

CSCE 606 – Software Engineering
Project: Inventory System
Sprint # 2 – Planning

Customer: Dr. Robert Lightfoot

Development Team:

- Rafael Morales (Scrum Master)
- Khush Patel
- Saba Mostofi
- Arun Akash Rangaraj
- Sid Rayapur

Links:

- Deployed app: <https://inventory-system-lightfoot-c73b05a2c5ae.herokuapp.com/>
- Github Project: <https://github.com/orgs/tamu-edu-students/projects/101>
- Github Repo: <https://github.com/tamu-edu-students/CSCE-606-Inventory-System>
- Shared folder: <https://drive.google.com/drive/folders/1NsQfvHf9n272E8VKVghdkU4B7Elk4EYI>
- Discussion Channel: <https://app.slack.com/client/T08A4A8U89M/C08AJRT0UTC>

Sprint #2 Goal:

The goal of this sprint is to work on the backend of our application. The majority of user stories focus on backend development, particularly on Models, Controllers, and Views. Several critical customer requirements will be implemented during this sprint, including:

- NFC Chip and QR Code Integration for bin identification.
- Adding Location and Picture Models to enhance item tracking.
- Modifying Existing Models to align with customer requests:
- Prevent item deletion.
- Allow item creation outside of bins.
- Enhancing Frontend Compatibility by adding HTML and CSS to support backend development.
- Login/Logout password reset

After this sprint, we expect the backend to be nearly complete, allowing us to shift our focus to front-end development in the upcoming sprints.

Sprint Backlog and User Stories:

- **Feature:** Create session Model
As a logged-in user,
I want to record every logged session,
So that I can later track my inventory movement.
Points: 3
- **Feature:** Create Location Model
As a logged-in user,
I want to create, read, update, and delete (CRUD) locations,
So that I can efficiently manage my inventory.
Points: 2
- **Feature:** Create Picture Model
As a logged-in user,
I want to take and attach pictures to bins and locations,
So that I can easily check what is inside a bin.
Points: 5
- **Feature:** Add QR Code to Bin
As a logged-in user,
I want to have the option to add a QR code when creating a bin,
So that I can scan it and easily check its contents.
Points: 3
- **Feature:** Scan QR Code for Bin Information
As a logged-in user,
I want to scan a QR code,
So that I can quickly check the bin's contents.
Points: 3
- **Feature:** Add NFC Chip to Bin
As a logged-in user,
I want to attach an NFC chip to a bin,
So that I can scan it to find information about its contents.
Points: 5

- **Feature:** Prevent Item Deletion after removal from Bin
As a logged-in user,
I want to retain item records after removing them from a bin,
So that I can access this information later.
Points: 4
- **Feature:** Allow items that don't belong to any Bin
As a logged-in user,
I want to add items that are not assigned to any bin,
So that I can keep track of larger items like bicycles.
Points: 2
- **Feature:** Simple UI for CRUD Operations:
As a developer,
I want to have a basic UI for CRUD operations on every model,
So that I can visually track development progress.
Points: 3
- **Feature:** Password Recovery
As a user,
I want to reset my password,
So that I can recover my account if I forget my credentials.
Points: 4
- **Feature:** Improve Bin Form with Dropdowns
As a logged in user,
I want to select locations and categories from dropdowns in the bin form,
So that I can avoid creating duplicate entries.
Points: 3
- **Feature:** Create log from session
As a logged in user,
I want to select locations a gap in time,
So that I can create a log with all movement of Items.
Points: 3

Assignment of tasks:

- **Feature:** Create Session Model

Developer: Sid

Tasks:

- Create a Session model with a User reference, login timestamp, and logout timestamp.
- Create new migrations
- Update the Session Controller to allow queries for movement within date ranges.
- Update View if needed
- Create BDD and TDD.

- **Feature:** Create Location Model

Developer: Sid

Tasks:

- Create a Location model with a User reference
- Modify Bin model if it is needed
- Update controller and view if it is needed
- Create new migrations
- Create BDD and TDD.

- **Feature:** Create Picture Model

Developer: Saba

Tasks:

- Create picture models with a User reference
- set up **AWS S3** or a similar storage solution for storing pictures.
- Bins can have multiple pictures.
- Items can have only one picture each.
- Create BDD and TDD.

- **Feature:** Add QR Code to Bin

Developer: Rafael

Tasks:

- Add a QR code string column to the bin table.
- Create necessary Migrations
- Create BDD and TDD

- **.Feature:** Scan QR Code for Bin Information

Developer: Rafael

Tasks:

- Scanning a QR code should redirect the user to the bin's details page.
- If the user is not logged in, they should be prompted to log in before accessing the bin information.
- Create necessary Migrations
- Create BDD and TDD

- **.Feature:** Add NFC Chip to Bin

Developer: Rafael

Tasks:

- iPhone browsers do not support NFC scanning directly, so an alternative approach is needed.
- Scanning a NFC Chip should redirect the user to the bin's details page.
- If the user is not logged in, they should be prompted to log in before accessing the bin information.
- Create necessary Migrations
- Create BDD and TDD

- **.Feature:** Prevent Item Deletion After Removal from Bin

Developer: Khush

Tasks:

- Modify model validations to allow NULL values for the bin reference, instead of deleting the item.
- Create necessary Migrations
- Create BDD and TDD

- **.Feature:** Allow Items That Don't Belong to Any Bin

Developer: Khush

Tasks:

- Add a no_bin flag to the Item model to indicate when an item does not belong to a bin.
- Create necessary Migrations
- Create BDD and TDD

- **.Feature:** Simple UI for CRUD Operations

Developer: Arun

Tasks:

- This UI should be simple and functional for backend testing.
- The main focus is to ensure all backend features work correctly before shifting focus to frontend improvements in future sprints.
- Add search Bin capabilities, Add Search Item capabilities
- Create BDD and TDD

- **.Feature:** Password recovery

Developer: Arun

Tasks:

- Implement password reset functionality using email verification or a similar method.
- Create BDD and TDD

- **.Feature:** Improve Bin Form with Dropdowns

Developer: Khush

Tasks:

- Modify the bin creation/edit form to use dropdown menus for locations and categories.
- Create BDD and TDD

- **.Feature:** Log movement for every session

Developer: Sid

Tasks:

- After the creation of Session model, write the necessary code to show to the user the historical movements on the database from an specific date
- Create BDD and TDD