

GRASSROOT (LOCAL GOVERNMENT) MOBILE APP & WEB PORTAL DEVELOPMENT

Grassroot App... “Connecting Communities. Empowering Local Government.”

Grassroot App... “Together we build stronger communities.”

S/N	AREAS OF PROJECT	BACKGROUND INFORMATION	DESCRIPTIONS
		<p>See the idea below</p>  <ul style="list-style-type: none"> LG APP for Community A LG APP for Community B LG APP for Community C LG APP for Community D 	<p>1. Community Alerts & Emergency Notifications (Push)</p> <p>Send instant alerts for:</p> <ul style="list-style-type: none"> • Storms, flooding, wildfires • Disease outbreaks • Road closures & construction • Missing people • Utility outages (water, electricity) • Public safety threats <p>Why critical: Real-time communication builds trust and saves lives.</p> <p>2. Service Request Portal (Pull)</p>

	<p>Residents can request:</p> <ul style="list-style-type: none"> • Pothole repairs • Streetlight repairs • Sanitation/garbage pickup • Water leak reporting • Environmental hazard reporting <p>Include:</p> <ul style="list-style-type: none"> • Photo upload • GPS location tagging • Case status tracking <p>Why critical: Most local issues start at the neighborhood level.</p>
	<p>3. Digital Payments & e-Services (Pull)</p> <p>Residents can pay:</p> <ul style="list-style-type: none"> • Local taxes • Utility bills • Permits (business, construction) • Parking fees • Market stall fees • Licensing fees <p>Why critical: Revenue leakage reduction + convenience.</p>
	<p>4. Local News & Government Announcements (Push)</p> <p>Updates from:</p> <ul style="list-style-type: none"> • Mayor/chairperson • Council meetings • Policy changes • Community programs • Local awards, public events <p>Why critical: Builds transparency & civic participation.</p>

- Farmers markets
- Local festivals
- Sports & youth programs
- Public health campaigns
- Volunteer opportunities

Why critical: Strengthens community cohesion.

6. Local Jobs & Opportunities Board

- Municipal job postings
- Public works contracts
- Youth apprenticeship opportunities
- Training programs
- Seasonal jobs (parks, sanitation)

Why critical: Supports economic empowerment at grassroots.

7. Business Directory & Local Marketplace

Showcase:

- Local businesses
- Street vendors
- Farmers
- Local artisans
- Market prices (agriculture)

Option: Verified “Gov-Approved Vendor” badge.

Why critical: Supports local economic development.

8. Waste Management & Sanitation Schedule

- Waste pickup calendar
- Recycling schedule
- Bulk waste disposal bookings
- Alerts for delays

Why critical: Reduces illegal dumping & improves cleanliness.

9. Community Safety & Police Contact Center

- Report non-emergency issues
 - Report abandoned vehicles
 - Public safety tips
 - Geo-tagged safety concerns
- Why critical:** Enhances grassroots safety collaboration.

10. Health & Social Services Hub

- Immunization schedules
 - Public health notices
 - Local clinic information
 - Social assistance registration
 - Seniors & disability services
- Why critical:** Accessible health information saves lives.

11. Local Government Forms & Document Center

Residents can access:

- Birth registration guidance
- Land documents (info only, no PHI)
- Business registration forms
- Building permit guidelines

Why critical: Reduces long lines at government offices.

12. Citizen Feedback & Polling Tool

Residents can participate in:

- Quick polls ("Which park project should we fund?")
 - Satisfaction surveys
 - Public consultation
- Why critical:** Encourages participatory democracy.

13. Push Notifications by Ward/Zone/Subcounty

Hyper-target messages based on:

- Ward
- District

	<ul style="list-style-type: none"> • Village • Street <p>Why critical: Reduces irrelevant messages and increases adoption.</p>
	<p>14. Transparency & Budget Dashboard</p> <ul style="list-style-type: none"> • Local project budgets • Community development projects • Expenditure summaries • Contract award details (high-level only) <p>Why critical: Builds trust and reduces corruption.</p>
1.	<p>15. Disaster Reporting & Relief Coordination</p> <p>Residents can report:</p> <ul style="list-style-type: none"> • Flood-prone areas • Fire outbreaks • Damage photos • Relief needs <p>Why critical: Gives the local government real-time intelligence.</p>

<p>Phase 3</p> <ul style="list-style-type: none"> • Transparency dashboard • Marketplace expansion • AI chatbot for residents • GIS mapping for assets • Multilingual support • Offline content mode <p>This mobile app will support local governments by:</p> <ul style="list-style-type: none"> • Improving communication • Streamlining services • Increasing revenue • Enhancing transparency • Reducing administrative costs • Building trust with citizens • Providing emergency readiness • Monetization is ethical, sustainable, and community friendly. 	<p>Business Requirements (BRD)</p> <p>[1.] Resident Registration</p> <p>Residents sign up with:</p> <ul style="list-style-type: none"> • Phone number or email • GPS location (optional) • Ward/zone selection <p>[NB: Resident in this community should be able to see ONLY information from their Local Government]</p> <p>[2.] Local Government Admin Accounts</p> <p>Roles:</p> <ul style="list-style-type: none"> • Super admin • Ward officer • Sector officer • Emergency officer
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- Communications team
- [NB: These are the offers that should be able to update the web portal to push the notifications for their community]

[3.] Push Notifications

Admins can send:

- Emergency alerts
- Community news
- Event notices

[4.] Service Requests

Residents must submit:

- Type of issue
- Description
- Photo
- GPS location

Admins must assign service requests to appropriate departments.

[5.] Digital Payments

Secure payments for:

- Taxes
- Permits
- Fees
- Licenses
- Utilities

[NB: Residents should be able to remit payment for any of the indicated services to their Local Government]

[6.] Business Listing Management

Businesses can:

- Apply for listing (another revenue for the LG.)
- Pay for upgrades
- Update info

<p>[This feature will allow local businesses to have a listing in their community, for advertisement, promotion, awareness and other publicity opportunities]</p>	<p>[7.] Multi-channel Feedback Residents can participate in polls and surveys.</p> <p>[The local Government have the capability to send out poll to residents in their community to get their opinions about relevant issues]</p>	<p>[8.] Data Analytics</p> <p>Dashboard displays:</p> <ul style="list-style-type: none"> • Activities • Revenue • Issues • Trends <hr/> <p>A. Digital Service Fees</p> <ul style="list-style-type: none"> • Permit fees • Business license renewals • Market stall payments • Parking fees • Utility bill payments <p>B. Verified Business Listings</p> <p>Businesses pay for:</p> <ul style="list-style-type: none"> • Featured position • “Local Government Approved” badge • Sponsored listings on directory <p>C. Local Advertising (Ethical & Community-Focused)</p> <ul style="list-style-type: none"> • Local shops <p>The app becomes a new revenue collection channel for the local Government</p>
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<ul style="list-style-type: none"> • Clinics • Taxi services • Restaurants • Schools • Farmers' associations <p>No intrusive ads — only relevant, approved ads.</p> <p>D. Transaction Fees on Certain Payments A minimal fee per transaction (e.g., \$0.10–\$0.50) such as:</p> <ul style="list-style-type: none"> • Permit renewals • Parking 	<p>E. Vendor Subscription Model Local businesses can pay monthly for:</p> <ul style="list-style-type: none"> • E-commerce listing • Delivery partnership • Payments integration
<p>3. FUNCTIONAL REQUIREMENTS</p>	<p>Functional Requirements</p> <p>[1] – Resident Registration</p> <ul style="list-style-type: none"> • Phone/email login • Ward/zone selection <p>[2] – Push Alerts Module</p> <ul style="list-style-type: none"> • Emergency alerts • Ward-specific alerts <p>[3] – Service Requests</p> <ul style="list-style-type: none"> • Submit issue with photo • GPS tagging • Status tracking • Assigned department routing <p>[4] – Digital Payments</p>

	<ul style="list-style-type: none"> • Taxes • Utilities • Parking fees • Business permits <p>[5] – Directory</p> <ul style="list-style-type: none"> • Local business listings • Government-approved vendor badges <p>[6] – Local Jobs</p> <ul style="list-style-type: none"> • Government job postings • Private job listing portal <p>[7] – Sanitation Schedule</p> <ul style="list-style-type: none"> • Ward-level calendar • Day-of alerts <p>[8] – Feedback & Polls</p> <ul style="list-style-type: none"> • Single choice • Multi-choice • Satisfaction rating <p>[9] – Admin Dashboard</p> <ul style="list-style-type: none"> • Analytics • Revenue stats • Issue tracking • Alerts console 	<p>DESIGN CORE MODULES</p> <ol style="list-style-type: none"> 1. Alerts Center – send emergency notifications 2. Service Request Manager – track & assign tasks 3. Revenue Center – monitor payments, generate reports 4. Jobs & Opportunities – manage postings 5. Business Directory – approve or verify listing 6. Event Management System 7. Sanitation Management – schedule pickups 8. Public Safety Inbox – non-emergency reports 9. Health & Social Services Updates 10. Forms Repository – manage digital documents
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	<p>11. Feedback & Poll Management</p> <p>12. Analytics Dashboard – real-time data visualization</p> <p>13. Ward/Zone-specific Messaging</p> <p>14. Budget Transparency Module</p> <p>15. Disaster Response Console</p>
SCHEMATIC SOLUTION	<h3>System Architecture Overview</h3> <pre> graph TD SA[System Architecture] --- MA[Mobile App] SA --- WP[Web Portal] SA --- AE[Analytics Engine] SA --- FS[File Storage] SA --- BL[Business Logic Layer] SA --- DB[Database] MA --- F[Flutter] WP --- R[React.js] AE --- CF[Cloud Functions] AE --- P[Python] FS --- AWS_S3[AWS S3] FS --- GCS[Google Cloud Storage] BL --- CL[Core Logic] DB --- PGSQL[PostgreSQL] DB --- FSTORE[Firebase Firestore] </pre> <p>The diagram illustrates the System Architecture Overview. At the center is a large gray box labeled "System Architecture". Surrounding it are six colored boxes: "Mobile App" (orange), "Web Portal" (blue), "Analytics Engine" (light blue), "File Storage" (purple), "Business Logic Layer" (pink), and "Database" (magenta). Lines connect the central "System Architecture" box to each of these peripheral components. Additionally, lines connect specific technologies to their respective components: "Flutter" to the "Mobile App", "React.js" to the "Web Portal", "Cloud Functions" and "Python" to the "Analytics Engine", "AWS S3" and "Google Cloud Storage" to the "File Storage", "Core Logic" to the "Business Logic Layer", and "PostgreSQL" and "Firebase Firestore" to the "Database".</p>

TECHNICAL REQUIREMENTS	Technical Requirements (TRD) <ul style="list-style-type: none"> Frontend <ul style="list-style-type: none"> • Flutter (iOS + Android app) • Responsive UI Backend <ul style="list-style-type: none"> • Node.js / Python (Django or FastAPI) • RESTful API • Firebase or AWS SNS for notifications Database <ul style="list-style-type: none"> • PostgreSQL (primary) • Redis (for caching & alerts) Hosting <ul style="list-style-type: none"> • AWS / Azure / GCP • 99.9% uptime SLA Security <ul style="list-style-type: none"> • AES-256 encryption • JWT authentication • Role-based access • GDPR + CCPA compatible Integrations <ul style="list-style-type: none"> • Payment gateways (Stripe, Paystack, Flutterwave, Apple Pay, Google Pay) • GIS / Maps API • SMS gateway for offline users 	<p>PRODUCT CATEGORIZATION</p> <ul style="list-style-type: none"> ▪ LGA Dashboard (for the LGA) – to push information <ul style="list-style-type: none"> - Collect Initial fee - Annual Service Fees ▪ End-user App (For everyone) – to pull information <ul style="list-style-type: none"> - One time payment to download and install app. 	<p>DELIVERABLES</p> <p>These are the final deliverables</p>
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	<ul style="list-style-type: none"> • iOS/Android mobile apps • Web portal • Admin dashboard • Documentation & API docs • Deployment setup • User guide
Benchmark Solution	<p>DISNEY WORLD App NW Publisher App</p> <p>These two apps provide an excellent example of what this app is going to achieve</p> <ol style="list-style-type: none"> 1. Provide information to the residents is a location and this information will not spill to other community 2. The residents will be issued a code(s) to connect to that community to prevent information leaking to another community.