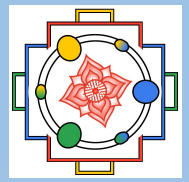

SIDDHI AND
ASMITA

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HarvestHub

Siddhi Kabadi, Asmita Jalote

CITAP

Team

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Computer Science
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Introduction

Problem Statement

- Support farmers, maintain environmental responsibility, and enhance socio-economic conditions
- Engage communities and improve sustainability practices across over 30 states in the USA
- IT-based solution to improve and expand operations

Key Requirements

- Data management & Security
- Supportive of Various Devices
- Scalable

Solution

- Firebase - Sustainable Cloud Architecture
- Functional on a variety of browsers and operating systems
- Portable

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Solution Story

Emphatic Side of Problem Statement

- Maintain focus on community building and communal support

Business Aspects: Integration of Software and Technology

- Real-time updates
- Community based fundraising

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Architecture

1. **Usability:**
   - Single Interface for Multiple Functions
   - Easy Navigation
2. **Supportability:**
   - Continuous Support and Maintenance
3. **Sustainability:**
   - Minimalistic Design: Focuses on resource efficiency and legal compliance across different regions
4. **Data Protection:**
   - Secure Hosting on Firebase: Automatic end-to-end encryption and HTTPS for all data exchanges
5. **Performance:**
   - Optimized Load Times: Ensures web pages load within 2 seconds, maintaining user engagement
6. **Scalability:**
   - Adaptable to Growth: Designed to handle a doubling of user and data load within the first year

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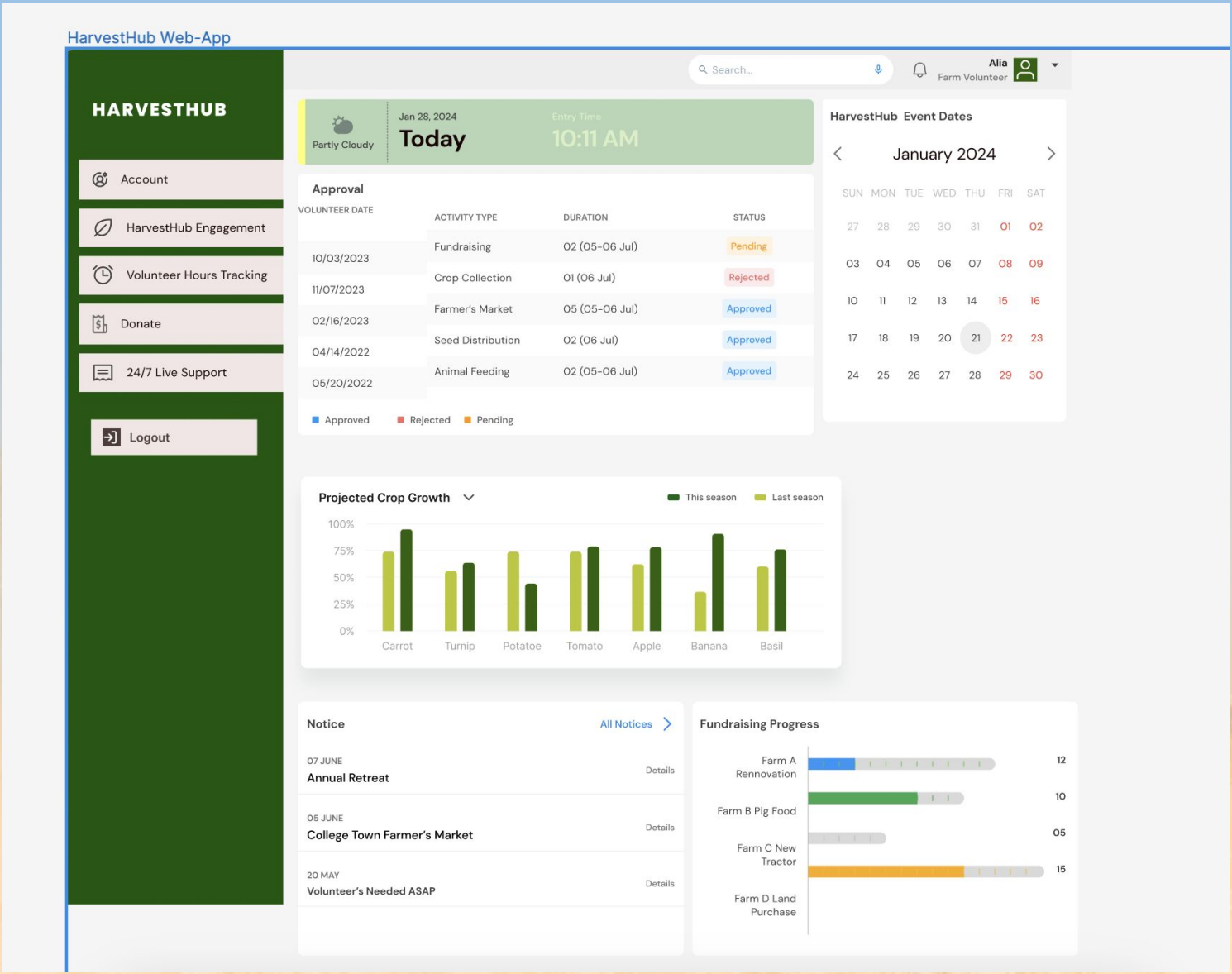
HarvestHub Web-App
HARVESTHUB
Account
HarvestHub Engagement
Volunteer Hours Tracking
Donate
24/7 Live Support
Logout
Search...
Alia
Farm Volunteer
Partly Cloudy
Jan 28, 2024
Today
Entry Time
10:11 AM
Approval
VOLUNTEER DATE
ACTIVITY TYPE
DURATION
STATUS
10/03/2023
Fundraising
02 (05-06 Jul)
Pending
11/07/2023
Crop Collection
01 (06 Jul)
Rejected
02/16/2023
Farmer's Market
05 (05-06 Jul)
Approved
04/14/2022
Seed Distribution
02 (06 Jul)
Approved
05/20/2022
Animal Feeding
02 (05-06 Jul)
Approved
Approved
Rejected
Pending
HarvestHub Event Dates
January 2024
SUN MON TUE WED THU FRI SAT
Projected Crop Growth
This season
Last season
100%
75%
50%
25%
0%
Carrot
Turnip
Potatoe
Tomato
Apple
Banana
Basil
Notice
All Notices
07 JUNE
Annual Retreat
Details
05 JUNE
College Town Farmer's Market
Details
20 MAY
Volunteer's Needed ASAP
Details
Fundraising Progress
Farm A Rennovation
12
Farm B Pig Food
10
Farm C New Tractor
05
Farm D Land Purchase
15

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Execution

ID	Task Name	Start	Finish	Duration
1	Phase 1 - Planning	01/01/2024	04/14/2024	3 Months
2	Phase 2 - Infrastructure Setup	04/15/2024	05/15/2024	1 Month
3	Phase 3 - Build Core Features	05/15/2024	07/15/2024	2 Months
4	Phase 4 - Expand Features	07/15/2024	10/15/2024	3 Months
5	Phase 5 - Testing	10/15/2024	10/30/2024	15 Days
6	Phase 6 - Compliance	10/30/2024	Ongoing	Ongoing
7	Beta Release	11/01/2024	11/04/2024	3 Days
8	Gather User Feedback	11/01/2024	11/04/2024	3 Days
9	Software Update/Fix/Test	11/05/2024	11/10/2024	5 Days
10	General Release	11/11/2024	11/11/2024	1 Day

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Technology Choices

Architecture component	Technology Choice	Justification
Database	Google Cloud SQL	Can manage large sets of data Secure and stable environment Allows for real-time updates
Hosting Platform	Firebase	Can be integrated efficiently with Google services (such as Google Analytics and Google Cloud SQL)
Authentication	Firebase Authentication	Simultaneously works with Firebase Has multi-factor authentication Can be implemented across different platforms and operating systems
Machine learning	TensorFlow.js	Can be used with Javascript Can be integrated easily with the rest of the code Allows for accurate farming predictions
Progressive Web App	Workbox	Allows for app to work offline
Backend API	Node.js, Express	Allows for real-time updates with API's

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Thank You