



# Ghar Suraksha

Caffeine\_Overflow

SG\_293

Team Leader: Abhay Desalli

# The Idea

GharSuraksha, the only monitoring system you will ever-need.

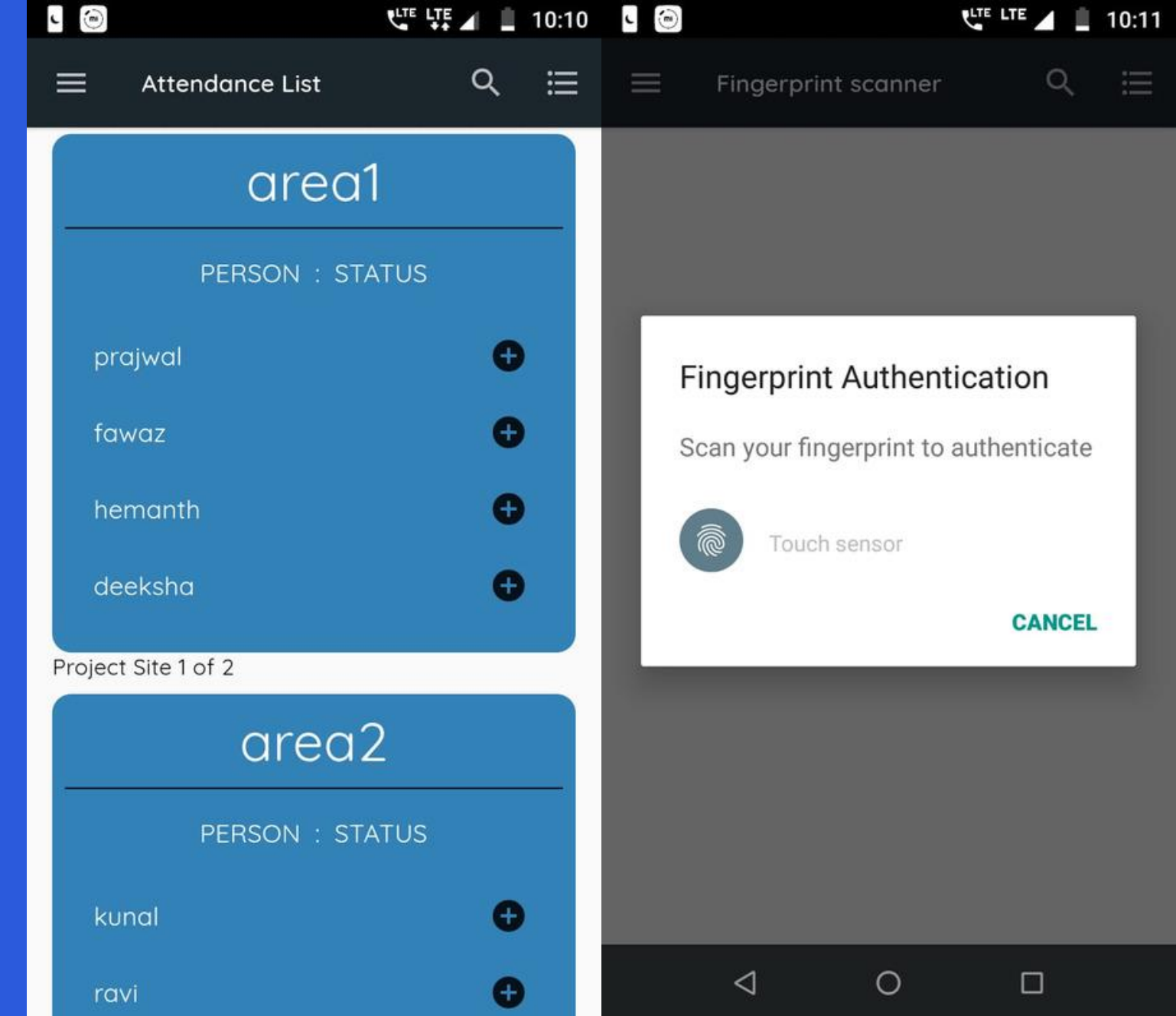
From monitoring houses to tracking workers, from visualizing progress to real-time chatbot.

# Problem 1

Inaccurate figures of  
labor and construction  
materials, by contractors.



# Solution 1



A real-time digital biometric attendance of all the laborers.

## Problem 2

Lacking ways to measure & visualize the progress, deadlines, delay & work due.

# *Solution 2*

Image Processing to predict if the weekly timelines are met with just a picture from mobile!

# Problem 3

**Huge communication gap between  
the public and construction  
managers leading to ambiguity**

# *Solution 3*

**Suraksha, easy-to-use chatbot  
to obtain house details, register  
complaints & queries.**



## GIS

All Geographical data related to that particular area

## WORK-IN-PROGRESS

The construction part where the progress is being done.

## ANONYMOUS PORTAL

People can register for complaints in order to improve the quality of work.

## RIGHT 2 INFORMATION

People will have accountability to find out where their money goes.

...

**1 Click Image Progress Report**  
**Multi-Feature Dashboard**  
**Biometric Attendance**  
**Dynamic Chatbot**

...

**UNIQUE SELLING  
POINTS**

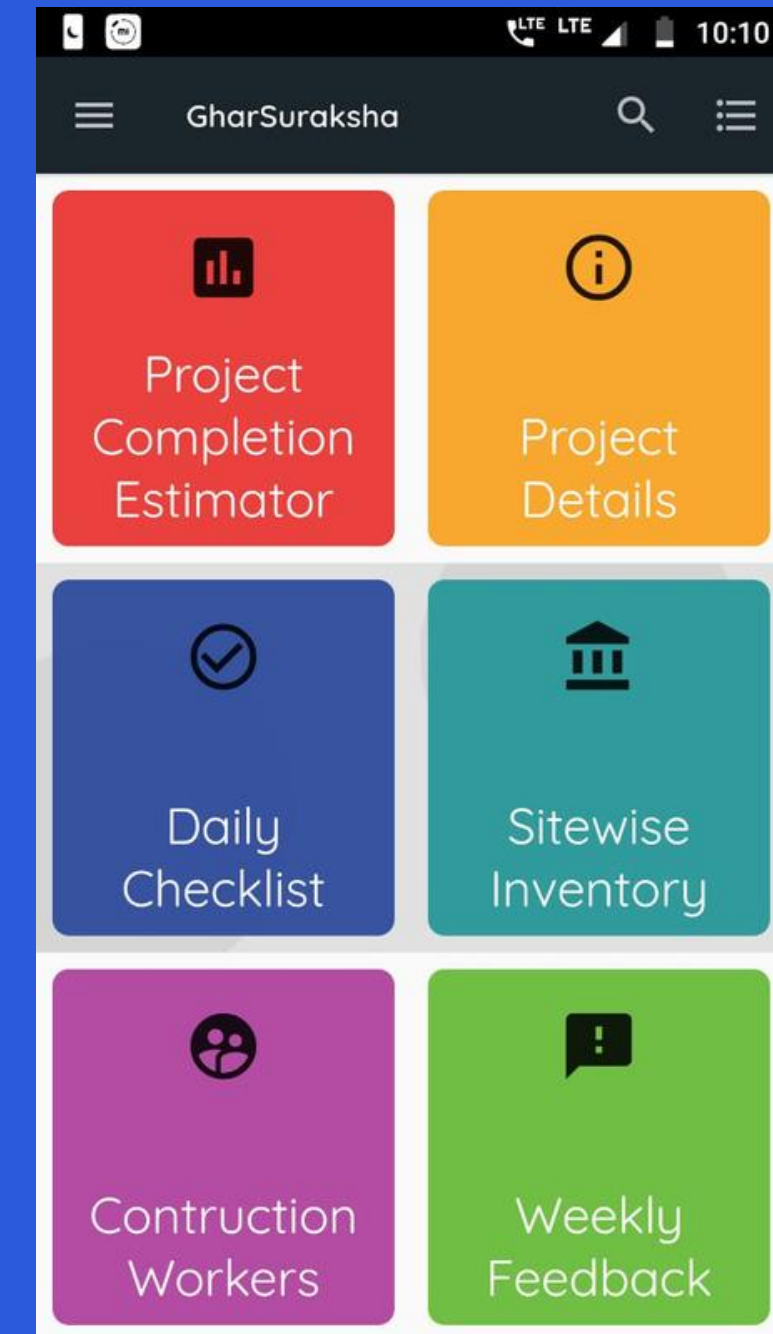
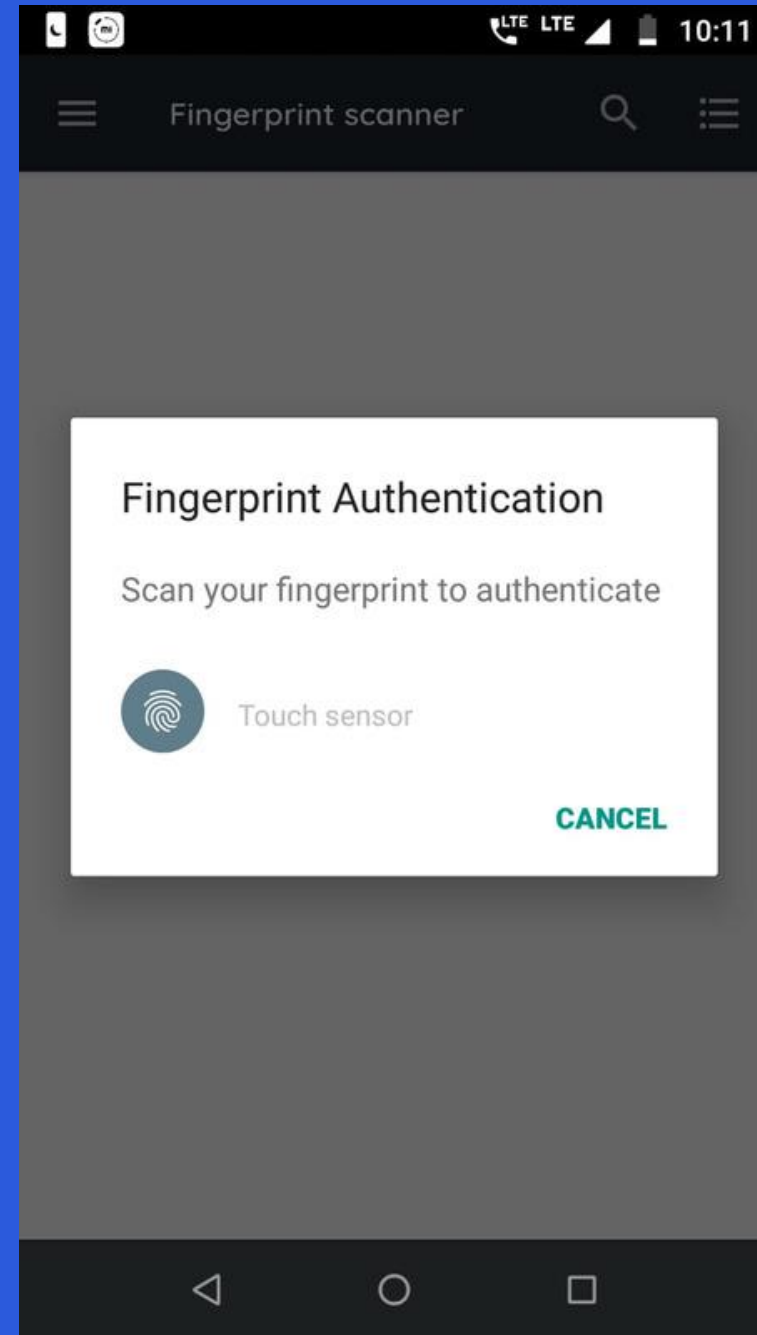
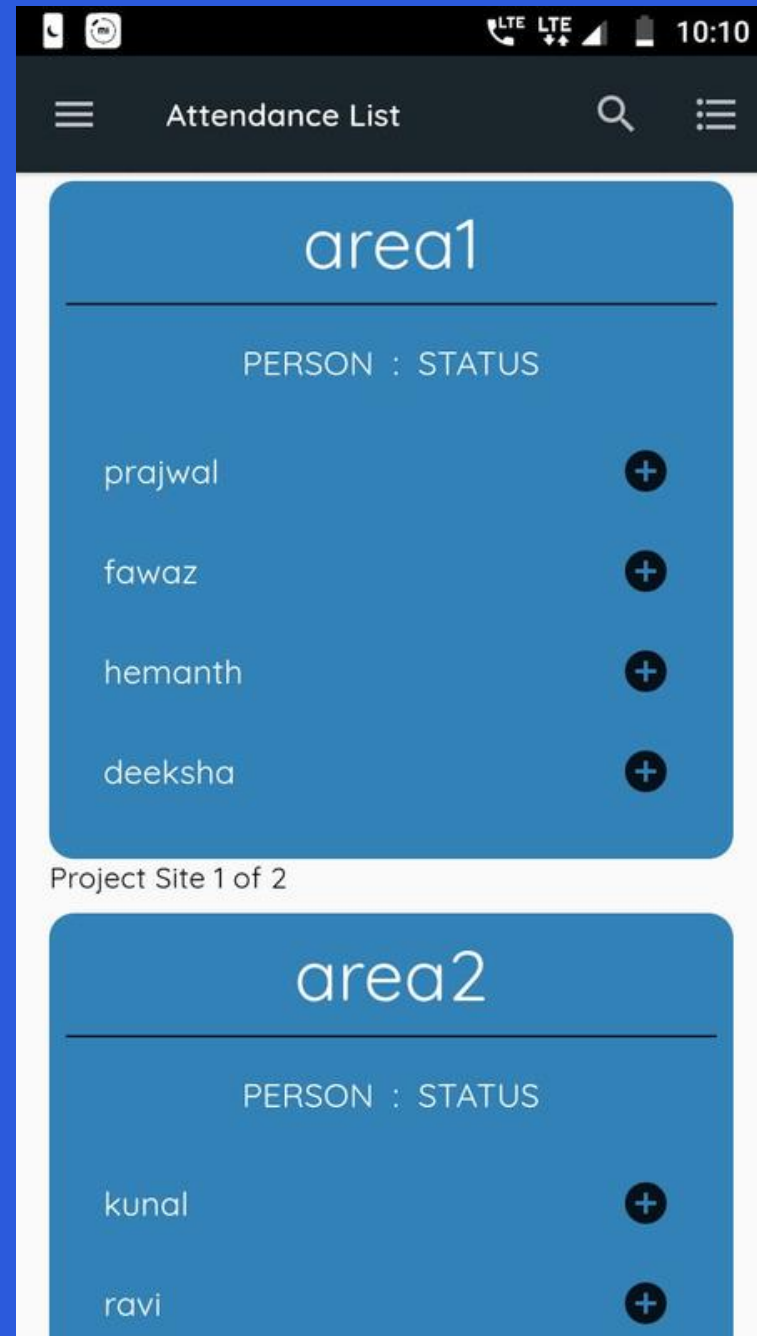


**IMPLEMENTATION**

**&**

**IMPROVEMENTS**

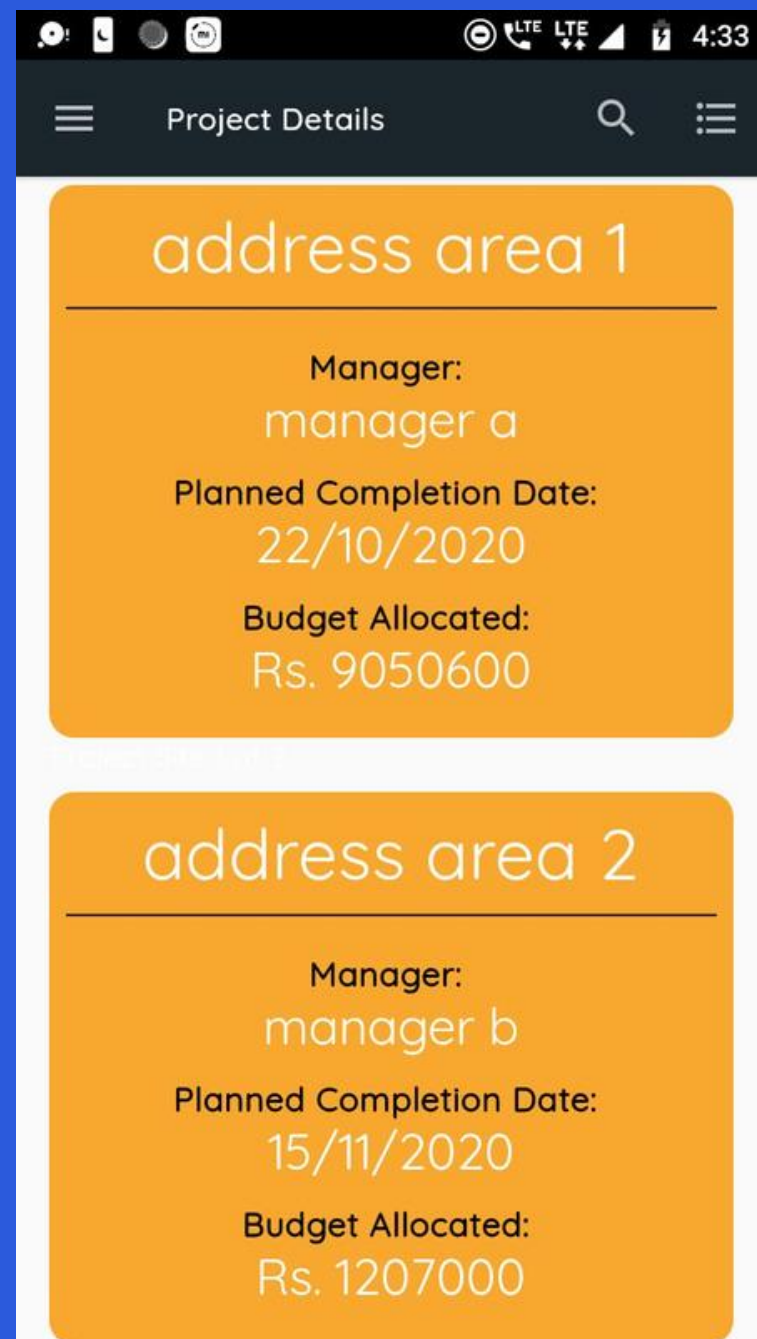
# ANDROID & IOS APP



## ATTENDANCE

## HOME-DASHBOARD

# ANDROID & IOS APP



Project Details

address area 1

Manager:  
manager a

Planned Completion Date:  
22/10/2020

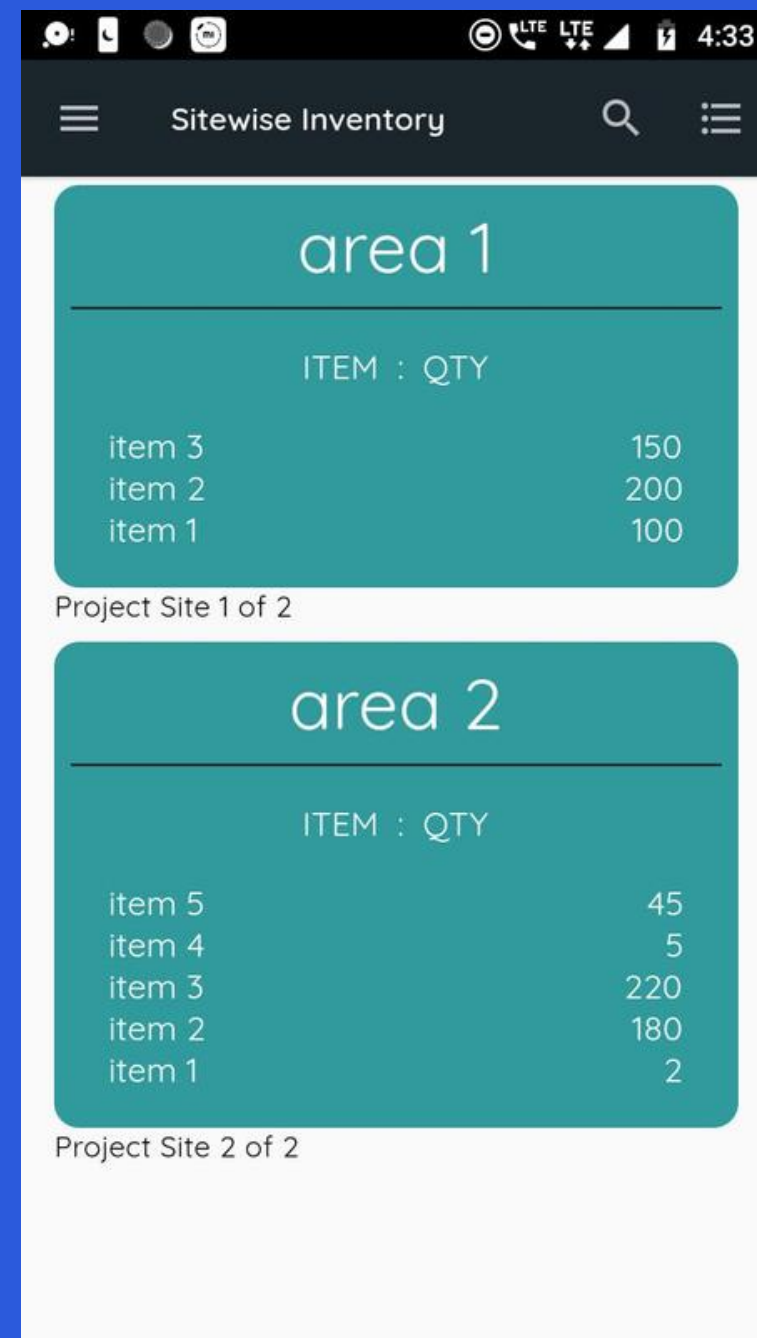
Budget Allocated:  
Rs. 9050600

address area 2

Manager:  
manager b

Planned Completion Date:  
15/11/2020

Budget Allocated:  
Rs. 1207000



Sitewise Inventory

area 1

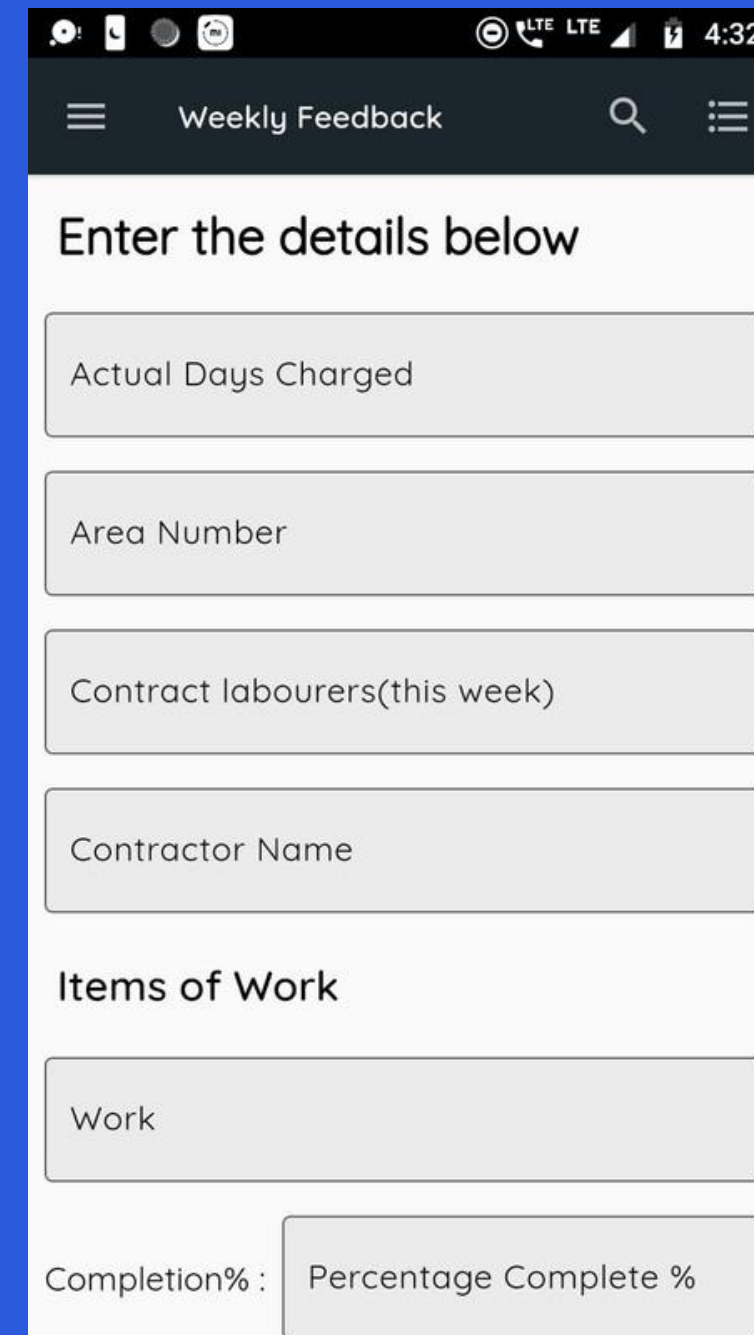
ITEM	QTY
item 3	150
item 2	200
item 1	100

Project Site 1 of 2

area 2

ITEM	QTY
item 5	45
item 4	5
item 3	220
item 2	180
item 1	2

Project Site 2 of 2



Weekly Feedback

Enter the details below

Actual Days Charged

Area Number

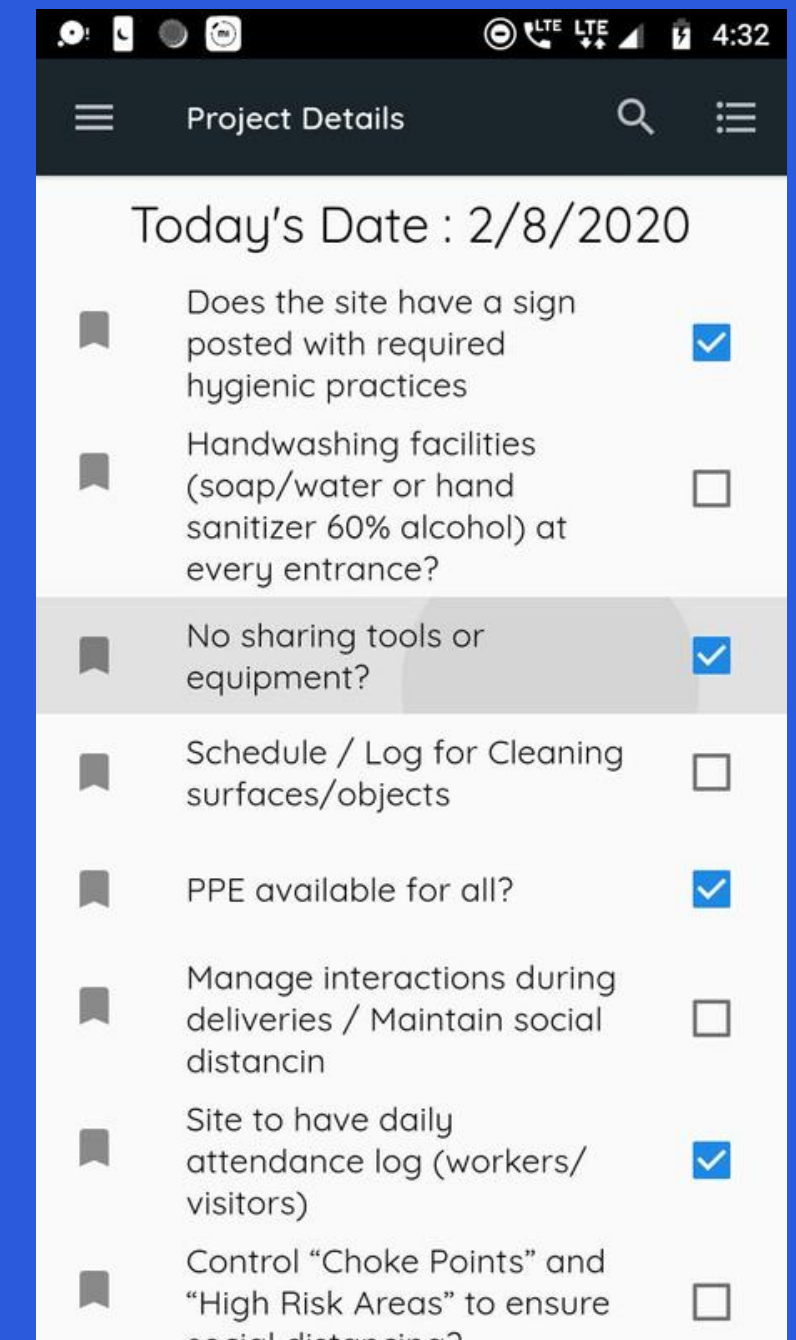
Contract labourers(this week)

Contractor Name

Items of Work

Work

Completion% : Percentage Complete %



Project Details

Today's Date : 2/8/2020




- Does the site have a sign posted with required hygienic practices ☒
- Handwashing facilities (soap/water or hand sanitizer 60% alcohol) at every entrance? ☐
- No sharing tools or equipment? ☒
- Schedule / Log for Cleaning surfaces/objects ☐
- PPE available for all? ☒
- Manage interactions during deliveries / Maintain social distancin ☐
- Site to have daily attendance log (workers/ visitors) ☒
- Control "Choke Points" and "High Risk Areas" to ensure social distancing? ☐

## INVENTORY

## CHECKLISTS



# SURAKSHA- CHATBOT

 Suraksha Chatbot  

Hey ! How Can I Help You




Here's what I can do -

- 1) View construction details
- 2) Take me to website
- 3) View contractors
- 4) Take feedback
- 5) View site details

View site details

Site SIKK056:

Area: 350 acres  
Lead Ctr.: A. Manoj Patil  
Address: 567 Lane, Lachen,  
Sikkim  
Estimated Comp.: 07/21  
No of Workers assigned at  
site: 80-90

 Suraksha Chatbot  

View construction details

Site SIKK056:  
Completion %: 78%  
Estimated Completion: 07/2021

Site SIKK057:  
Completion %: 66%  
Estimated Completion: 08/2021

Site SIKK058:  
Completion %: 82%  
Estimated Completion: 05/2021

Site SIKK057:  
Completion %: 90%  
Estimated Completion: 05/2021

Site SIKK057:  
Completion %: 93%  
Estimated Completion: 04/2021

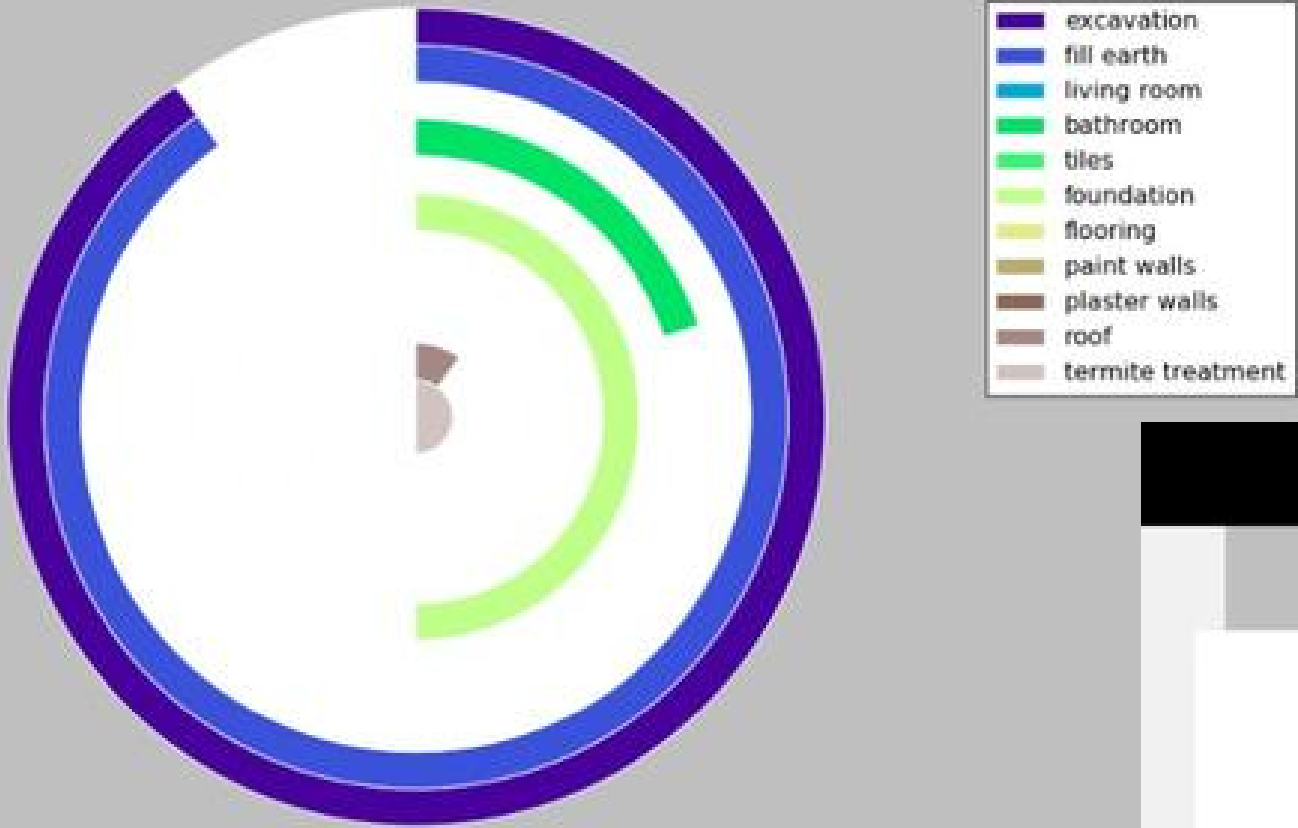
# WEB-DASHBOARD

GHARSURAKSHA

Welcome, Admin!

- Dashboard
- Images
- Bills And Invoices
- Reports
- Public Review
- Settings

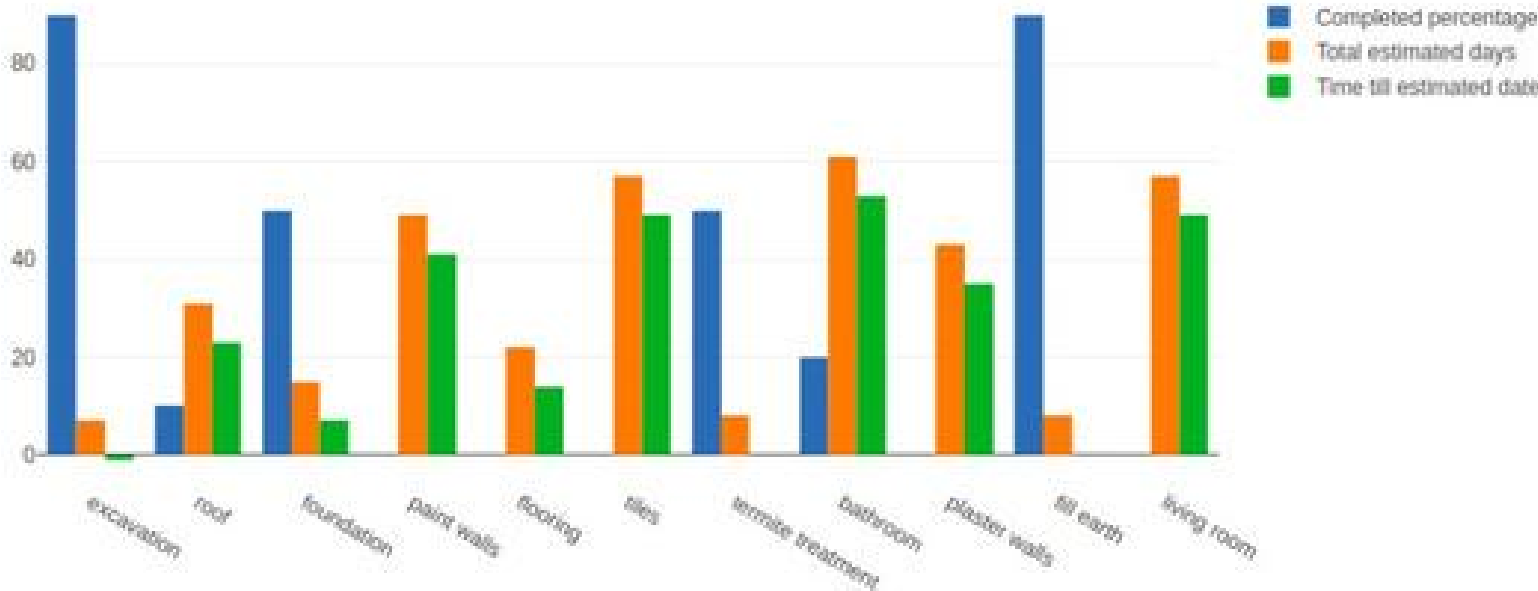
## Dashboard



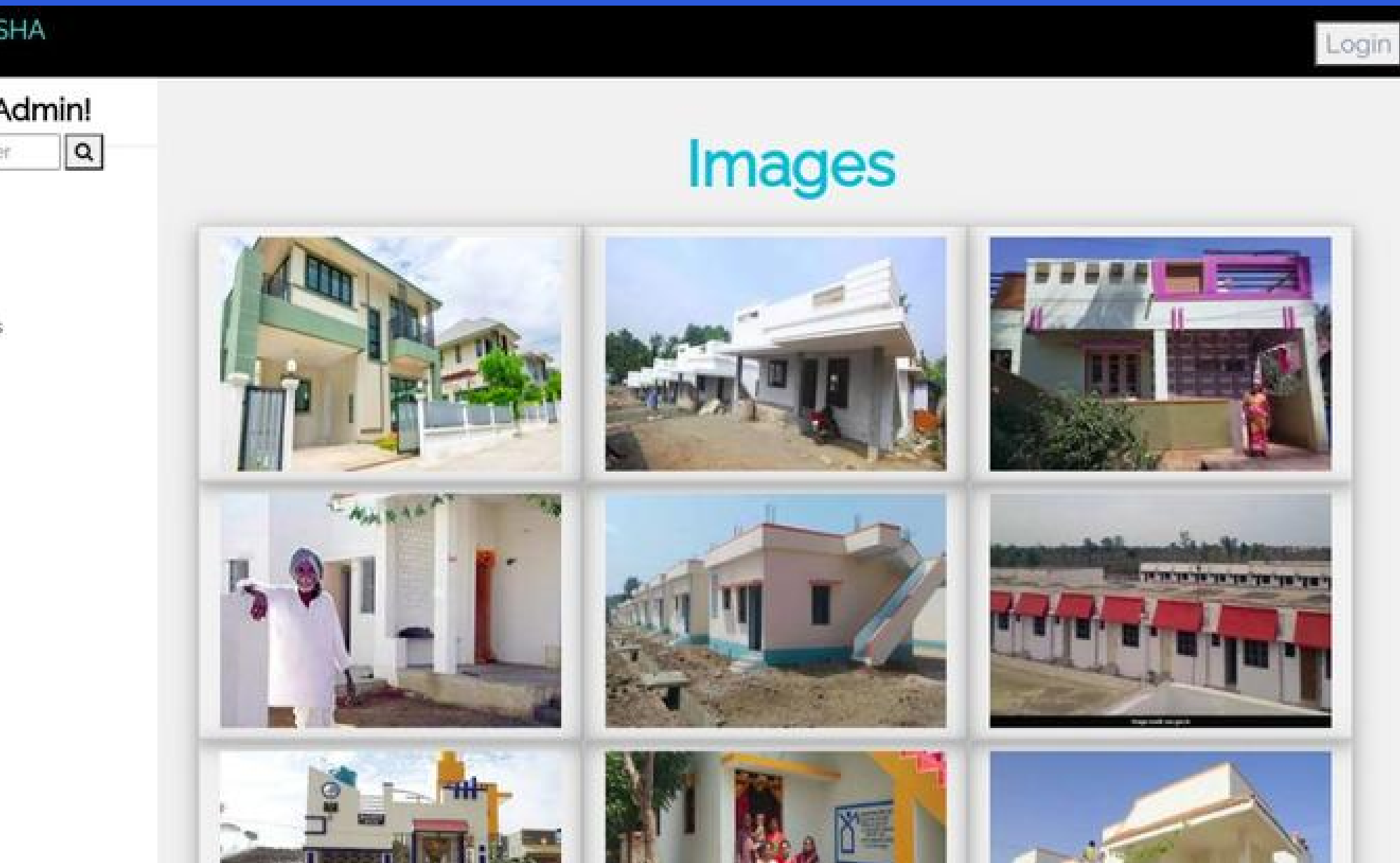
PIE CHART

## PROGRESS BAR

Login



# WEB-DASHBOARD



## HOUSE IMAGES



## REPORTS AND REVIEWS

### Reports

Pick report to print

Area: 1 Date: 2020-08-01 15:45:04.181000+00:00 Print Report

### Public Review And Opinion

USERNAME

COMMENTS

Container Right

iR2WtFoHAjMoMGKYPNx3 dummy feedback 1

noNGZJgTWWhhu74RaHxAJ dummy feedback 2



# IMAGE PROCESSING

**BREAKING SURVEILLANCE VIDEO TO  
1500+ FRAMES**



frame1377.jpg



frame1376.jpg



frame1375.jpg



frame1374.jpg



frame1373.jpg



frame1372.jpg



frame1371.jpg



frame1370.jpg



# IMAGE PROCESSING

USING SSIM IMAGES ARE COMPARED  
AND THE CONSTRUCTED PART IS  
IDENTIFIED



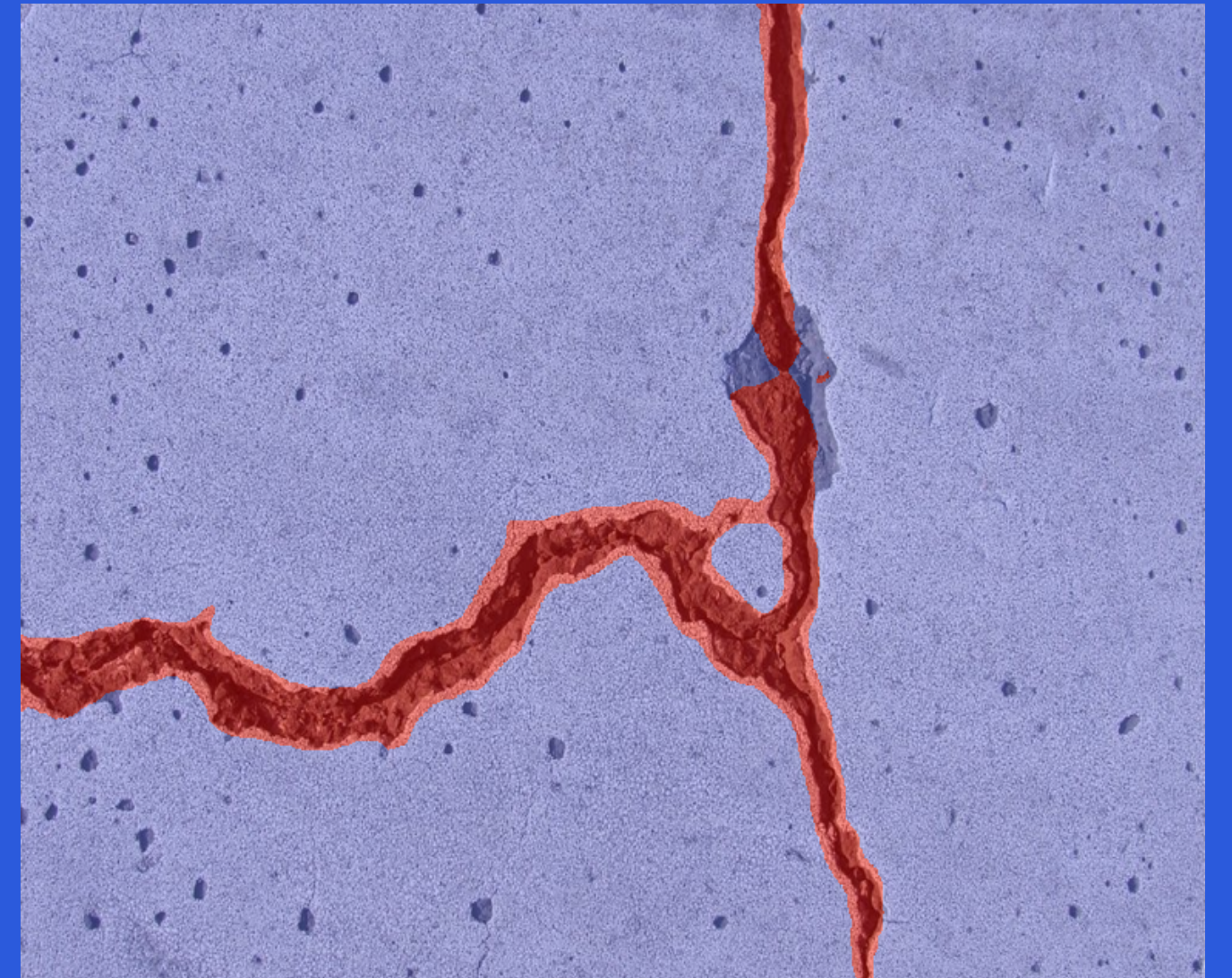


# IMAGE PROCESSING

USING DEEP-LEARNING WE AHAVE  
DEVELOPED A SURFACE CRACK  
DETECTION METHOD FOR BETTER  
QULAITY ASSURANCE



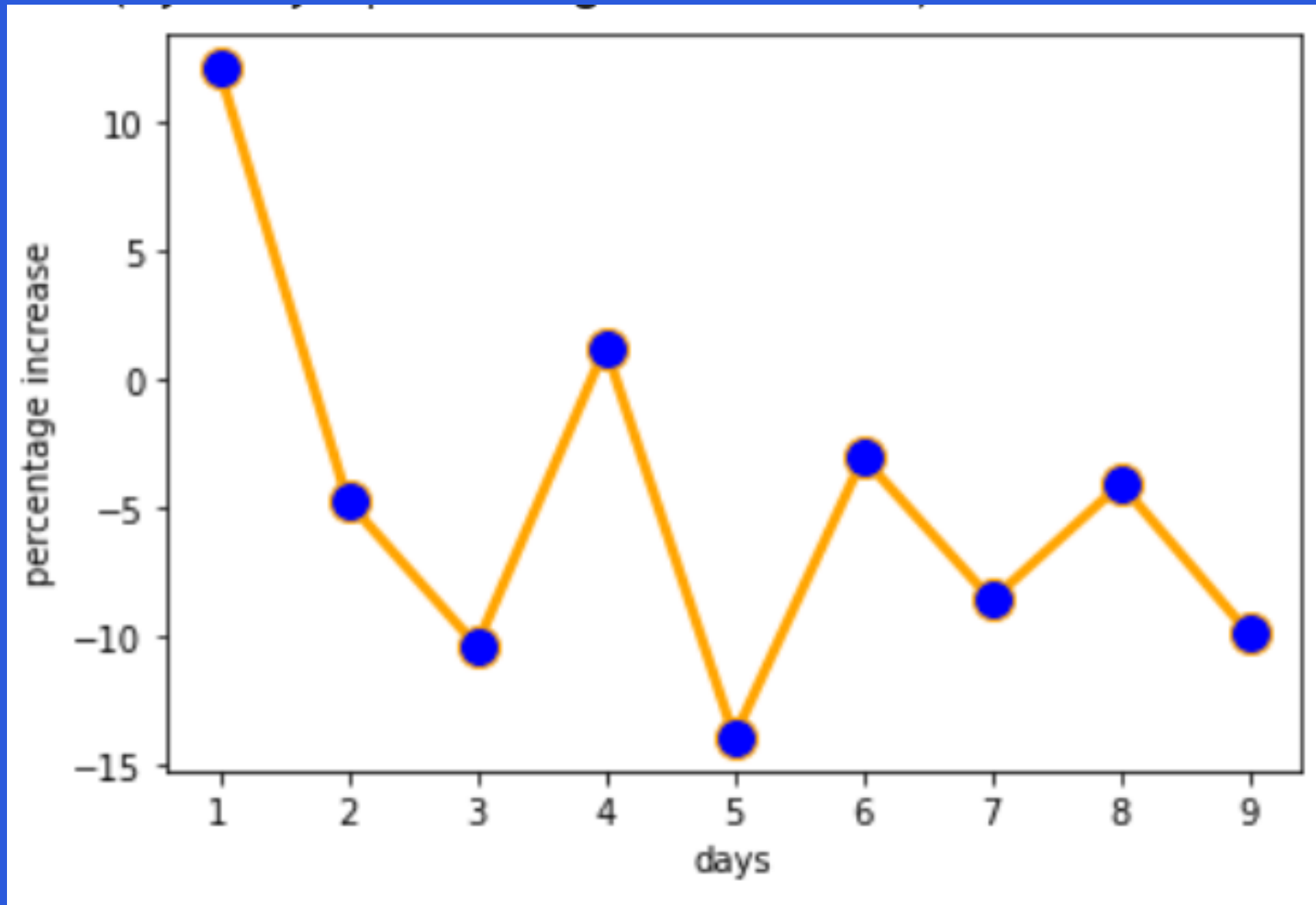
**AFTER  
RUNNING  
ML  
MODEL**



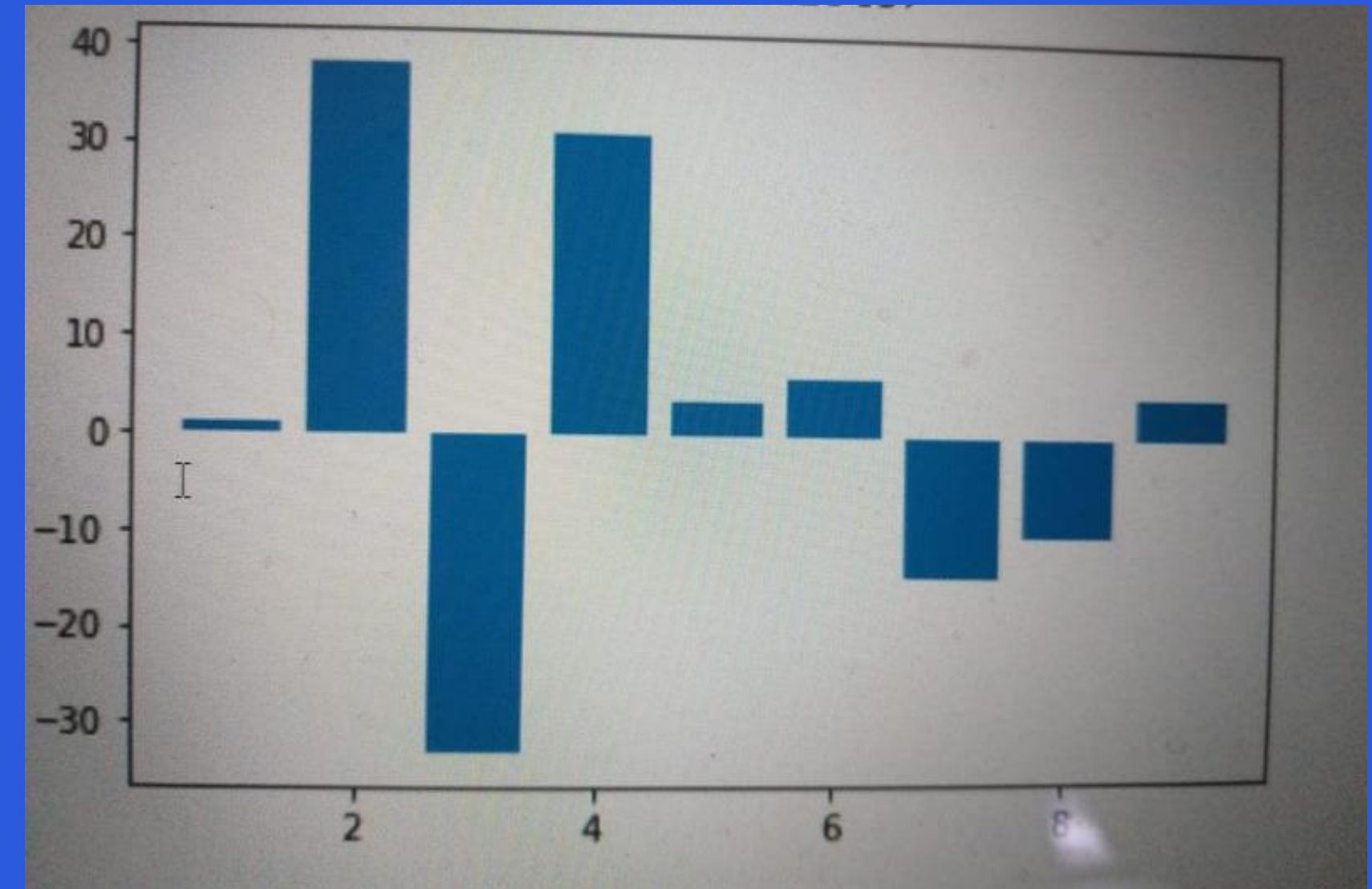


# IMAGE PROCESSING

## RELATIVE PROGRESS



## DAILY PROGRESS



## WEEKLY BAR CHART

# TECH-STACK

**HTML-CSS**  
**FLASK**  
**FIREBASE**  
**PLOTLY**

**FLUTTER**  
**FIRESTORE**



**NLTK**  
**SPACY**  
**TF-IDF**  
**TEXTACY**

**OPENCV**  
**SCIKIT-LEARN**  
**GOOGLE-COLAB**