

**REPUBLIC OF CAMEROON**

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**AND TECHNOLOGY**

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**DEPARTMENT OF COMPUTER ENGINEERING**

**COURSE: INTERNET PROGRAMMING AND MOBILE APPLICATIONS**

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**TASK 3: REQUIREMENT ANALYSIS FOR DISASTER MANAGEMENT APP**

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6. **Introduction**

This document provides a comprehensive analysis of requirements for a disaster management application tailored for Cameroon, derived from responses gathered via a Google Form. It aims to delineate the specific needs, challenges, and functionalities desired in the app, ensuring it effectively aids in managing natural disasters.

1. **Methodology**

The requirement gathering utilized a structured approach through a Google Form, focusing on stakeholders primarily comprising residents and citizens affected by natural disasters. The responses covered aspects like common disasters, current management efficacy, challenges faced, desired functionalities, usability, and communication importance.

1. **Review Collected Data**

**Data Extracted:**

* **Common Disasters:** Floods and fires.
* **Efficiency Ratings:** Varied, with an average indicating moderate efficiency.
* **Challenges:** Slow mitigation times, lack of equipment, and insufficient preventive measures.

**Data Organization:**

* **User Needs:** Effective communication tools, quick access to resources.
* **System Requirements:** Real-time alerts, resource location services.
* **Constraints:** Usability in low-resource settings, offline functionality.

**Identify Ambiguities and Gaps**

**Ambiguities Identified:**

Some responses were vague about the specific types of resources needed during disasters.

Several responses did not specify which communication tools were preferred.

**Gaps Identified:**

Lack of detailed suggestions on how to enhance communication during power outages or network failures.

**Prioritize Requirements**

Prioritization Applied:

**Must Have:** Real-time alerts, resource location services, basic communication tools.

**Should Have:** Offline functionality, multi-language support.

**Could Have:** User feedback mechanisms, advanced mapping features.

**Won't Have:** High-bandwidth required features, complex administrative tools for end-users.

**Resolve Conflicts**

Conflicts Resolved:

Between the need for high-tech features and the app's usability in low-resource settings, priority was given to low-resource compatible features.

Resolved discrepancies in the desired speed of alerts versus actual technical feasibility by planning phased roll-outs for feature enhancements.

1. **Requirement Specification Document**

**Scope**

The app will provide real-time disaster alerts, resource location services, and communication tools tailored to the needs of residents and emergency responders in Cameroon. It will function effectively in low-resource settings and be accessible to a wide demographic.

**Stakeholder Description**

* **Residents:** Individuals living in disaster-prone areas needing timely information and resources.
* **Emergency Responders:** Agencies and individuals involved in disaster response and management.

**Requirements**

**Functional Requirements**

**FR1: Real-Time Alerts**

* **Description:** The app must provide real-time alerts for various disasters such as floods and fires.
* **Priority:** High

**FR2: Resource Location Services**

* **Description:** Users must be able to locate emergency resources such as shelters and first aid stations.
* **Priority:** High

**FR3: Communication Tools**

* **Description:** The app must include basic communication tools to facilitate contact between users and emergency services.
* **Priority:** High

**FR4: Offline Functionality**

* **Description:** The app should function without an active internet connection to ensure accessibility.
* **Priority:** Medium

**FR5: Multi-Language Support**

* **Description:** The app should be available in multiple local languages.
* **Priority:** Medium

**Non-Functional Requirements**

**NFR1: Usability**

* **Description:** The app must be easy to use, with a simple, intuitive interface suitable for all user groups.
* **Priority:** High

**NFR2: Performance**

* **Description:** The app should perform well under high load during disaster events, with minimal downtime.
* **Priority:** High

**NFR3: Accessibility**

* **Description:** The app should be usable by individuals with disabilities and adapt to different screen sizes and devices.
* **Priority:** Medium

**User Personas and Scenarios**

**Persona 1: John Doe - Resident**

* **Needs:** Quick updates on nearby disasters, easy access to emergency resources.
* **Scenario:** Receives a flood alert and uses the app to find the nearest safe point.

**Persona 2: Jane Smith - Volunteer**

* **Needs:** Coordination tools for working with other volunteers and authorities.
* **Scenario:** Uses the app during a fire to communicate and coordinate with other responders.

**Validation**

* **Process:** The requirements will be validated through user testing and feedback sessions with stakeholders.
* **Adjustments:** Based on feedback, requirements may be adjusted to better meet user needs and technological capabilities.

1. **Conclusion**

The requirement analysis for the disaster management app has been successfully implemented based on the collected data. The structured approach ensured that all pertinent aspects were addressed, ambiguities resolved, and requirements prioritized according to the stakeholders' needs. The next steps involve proceeding with the system modeling and design phase, using this analysis as a foundational guide.