



SANTA CLARA UNIVERSITY
SCHOOL OF ENGINEERING

Digital Transformation in Low-Resource Contexts

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Frugal Innovation Hub

Mission

To engage engineering faculty and student in projects for social impact

Extensive experience helping low-resource organizations embrace technology

Social enterprises

Non-profit organizations



Social enterprises

Sustainable companies that are profitable but provide a service to the community

Typically operate in impoverished areas



Nazava Water Filter

Southeast Asia best-selling Water Filter



SOKO

We are a women-led, people-first, ethical jewelry brand and tech-powered manufacturing platform built to connect artisans in Kenya with the global market.



Non-profit organizations

Mostly funded by donations

Typically operate in impoverished areas



<https://roseacademies.org>



Frugal Innovation Hub


The Wish-List Model

Organizations make requests

We form groups with students to work on the projects

Project Proposal

[Home](#) › [School of Engineering](#) › [Labs & Research](#) › [Labs](#) › [Frugal Innovation Hub](#) › [GET INVOLVED!](#) › [Project Proposal](#)



What is the name of your organization?

Organization's URL

What is the mission of your organization?

What is your full name and role in the organization?

Your email address.



Frugal Innovation Hub

The Wish-List Model

Selection Process

- = SCU Capacity
 - = Mobile Apps
 - = IoT
 - = Water
 - = Sustainable Farming

Selection Process

- = Project feasibility
- = Project impact
- = Organization needs
- = Organization capacity



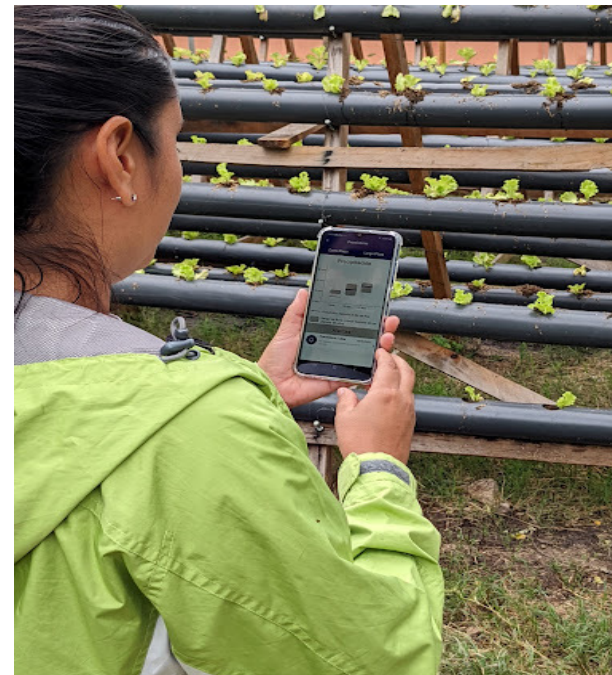
Digital Transformation

Process through which organizations embrace technology

Organizations operating in low-resource areas have difficulties

- Lack of resources

- Lack of tech-savvy personnel

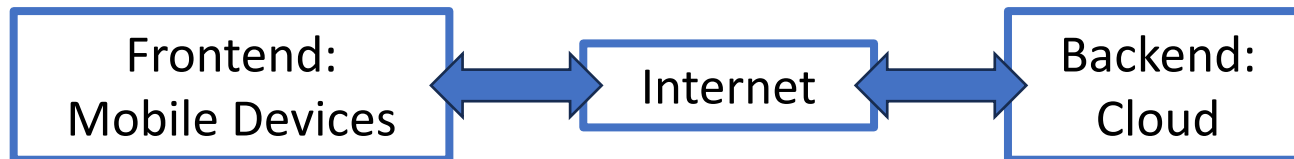




Digital Transformation

Current trend

Mobile devices and the cloud have enabled organizations to embrace technology





Digital Transformation

Global Digital Transformation Clinic

To help organizations embrace technology

We help them use available tools

We develop customized solutions



Global Digital Transformation Clinic

Helping organizations use available tools

Open-source tools

Example: ODK – Open Data Kit

Commercial tools

Cost is proportional to use and data

May be free for non-profit organizations





Global Digital Transformation Clinic

Helping organizations
use available tools

Educational games

Some have free versions



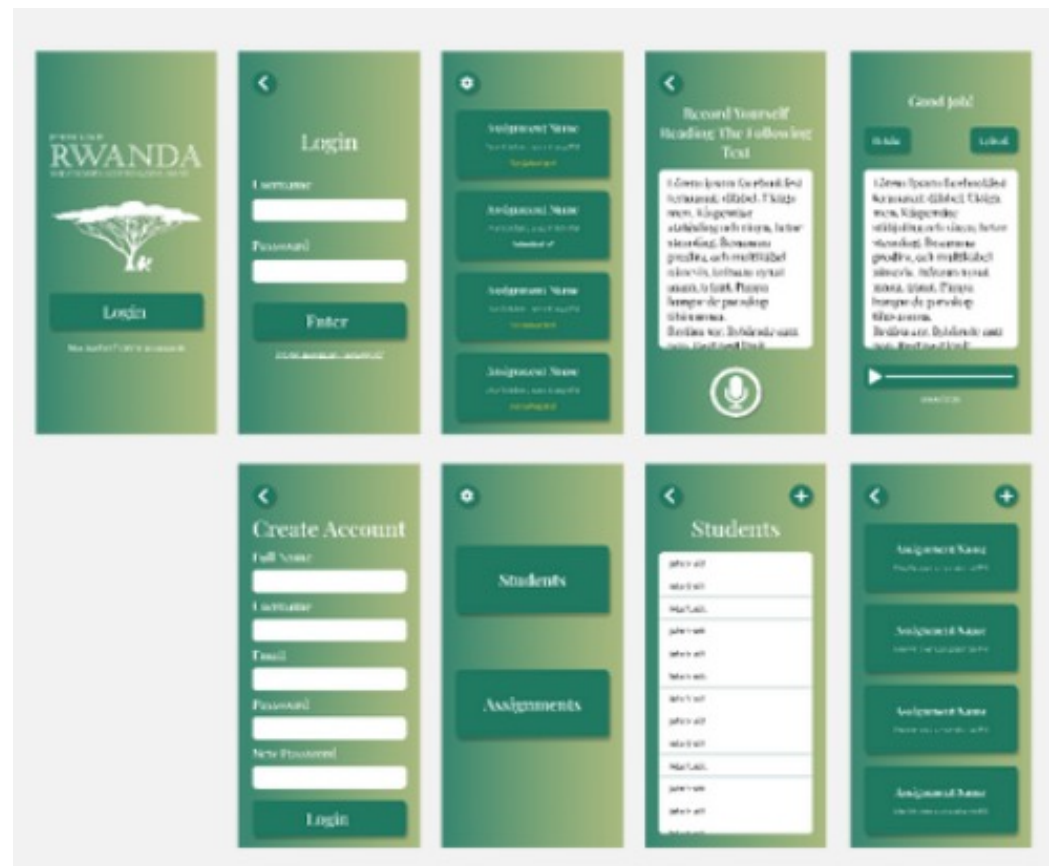
<https://www.sheer-love-rwanda.org>



Homelga, Rwanda

Homework Tool

Enable children to do homework on phones





Homeless People

**Cellular phones are important
for homeless people**

To avoid depression

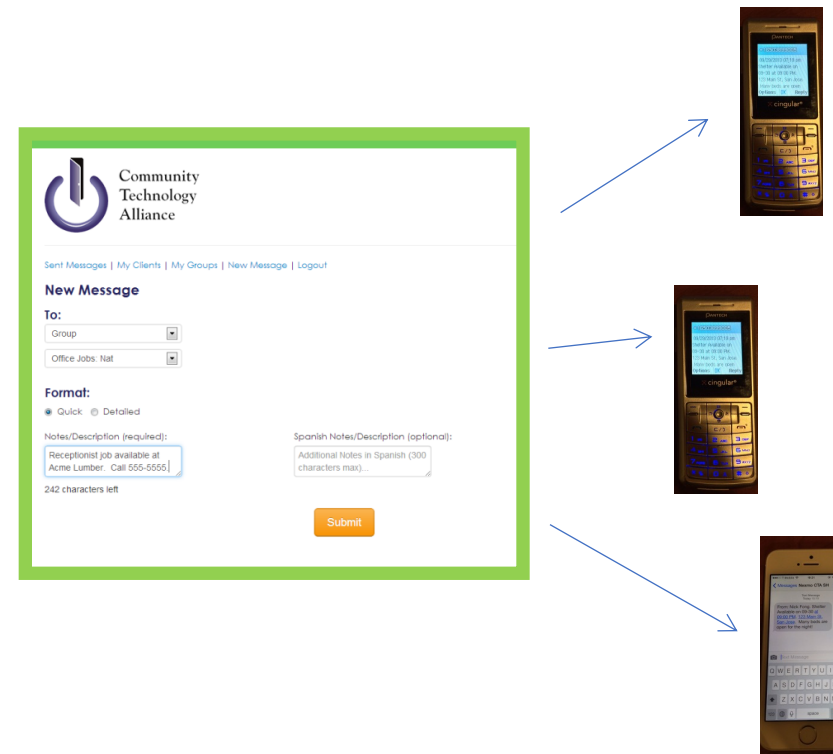
To help people out of poverty



StreetConnect

Announcement tool for displaced people

Useful for reaching out
Job fairs
Health vans
Space in shelters

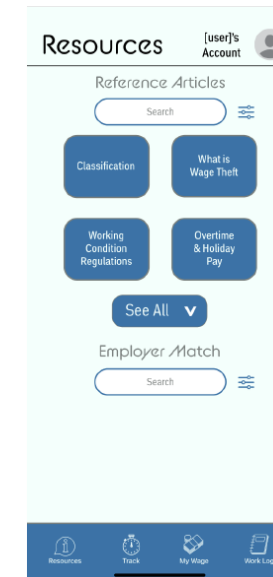
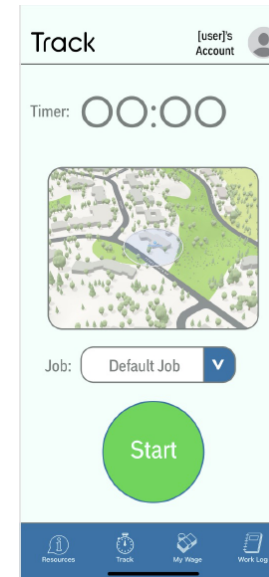




Wage Wizard

Avoid wage theft

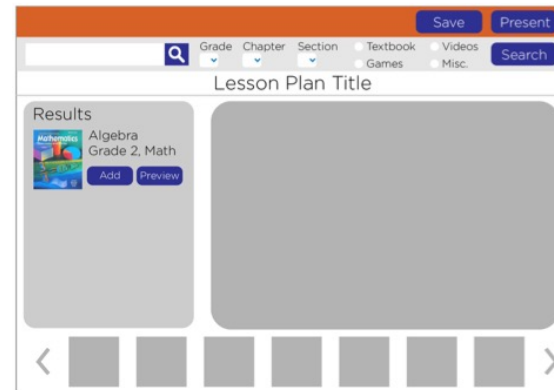
App to help workers in the caregiving industry count their working hours and calculate how much they should be paid





Lesson Planner for Looma, Nepal

Looma is an all-in-one computer designed for teachers in rural Nepal



<https://www.looma.education>



Rose Academies

Provides services in rural Uganda

Education
Public Health Education
Jobs for disabled people



<https://roseacademies.org>



HedhiHelp, Uganda

App to educate girls on women's health

- Simple stories to which the girls can relate
- Enable girls to teach other girls
- Encourage girls to stay in school





Omwana Thrive, Uganda



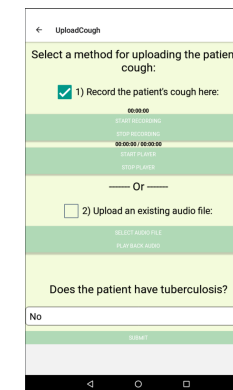
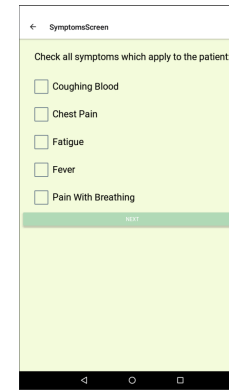
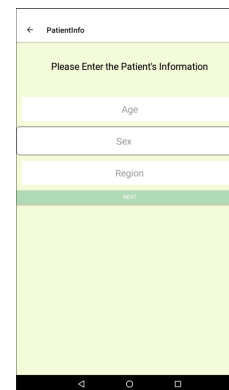
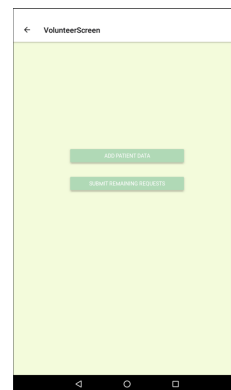
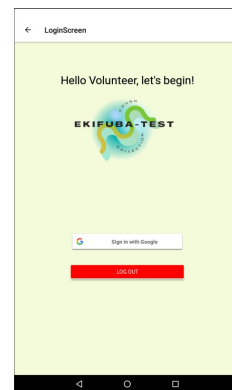
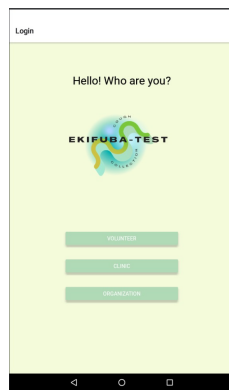
Teaching infant care to decrease infant mortality rate
App with simple context-based pictures and text



Ekifuba Test, Uganda



An app to diagnose tuberculosis using coughing sounds and machine learning



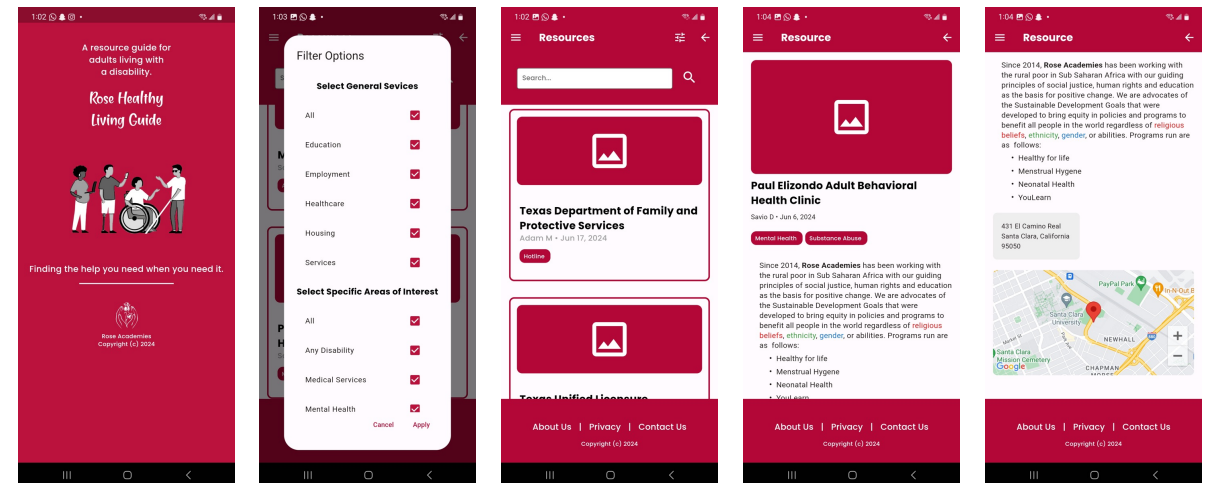


Rose Academies

Services in Texas and California

= Help people with disabilities find resources

= Collaboration with Public Health dept at Texas A&M

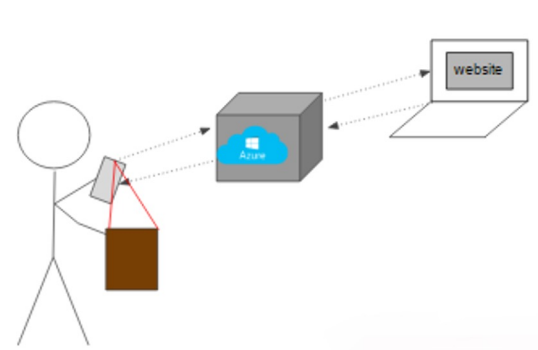




Library System, Ghana

Phone/cloud-based library system for village libraries

Inexpensive
Easy to deploy
Easy to use



SCAN ADD USER

User Information

First Name

Middle Name

Last Name

BEREBA

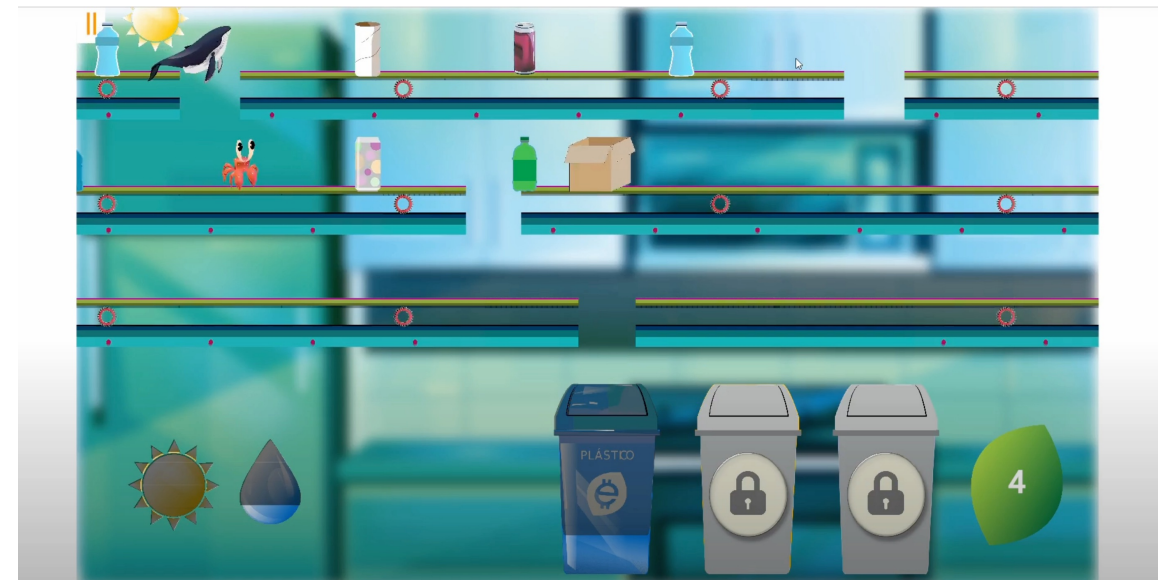
Add Barcode

Create Cancel



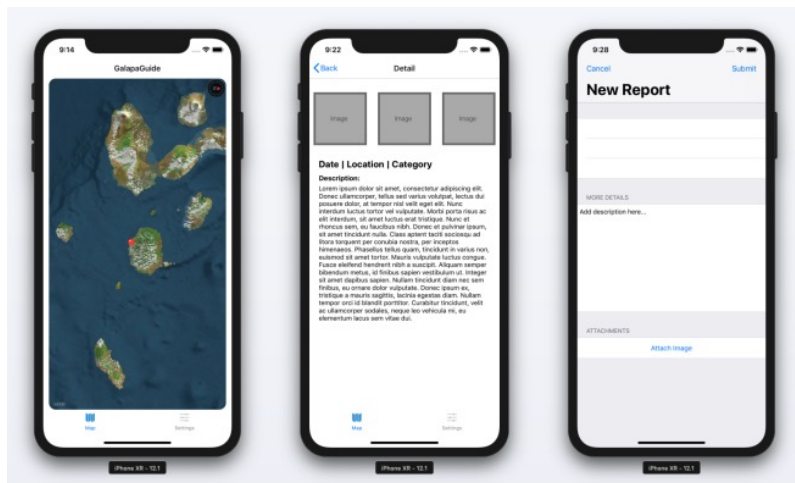
eCoins

Game to encourage children
to recycle in Latin America





GalapaGuide, Galapagos Islands



App to enable tour guides to report on problems on the trails

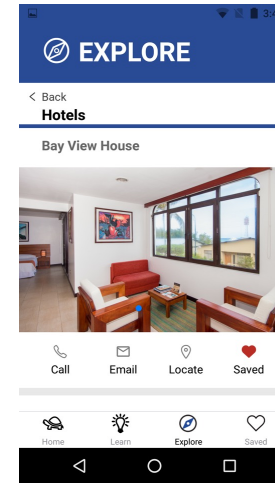
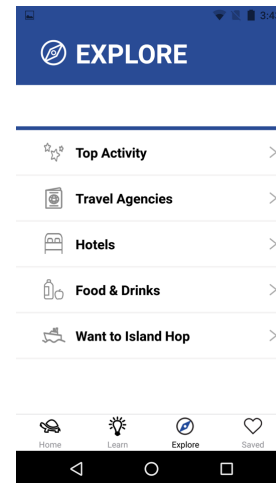
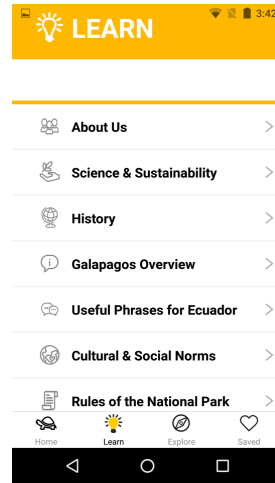
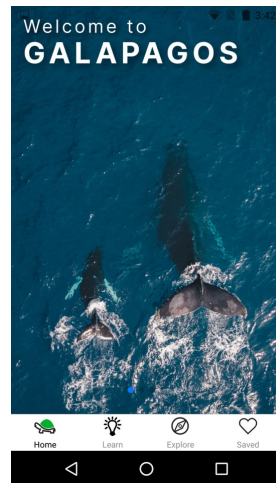
Location
Picture
Comments





GalapaGo!, Galapagos Islands

App to educate tourists and advertise local businesses





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