

A Project report on
“SANKALP APP”
-App for welfare of
underprivileged individuals

COMPUTER SCIENCE AND ENGINEERING

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CERTIFICATE

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students of Computer Science And Engineering have completed their Design Thinking and Innovation project on **SANKALP-An App for welfare of underprivileged individuals** as a part of their course curriculum during 2024-25.

They have done their project under the guidance and supervision of DR. K. NARASIMHA RAJU, MS. P. SRAVYA, And MS. D. MADHAVI of Design Thinking Innovation.

They have completed their project work within the time frame.

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We also thank all the members of the staff in Computer Science and Engineering who have aided us in our project.

We thank all those who contributed directly or indirectly in successfully carrying out his work in one way, or the other.

DECLARATION

We hereby declare that this industry-oriented project entitled
“SANKALP-An App for welfare of underprivileged individuals”
is a Bonafide work done by us submitted to the **Department of
Computer Science and Engineering, Gayatri Vidya Parishad
College of Engineering (Autonomous)Visakhapatnam,** in
complete fulfillment for the award of the degree of B. tech is of our
own and it is not submitted to any other university or has been
published any time before.

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1. ABSTRACT

The Sankalp App is designed to support underprivileged individuals, particularly those Below the Poverty Line (BPL), by connecting them to essential services such as food, shelter, healthcare, job opportunities, and skill development programs. Many BPL individuals face challenges such as lack of stable housing, limited access to food and healthcare, unemployment, and safety concerns. The app aims to address these issues by providing real-time resource availability, eligibility verification for government benefits, emergency support, and employment assistance.

To make sure the app is useful for everyone, Sankalp is made accessible for both smartphone and non-smartphone users. People can use it through USSD codes and SMS-based services, so even those without internet access can get help. The platform also works with NGOs, government organizations, and other resource providers to build a strong network of support.

Some helpful features include geolocation services to find nearby shelters or food centres, multilingual support to help users in their local languages, and strong data privacy and security measures to protect personal information. These features make sure the app is easy to use, safe, and helpful for people in need.

By using technology to close the gap between BPL individuals and the services they need, Sankalp empowers users to improve their daily lives, get the support they deserve, and live with dignity. The app not only helps individuals, but also brings together donors, volunteers, and organizations who want to help, creating a shared platform to drive real social change.

2. INTRODUCTION

In India and across the world, millions of people live Below the Poverty Line (BPL), struggling to access basic necessities such as food, shelter, healthcare, and employment. Many of them rely on daily wages, informal networks, and limited government support, often facing social exclusion and a lack of awareness about available welfare schemes.

Despite the growing penetration of mobile technology, a significant portion of the BPL population lacks internet access, making it difficult for them to benefit from digital platforms. Sankalp is an innovative mobile application designed to bridge this gap by providing a comprehensive platform that connects underprivileged individuals with essential resources.

The app offers a user-friendly and multilingual interface that enables individuals to:

- Find free or subsidized food services (ration shops, community kitchens).
- Locate nearby shelters supported by NGOs or government agencies.
- Check eligibility and apply for benefits seamlessly.
- Access emergency support and helplines.
- Find job opportunities and skill development programs.

To ensure maximum accessibility, Sankalp incorporates offline solutions like USSD codes and SMS-based services, allowing even non-smartphone users to obtain critical information. By fostering collaboration between service providers, government agencies, and NGOs, the app enhances resource distribution and promotes social inclusion.

The ultimate goal of Sankalp is to empower underprivileged individuals, helping them overcome economic hardships, improve their quality of life, and create a sustainable future.

3. EMPATHY MAP

In the empathy phase of the Sankalp project, we explored the real-life challenges faced by BPL individuals in accessing essential services such as food, shelter, healthcare, and employment. We also engaged with NGOs and service providers to understand their difficulties in reaching and supporting these communities effectively.

Through user stories and interviews, we uncovered the struggles of navigating complex systems, lack of digital literacy, and limited awareness of available resources. Simultaneously, service providers expressed the need for better coordination, real-time data, and tools to measure impact.

These insights helped us understand both the emotional and practical barriers from all sides. An empathy map was developed to visually represent these findings, forming a human-centered foundation for the design and development of the Sankalp App

To understand the challenges faced by BPL (Below Poverty Line) individuals, the team conducted direct and indirect surveys.

Key Insights from Empathy Map

1. What they Say

- Basic Necessities: Concerns about finding food and shelter are primary, indicating immediate survival needs.
- Employment: Difficulties in securing stable employment highlight the challenge of achieving financial stability.
- Healthcare and Legal Support: Struggles in accessing these services suggest barriers to essential support systems.
- Confusion About Resources: Uncertainty about government schemes and available resources indicates a lack of clear information and guidance.

2. What they Think

- Escaping Poverty: Worry about escaping poverty and securing basic needs is a constant concern.
- Access to Opportunities: Belief that opportunities exist but are hard to access reflects a sense of potential hindered by barriers.
- Uncertainty: Feeling uncertain about where to seek reliable help

indicates a need for better information and support systems.

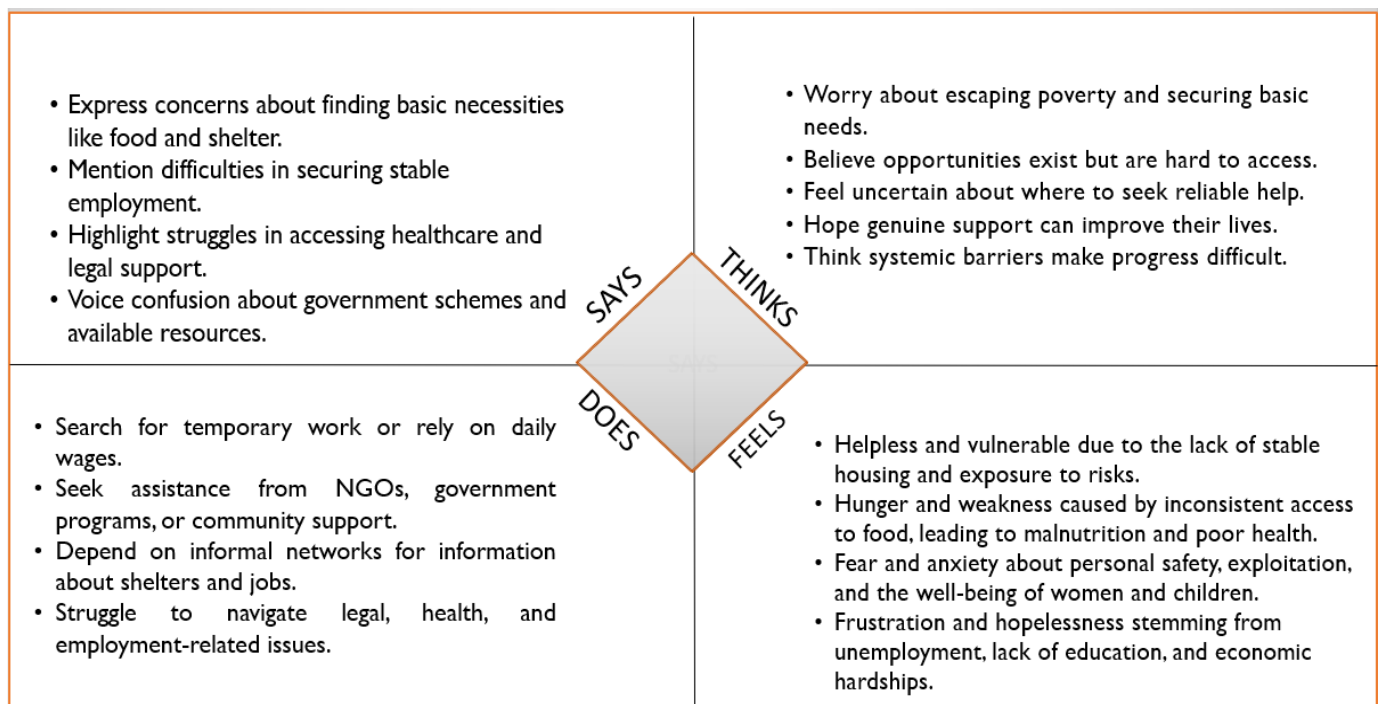
- Hope for Support: Hope that genuine support can improve their lives shows a desire for effective assistance.

3. What they Do

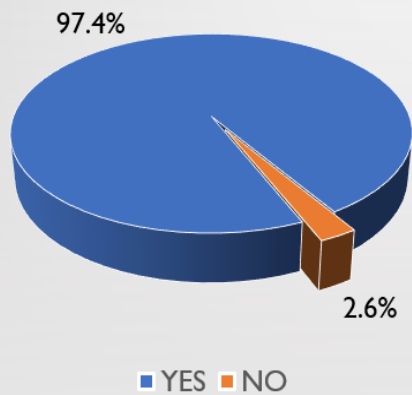
- Temporary Work: Relying on daily wages or temporary work shows a precarious employment situation.
- Seeking Assistance: Turning to NGOs, government programs, and community support reflects efforts to find help.
- Informal Networks: Depending on informal networks for information about shelters and jobs suggests a lack of formal support structures.
- Navigating Issues: Struggling with legal, health, and employment-related issues indicates systemic barriers and complexity in accessing help..

4. What they Feel

- Helplessness and Vulnerability: Lack of stable housing and exposure to risks contribute to feelings of helplessness.
- Hunger and Weakness: Inconsistent access to food leads to malnutrition and poor health, causing physical and emotional strain.
- Fear and Anxiety: Concerns about personal safety, exploitation, and the well-being of women and children highlight significant emotional burdens.
- Frustration and Hopelessness: Unemployment, lack of education, and economic benefits contribute to a sense of frustration and hopelessness.

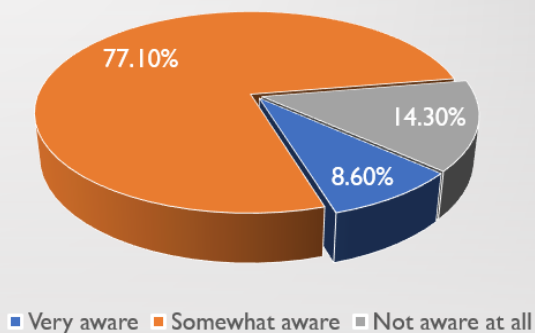


1. Have you ever seen someone struggling to find basic resources like food or a place to sleep?
115 responses



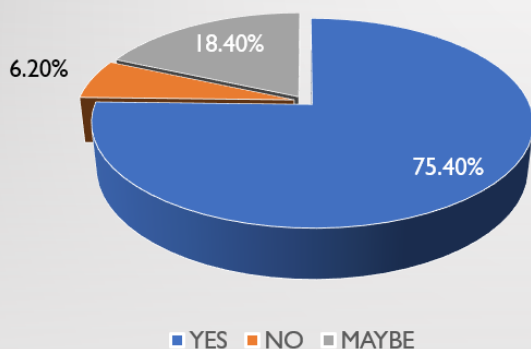
The survey shows that 97.4% of people have seen others struggling for food and shelter, meaning poverty is a common sight. This suggests problems with support systems and resource distribution.

2. How aware are you of government schemes or benefits available for underprivileged communities?
115 responses



The survey shows that 77.1% of people are somewhat aware of government schemes for underprivileged communities, while only 14.3% are very aware. This suggests a need for better outreach and education to ensure people fully understand and use these benefits.

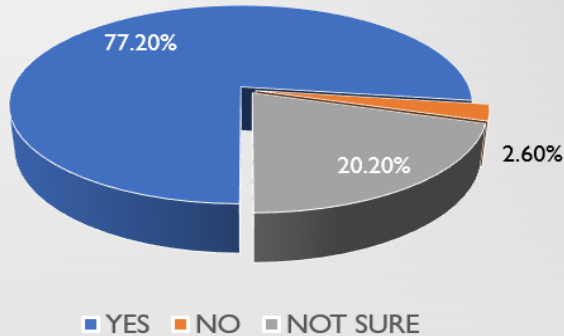
3. Do you think connecting people in need to donors, volunteers, or employers could help reduce poverty?
115 responses



The survey shows that 75.4% believe connecting people in need with donors, volunteers, or employers can help reduce poverty. This highlights strong support for community-driven solutions and the need for better resource networks.

4. Do you think more people would be willing to help the homeless or underprivileged if there was a transparent and easy way to do so?

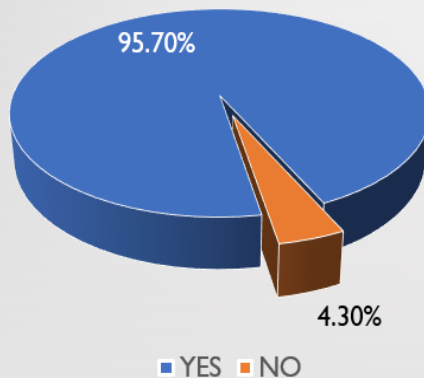
115 responses



The survey shows that 77.2% believe more people would help the homeless if the process were transparent and easy. This highlights the need for clear, trustworthy platforms to encourage donations and volunteering.

5. Would you support an app that allows you to donate directly to homeless individuals and alerts them about severe weather or dangers?

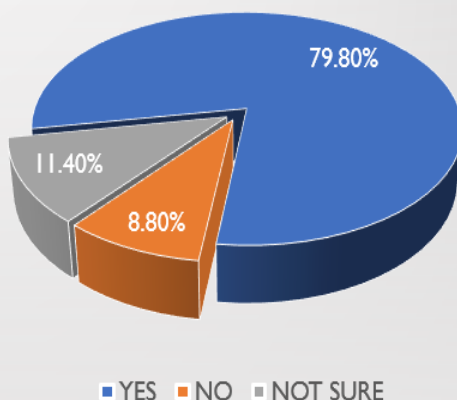
115 responses



The survey shows that 95.7% support an app for direct donations and safety alerts for the homeless. This strong interest suggests the need for a secure and transparent platform to assist those in need.

6. Do you think providing easy access to government schemes and benefits through an app could make a difference for low-income communities?

115 responses



The survey shows that 79.8% believe an app providing easy access to government benefits could help low-income communities. This highlights the need for a user-friendly, inclusive platform to improve accessibility.

4. DEFINE PHASE:

In the Define Phase, the goal was to consolidate the findings from the Empathy Phase and narrow down the key problems that the Sankalp App will aim to solve. This phase focuses on creating clear problem statements and defining the scope of the solution.

Identifying the Core Problem

After analyzing the insights gathered from BPL individuals, NGOs, and service providers, we defined the following core problems:

1. Lack of Awareness:

Many BPL individuals are unaware of the available resources like food, shelter, healthcare, job opportunities, and government welfare schemes. They struggle to access services due to limited information and geographical barriers.

2. Accessibility Issues:

Even when resources are available, accessing them is often complicated due to digital illiteracy, inadequate infrastructure, or lack of internet connectivity. Many people rely on informal networks or word-of-mouth, which is not always reliable.

3. Lack of Collaboration Between Stakeholders:

Service providers, such as NGOs, government organizations, and private institutions, do not always have a centralized platform to coordinate efforts and optimize resource distribution, leading to inefficient services and missed opportunities.

4. Urgency of Needs:

BPL individuals often face emergencies such as medical crises, food shortages, and shelter needs, where real-time solutions are critical. They need a platform that provides instant notifications about available resources.

5. IDEATE PHASE:

The Ideate phase in the Design Thinking process, focused on generating creative, user-centric solutions to address the challenges identified during the Empathize and Define phases. For the Sankalp App, this stage played a vital role in exploring practical and scalable ideas aimed at uplifting Below Poverty Line (BPL) communities while engaging potential donors and volunteers through a unified platform.

By brainstorming, mind mapping, and validating ideas with real-world users and experts, the following solution features were conceptualized:

Solutions for BPL Users:

- **One-Stop Resource Map:**

A centralized interface that shows the nearest food centers, shelters, healthcare camps, and legal aid points based on the user's geolocation.

- **USSD & Kiosk Integration:**

To bridge the digital divide, the app ideates USSD codes and community kiosk points for users without internet access or smartphones.

- **Job Matching:**

A smart job-matching portal tailored for micro-jobs, local employment, and vocational training opportunities, based on users' skill levels and preferences.

- **Legal & Health Awareness Tools:**

Audio-based legal explainers and multilingual health hotlines ensure users can access crucial information without literacy or language barriers.

- **Emergency Alerts & Support:**

A real-time notification system to warn users about natural disasters, disease outbreaks, or government advisories.

- **Profile-Based Personalization:**

User profiles help tailor service suggestions and reminders, allowing personalized access to schemes and training modules.

Solutions for Donors & Volunteers:

- **Crowdsourced Donation Hub:**

An interactive donation section where individuals and NGOs can view and respond to verified requests from BPL communities.

- **Location-Based Gifting:**

Donors can filter requests by region, category (food, clothes, education, etc.), and urgency, ensuring their help reaches those most in need.

- **Escrow-Style Secure Transactions:**

Donations are held securely until the completion or verification of delivery, ensuring transparency and trust.

- **Impact Tracking & Reports:**

Donors receive progress updates and impact visuals, creating a sense of personal involvement and trust in the platform.

- **Recurring Contributions:**

Options for donors to automate monthly donations or adopt a consistent support role (e.g., sponsoring meals or education kits).

- **Volunteer Task Board:**

A section where individuals can sign up for local drives, distribution events, or remote mentoring—enhancing civic participation.

Key Innovations Emerged:

- Multilingual Interface
- Offline compatibility using SMS and USSD
- AI-based matching between needs and available resources
- Secure and transparent donor flow
- Unified portal for all stakeholders – BPL citizens, donors, NGOs, and government bodies

App Development Roadmap: Sankalp App

Integrated Resource Mapping:

- Develop an interactive map to display nearby food centers, shelters, health camps, and hygiene facilities.
- Enable real-time updates for availability and status of services.
- Implement filters for category-wise search (e.g., food, health, jobs).

Database Management & Data Security:

- Design a scalable database to store user profiles, resource locations, job listings, and government schemes.
- Apply strong data encryption and privacy protocols to protect sensitive user data.
- Ensure regular data validation and backups for consistency and integrity.

User Interface Design:

- Create a clean, intuitive UI adaptable for users with low digital literacy.
- Include multilingual support and voice-based navigation for accessibility.
- Design in alignment with empathy-based insights to ensure inclusivity and ease of use.

Geolocation Services:

- Integrate location tracking to help users discover nearest essential services.
- Allow service providers to update their resource availability based on location.
- Include navigation assistance and distance indicators for better decision-making.

Cloud Hosting:

- Use cloud infrastructure for real-time syncing of data, scalability, and reliable performance.
- Support dynamic content updates and secure remote access for service providers.
- Select a trusted cloud service partner to ensure high uptime and responsiveness.

AI for Personalizing Experiences:

- Utilize AI to recommend jobs, skill courses, and schemes based on user profile

and usage patterns.

- Enable adaptive content delivery in preferred language and relevant services.
- Continuously improve personalization based on feedback and user interaction data.

Deployment and Maintenance:

- Publish the app on Android (with lightweight versions for low-end devices) and web platforms.
- Track analytics and feedback post-launch to fix bugs and improve usability.
- Set up regular updates and feature rollouts based on evolving user needs and tech trends.

The Ideate Phase of the Sankalp App transformed identified challenges into practical, user-centered digital solutions. Each roadmap element—from geolocation to AI-driven personalization—aims to create an inclusive, scalable, and impactful platform that empowers BPL communities and enhances their access to essential services.

6. PROTOTYPE PHASE:

The Prototype Phase is a pivotal stage in the design thinking process, where abstract ideas for the Sankalp App are transformed into tangible and interactive representations. This is crucial for evaluating the feasibility, usability, and effectiveness of the app in addressing the complex needs of individuals Below the Poverty Line (BPL). The prototypes serve as a medium for gathering feedback, iterating on the design, and ensuring the final product aligns with user requirements and project goals.

Key Aspects and Features Prototyped for the Sankalp App:

- **Accessibility for All Users:**

- *Dual-Platform Approach:*

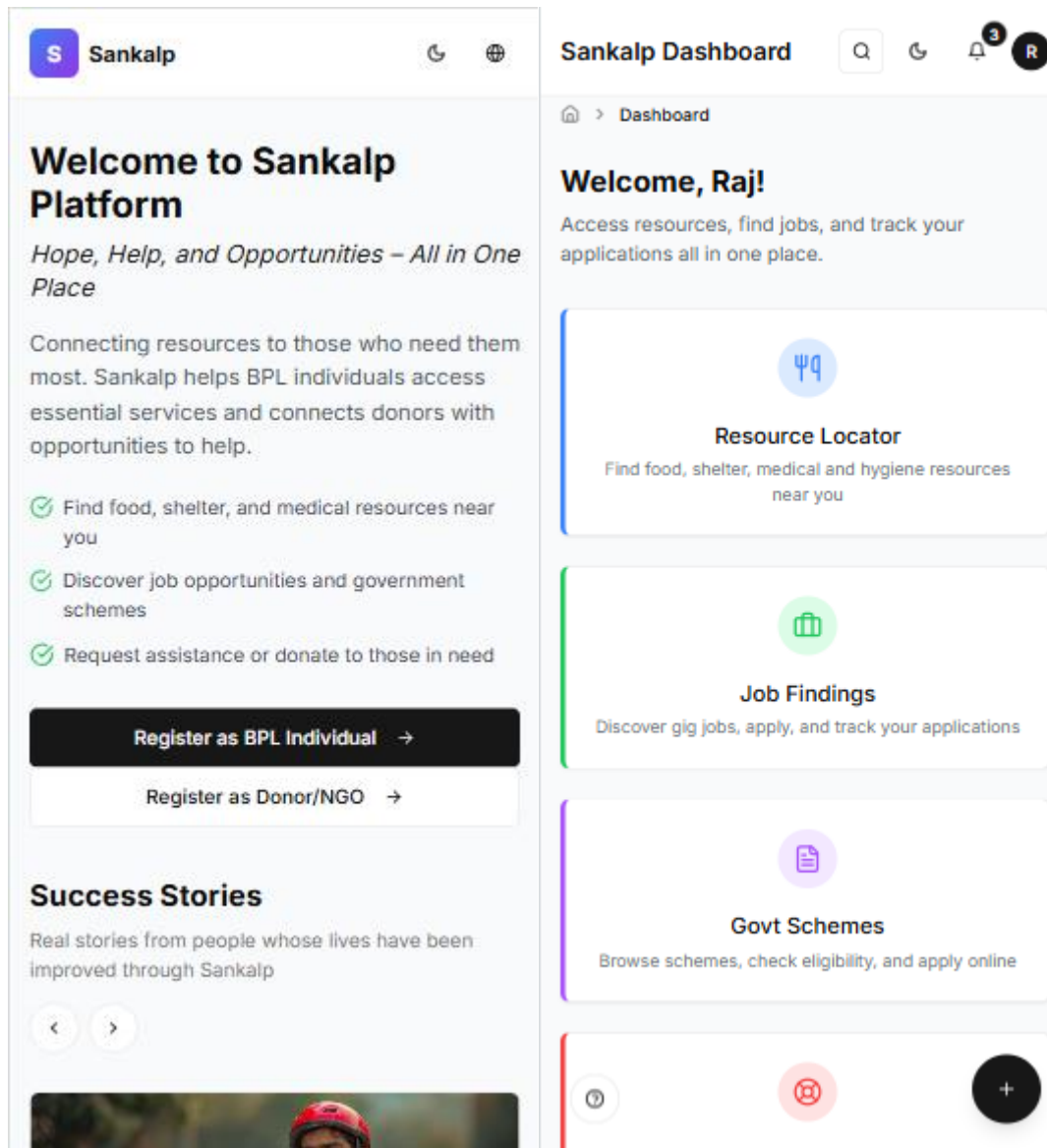
The Sankalp App recognizes the diverse technological access among the target users. Prototypes are developed to function seamlessly on smartphones and also to provide access to essential information for non-smartphone users.

- *USSD and SMS Integration:*

- For users without smartphones or internet access, USSD codes are prototyped to provide menu-driven access to key services. This allows users to retrieve information on food availability, shelter locations, and emergency contacts using basic mobile phones.

- SMS-based services are prototyped for sending alerts, notifications, and reminders about benefit eligibility, job openings, or upcoming events. This ensures that even the most digitally excluded individuals can stay informed.

This dual approach is critical to address the accessibility issues highlighted in the "Define Phase," where limited digital literacy and infrastructure were identified as key barriers.



Above Figures visually represent our app model, offering a snapshot of its key features and functionalities. These figures serve as a concise visual overview, providing a glimpse into the design and structure of our application. They play a crucial role in conveying the essence of our app model in a clear and illustrative manner.

<https://v0-website-builder-oudqyh.vercel.app/>

the above link redirects to our app.

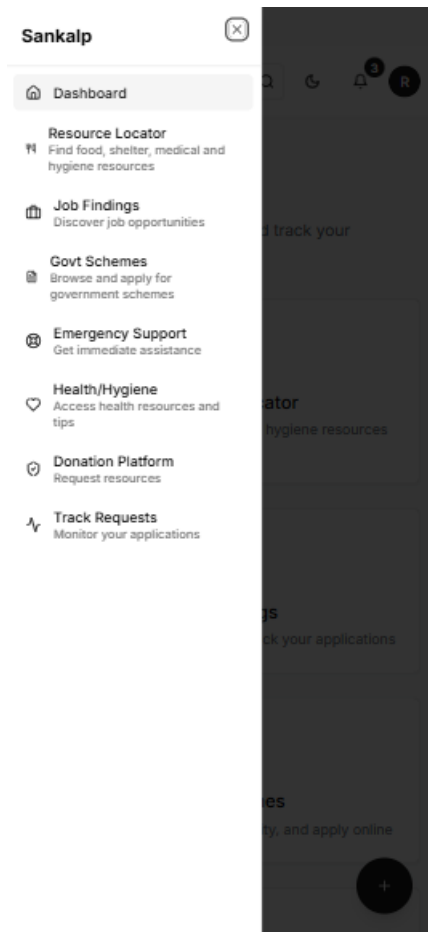
User Interface and Experience (UI/UX):

• Multilingual Support:

- Prototypes include multilingual interfaces, allowing users to select their preferred language. This is essential in a diverse country like India, where language barriers can hinder access to information and services.
- The design considers the need for simple language and avoids complex terminology to cater to users with varying levels of literacy.

• Intuitive Navigation:

- Prototypes emphasize clear and consistent navigation to ensure that users can easily find the information or services they need.
- Wireframes and interactive mockups are used to test different navigation flows and information architecture, optimizing for ease of use.



- **User-Centered Design:**

- Prototypes are developed with a focus on empathy, incorporating insights from the "Empathy Phase" to ensure that the app meets the real needs and preferences of BPL individuals.
- Accessibility considerations, such as font size, color contrast, and voice assistance, are integrated into the prototypes to cater to users with visual or motor impairments.

Core Functionalities

◆ Resource Location:

For BPL Users: Interactive maps and filters to locate nearby food, shelter, and healthcare.

For Donors/NGOs:

Resource Management & Monitoring: Dashboards to track real-time availability, usage patterns, and demand spikes.

Automated Alerts: Notifications for low stock or high-demand areas to enable quick action.

◆ Benefits Access:

For BPL Users: Guides users through eligibility checks and applications for government schemes.

For Donors/NGOs:

Allows organizations to assess service impact and identify underserved regions.

Potential integration for monitoring the success rate of government benefit delivery.

◆ Job Development:

For BPL Users: Connects users to job boards, vocational training, resume builders, and interview prep.

For Donors/NGOs:

Metrics on employment outcomes and skill development impact.

Tools to fund or sponsor job-readiness programs and monitor results.

◆ **Emergency Support:**

For BPL Users: Quick access to emergency helplines, SOS signals, and real-time alerts.

For Donors/NGOs:

Real-time crisis data to coordinate fast relief response.

Location-based alert systems to prioritize aid.

◆ **Donation Platform:**

For BPL Users: Receives direct aid through secure, verified channels.

For Donors/NGOs:

Secure Transactions: End-to-end encryption and two-factor authentication ensure safe and transparent donations.

Tracking & Reporting: Real-time updates on fund usage, impact reports, and feedback from recipients.

Advanced Features for Donors, NGOs & Resource Providers

◆ **User Engagement Insights**

Analytics to measure satisfaction, usage patterns, and feedback from BPL users.

Helps donors fine-tune campaigns and improve service delivery.

◆ **Customization & Flexibility**

Configurable dashboards, reports, and multilingual interfaces to suit various organizational needs and regions.

◆ **Collaboration & Networking**

Tools for joint initiatives with other NGOs, government bodies, or private sector players.

Supports resource pooling, shared logistics, and knowledge exchange.

Welcome, Raj!

Access resources, find jobs, and track your applications all in one place.



Resource Locator

Find food, shelter, medical and hygiene resources near you



Job Findings

Discover gig jobs, apply, and track your applications



Govt Schemes

Browse schemes, check eligibility, and apply online



Emergency Support

Access helplines, send alerts, and request urgent assistance



Health/Hygiene

Get health tips, find clinics, and access medical resources



Donation Platform

Request resources or donate to those in need

Welcome, Ajay!

Thank you for being a part of Sankalp Platform

[View Impact](#)[Get Support](#)

Donate

Donate food, clothing, or other essential items



Track Donations

Monitor the status of your donations



View Requests

See what resources are needed



Donor Network

Connect with NGOs and other donors

[NGOs](#)[Donors](#)

Hope Foundation

NGO • Delhi

Working to provide food and education to underprivileged children

[Food](#)[Education](#)[Connect](#)

Helping Hands

NGO • Mumbai

Providing healthcare and shelter to homeless individuals

[Healthcare](#)[Shelter](#)[Connect](#)

Donate Resources

Help those in need by donating essential items

Donation Details

1 Select Items**2** Delivery**3** Confirm

What would you like to donate?

Food

Rice, wheat, pulses, etc.



Clothes

All sizes and types



Blankets

For cold weather



Additional Features

- **Geolocation Services:** Enables users to find nearby resources, navigate to shelters, and receive local alerts, with strong privacy controls.
- **User Profile Management:** Allows users to manage personal info, app preferences, and securely store important documents.
- **Search Functionality:** Robust search with filters and language-tolerant algorithms ensures easy access to relevant services.
- **Security Features:** Includes data encryption, two-factor authentication, and compliance with privacy regulations to protect user data.

Service Provider Interface

- Dashboards for NGOs and government bodies to track resources, user engagement, and service delivery.
- Built-in analytics and reporting tools support data-driven decisions and impact measurement.
- Collaboration tools help coordinate efforts and avoid duplication of resources.

The Sankalp App prototype is more than just a tech solution—it's a platform designed to empower BPL users, streamline support networks, and drive real social change through thoughtful, tested design.

7. CONCLUSION:

Through this project, we conclude that technology can play a transformative role in improving the lives of BPL individuals. The Sankalp App is not just a digital platform—it is a step toward bridging critical gaps in access to jobs, resources, and essential services.

In a country where millions still struggle to access basic necessities, it is unacceptable for inequality and lack of awareness to stand in the way of progress. While there are challenges in implementation, the focus must remain on empowering communities, not on bureaucracy or barriers.

In today's fast-evolving digital world, we need solutions that are inclusive, user-friendly, and grounded in empathy. Most importantly, we need people—especially those at the margins—to be informed, connected, and supported. The Sankalp App aims to be that lifeline, driving impact where it's needed most.

References—

1. Mehta, Balwant Singh. "Impact of Mobile Phone on Livelihood of Rural People." NIRD & PR Portal (2016).
2. Pareek, Preksha, and Dr. Prema K.V. "Classifying the Population as BPL or Non-BPL Using Pareek Prema." International Journal of Scientific and Research Publications (IJSRP) (2012).
3. Hirway, I. "Identification of BPL Households for Poverty Alleviation Programs." Economic and Political Weekly (2003).
4. Bhattacharya, Sudip, Thiyagarajan Arulmani, and Kanica Kaushal. "Homelessness: An Emerging Threat." International Journal of Healthcare Education & Medical Informatics (2018).
5. Abraham, Reuben. "Mobile Phones and Economic Development: Evidence From the Fishing Industry in India." Information Technologies & International Development journal (2007).

