



## Smart Inventory Management System: ITEM LOCATOR

Milestone 2  
Mid Progress Evaluation  
Group 13



# GROUP 13 - MEMBERS

FERNANDO K.A.I. – E/18/098



FERNANDO K.N.A. – E/18/100



JAYASUNDARA J.W.K.R.B. – E/18/155



---

# Outline

1. System Understanding and Overview
2. System Process
3. Solution Architecture, Data and Control Flow
4. User Friendly Experience
5. Demonstration (4 min) \*
6. Q&A

---

# 1. SYSTEM UNDERSTANDING AND OVERVIEW

# Inventory Management for Makerspace Lab with web interface





# Inventory Management for Makerspace Lab

- Above process would be repeated back and forth.
- Our goal as a team is to add locations to this existing project.

---

## 2. SYSTEM PROCESS

## 2. SYSTEM PROCESS

---

1. ITEM DATABASE VIEW WITH REFERENCE IMAGES
2. SPECIFIC ITEM VIEW WITH ALL DETAILS
3. ITEM SEARCH FUNCTION
  - a. Search for items by Keywords
  - b. Search for items in specific location
  - c.



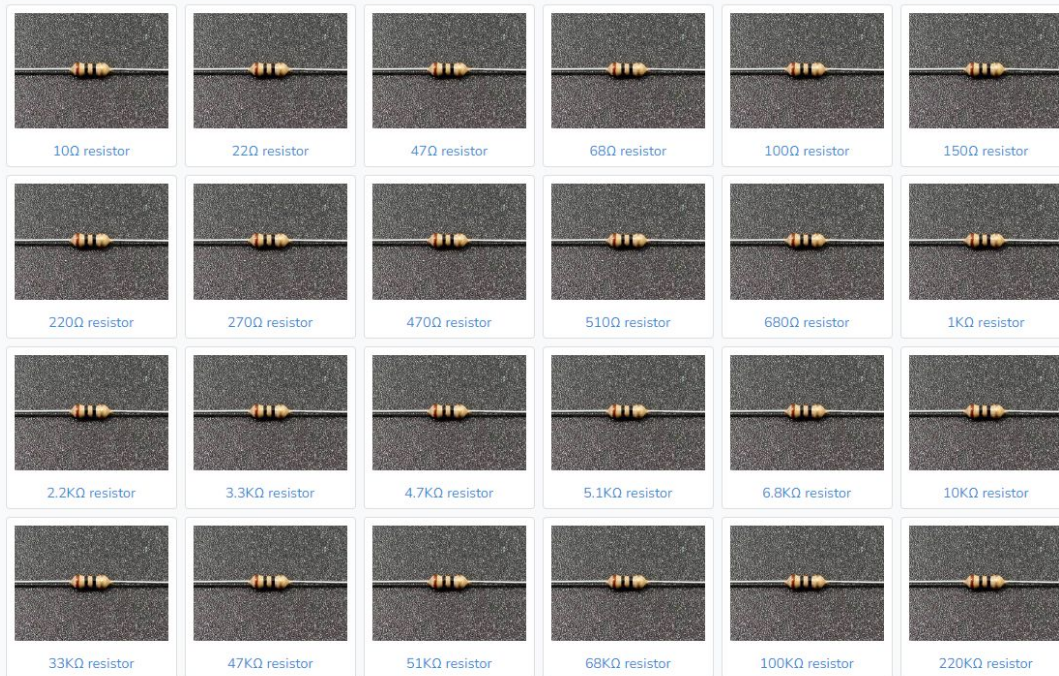
# • ITEM DATABASE VIEW WITH REFERENCE IMAGES

CE Smart Inventory

Super Admin

[Home](#) / [Consumables](#) / [Resistors](#) / THD Resistors

## THD Resistors



# • SPECIFIC ITEM VIEW WITH ALL DETAILS

Dashboard

SYSTEM

Access

Equipment

Components

Consumables

Search

Fabrication Requests

Logs

Home

Consumables / Items / Show

Consumable Items

Consumable Types

Consumable : Show | 10Ω resistor

10Ω resistor

Code (to be finalized)

MS/CS/12/1001

Location

Makerspace Lab -> Soldering Station Desk

Type

THD Resistors

Price

Rs. 0.5


Quantity

100

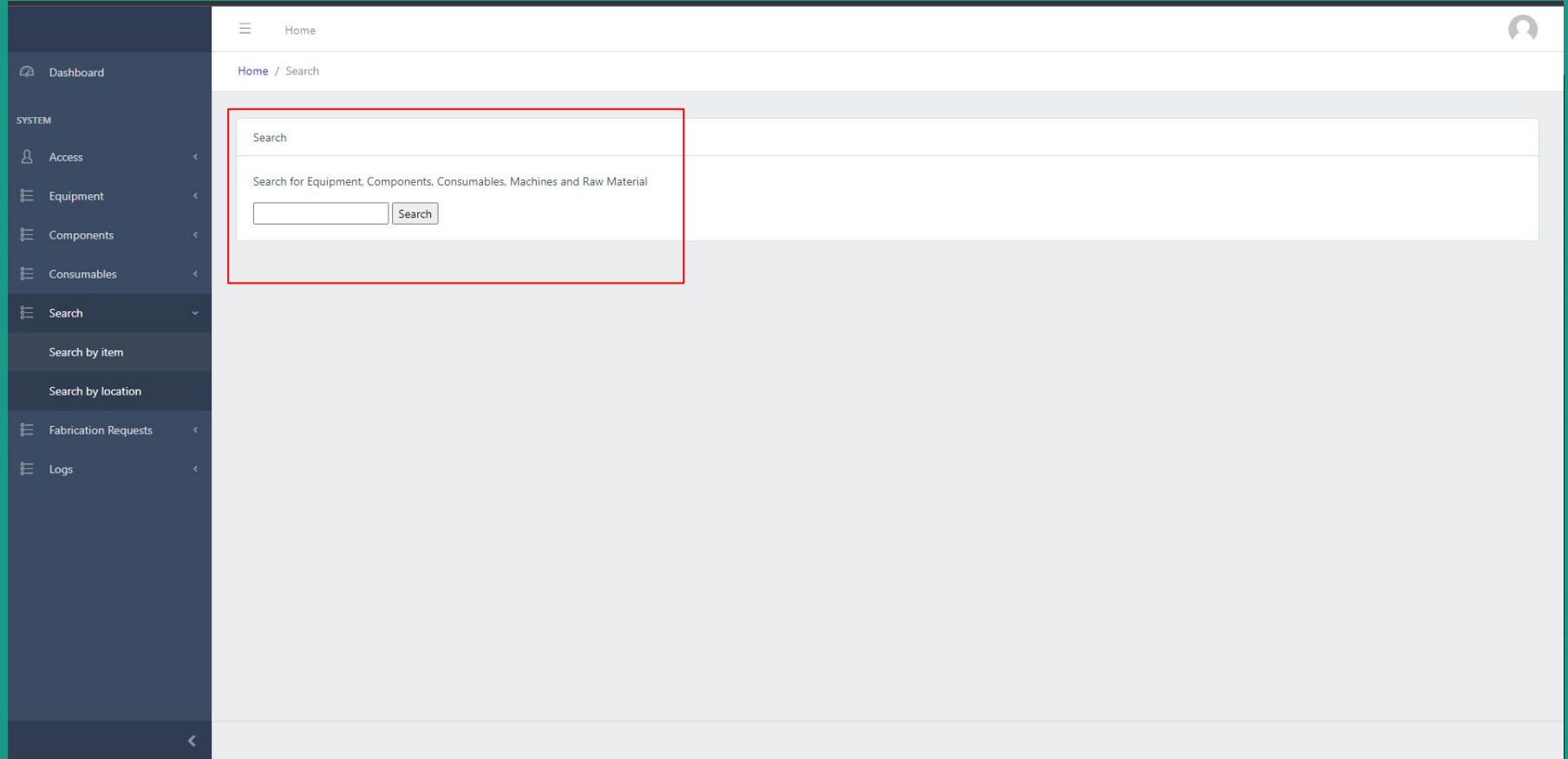
Form factor

Specification

Thumbnail



# • ITEM SEARCH FUNCTION



# • ITEM SEARCH FUNCTION - 1. Search by Item Keyword

The screenshot displays a web application interface with a dark sidebar on the left and a main content area. The sidebar contains a 'SYSTEM' section with links to Dashboard, Access, Equipment, Components, Consumables, Search, Fabrication Requests, and Logs. The main content area has a breadcrumb trail 'Home / Search / Results' and a search bar. Below the search bar, the text 'You are searching for 'resistor'. There are 51 results.' is displayed. A list of 15 resistor values is shown, each preceded by a bullet point. Annotations with arrows point to specific parts of the interface: 'Search keyword' points to the search bar, 'Total number of search results' points to the text 'There are 51 results.', and 'Listing of all search results' points to the list of resistor values.

Home / Search / Results

## Search results for “resistor”

Search

You are searching for 'resistor'.  
There are 51 results.

- 10 $\Omega$  resistor
- 22 $\Omega$  resistor
- 47 $\Omega$  resistor
- 68 $\Omega$  resistor
- 100 $\Omega$  resistor
- 150 $\Omega$  resistor
- 220 $\Omega$  resistor
- 270 $\Omega$  resistor
- 470 $\Omega$  resistor
- 510 $\Omega$  resistor
- 680 $\Omega$  resistor
- 1K $\Omega$  resistor
- 2.2K $\Omega$  resistor
- 3.3K $\Omega$  resistor
- 4.7K $\Omega$  resistor
- 5.1K $\Omega$  resistor
- 6.8K $\Omega$  resistor
- 10K $\Omega$  resistor

Search keyword  
Total number of search results

Listing of all search results

- ITEM SEARCH FUNCTION - 2. Search by Location (Options)

**Search results for location “Makerspace Lab > Soldering Station > Item Drawer”**

Search by location

Makerspace Lab

**Makerspace Lab > Soldering Station Desk**

Makerspace Lab > Soldering Station Desk > Item Drawer

← Search location

# • ITEM SEARCH FUNCTION - 2. Search by Location (Results)

**Search results for location “Makerspace Lab > Soldering Station > Item Drawer”**

Search by location

Items at Makerspace Lab > Soldering Station Desk > Item Drawer

- Phillips head Screwdriver PH1x75
- Screw Bit Holder
- Flathead Precision Screwdriver 2x50
- Torx Precision Screwdriver T6x50
- 1/4 Bits Set
- Flat Steel File
- Double Open Spanner Wrenches Set
- Measuring Tape
- Digital Caliper
- Wire Stripper
- Long Nose Plier
- Hex Key Set
- Trigeminal socket wrench
- Hacksaw
- 1/2" Socket Set
- 1/2" Universal Joint Adapter
- 12 Pcs Combination Wrench Set
- Makerbot Replicator
- 22Ω resistor
- 100Ω resistor
- 270Ω resistor
- 680Ω resistor
- 3.3KΩ resistor
- 6.8KΩ resistor
- 47KΩ resistor
- 100KΩ resistor
- 470KΩ resistor
- 1MΩ resistor
- 150Ω resistor
- 470Ω resistor

Search location

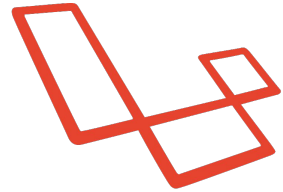
Listing of all items at the search location

---

### 3. SOLUTION ARCHITECTURE, DATA AND FLOW CONTROL

# Technologies Used

- PHP with Laravel
- HTML + Bootstrap 4
- Vue.js
- GitHub and Project Management Tools



Laravel



GitHub





# System Organization and Data Flow



Department Server

Data Request and  
Response





# Storage of Data

- Data stored in a MySQL database.
- Specific Locations in the makerspace lab are stored in one table named locations.
- Another table to contain where the item is located. Refers to the correct location from the locations table.

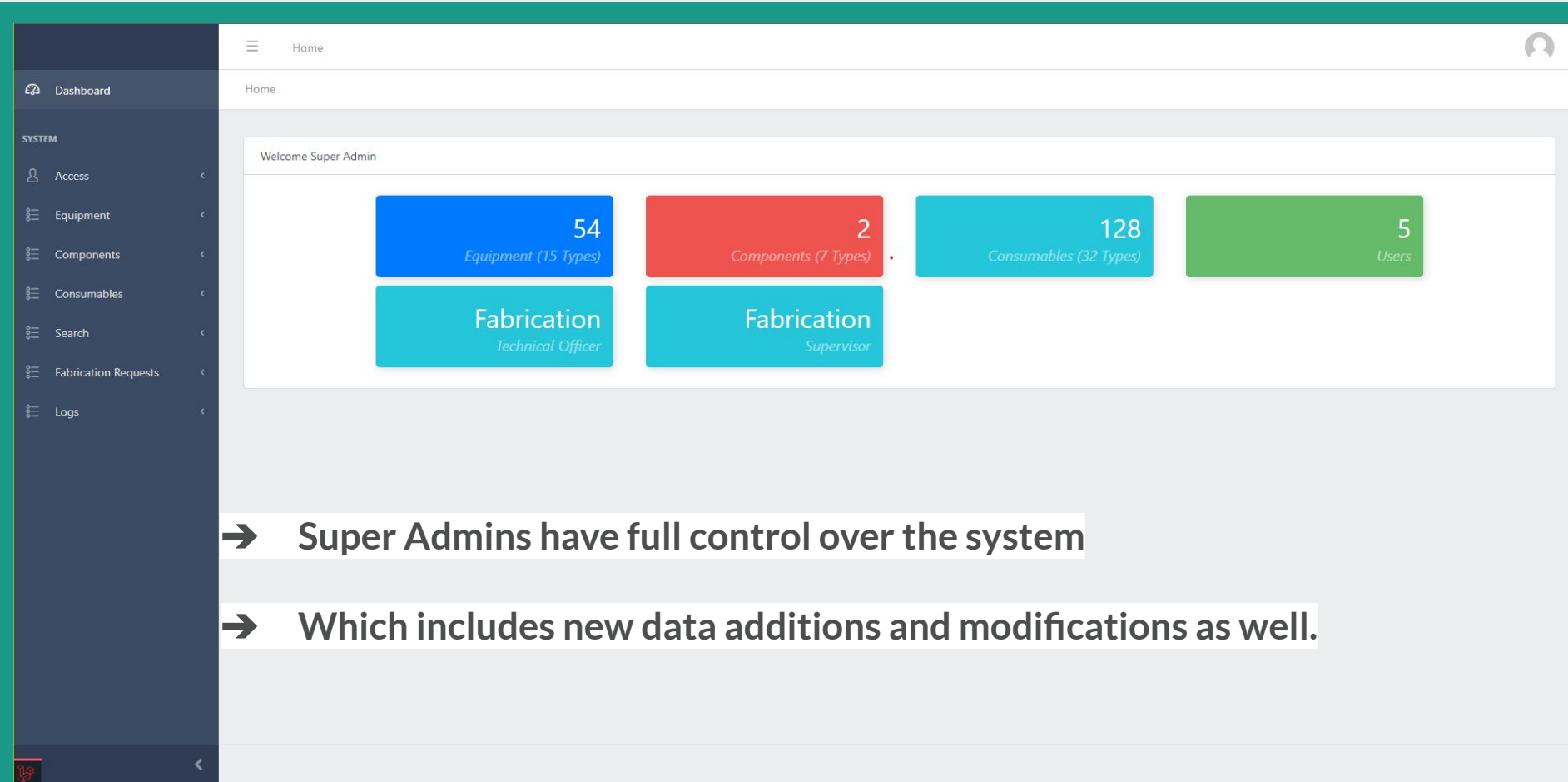
# User Types



→ There are 5 user types which have different roles and access levels.

- ◆ Admin
- ◆ User
- ◆ Lecturer
- ◆ Maintainer
- ◆ Technical Officer

# Super Admin Dashboard



→ Super Admins have full control over the system

→ Which includes new data additions and modifications as well.

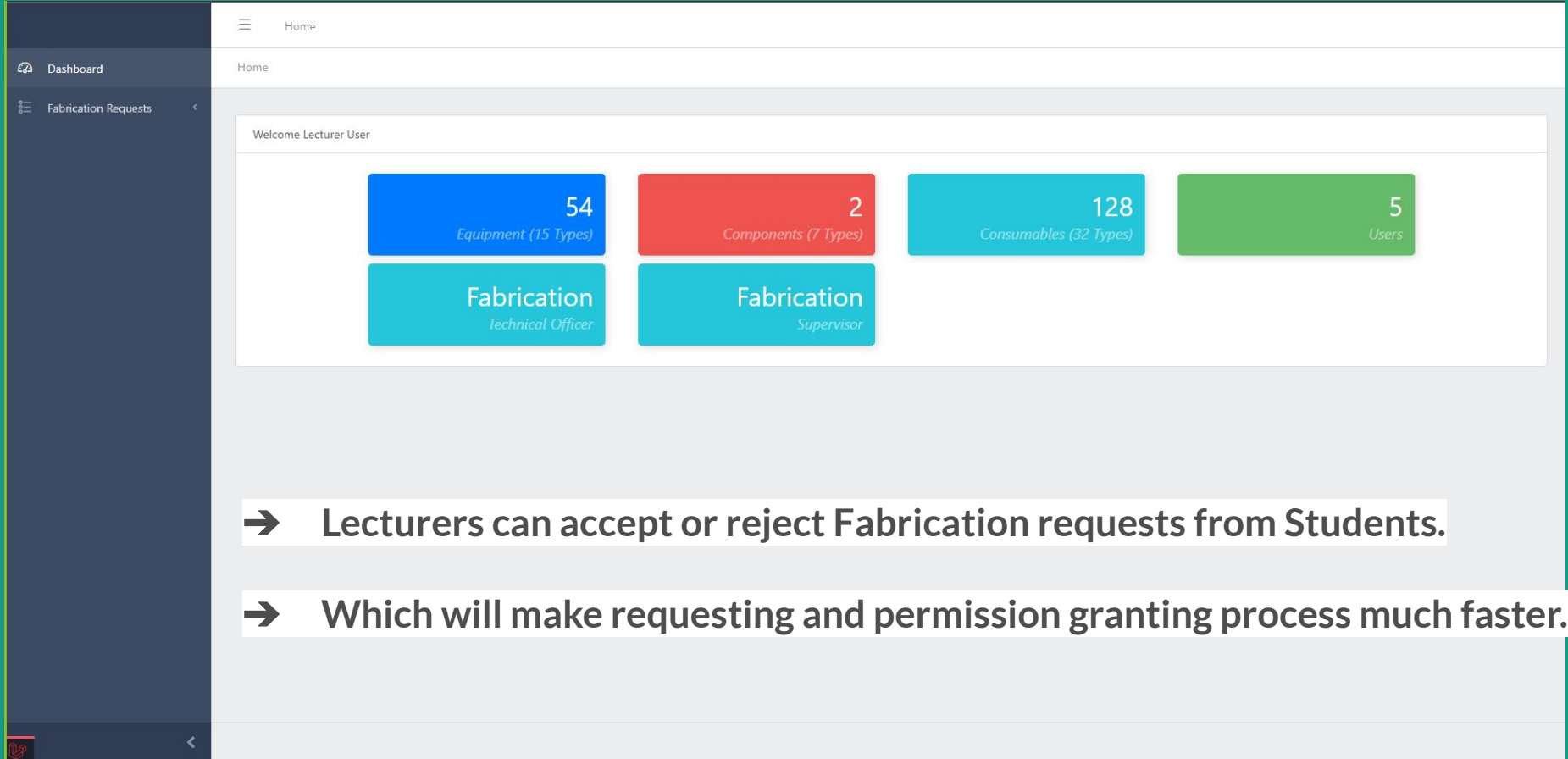
# User - Dashboard

The screenshot displays a web application interface for a user dashboard. On the left is a dark blue sidebar with three menu items: 'Dashboard' (with a cloud icon), 'Fabrication Requests' (with a list icon and a dropdown arrow), and 'Fabrication - User'. The main content area has a white header with a hamburger menu icon, the text 'Home', and a user profile icon. Below the header is a breadcrumb trail: 'Home / Fabrications / Requests'. The main content area is titled 'Job Requests - User View' and contains a table with the following headers: 'ID', 'Status', 'Machine', 'Material', and 'Supervisor'. The table body is currently empty. At the bottom left of the sidebar, there is a small red and white icon.

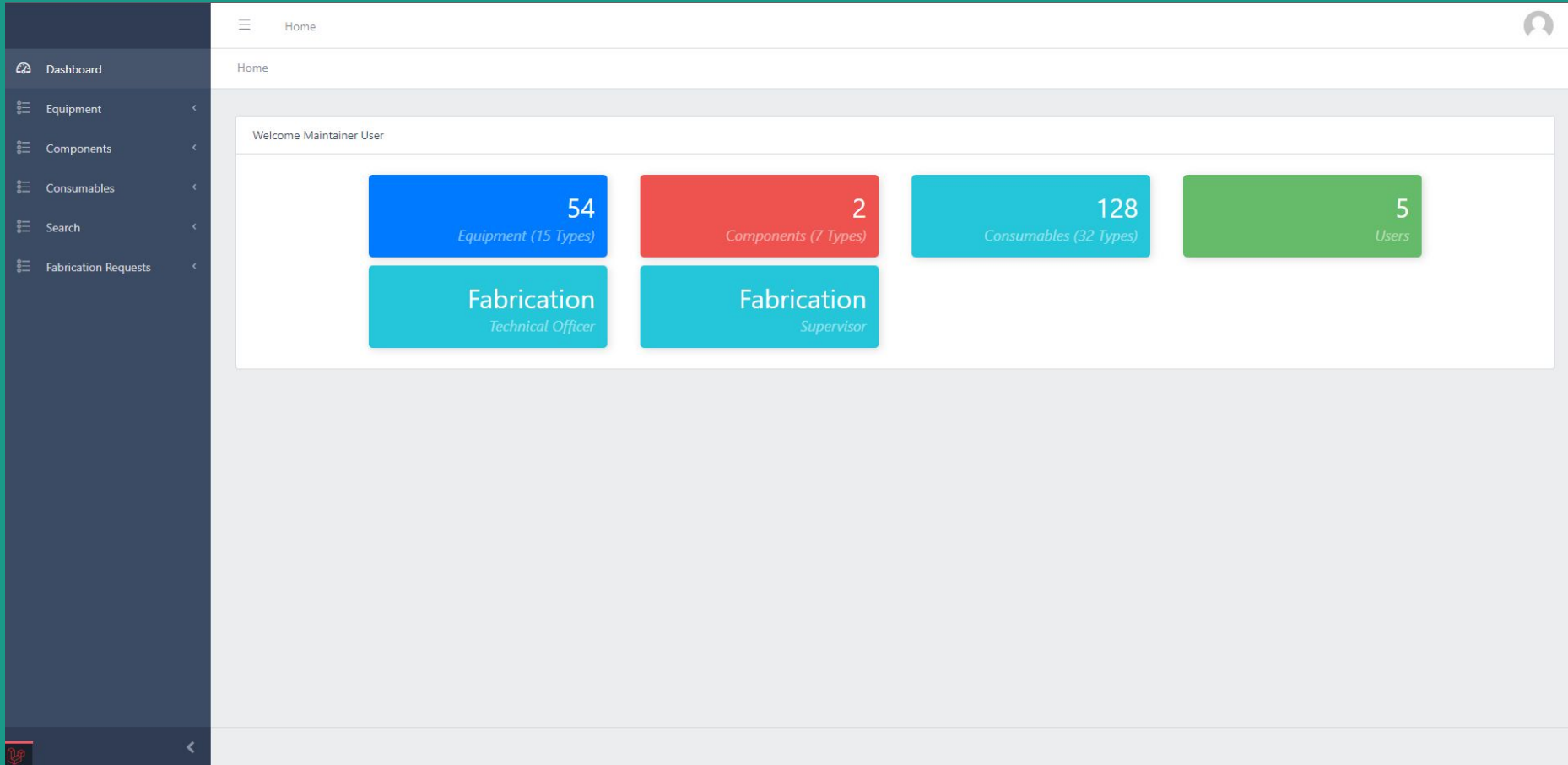
→ Users can search locations of items and request permission to use certain equipments.

→ User - Dashboard is still work in progress.

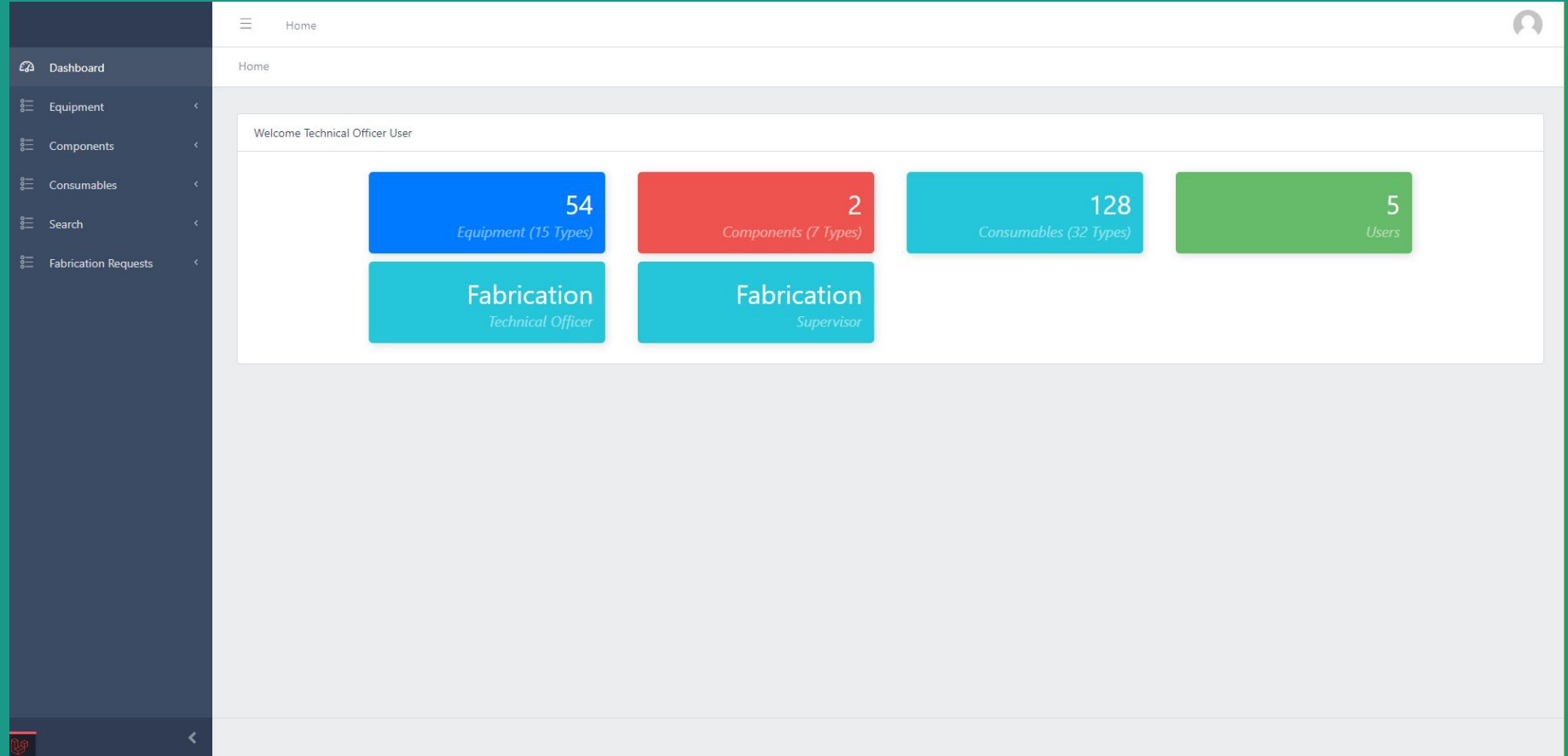
# Lecturer Dashboard



# Maintainer Dashboard



# Technical Officer Dashboard





---

## 4. USER FRIENDLY EXPERIENCE



# Search Functionality

Users can search,

- by item
- by location

Which makes it easy to use.



Dashboard

## SYSTEM



Access



Equipment



Components



Consumables



Search



Search by item

Search by location



Fabrication Requests



Logs



# Search Result

→ User gets the location as a text and a photo of the item to verify that's what they are looking for

Dashboard

SYSTEM

Access

Equipment

Components

Consumables

Search

Fabrication Requests


Logs

Home

Home / Consumables / Items / Show

Consumable : Show | 10Ω resistor

10Ω resistor

Code (to be finalized)	MS/CS/12/1001
Location	Makerspace Lab -> Soldering Station Desk
Type	THD Resistors
Price	Rs. 0.5
Quantity	100
Form factor	
Specification	
Thumbnail	



# Extendability

→ An AR solution would really help user to find an item easily.



# Q & A

---

# Thank You!

