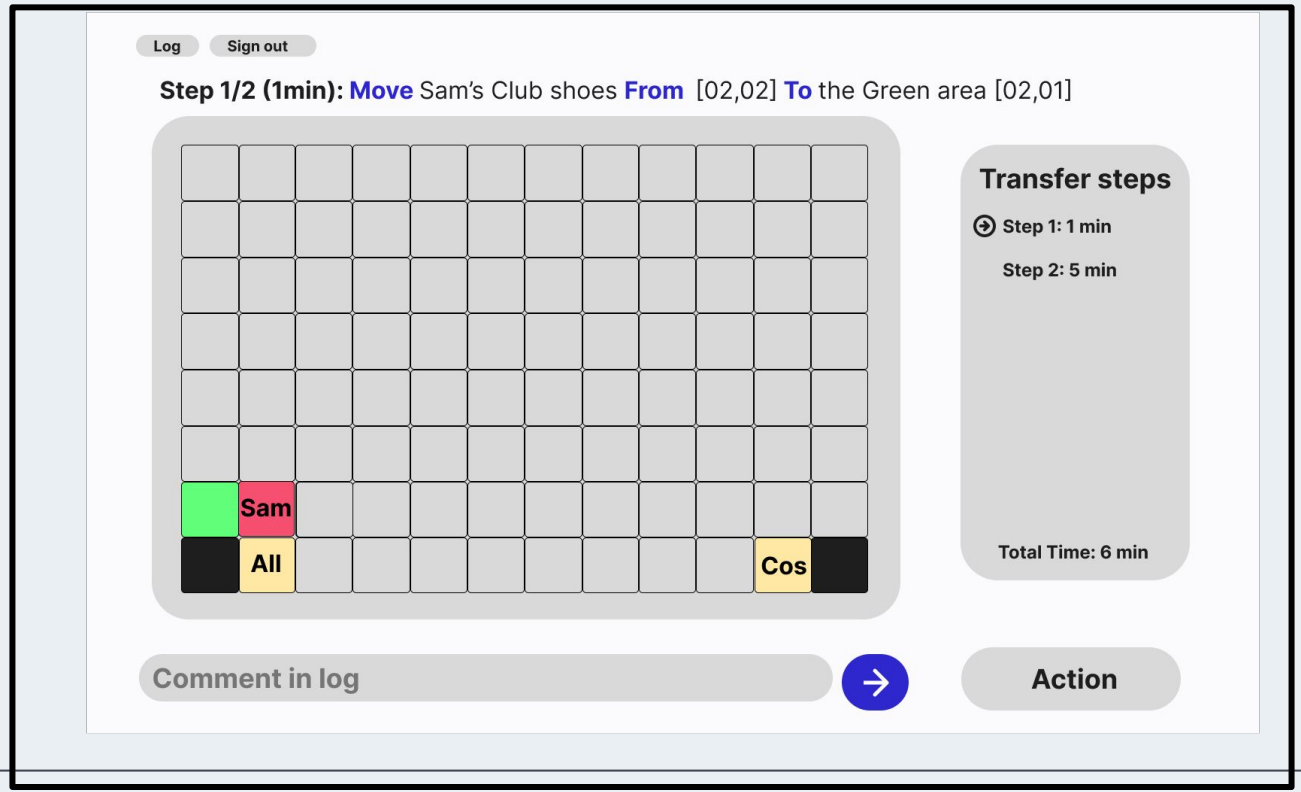
Scenario 1-13 Balance Steps

Balance Page



Scenario 1-14 Balance Steps

Balance Page

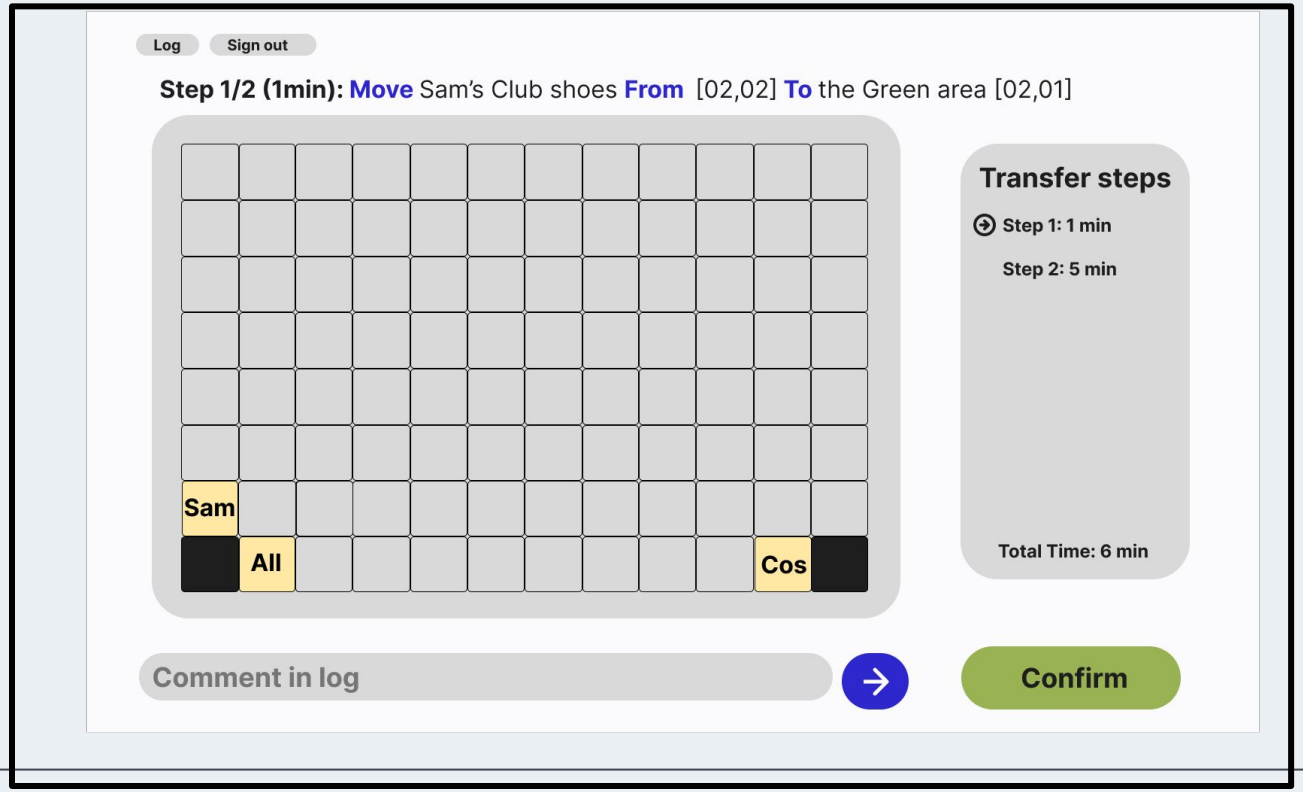


Scenario 1-15 Balance Steps

Balance Page

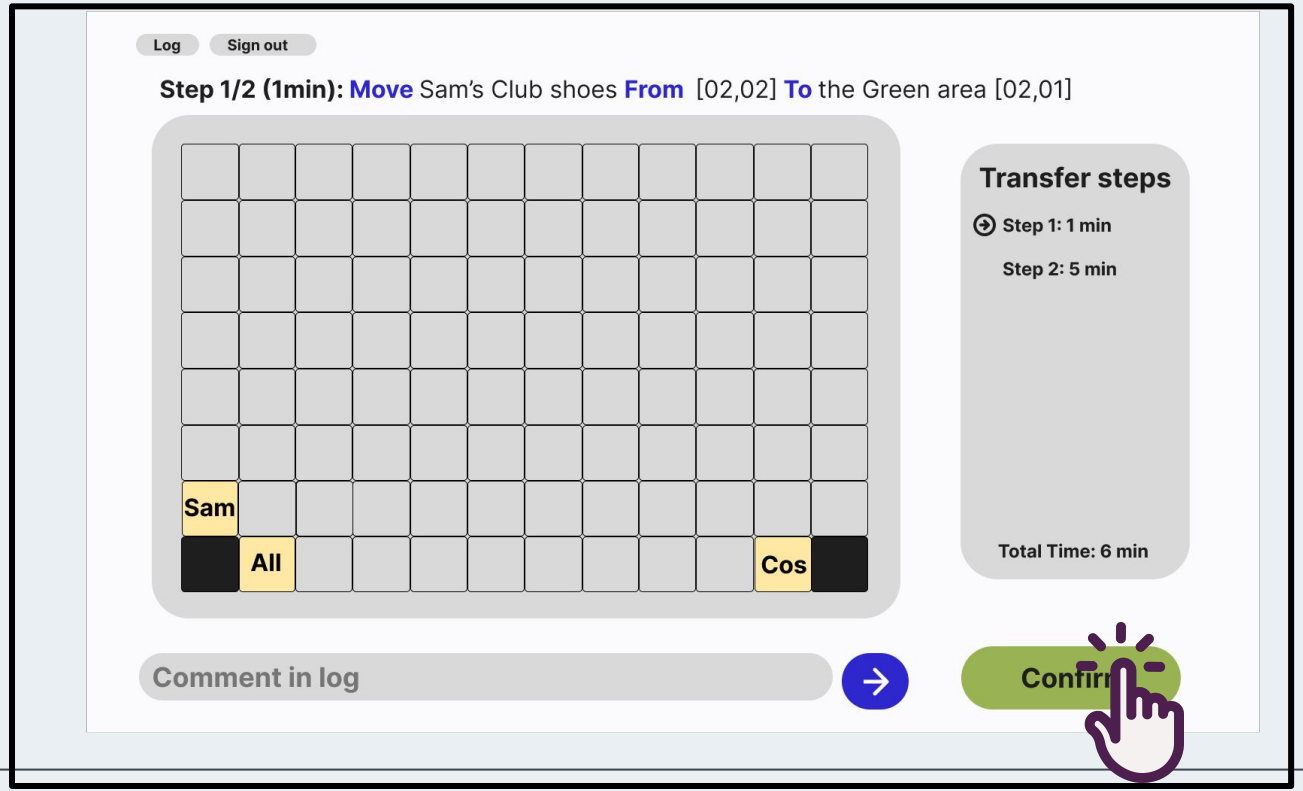
Scenario 1-16 Balance Steps

Balance Page



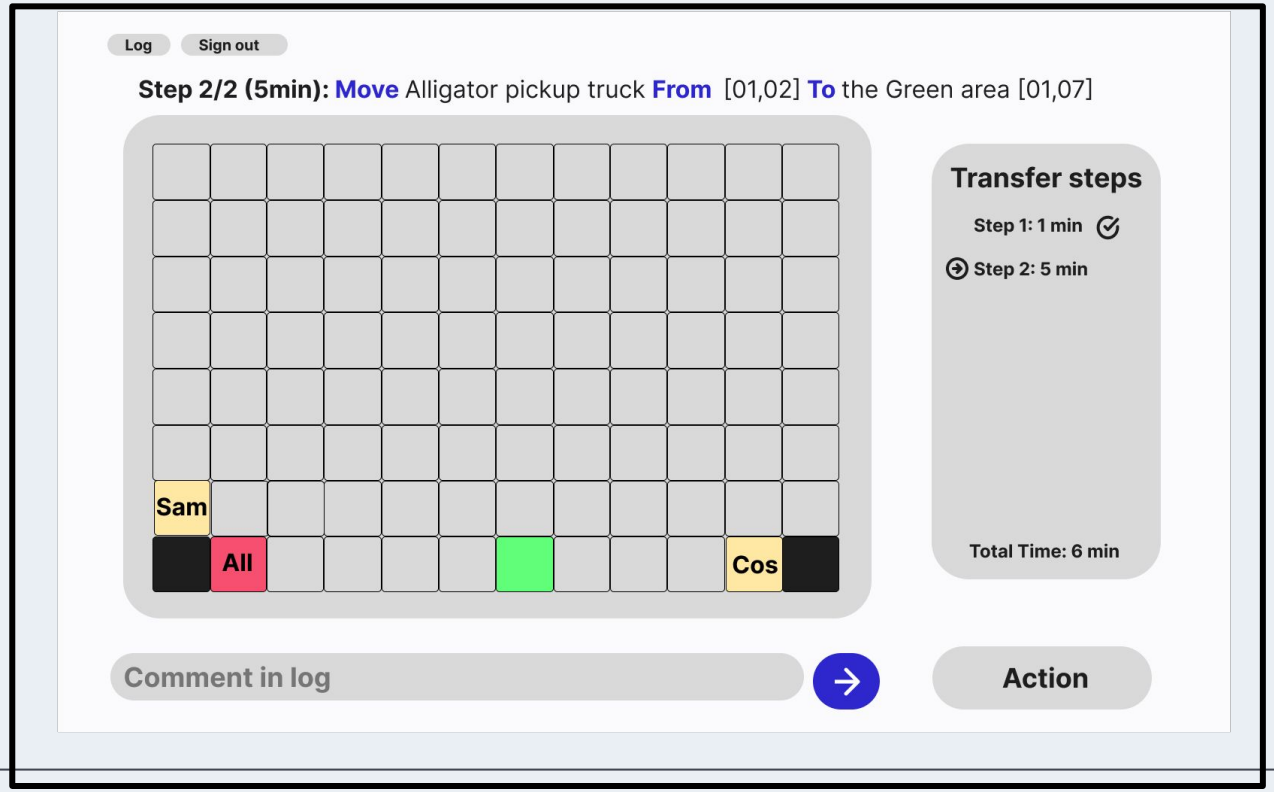
Scenario 1-17 Balance Steps

Balance Page



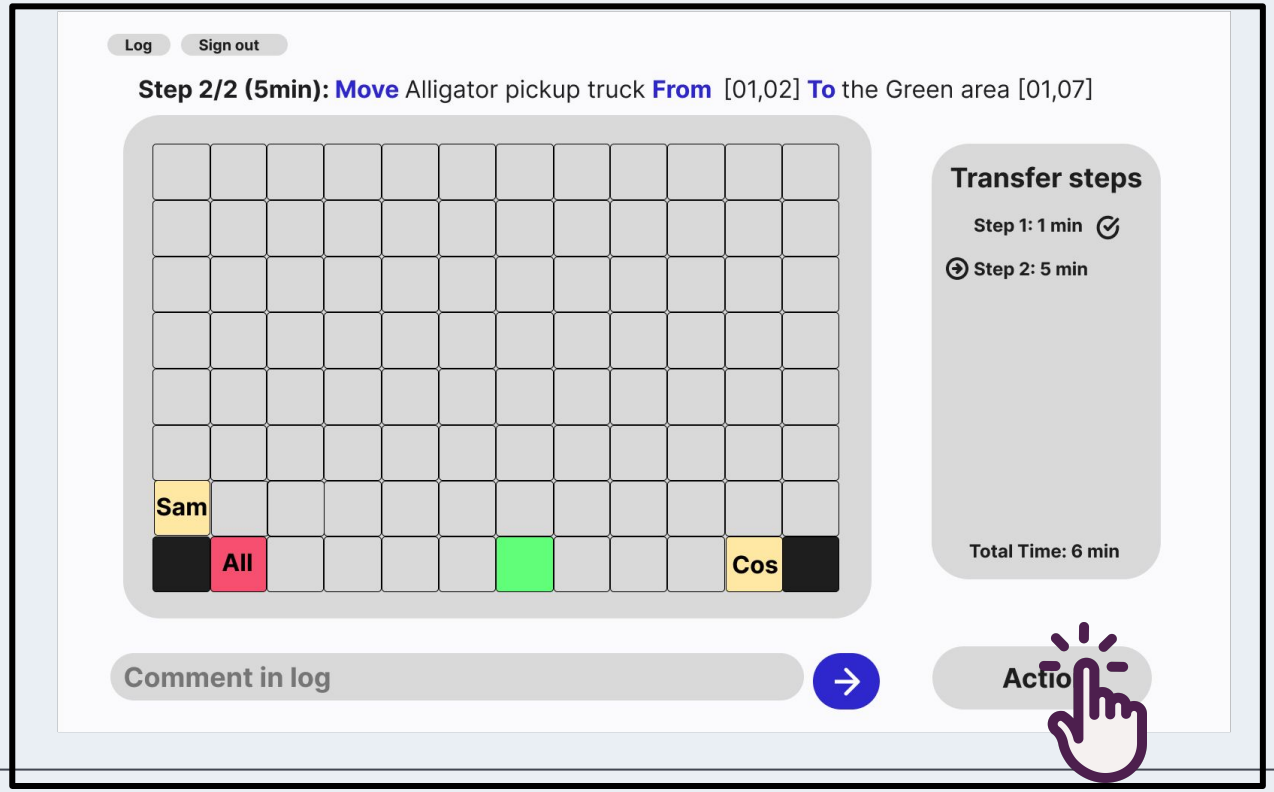
Scenario 1-18 Balance Steps

Balance Page



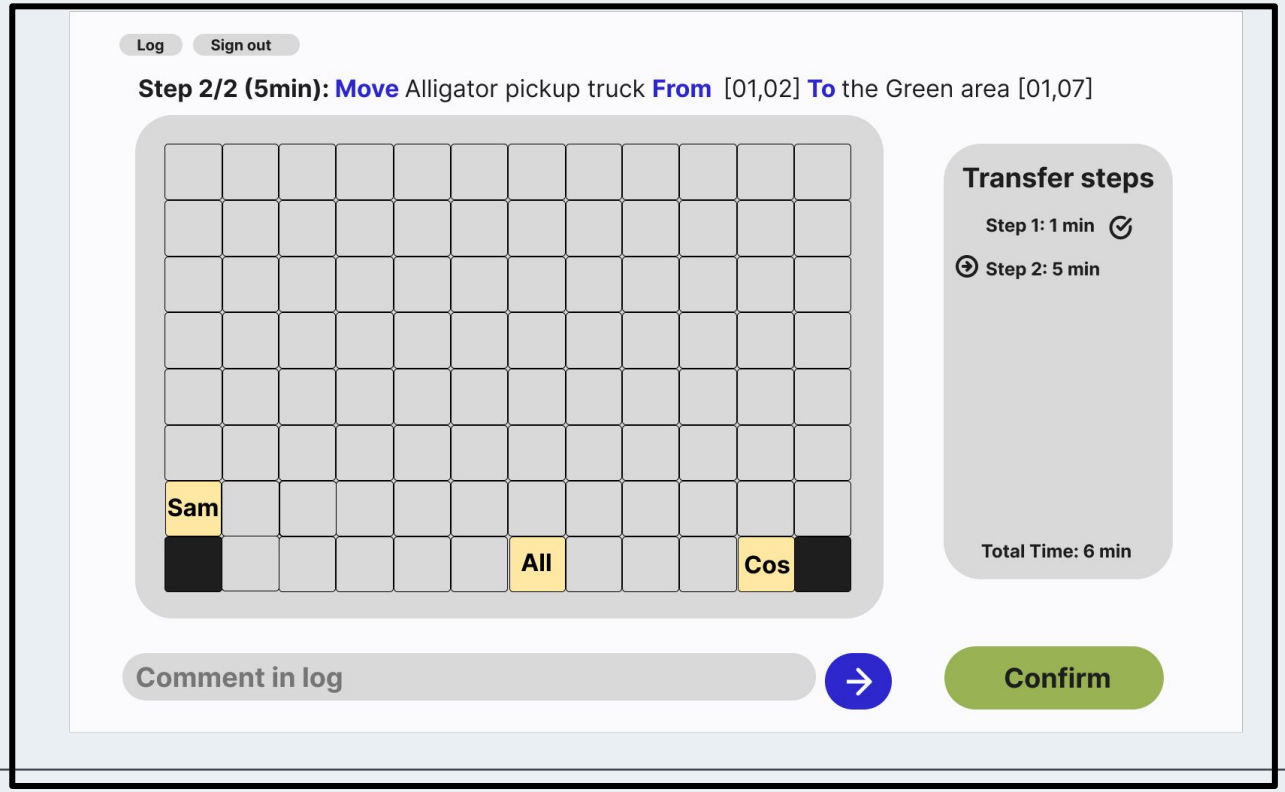
Scenario 1-19 Balance Steps

Balance Page



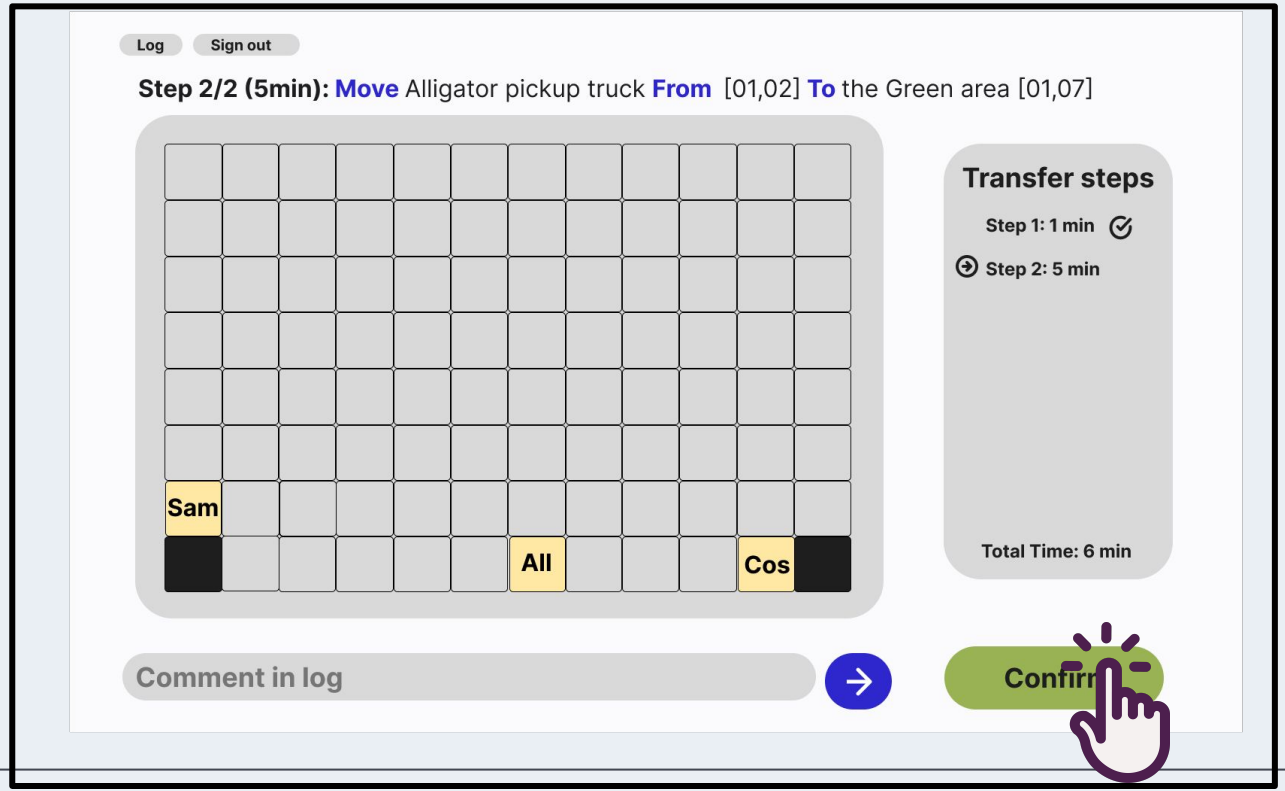
Scenario 1-20 Balance Steps

Balance Page



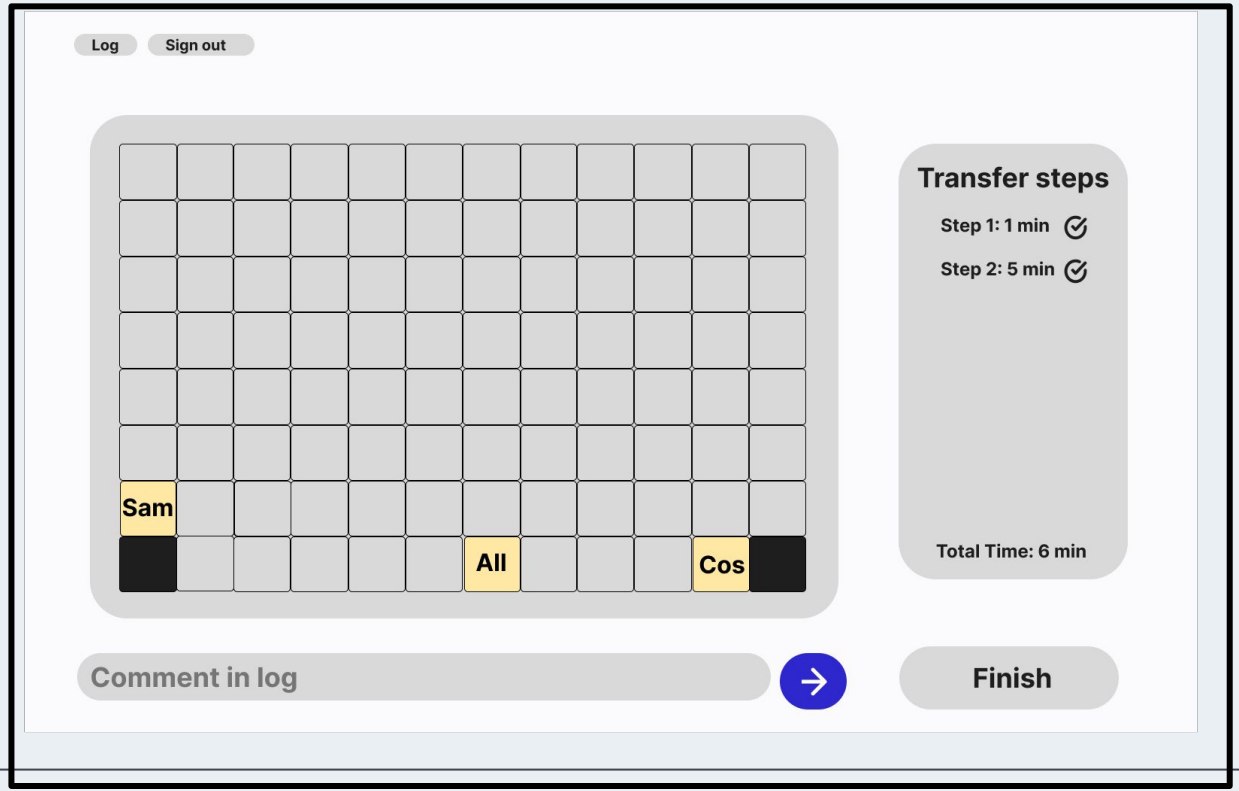
Scenario 1-21 Balance Steps

Balance Page



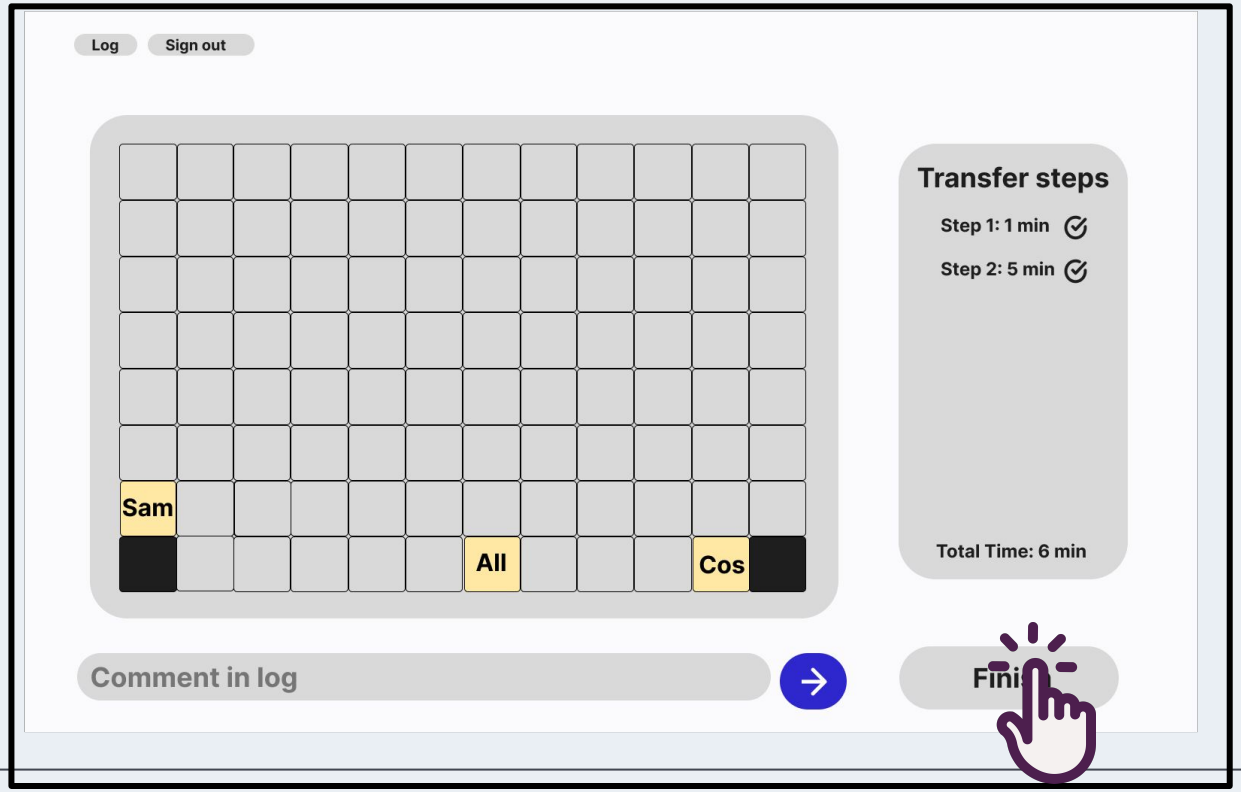
Scenario 1-22 Balance Steps

Balance Page



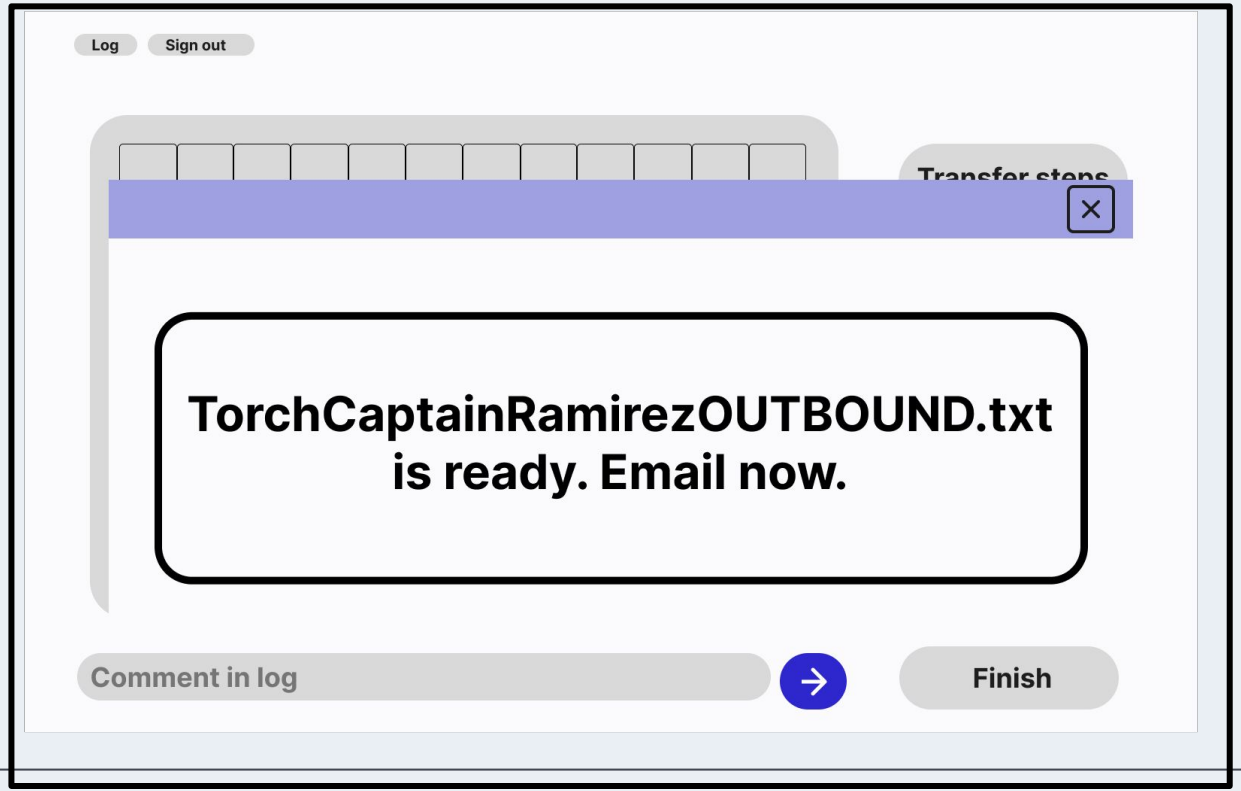
Scenario 1-23 Balance Steps

Balance Page



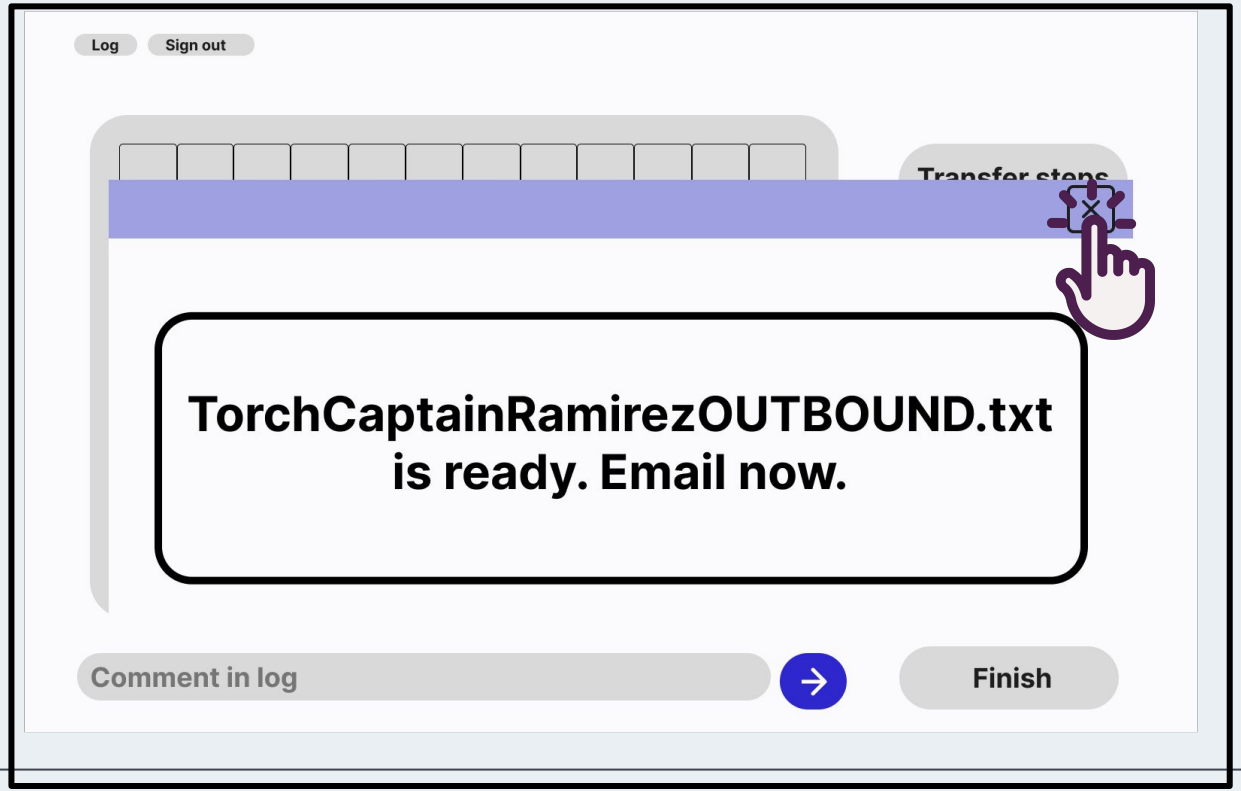
Scenario 1-24 Outbound Manifest

Balance Page



Scenario 1-25 Outbound Manifest

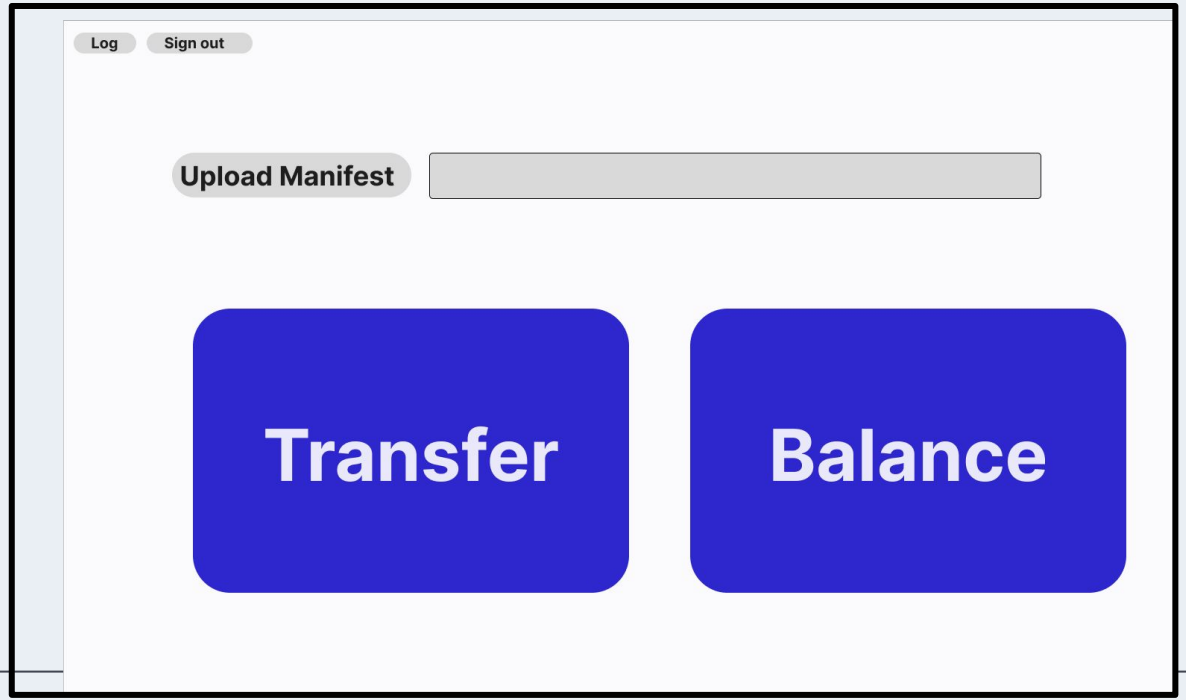
Balance Page



Scenario 1-26 Main Menu

- Aaron waits for the next job…

Main Menu Page



Shifting, Transfer,
Power Cut

Scenario 2

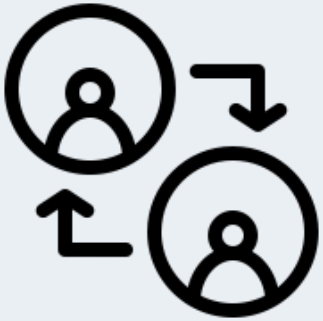
TTech.

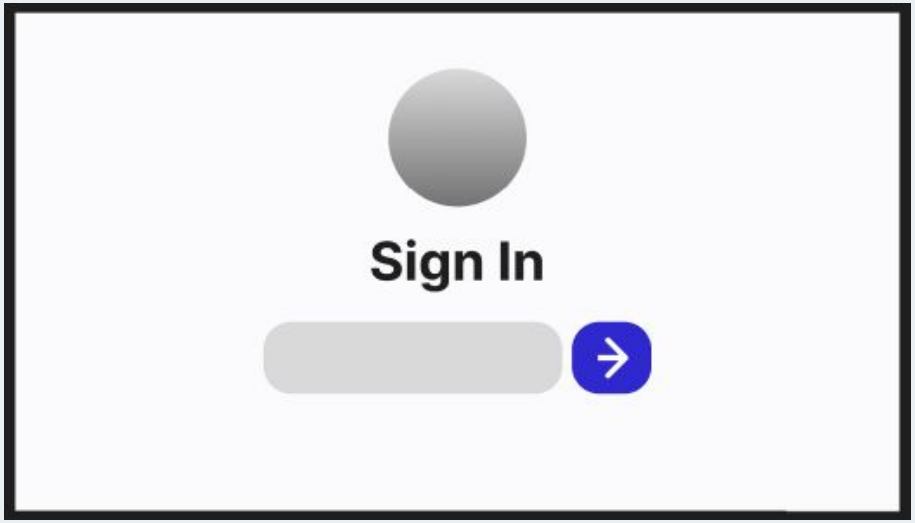
Scenario 2-1

- **Name:** James Johnson (nicknamed "Jim")
- **Age:** 36
- **Position:** Crane Operator
- **Education:** High School Graduate
- James is a cat lover and takes care of six cats at home
- James has worked at Long Beach Port for eight years as a dockworker
- James transferred to Keogh’s Ports six months ago as a crane operator.

Scenario 2-2

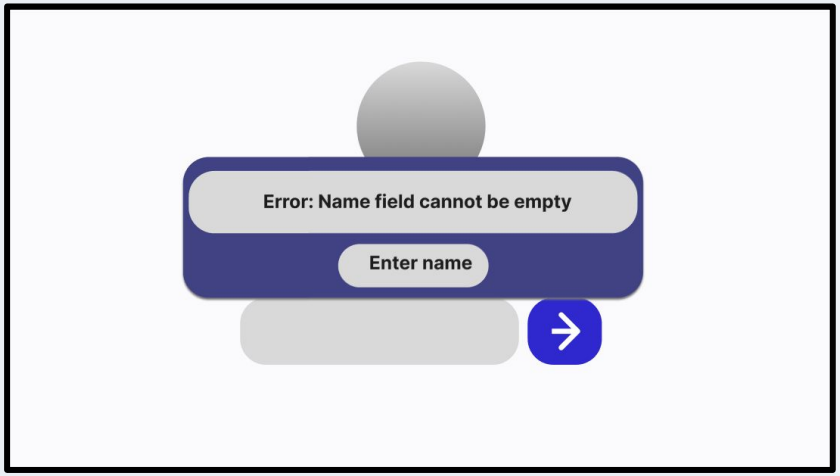
- Today, James starts his shift at 10:00pm. He arrives at the cabin at 9:58pm. He taps his colleague Adam's shoulder to indicate that he is ready to take over. Adam logs out and leaves the crane cabin
- When James comes in, the logging homepage is displayed

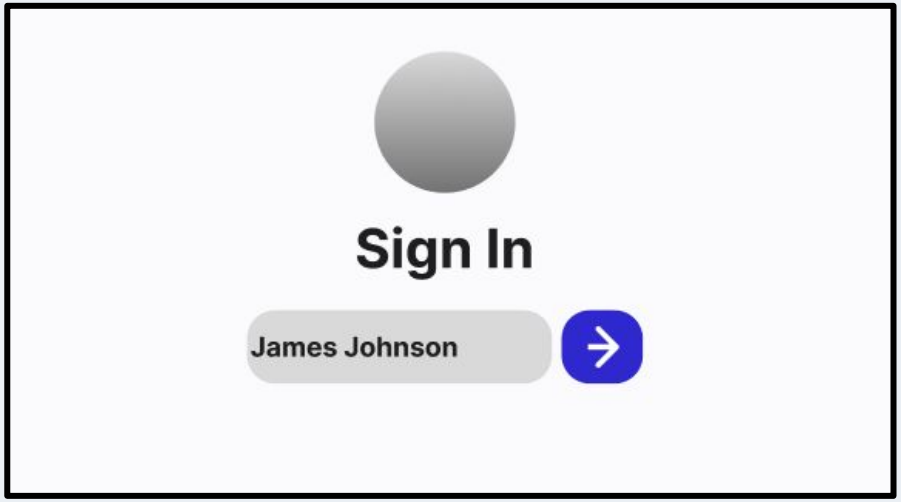




Scenario 2-3

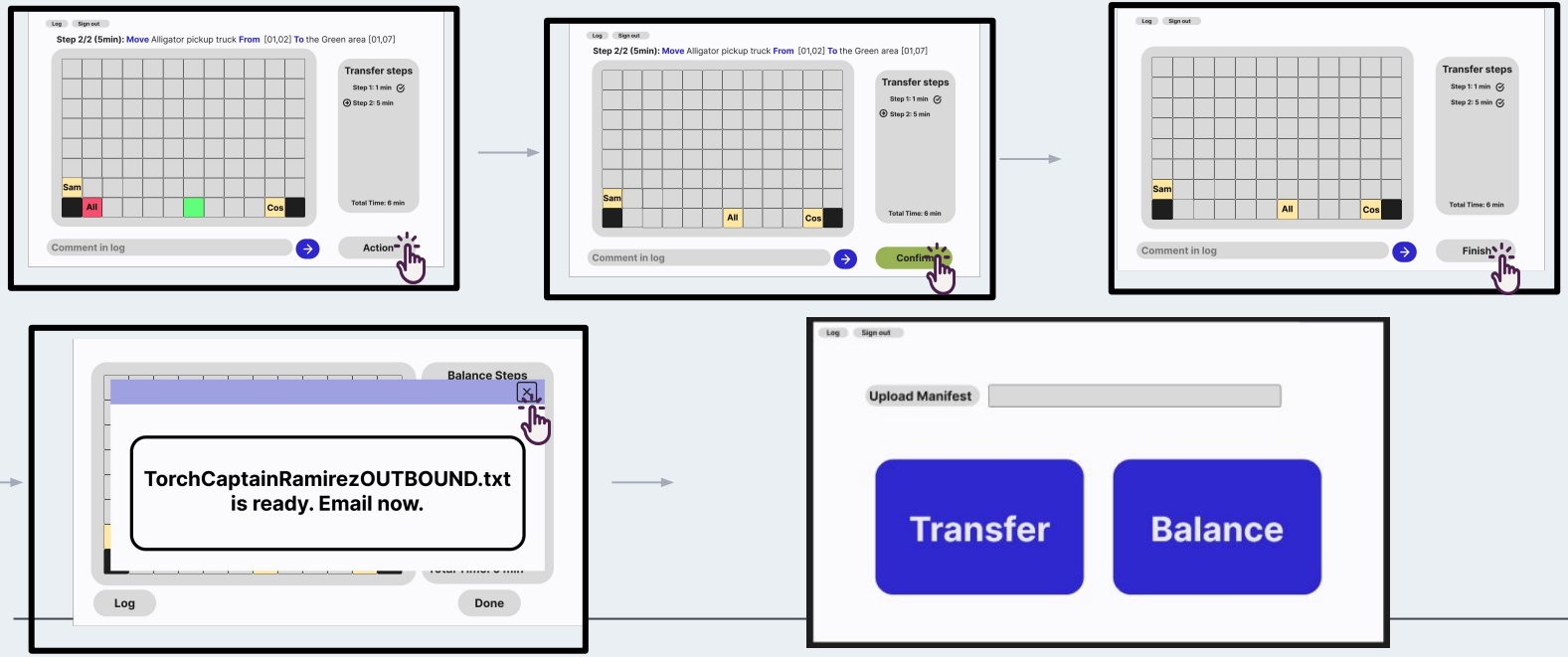
- James presses enter before he enters his name
- The system prevents James from entering invalid name





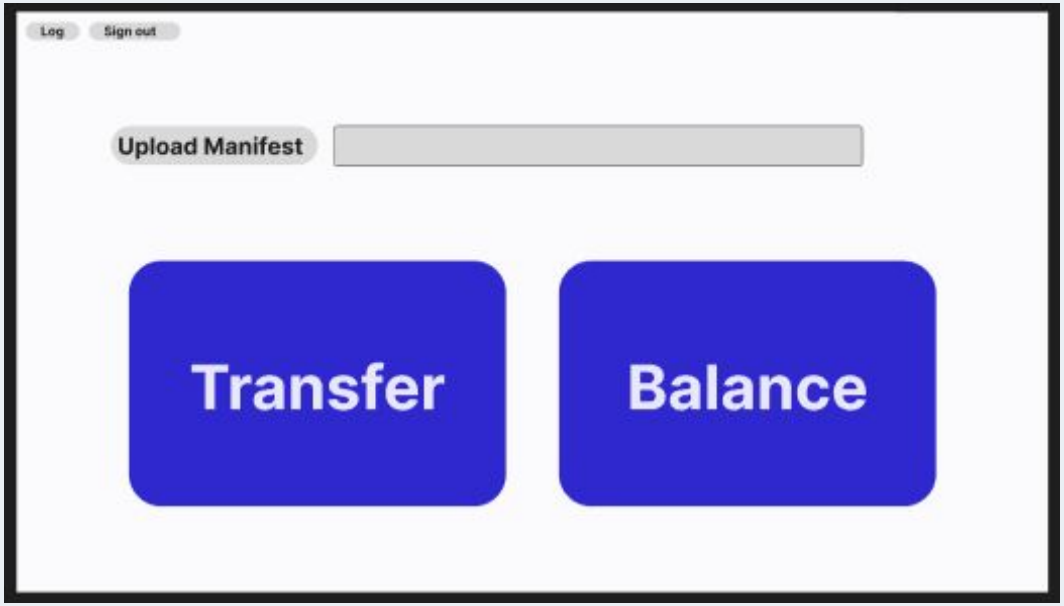
Scenario 2-4

- After logging in, the system resumes the previous balancing session left by the earlier shift
- James completes the balancing session
- James sends the updated manifest, and returns to the working browser



Scenario 2-5

- James waites in the cabin for messages



Scenario 2-6

- At 2:31 am, James receives Seaweed.txt from the captain of Seaweed
- At 2:50 am, James receives a transfer instruction from the head office

Seaweed.txt - Notepad

File Edit Format View Help

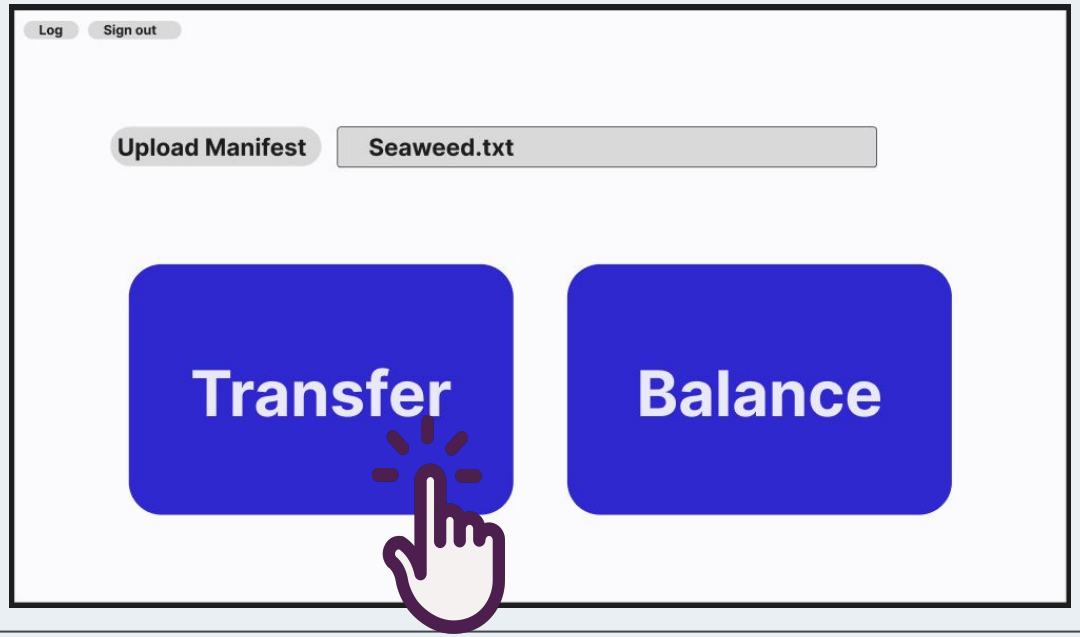
[01, 01], {00000}, NAN
[01, 02], {00000}, NAN
[01, 03], {00000}, NAN
[01, 04], {00300}, Ball
[01, 05], {00000}, UNUSED
[01, 06], {00000}, UNUSED
…
[02, 02], {00500}, Mellon
[02, 03], {00100}, Cat
[03, 01], {00009}, Foo
…

Head Office:

Seaweed is coming at **3:50**, **unload** Foo and **load** Hawaiian Pizza.

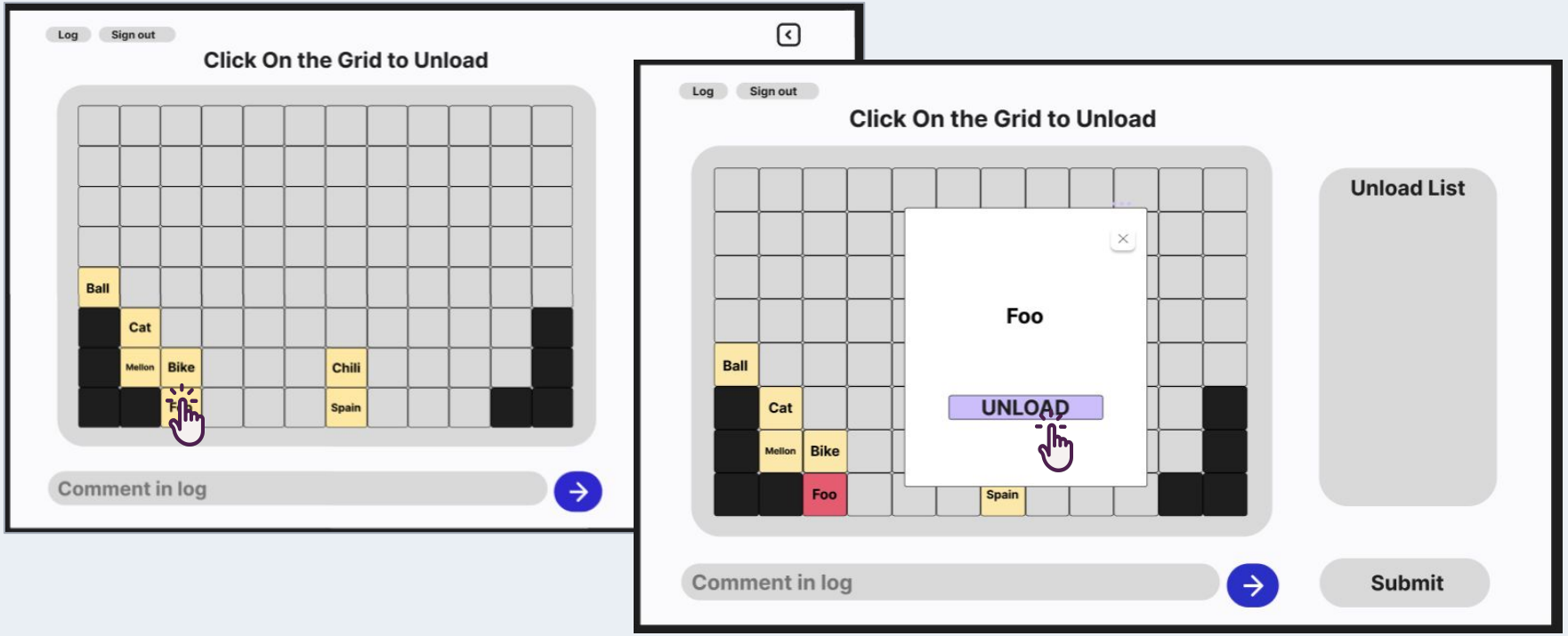
Scenario 2-7 Transfer

- James uploads the manifest seaweed.txt to the system and selects **Transfer** at 3:15 am



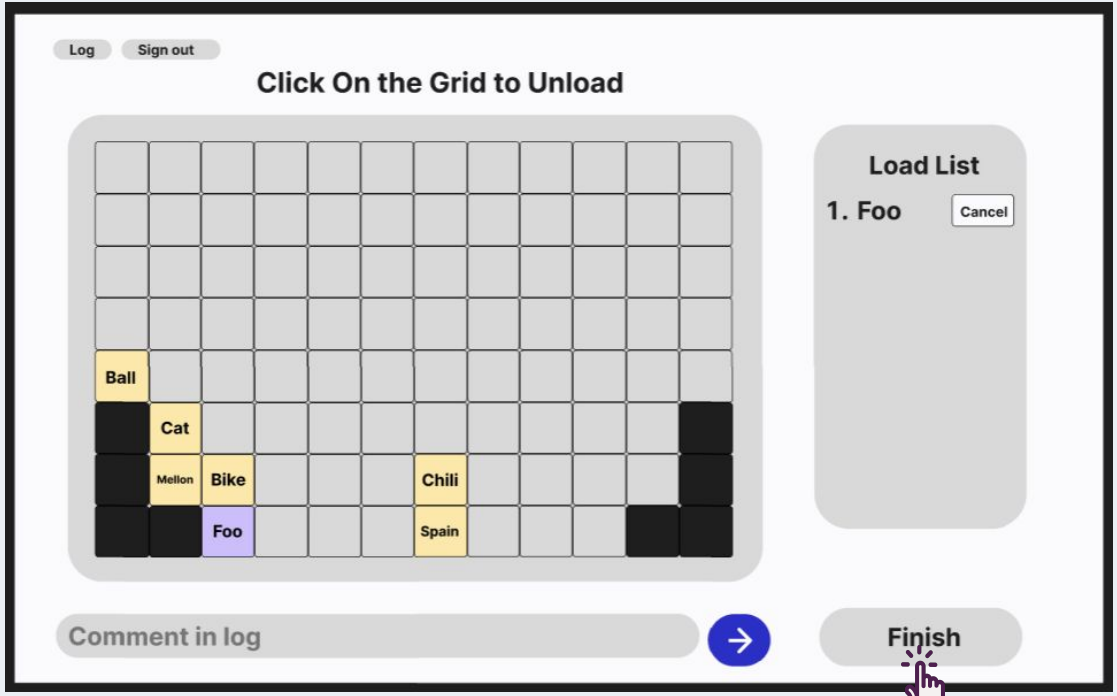
Scenario 2-8 Unload Setup

- James is directed to the **Transfer Set Up Page**
- To set up an unload item, James click on the grid
- Confirms the item's name and selects **Unload**



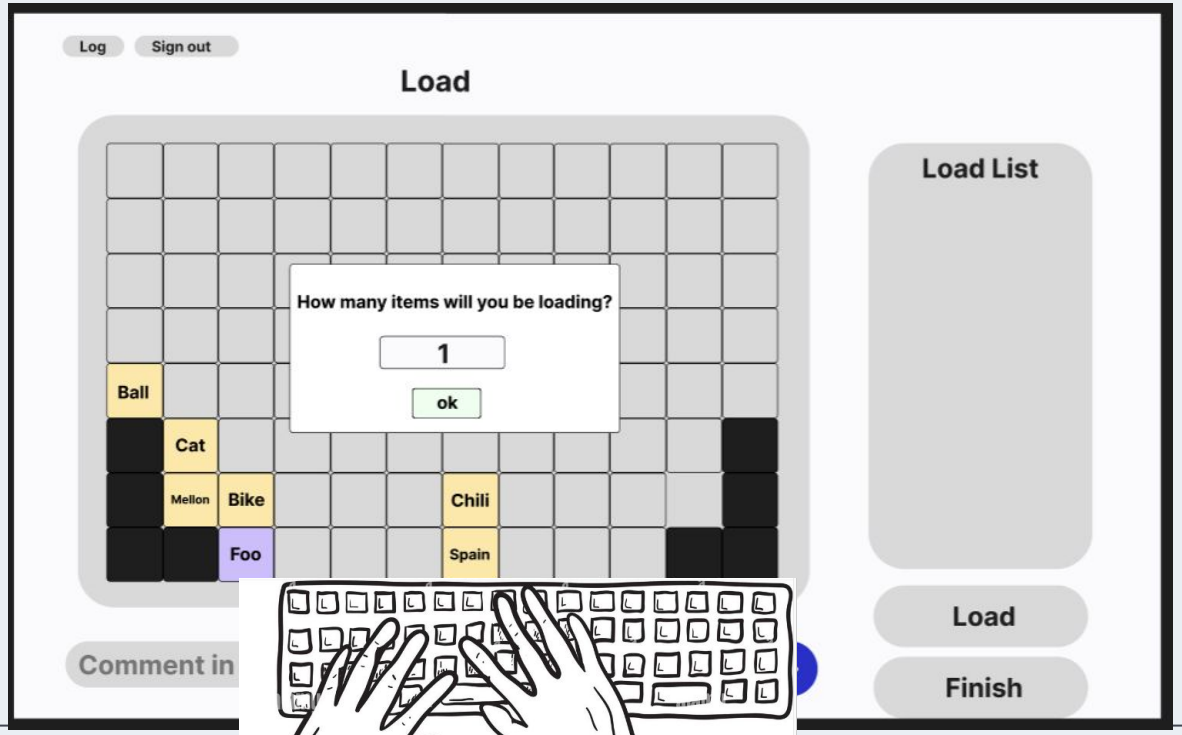
Scenario 2-9 Unload Setup

- The unloading items will appear at the right side of the screen, and James can cancel them at any time.
- James checks the unload list and clicks **FInish**



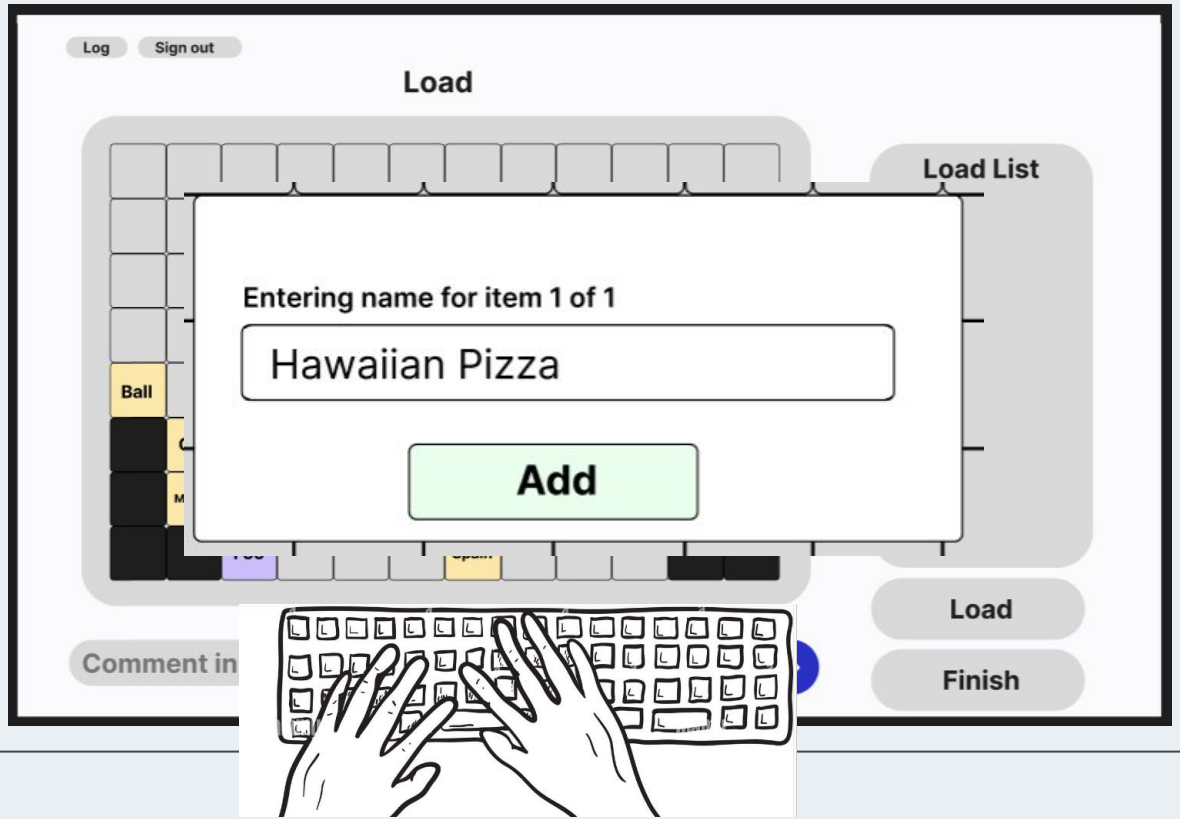
Scenario 2-10 Load Setup

- The system navigates James to the Load Setup Page
- James enters the number of items he is loading
    - The software blocks further action if there are not enough available slots



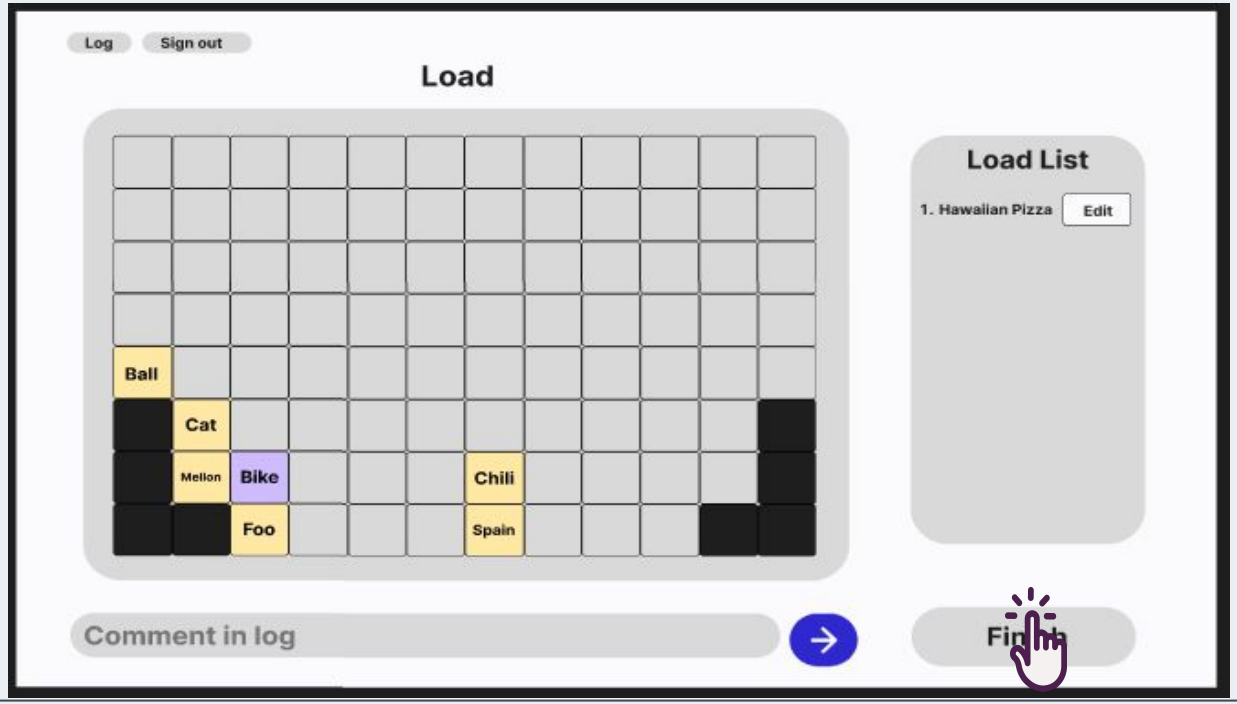
Scenario 2-11 Load Setup

- James confirms that there are enough available slots for the load items
- James then proceeds to add the load item by entering its name



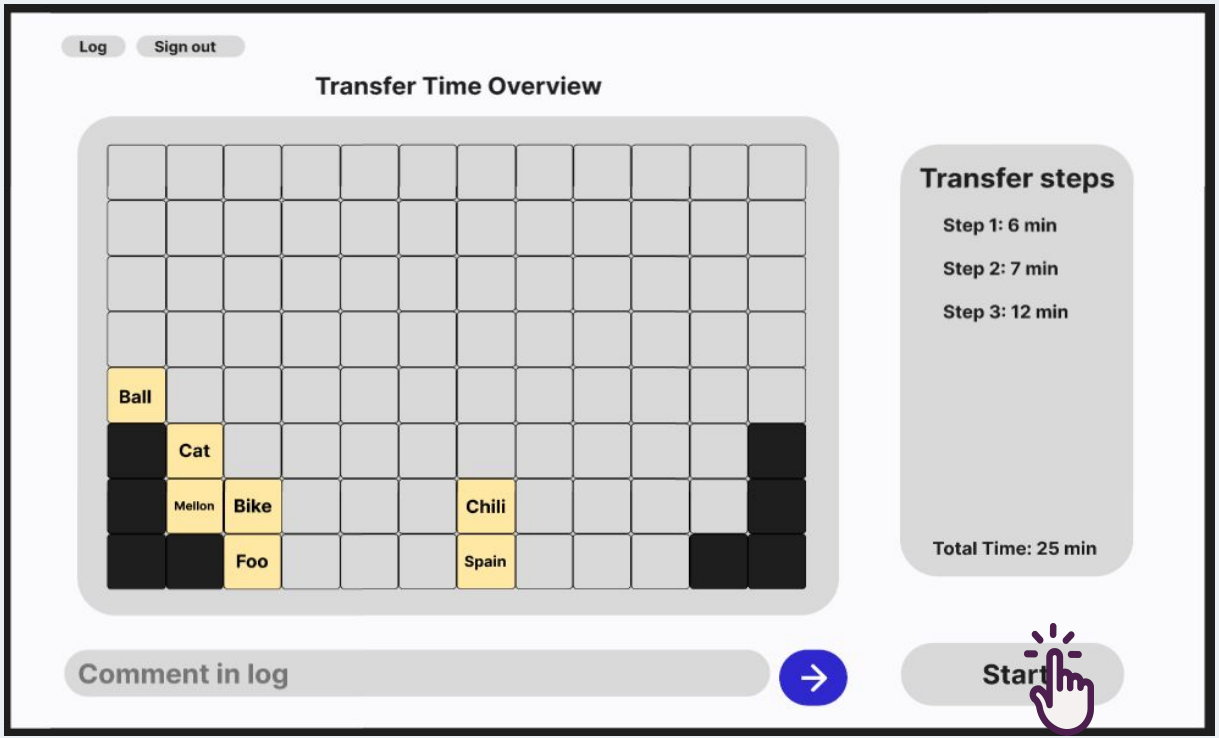
Scenario 2-12 Load Setup

- James sees the loading item appears at the right side of the screen
- James can edit the item's name if there is a typo
- Once James finishes adding load items, he clicks **Finish**



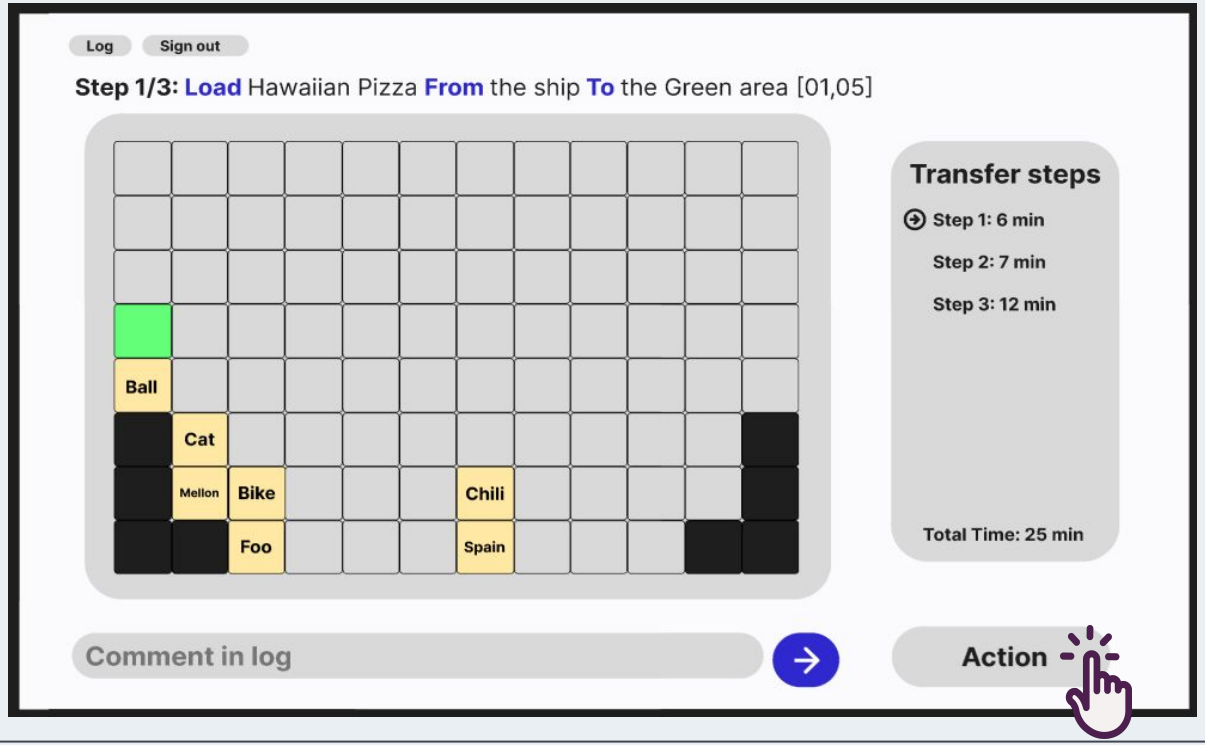
Scenario 2-13 Transfer Steps

- At 3:40am, Seaweed arrives
- The system displays the estimated time, James reviews it and clicks **Start**



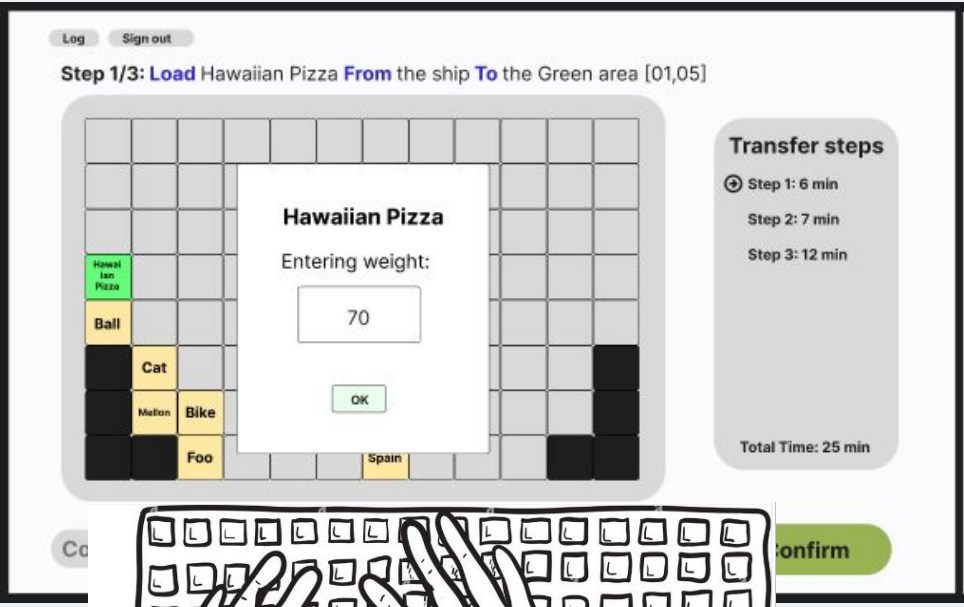
Scenario 2-14 Transfer Steps

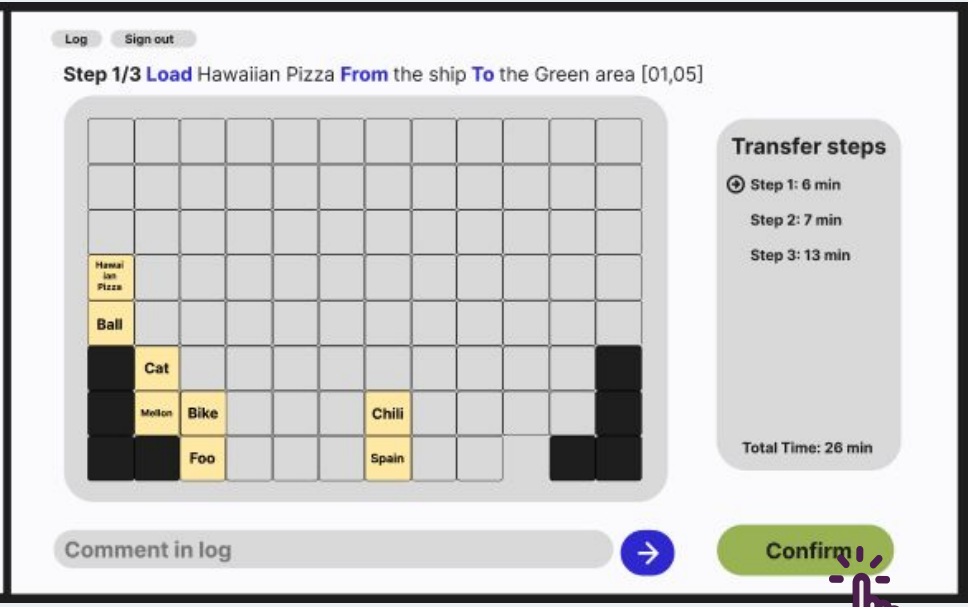
- James fellows the system's instructions to move items



Scenario 2-15 Transfer Steps

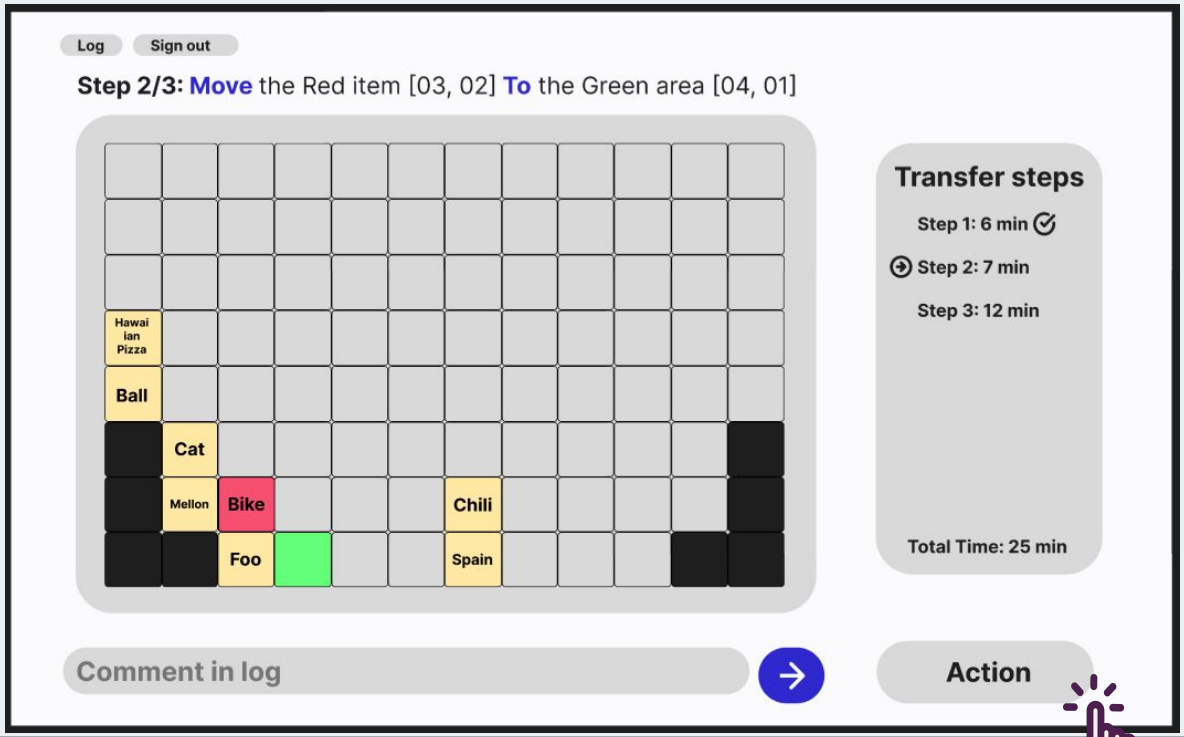
- James **enters the weight** as the crane retrieves item for **loading**





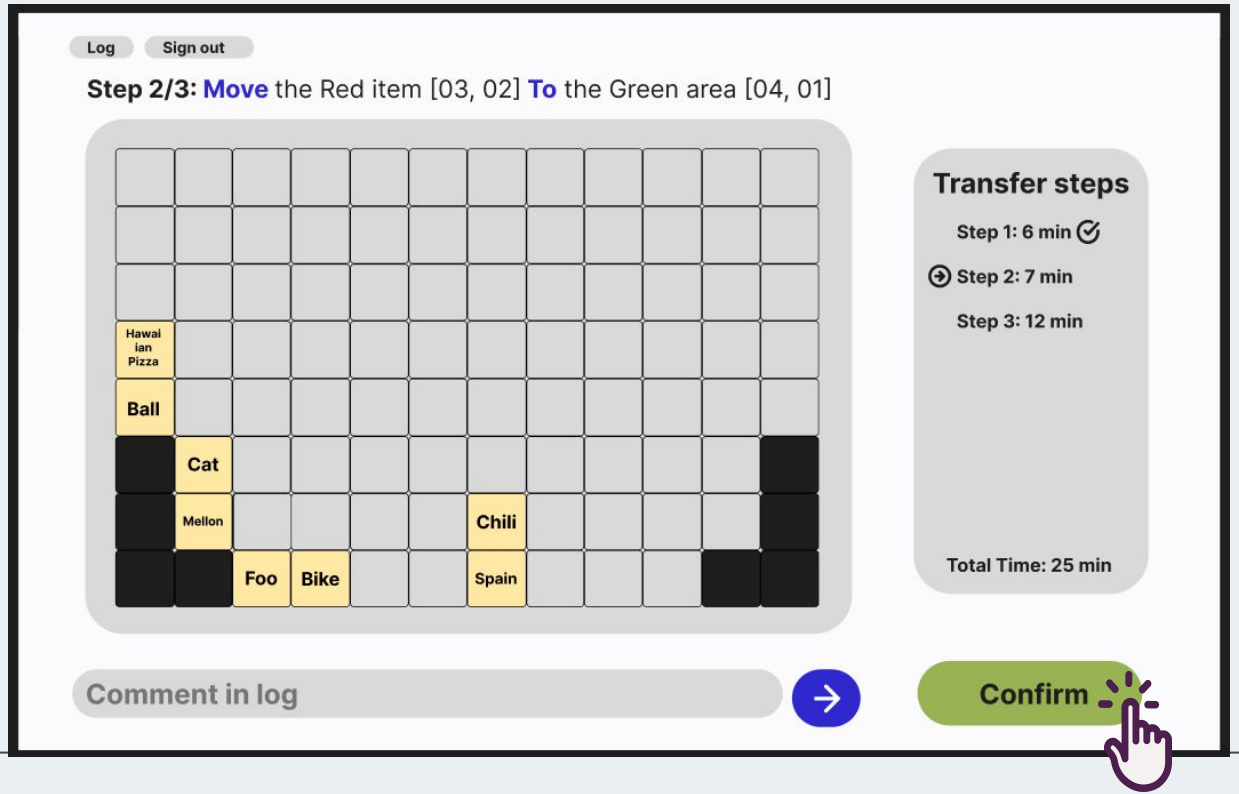
Scenario 2-16 Transfer Steps

- James fellows the system's instructions...



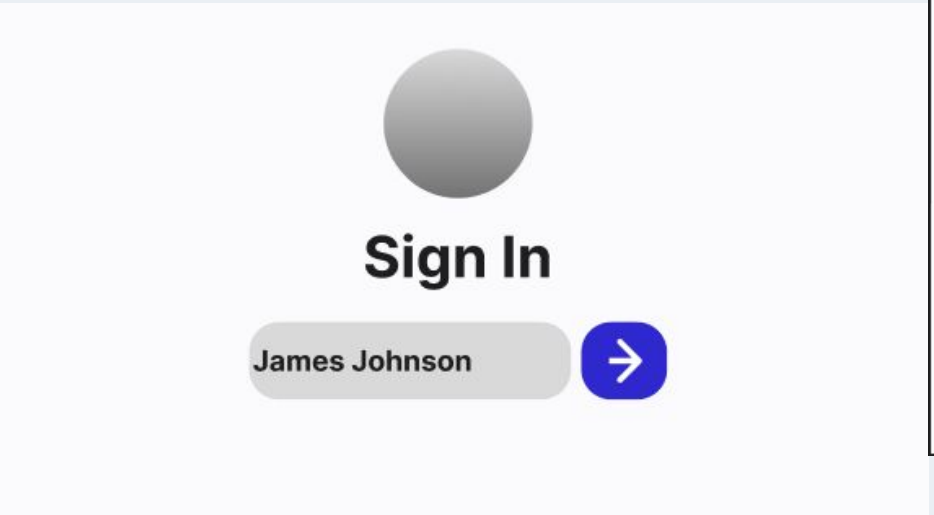
Scenario 2-17 Transfer Steps

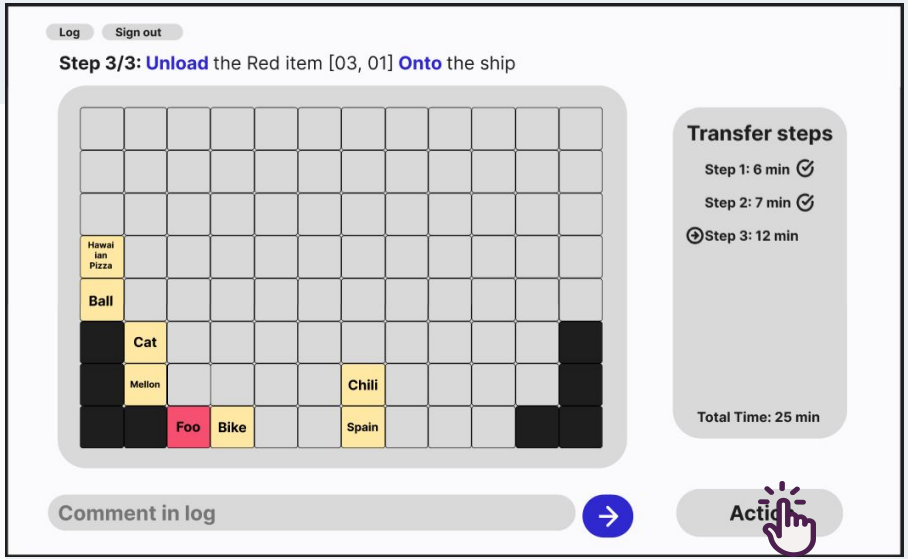
- James fellows the system's instructions...



Scenario 2-18 Power Cut

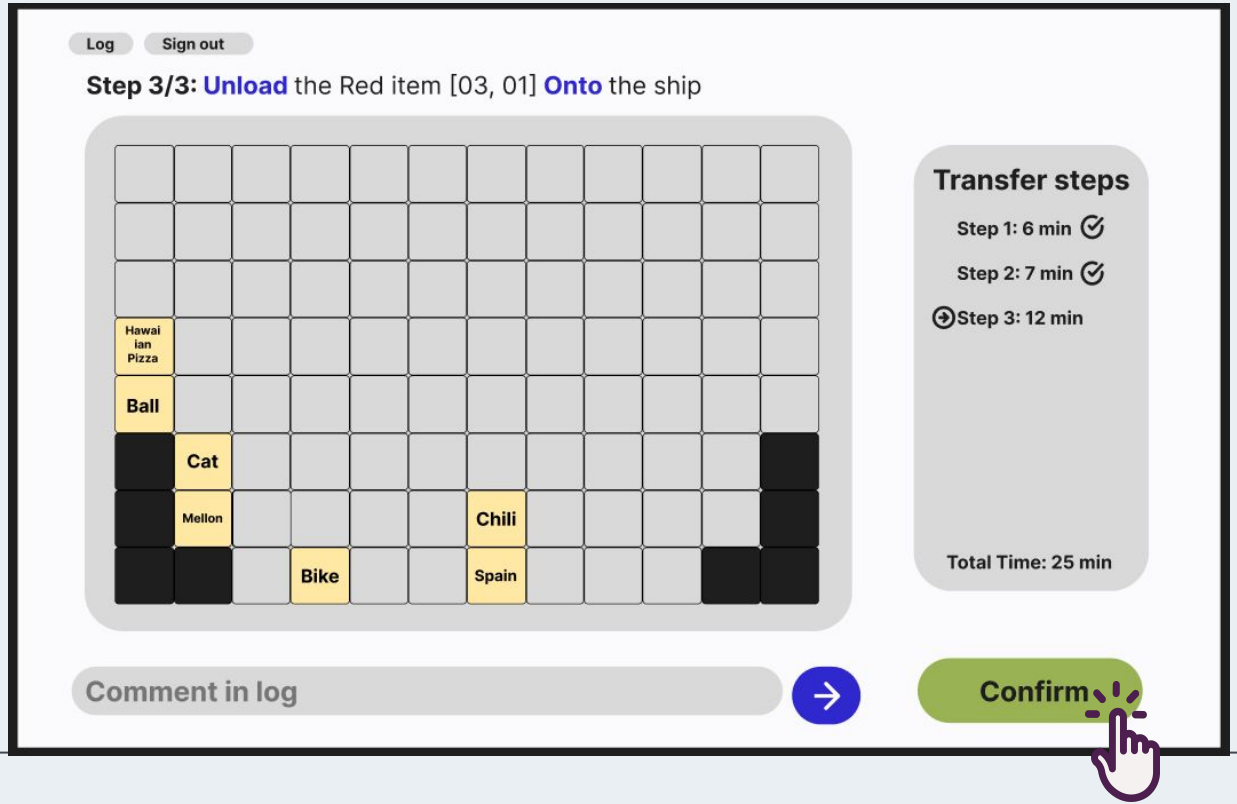
- Suddenly, power goes down and the working browser shuts down
- James waits inside the cabin for the power to be restored
- After 8 minutes, the power returns
- James reopens the working browser and logs in
- The system resumes from where he left off





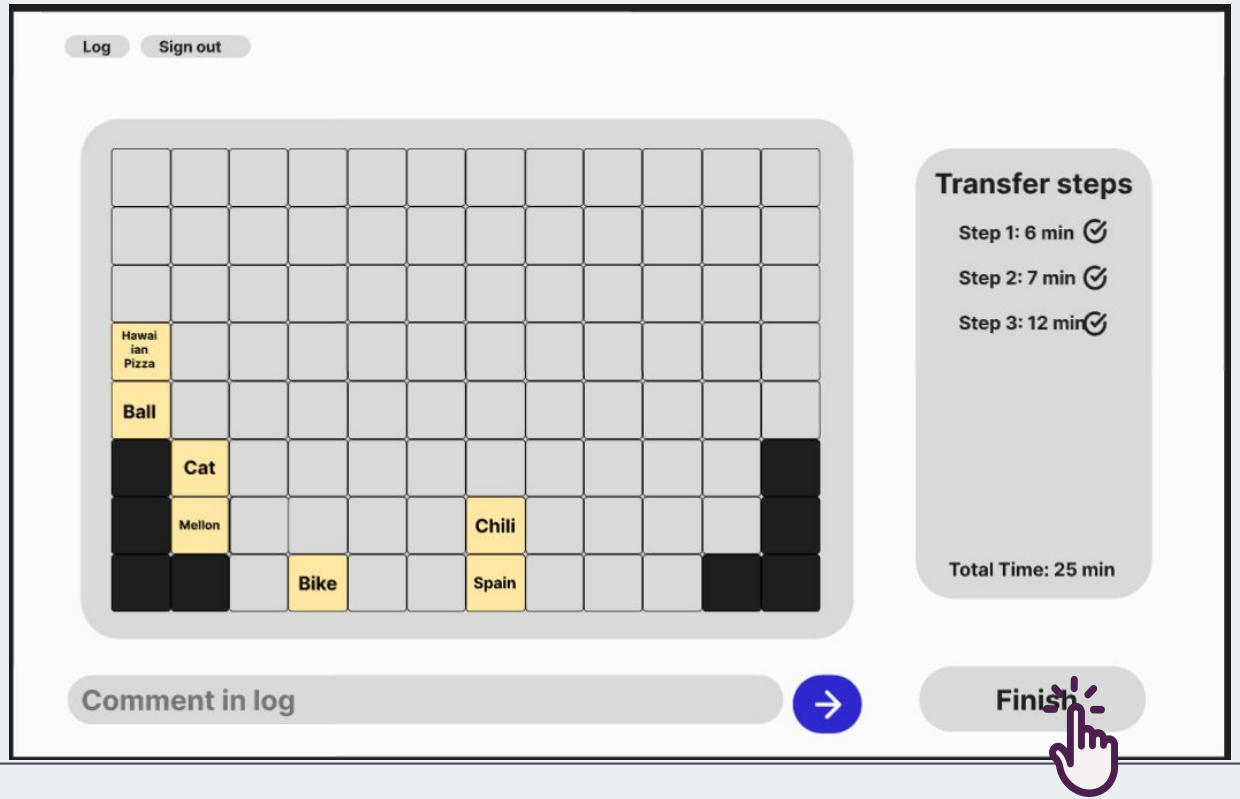
Scenario 2-19 Transfer Steps

- James fellows the system's instructions...



Scenario 2-20 Transfer Steps

- James finishes the transfer steps and clicks “**Finish**”



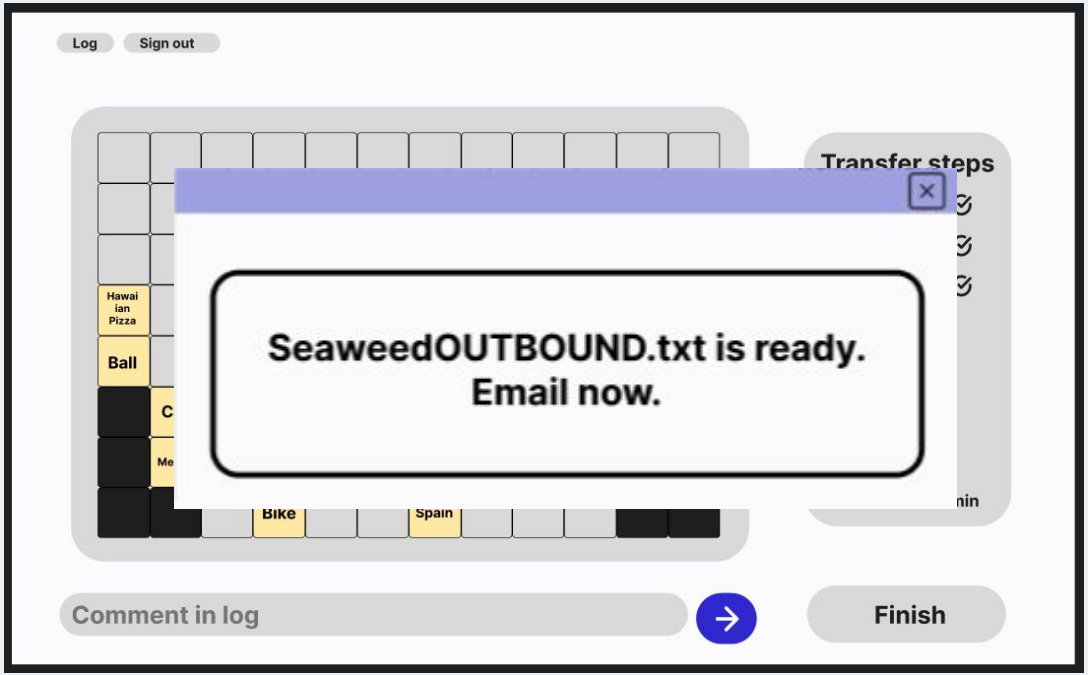
Scenario 2-21

- James sends the updated manifest to the captain of Seaweed

SeaweedOUTBOUND.txt - Notepad

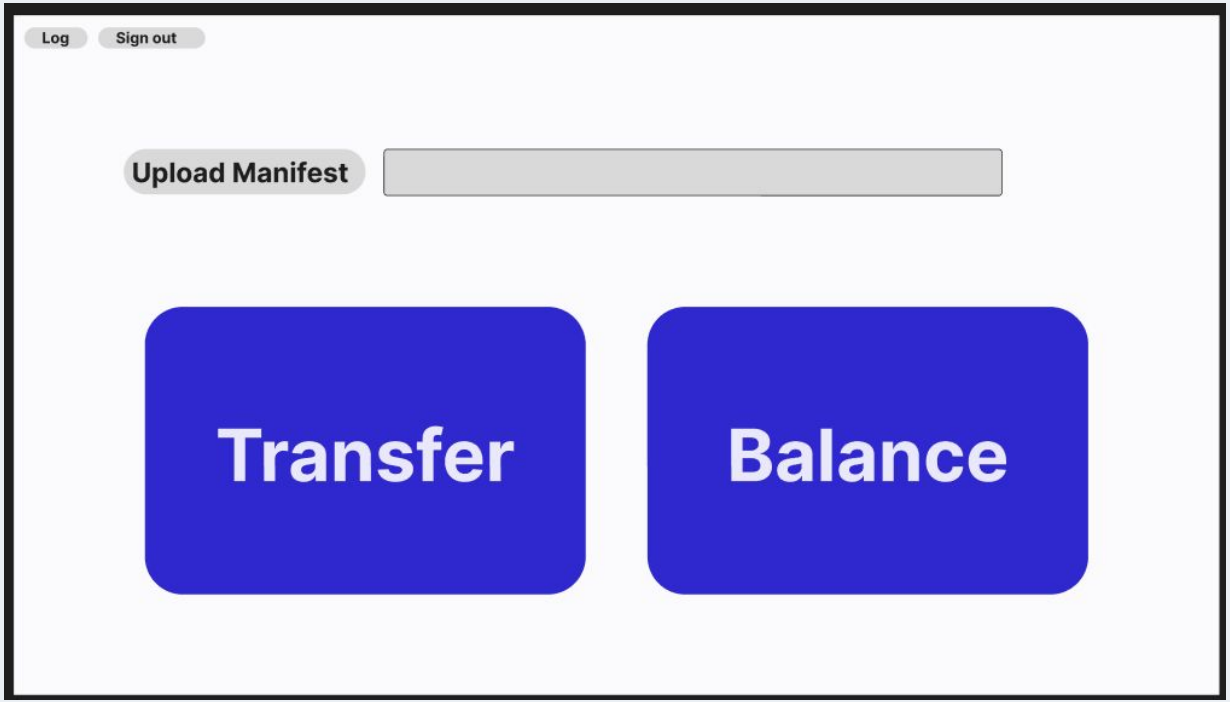
File Edit Format View Help

[01, 01], {00000}, NAN
[01, 02], {00000}, NAN
[01, 03], {00000}, NAN
[01, 04], {00300}, Ball
[01, 05], {00070}, Hawaiian Pizza
[01, 06], {00000}, UNUSED
…
[02, 02], {00500}, Mellon
[02, 03], {00100}, Cat
[03, 01], {00000}, UNUSED
…



Scenario 2-22

- James waits for the next job …



Adding Comments,
Log File

Scenario 3

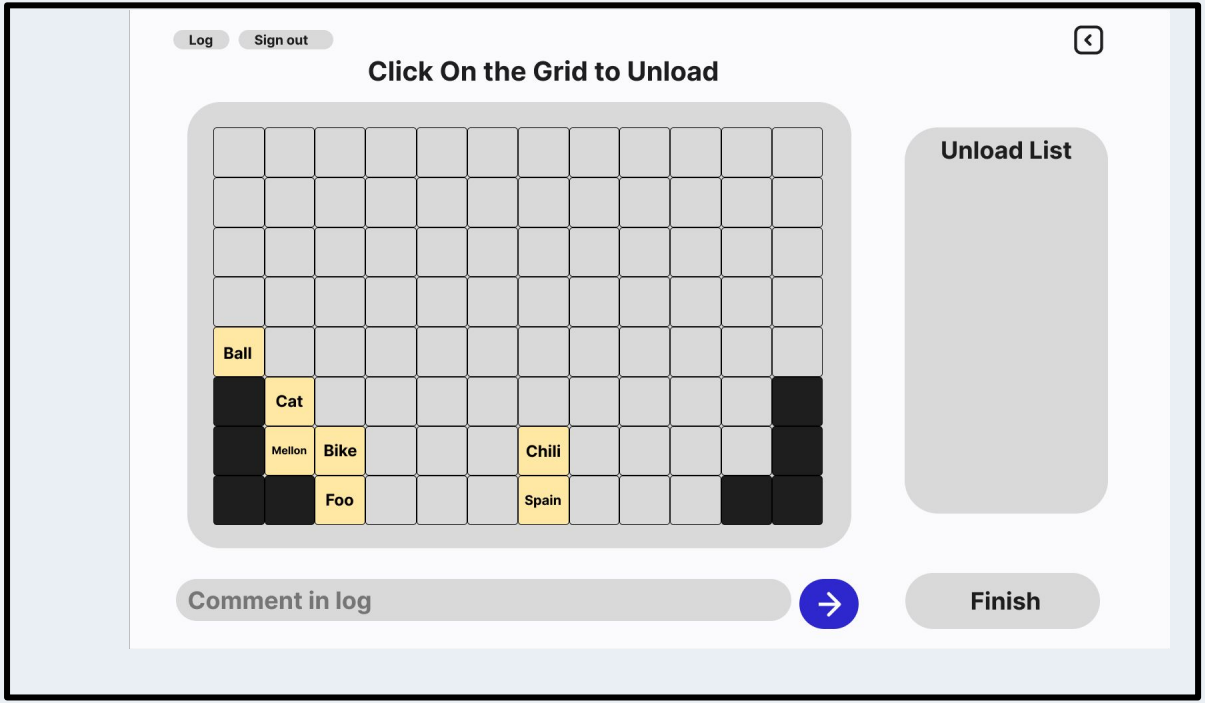
Scenario 3-1

- **Name:** Rodney Bernard
- **Age:** 44
- **Position:** Crane Operator
- **Education:** Associate’s Degree
- Rodney loves to go skiing and surfing
- He has worked at Long Beach Port for 15 years as a crane operator

Scenario 3-2 Unload Setup

- Rodney is in the process of a transfer operation

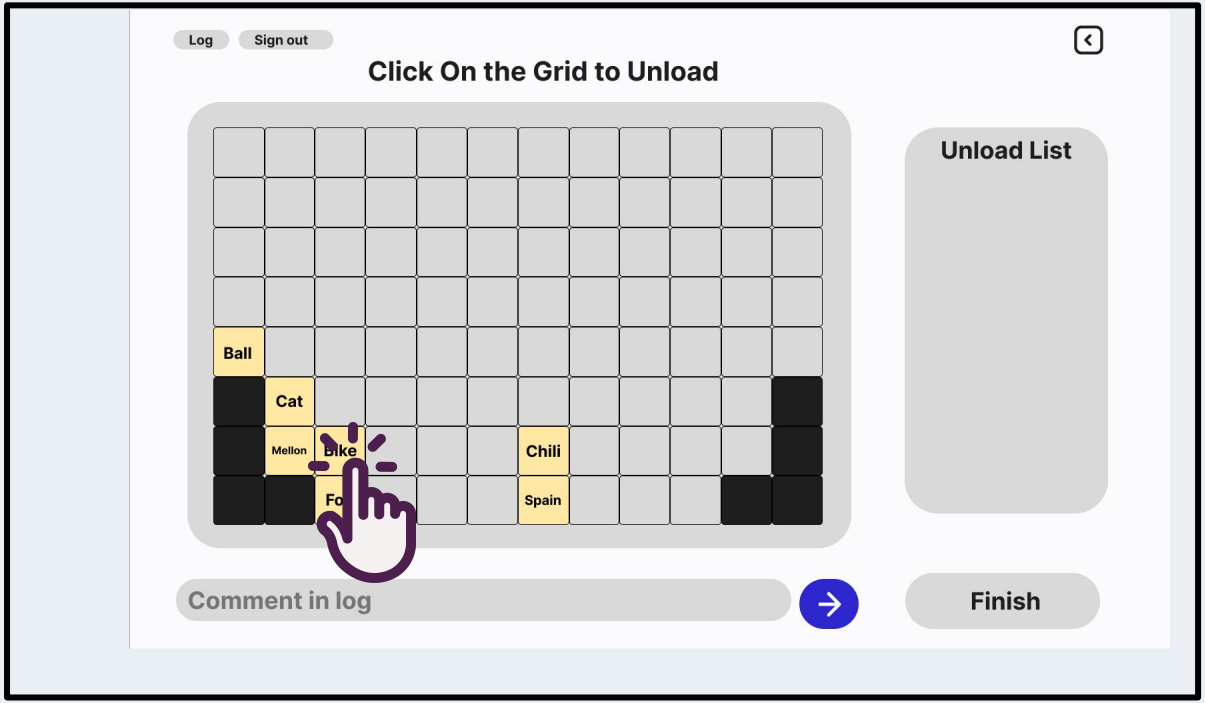
Transfer Page



Scenario 3-3 Unload Setup

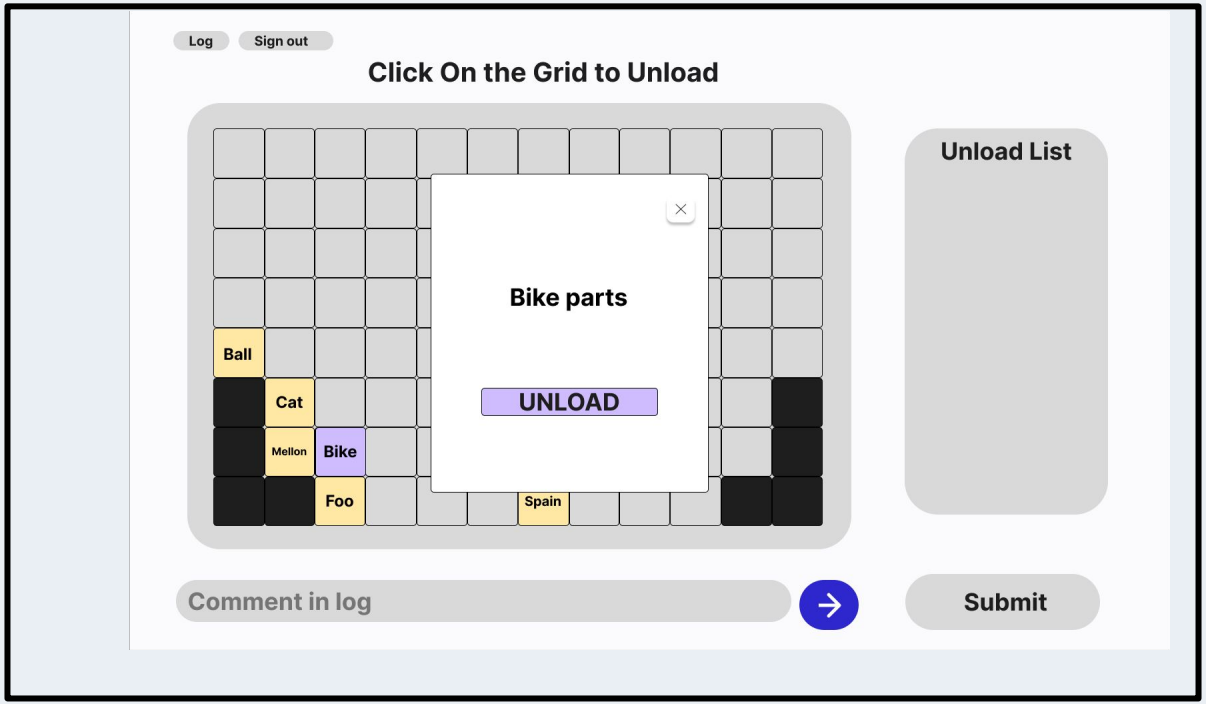
- The transfer list said to only unload the “Bike parts” container from the ship

Transfer Page



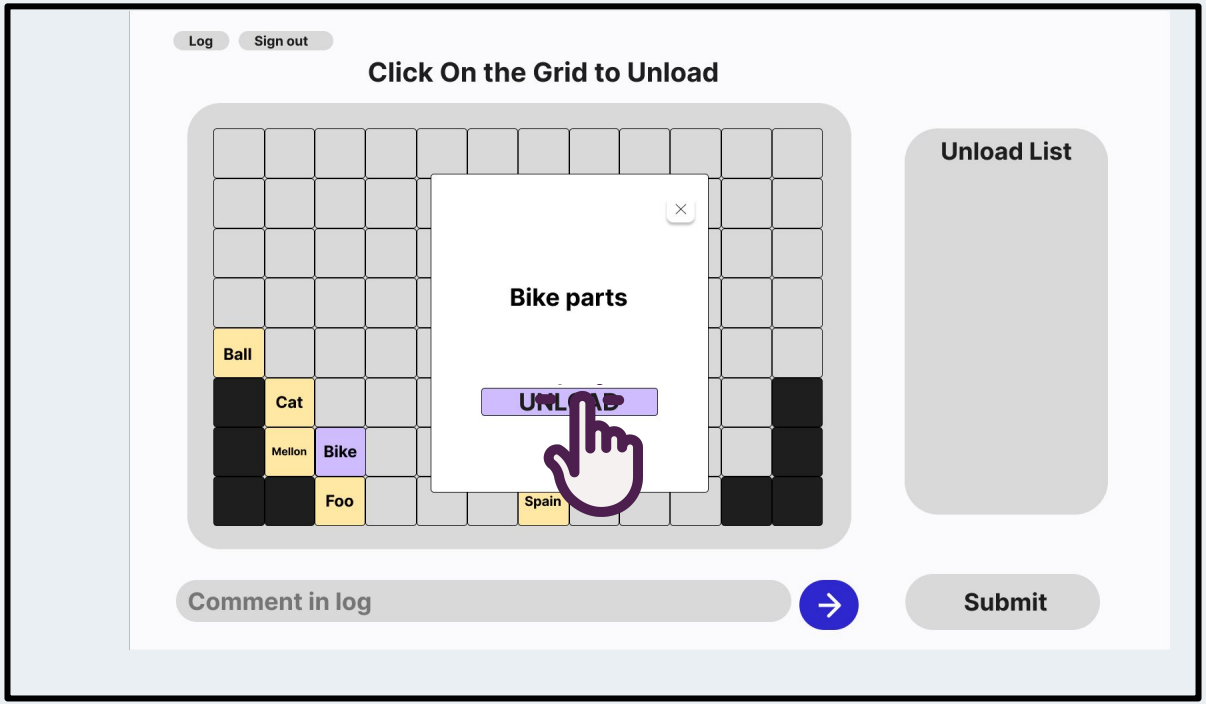
Scenario 3-4 Unload Setup

Transfer Page



Scenario 3-5 Unload Setup

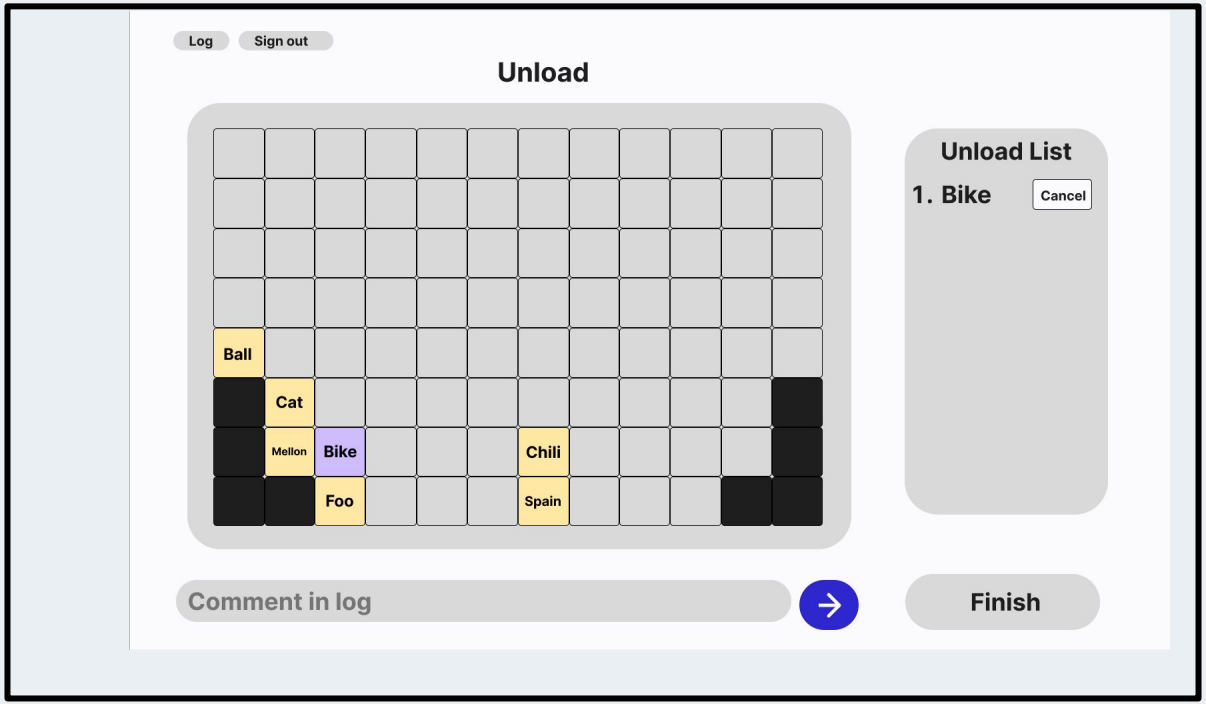
Transfer Page



Scenario 3-6 Unload Setup

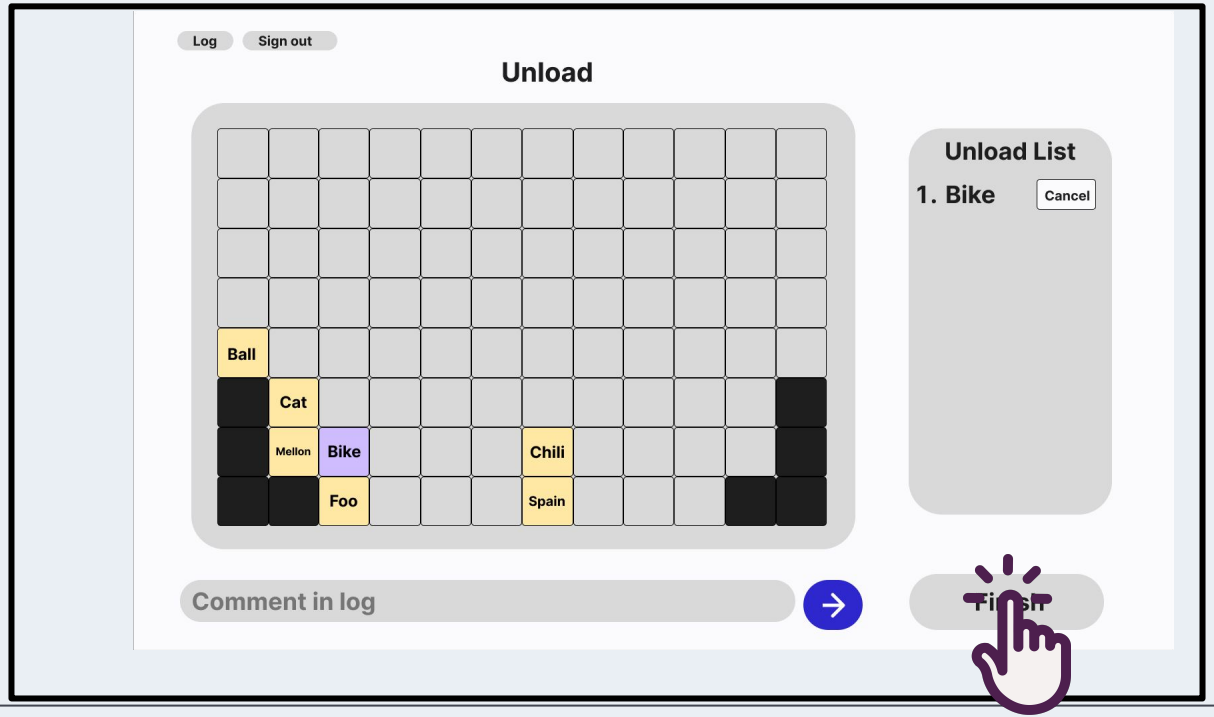
- Rodney confirms the unload list

Transfer Page



Scenario 3-7 Unload Setup

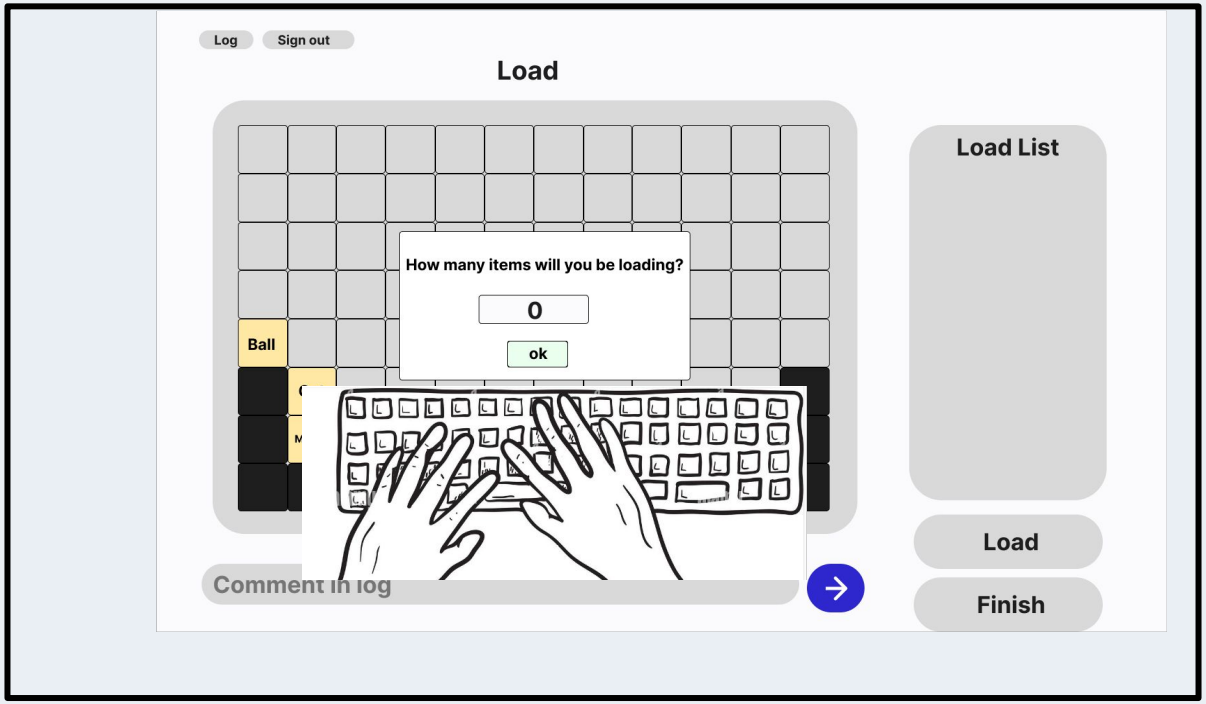
Transfer Page



Scenario 3-8 Load Setup

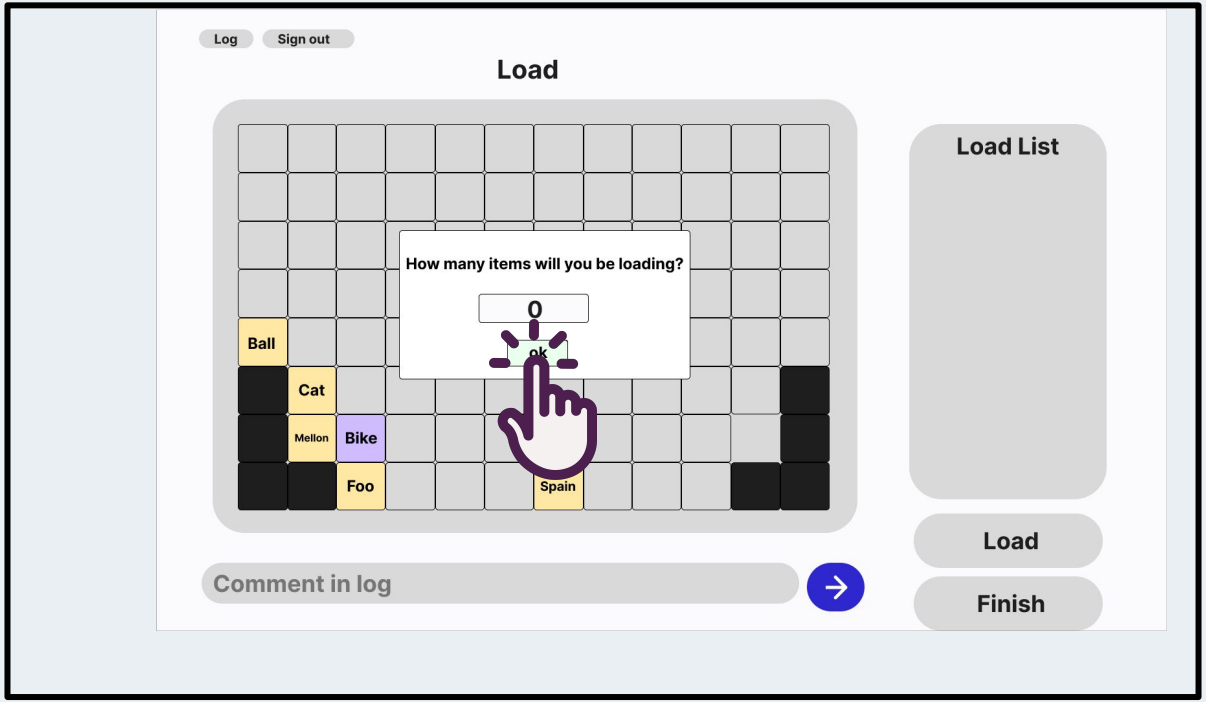
- There are no containers to be loaded

Transfer Page



Scenario 3-9 Load Setup

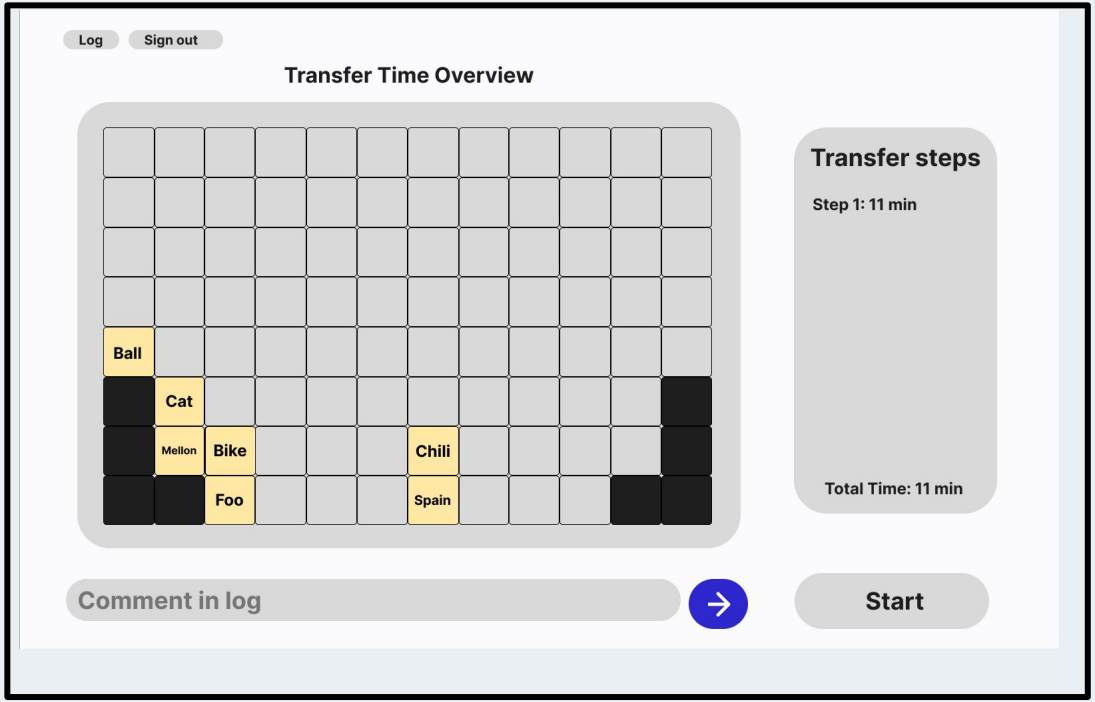
Transfer Page



Scenario 3-10 Transfer Steps

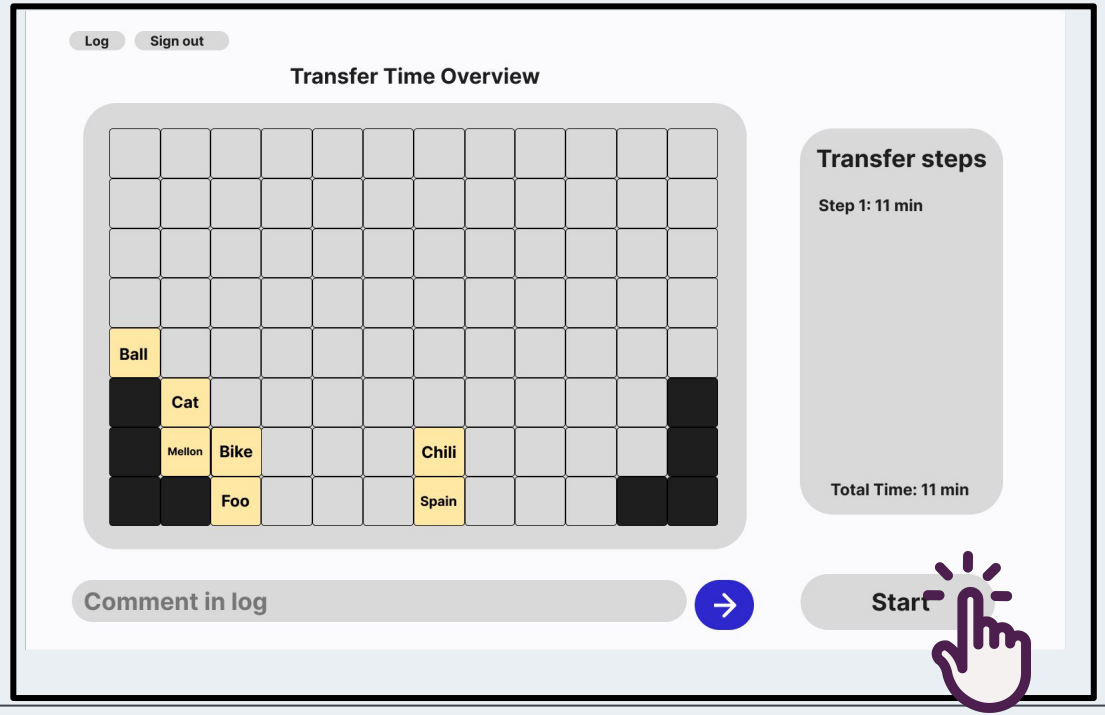
- Rodney starts the transfer steps

Transfer Page



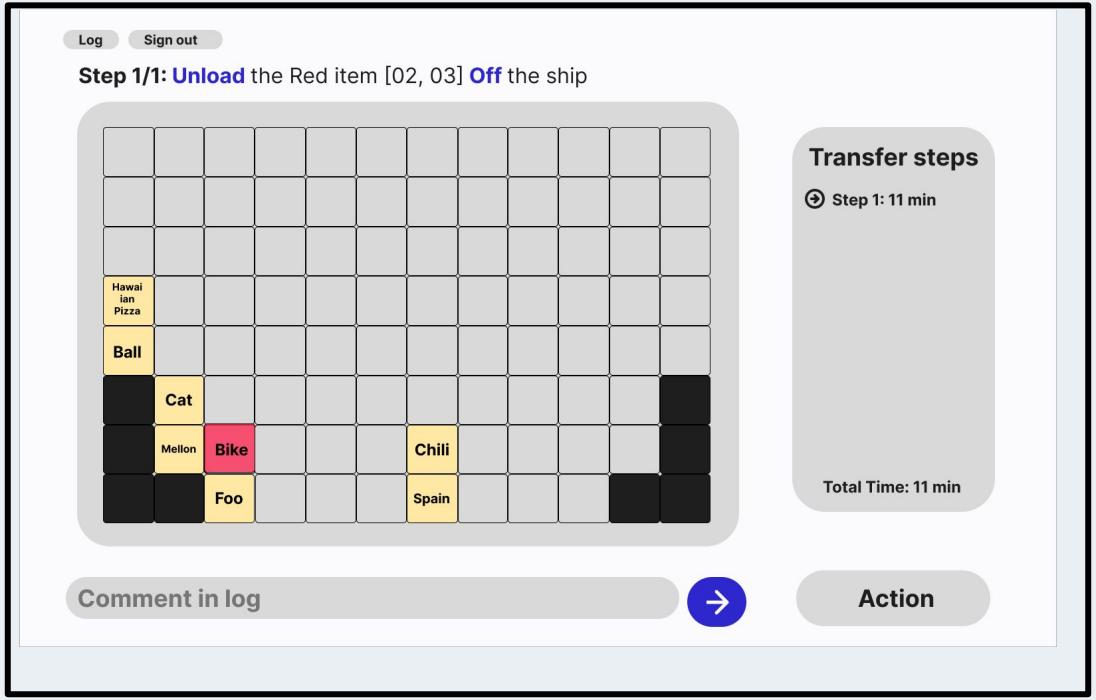
Scenario 3-11 Transfer Steps

Transfer Page



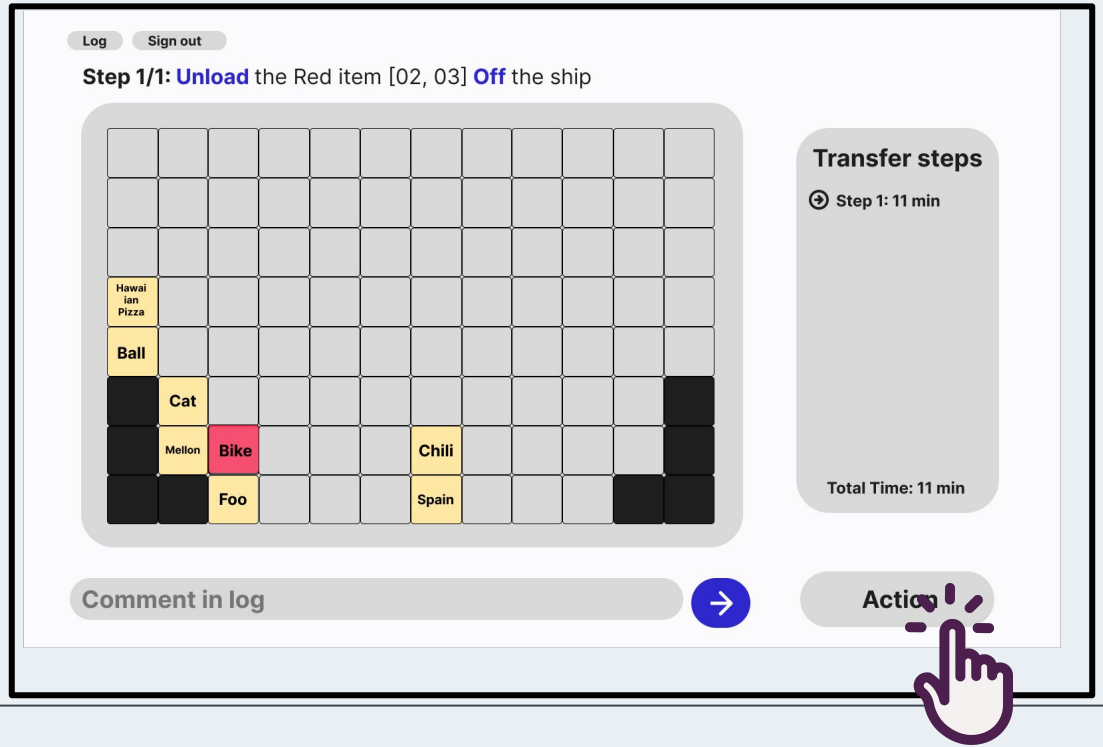
Scenario 3-12 Transfer Steps

Transfer Page



Scenario 3-13 Transfer Steps

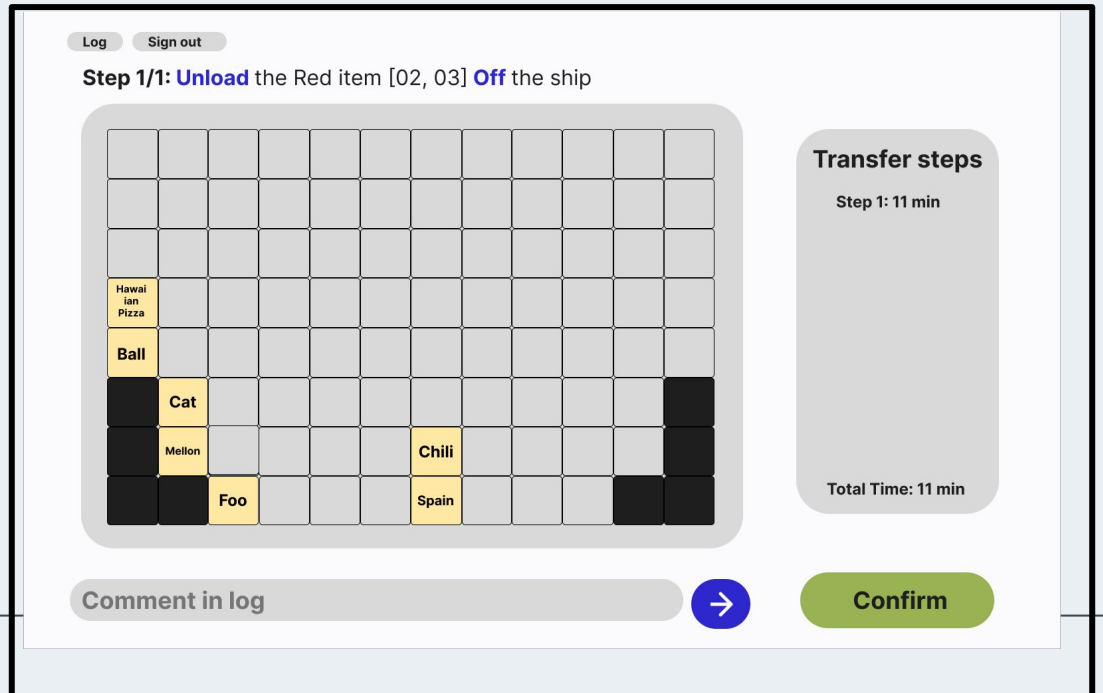
Transfer Page



Scenario 3-14 Making a Comment

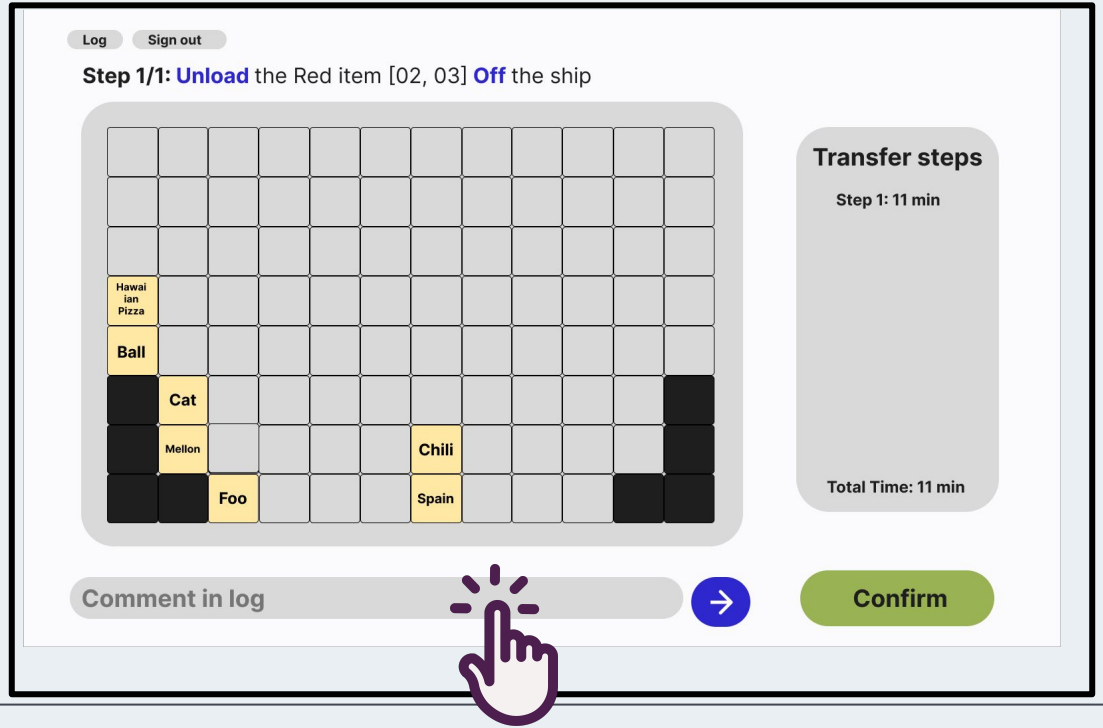
- Rodney notices the “Bike parts” container is 10% below its stated weight, he wants to make a comment for this in the log file in case it gets investigated

Transfer Page



Scenario 3-15 Making a Comment

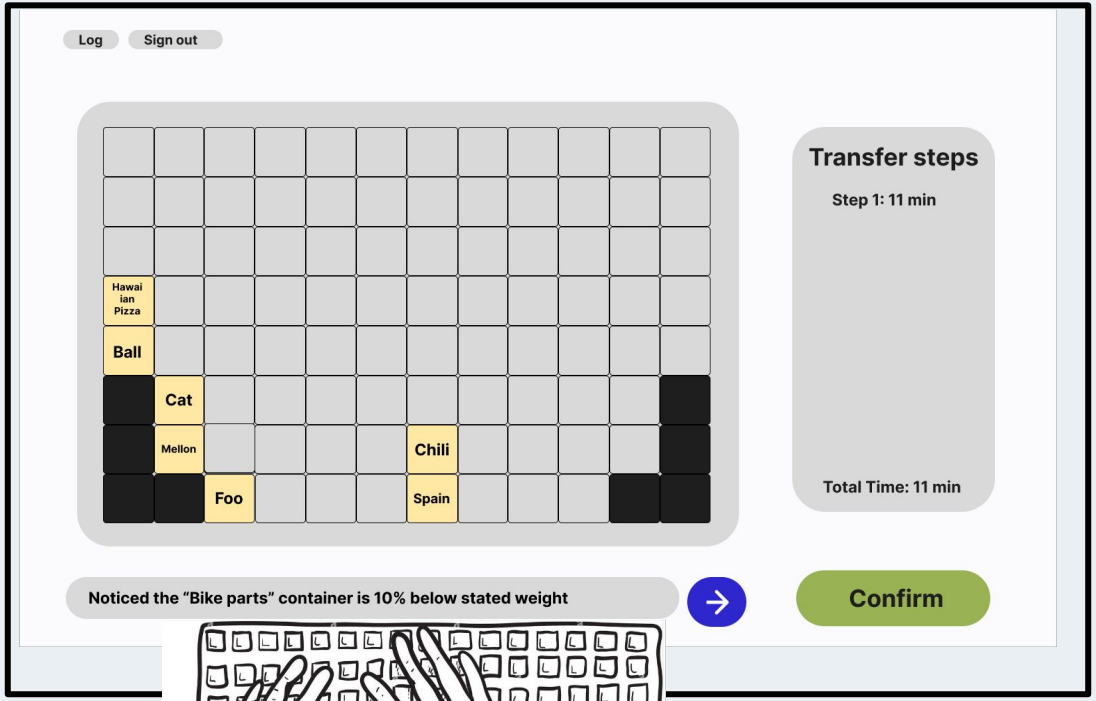
Transfer Page



Scenario 3-16 Making a Comment

- Rodney types his comment in the comment box

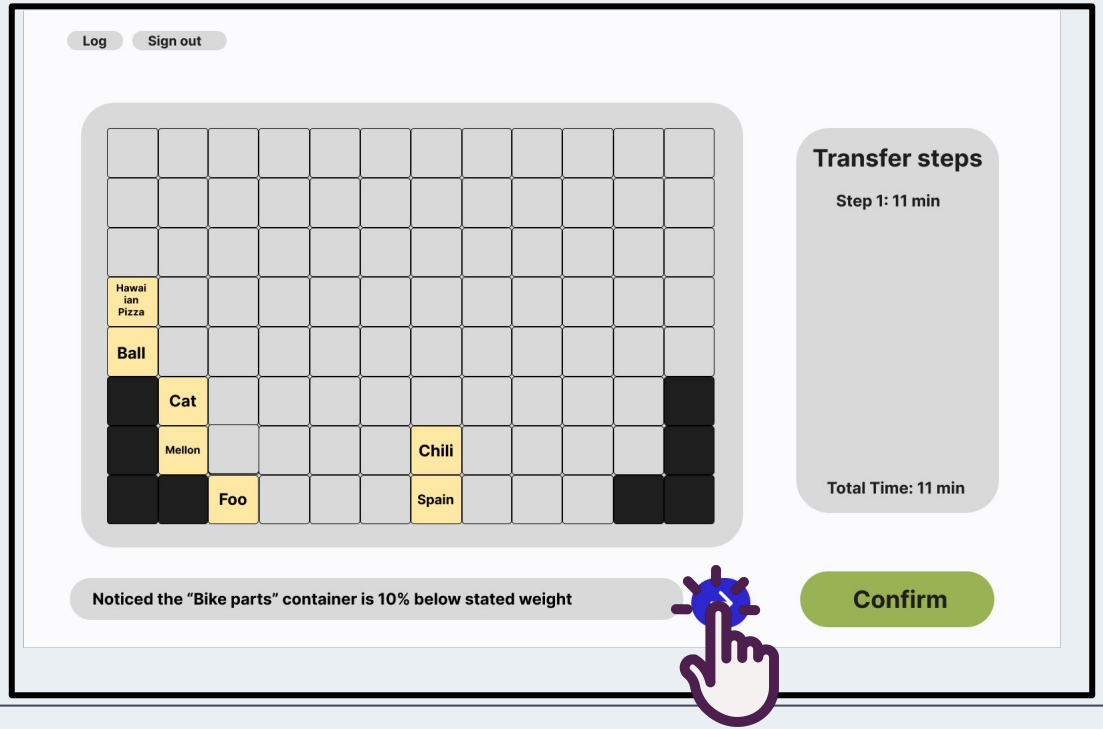
Transfer Page



Scenario 3-17 Making a Comment

- Rodney clicks the blue arrow to submit his comment to the log file

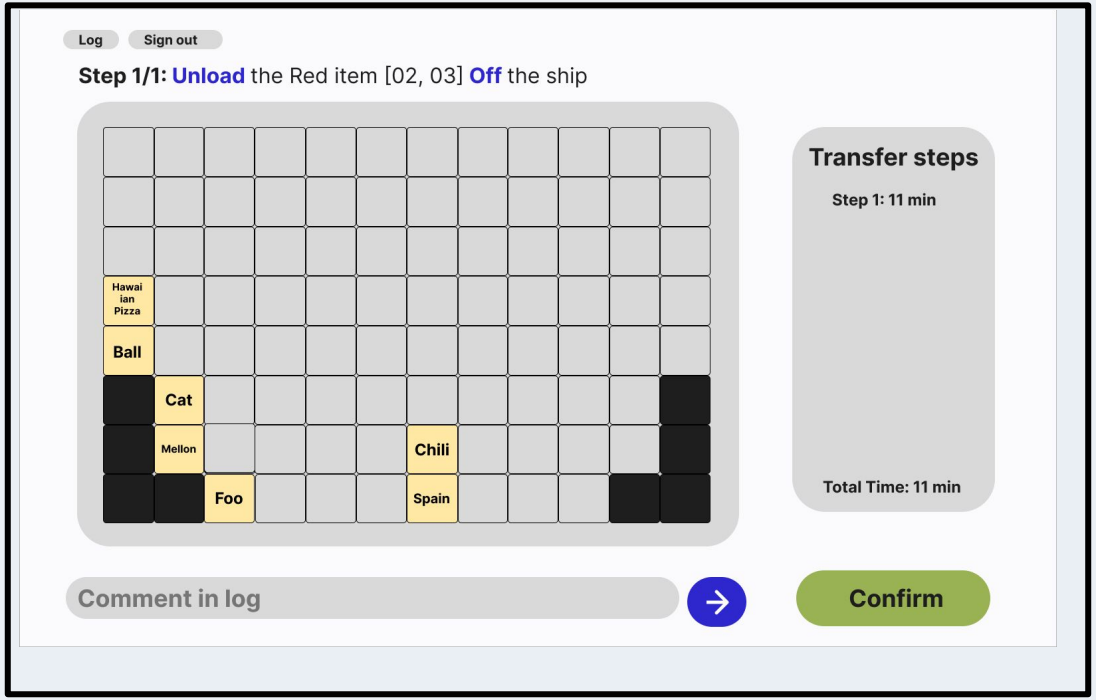
Transfer Page



Scenario 3-18 Checking Log File

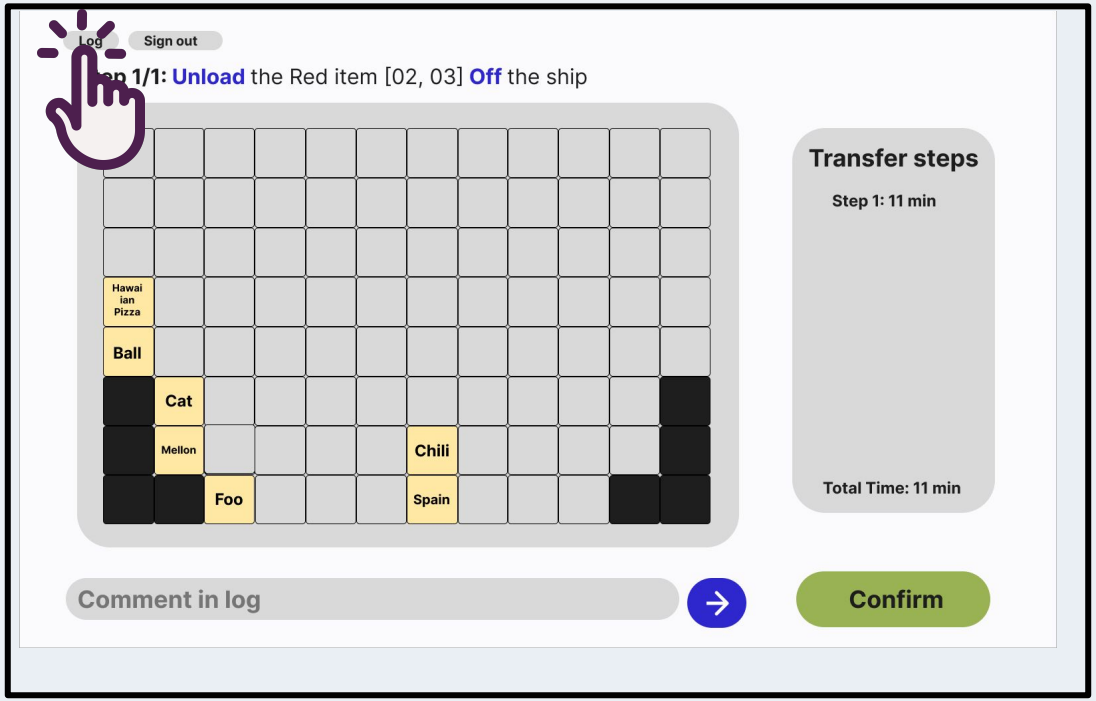
- Rodney wants to make sure his comment is in the log file by opening it

Transfer Page



Scenario 3-19 Checking Log File

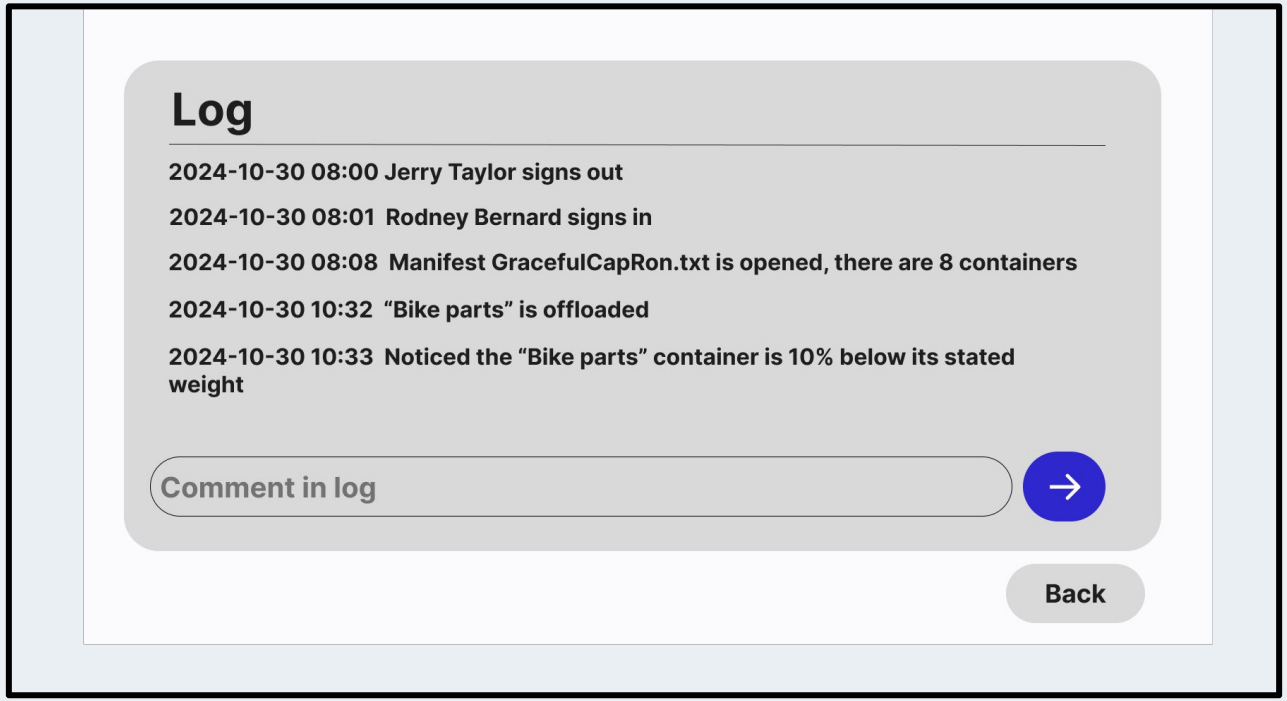
Transfer Page



Scenario 3-20 Checking Log File

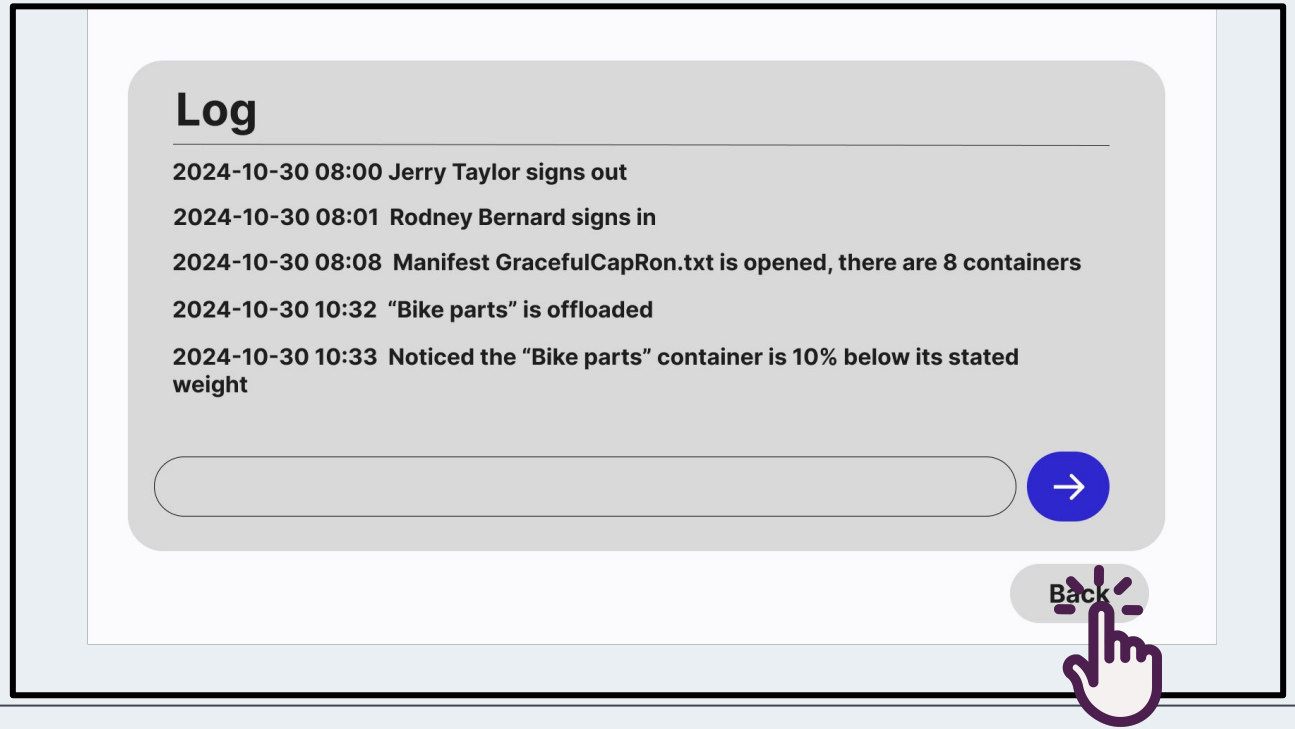
- Rodney confirms his comment is in the log file

Log Page



Scenario 3-21 Checking Log File

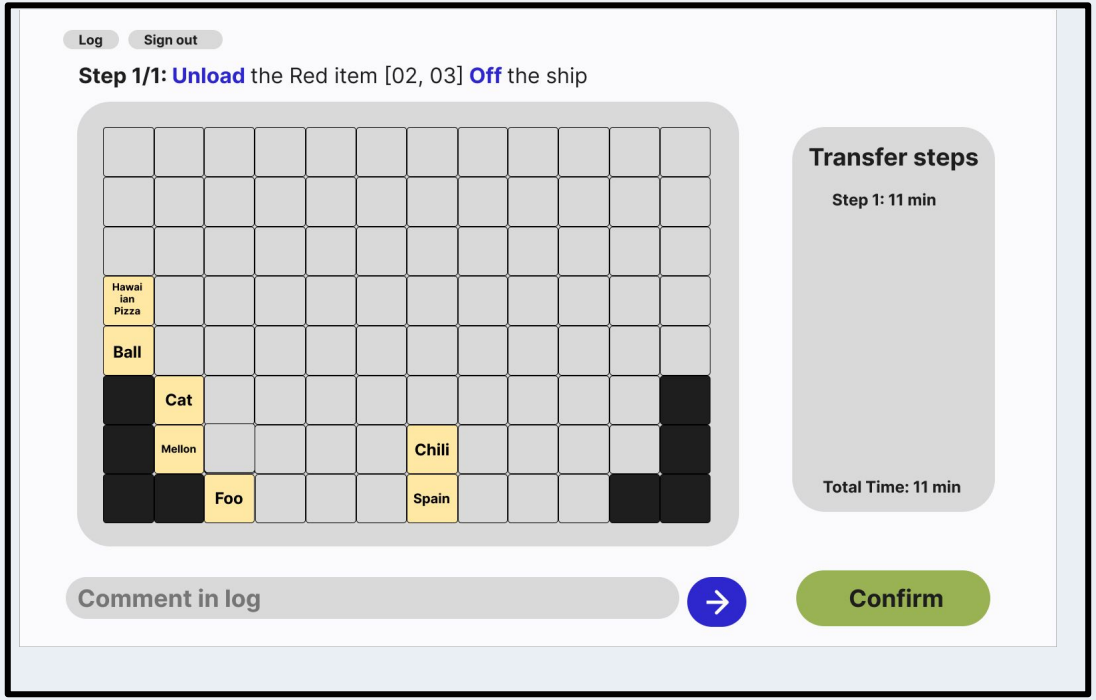
Log Page



Scenario 3-22 Transfer Steps

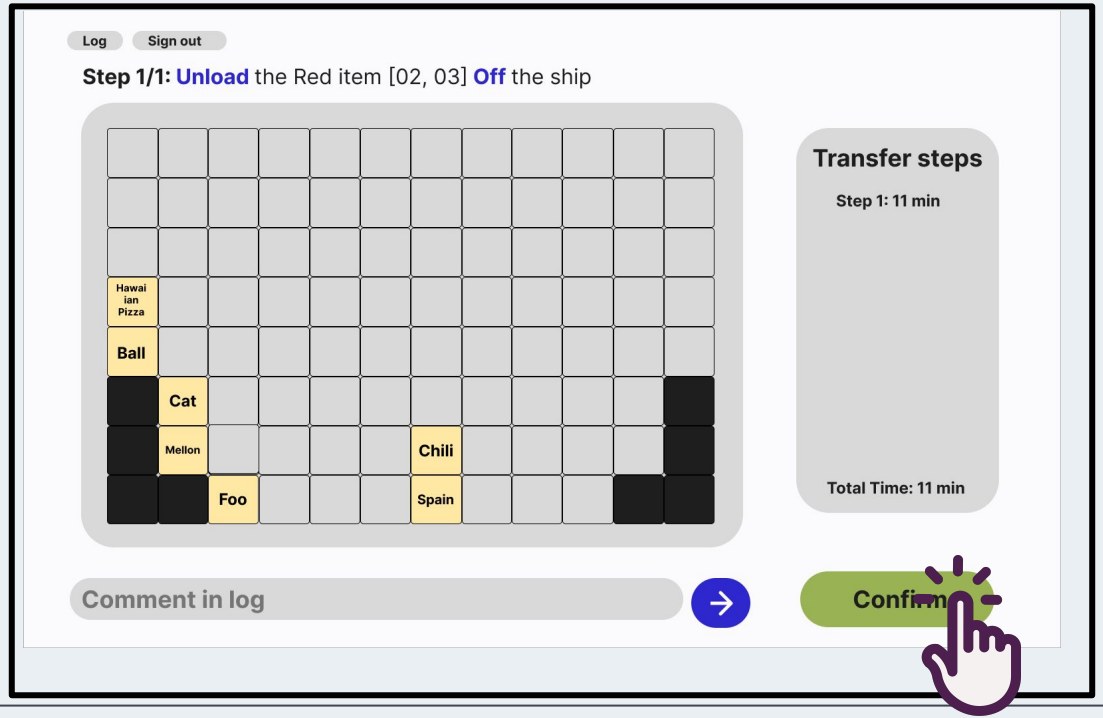
- Rodney continues the transfer operation

Transfer Page



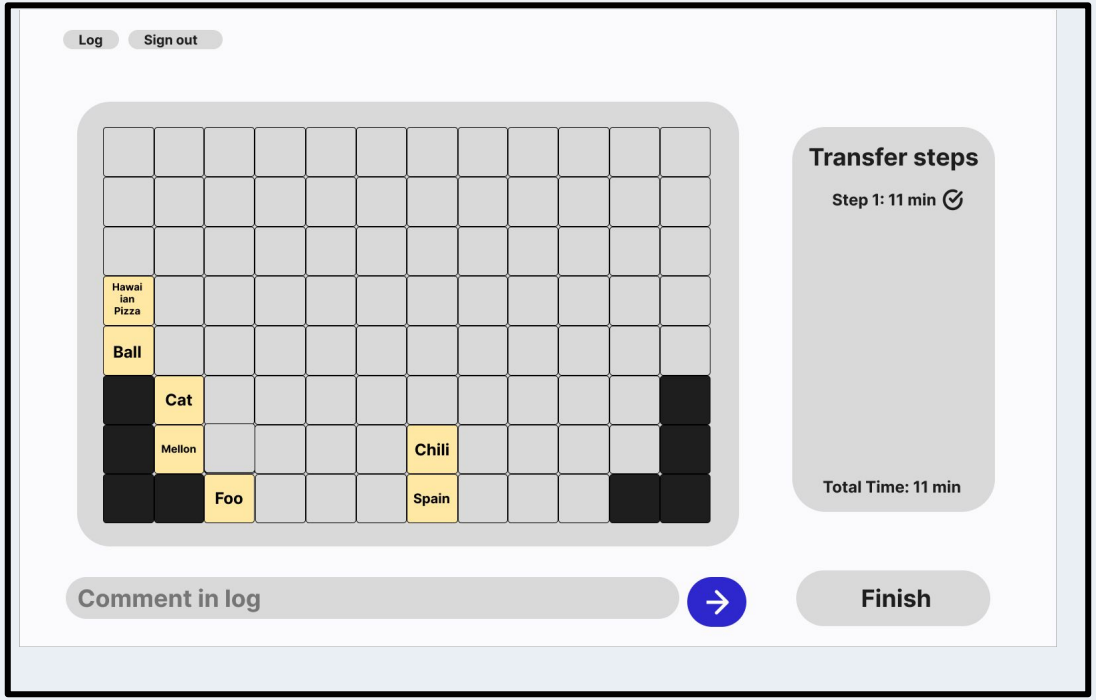
Scenario 3-23 Transfer Steps

Transfer Page



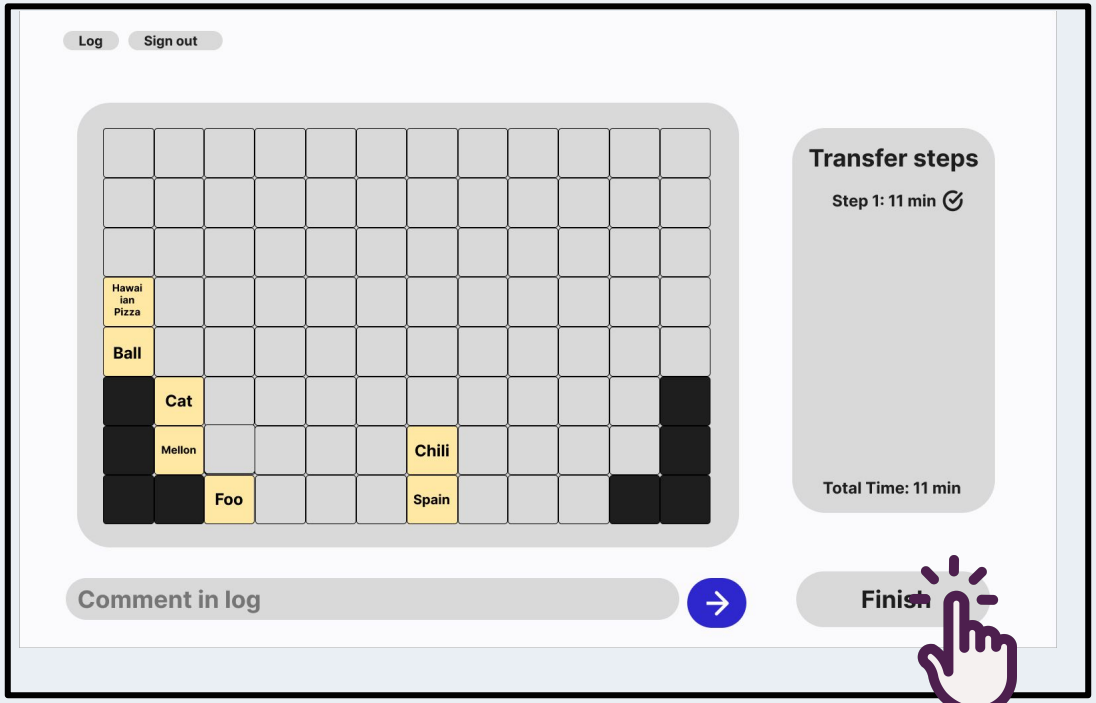
Scenario 3-24 Transfer Steps

Transfer Page



Scenario 3-25 Transfer Steps

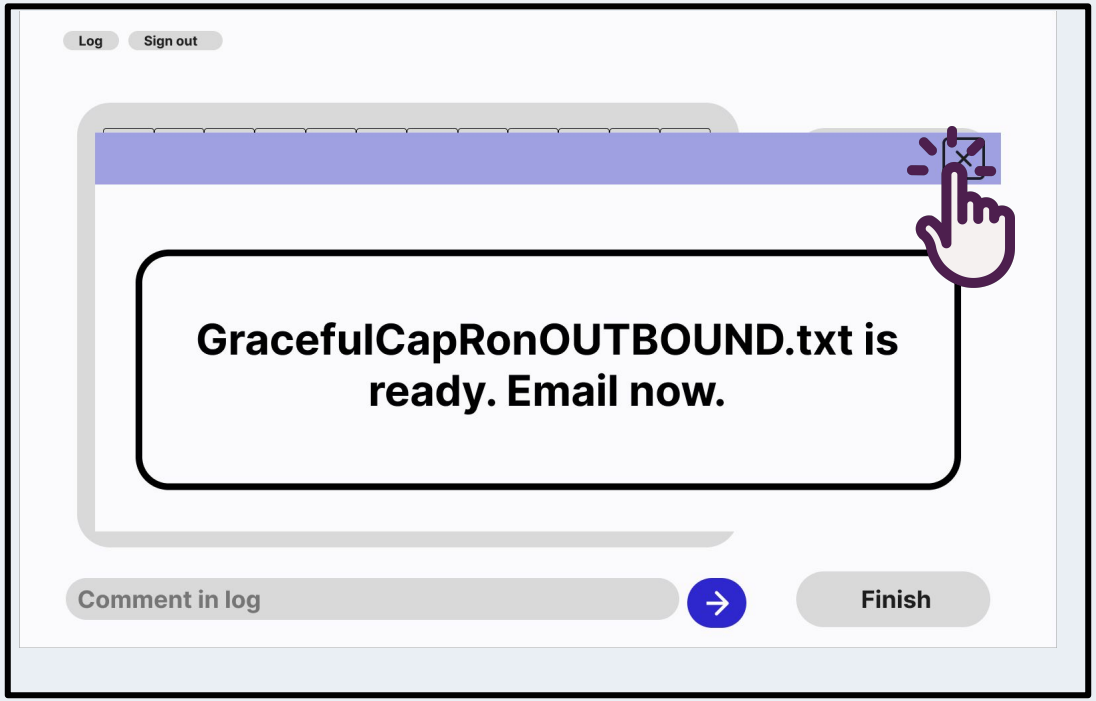
Transfer Page



Scenario 3-26 Outbound Manifest

- The transfer operation is finished

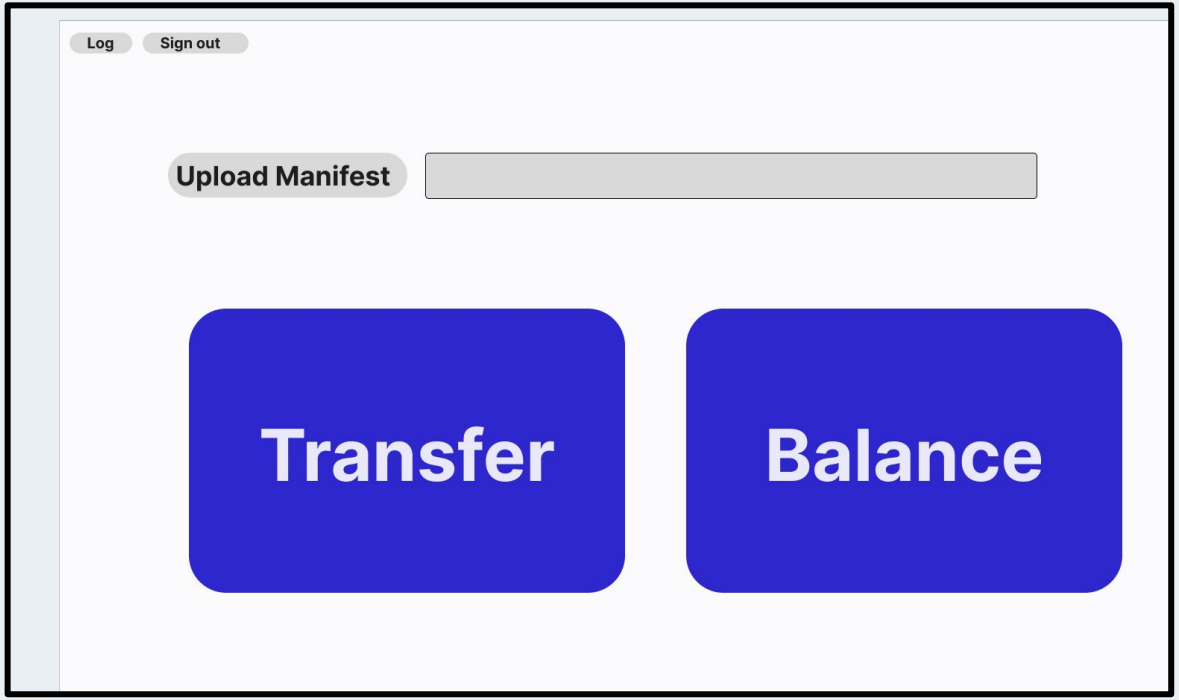
Transfer Page



Scenario 3-27 Main Menu

- Rodney waits for the next job...

Main Menu



Training

Training

1. **Tutorial Video**
   - We provide a 10-15 minute video tutorial covering essential tasks
   - The video file will be provided to the company
2. **One Online Walk-Through Session**
   - **Timing:** Scheduled within 1 week after the product is delivered
   - **Duration:** 1-hour session
   - **Format:** Live Zoom session

Documentation

Documentation

1. **Training Materials**
   Link to the tutorial video
2. **FAQ Guide**
   FAQs that operators may come up with
3. **Technical Spec Documents**
   Minimum hardware and software requirements

Acceptance Testing

Acceptance Testing

We will have a final deliverable on or before December 2, 2024

We propose the following tests:

- Two weeks before the final deliverable is due, you can provide us with up to 5 scenarios (manifests and transfer lists) and we will test any 3 of your choice through a live demo or video
- You have the option to provide us with 2 scenarios with zero notice and we will test them live

Acceptance Testing

- **The following are metrics of success:**
  - The transfer sequencing algorithm will output a list of steps in under 6 seconds for a ship with 48 containers and 24 unloads/loads
  - The transfer sequencing algorithm will output a list of steps in under 12 seconds for a ship with 96 containers and 48 unloads/loads
  - The balance sequencing algorithm will output a list of steps in under 6 seconds for a ship with 48 containers
  - The balance sequencing algorithm will output a list of steps in under 12 seconds for a ship with 96 containers
  - A user will be able to sign in, upload the manifest, and begin a transfer or balance operation in under 30 seconds
  - A user will be able to add a comment to the log file
  - The software will recover seamlessly from an unexpected power outage to the device running the software
  - The ship's port side mass and starboard side mass will be within 10% of each other after a balance operation
  - The log file will accurately mark the time in the desired time format using PST and will account for daylight savings
  - The software will allow the log file to be exported/downloaded at any given time
  - The software will allow the outbound manifest to be exported/downloaded at any given time
  - The software will display the container locations listed in the uploaded manifest with 100% accuracy

Compliance

Compliance

To ensure compliance with regulations the software will do the following:

- **Maritime Safety**
  - The **balance** feature will maintain less than 10% mass difference between the **port** and **starboard** sides of the ship.
  - When balancing, empty containers will be considered to have zero mass.
- **File names**
  - Outbound manifests will all follow the same naming format which appends the word **OUTBOUND** to the inbound manifest file name:
    - Example: QueenMary.txt → QueenMaryOUTBOUND.txt

Compliance

To ensure compliance with regulations the software will do the following:

- **Log & Data**
  - Maintain an annual log file that records:
    - All events carried out in the system with a timestamp:
      - Load/offload operations
      - Manifest status updates
      - Employee sign in/out
      - Comments added by operators
      - System notifications (i.e: power outages)

Maintenance Plan

TTech.

Maintenance Plan

For a period of three years following delivery, we will implement the following adjustments at no additional cost:

- New Language Requirements: Updates to support any additional language requirements as they arise.
- Enhanced Accessibility Standards: Modifications to meet new accessibility standards or regulations.
- Performance Optimization: Improvements to maintain software speed and efficiency in response to changes in container volume or port throughput

We will accommodate adjustments described below, for a nominal fee, which will not exceed 10% of the initial contract amount:

- Expansion to New Ship Classes: Adaptations to support new ship classes should you expand your port or purchase additional assets.
- User Management Overhaul: Significant modifications to the user management system, ensuring compatibility with larger teams or enhanced role management.

Contract

Contract: Gold Plan

Total Cost: $50,000
Down Payment: $10,000
Breakdown:

- Core Development: $35,000
  - Covers container transfer and balancing algorithms
- Interface Design: $10,000
  - Development of an operator-friendly interface
- Testing and Training: $5,000
  - In-depth testing on crane systems and training support

This option provides a robust, reliable solution with essential features needed the specified operations. It will cover basic requirements without extensive customization beyond the stated goals.

Contract: Platinum Plan

Total Cost: $65,000
Down Payment: $13,000
Breakdown:

- Core Development: $35,000
  - Covers container transfer and balancing algorithms
- Interface Design: $10,000
  - Development of an operator-friendly interface
- Testing and Training: $5,000
  - In-depth testing on crane systems and training support
- Priority Support and Maintenance $10,000
  - Additional support post-launch for twelve months, covering minor updates with prioritized response times

This option provides additional post-launch support, ensuring a smooth adaptation period for crane operations and quick responses to initial operational challenges.

Contract

We propose to develop a platform tailored to meet your operational needs.

The final deliverable will be completed on or before December 2nd, 2024.

To ensure we align with your requirements, we may need up to 10 hours of your time for clarification and additional questions, with responses requested within 48 hours.

Any requests beyond the agreed-upon features will not be accommodated at the specified price and timeline.

Signed (for PiTech) _____ Date: _____

Signed (for Keogh's Ports)_____ Date: _____

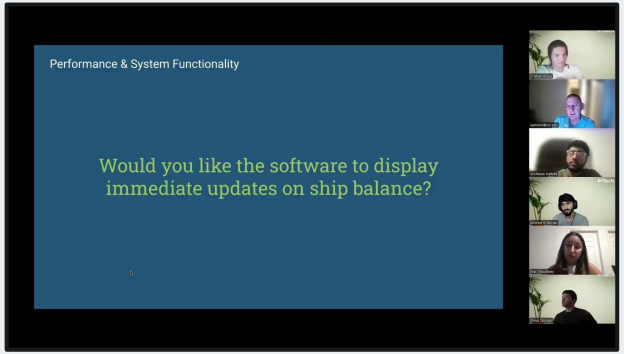
References

[a] Problem_overview_by_Mr_Keogh.pptx - Slide 14

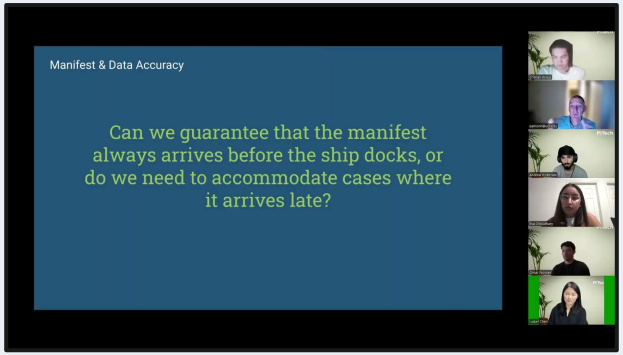
Introduction

- I own a single port, in Long Beach
- I do not own any ships or trucks or containers
- I make my money, by:
  - Loading/unloading ships
  - Balancing ships
- I get paid per number of containers moved, so the faster we work, the more ships I can serve, the more money I make.
- I can only handle one ship at a time.
- Typically, we handle about one ship per day.
- Some days, we may have no ships, but there is someone in the cabin 24/7 (by law)
- We work 24/7, three shifts 12 to 8, 8 to 4, 4 to 12

[b] Elicitation Interview - 00:46:33



[c] Elicitation Interview - 00:41:58



[d] Problem_overview_by_Mr_Keogh.pptx - Slide 21

Basic Operation IIa

- While the ship is still a few hours away, it sends an email with the manifest to us. This manifest is in a special format (described later)
- The captains job depends on the manifest being 100% correct, so you can assume that it is correct.
- Before the ship leaves, we have to email the (possibly modified) manifest back to the captain, he cannot legally leave until we have done so.
- It is critical that if we move any containers, that we edit the manifest to correctly reflect that.

[e] Problem_overview_by_Mr_Keogh.pptx - Slide 45

Log I

- I need a log file for legal purposes
- It should contain all the events with a time stamp
- It should be just plain text, something I can read in notepad
- It should never be edited directly by humans

[f] Problem_overview_by_Mr_Keogh.pptx - Slide 47

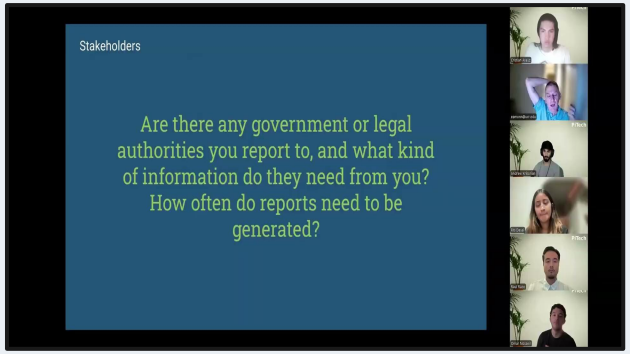
Log III Feature needed.

Very occasionally something happens that the operator will want to write to the log just in case there is an investigation later.

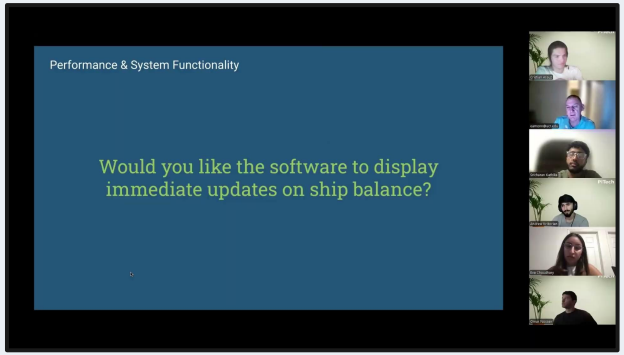
Below I show some examples. I put them in color so you can find them, but this should be a plain ASCII text

```
June 1st 2023: 00:02 John Smith signs out
June 1st 2023: 00:02 Anil Patel signs in
June 1st 2023: 02:04 Manifest HMMAlgecirас.txt is opened, there are 12 containers on the ship
June 1st 2023: 04:23 "Walmart Bikes Moreno Valley South" is offloaded.
June 1st 2023: 04:55 I notice that the "Walmart Toasters Moreno Valley South" container has a large fresh-looking dent on the door. However, door was not breeched, so just sent a photo to head office and I am continuing with the cycle.
June 1st 2023: 04:56 "Walmart Toasters Moreno Valley South" is offloaded.
June 1st 2023: 05:34 "Amazon Empty, Let John or Mike in packaging when arrives" is onloaded.
June 1st 2023: 06:02 Finished a Cycle. Manifest HMMAlgecirasOUTBOUND.txt was written to desktop, and a reminder pop-up to operator to send file was displayed.
June 1st 2023: 07:11 Manifest HMMAFreiger.txt is opened, there are 34 containers on the ship
June 1st 2023: 07:43 "Apple Valley Machine parts, call 902-555-2322 if problem" is offloaded.
June 1st 2023: 07:47 I noticed that "Apple Valley Machine parts" is about 10% over its stated weight, may be due to the rain on top, no further action taken.
June 1st 2023: 07:59 Anil Patel signs out
June 1st 2023: 08:00 Sue Smith signs in
June 1st 2023: 08:12 "Apple Valley Tires, call 902-555-2322 if problem" is offloaded.
::
June 2nd 2023: 01:13 Finished a Cycle. Manifest HMMAFreigerOUTBOUND.txt was written to desktop, and a reminder pop-up to operator to send file was displayed.
```

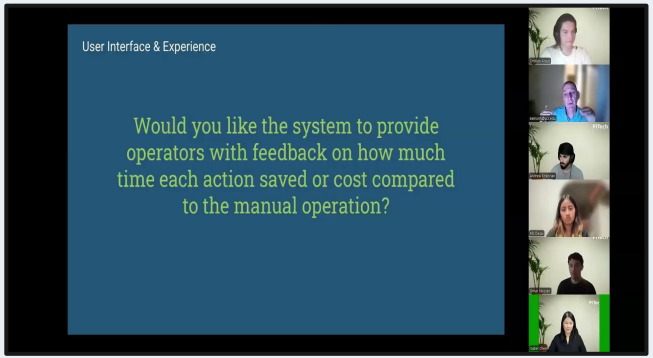
[g] Elicitation Interview - 00:12:20



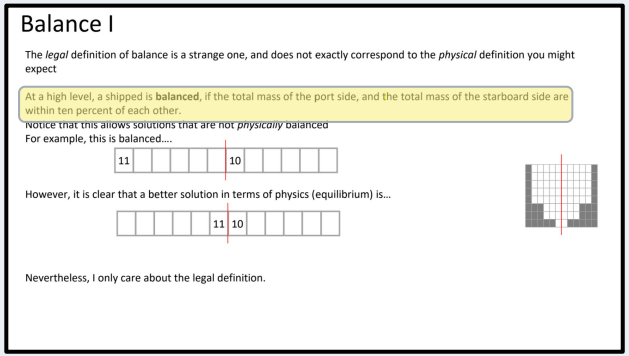
[h] Elicitation Interview - 00:46:33



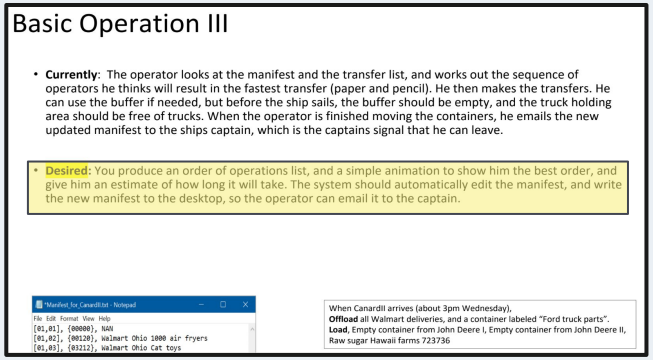
[i] Elicitation Interview - 00:37:30



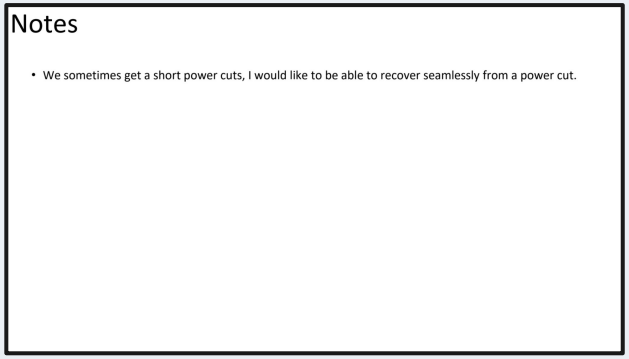
[k] Problem_overview_by_Mr_Keogh.pptx - Slide 37



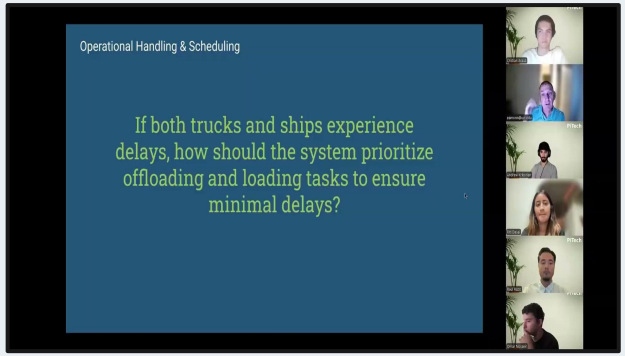
[j] Problem_overview_by_Mr_Keogh.pptx - Slide 24



[l] Problem_overview_by_Mr_Keogh.pptx - Slide 30

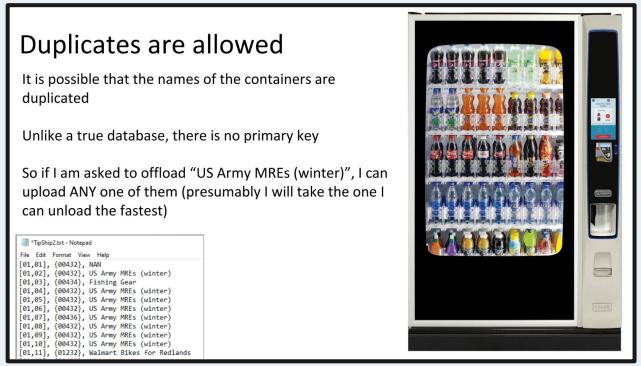


[m] Elicitation Interview - 00:46:33

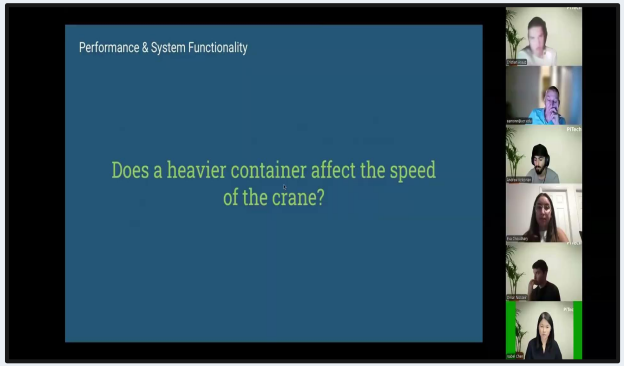


[o] Email

[n] Problem_overview_by_Mr_Keogh.pptx - Slide 34



[p] Elicitation Interview - 00:44:51



[q] Problem_overview_by_Mr_Keogh.pptx - Slide 61

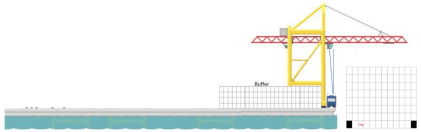
Sample Session

The truck with Jones Bikes pulls up

John grabs it and begins to load it.

As soon as the container clears the truck, the driver will leave.

As the container is being moved, the crane weights it, and John can see a digital display of its weight, 2314 kilos. He writes this down.

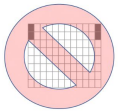


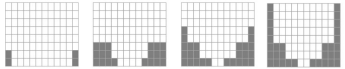
[s] Problem_overview_by_Mr_Keogh.pptx - Slide 32

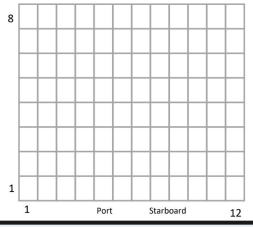
Below are some examples of ships

However, any shape is possible, except:

- It is always symmetric
- Obviously, you can never have an open slot below a closed slot







[r] Problem_overview_by_Mr_Keogh.pptx - Slide 36

Important Note

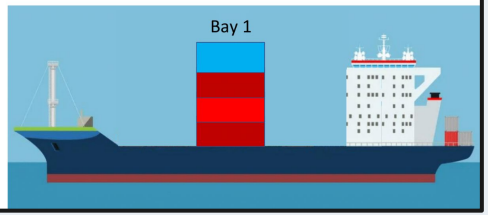
- Balance and load/unload are two separate operations

- When we do a *balance*, nothing is loaded or offloaded
- When we do *load/unload*, we don't care about balance

[t] Problem_overview_by_Mr_Keogh.pptx - Slide 15

Ship Sizes

All my ships are X2 class, that means that they only have one bay.
This one bay has a possible 8 rows and 12 columns, but some ships could have less



[u] Problem_overview_by_Mr_Keogh.pptx - Slide 14

Introduction

- I own a single port, in Long Beach
- I do not own any ships or trucks or containers
- I make my money, by:
  - Loading/unloading ships
  - Balancing ships
- I get paid per number of containers moved, so the faster we work, the more ships I can serve, the more money I make.
- I can only handle one ship at a time.
- Typically, we handle about one ship per day.
- Some days, we may have no ships, but there is someone in the cabin 24/7 (by law)
- We work 24/7, three shifts 12 to 8, 8 to 4, 4 to 12

[v] Problem_overview_by_Mr_Keogh.pptx - Slide 14

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- I own a single port, in Long Beach
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- We work 24/7, three shifts 12 to 8, 8 to 4, 4 to 12

[w] Problem_overview_by_Mr_Keogh.pptx - Slide 29

Users

- All my guys have at least high school educations (we have yet to have a female employee)
- All speak/read basic English, but it may not be their first language.
- They work in 8-hour shifts, 12 to 8, 8 to 4 and 4 to 12.
- The crane tower is very bright, it has to have 360 views, so high contrast colors, larger fonts are probably a good idea.
- The crane tower is very noisy, sound prompts are probably useless.

[x] Problem_overview_by_Mr_Keogh.pptx - Slide 15

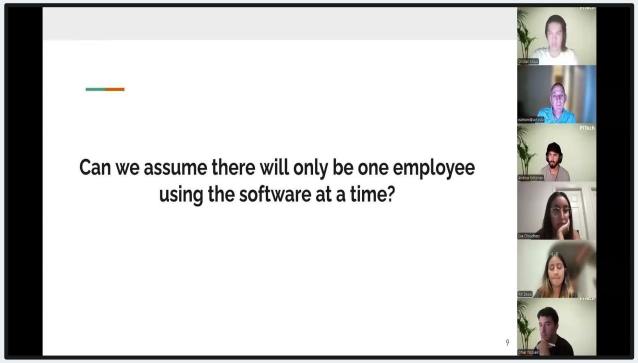
Employees

The employees pass thru security just to get into the yard.
Climbing to the cabin takes 12 minutes.
Thus, there is zero chance of unauthorized access
That means we do no have to worry about passwords/security etc.
We accept any sign in name that is given.

The normal shifts are 12 to 8, 8 to 4 and 4 to 12.
However, sometime a guy is sick, and someone will work a double shift to cover for them
Or someone has a doctors appointment and is late, so his buddy covers for him
In the worst case, I have covered for someone

However, there is always someone in the cab, 24/7

[y] Elicitation Interview - 00:02:30



[A] Problem_overview_by_Mr_Keogh.pptx - Slide 24

Basic Operation III

- **Currently**: The operator looks at the manifest and the transfer list, and works out the sequence of operators he thinks will result in the fastest transfer (paper and pencil). He then makes the transfers. He can use the buffer if needed, but before the ship sails, the buffer should be empty, and the truck holding area should be free of trucks. When the operator is finished moving the containers, he emails the new updated manifest to the ships captain, which is the captains signal that he can leave.
- **Desired:** You produce an order of operations list, and a simple animation to show him the best order, and give him an estimate of how long it will take. The system should automatically edit the manifest, and write the new manifest to the desktop, so the operator can email it to the captain.

When Canardll arrives (about 3pm Wednesday),
Offload all Walmart deliveries, and a container labeled "Ford truck parts".
Load, Empty container from John Deere I, Empty container from John Deere II, Raw sugar Hawaii farms 723736

[z] Problem_overview_by_Mr_Keogh.pptx - Slide 24

Basic Operation III

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- **Desired:** You produce an order of operations list, and a simple animation to show him the best order, and give him an estimate of how long it will take. The system should automatically edit the manifest, and write the new manifest to the desktop, so the operator can email it to the captain.

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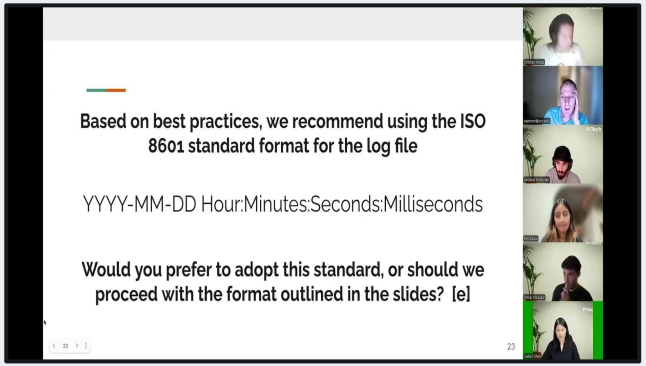
Load, Empty container from John Deere I, Empty container from John Deere II, Raw sugar Hawaii farms 723736

[B] Problem_overview_by_Mr_Keogh.pptx - Slide 21

Basic Operation IIa

- While the ship is still a few hours away, it sends an email with the manifest to us. This manifest is in a special format (described later)
- The captains job depends on the manifest being 100% correct, so you can assume that it is correct.
- Before the ship leaves, we have to email the (possibly modified) manifest back to the captain, he cannot legally leave until we have done so.
- It is critical that if we move any containers, that we edit the manifest to correctly reflect that.

[C] Elicitation Interview - 00:24:30



[D] Problem_overview_by_Mr_Keogh.pptx - Slide 24

Basic Hardware

- I would like the system to work on the cheapest all-in-one PC at COSTCO. This is because I don't want any expensive theft magnet.
- My PCs are typically barebones (I don't want employees wasting times on games). They have a chrome web browser, the notepad text editor, the built-in calculator.
- The operator cab in the tower does have fast ethernet.