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FINAL PROJECT PROPOSAL

(Approved by TA : Uday Kiran)

Homeless Health Connect

Accessible Care for Vulnerable Lives

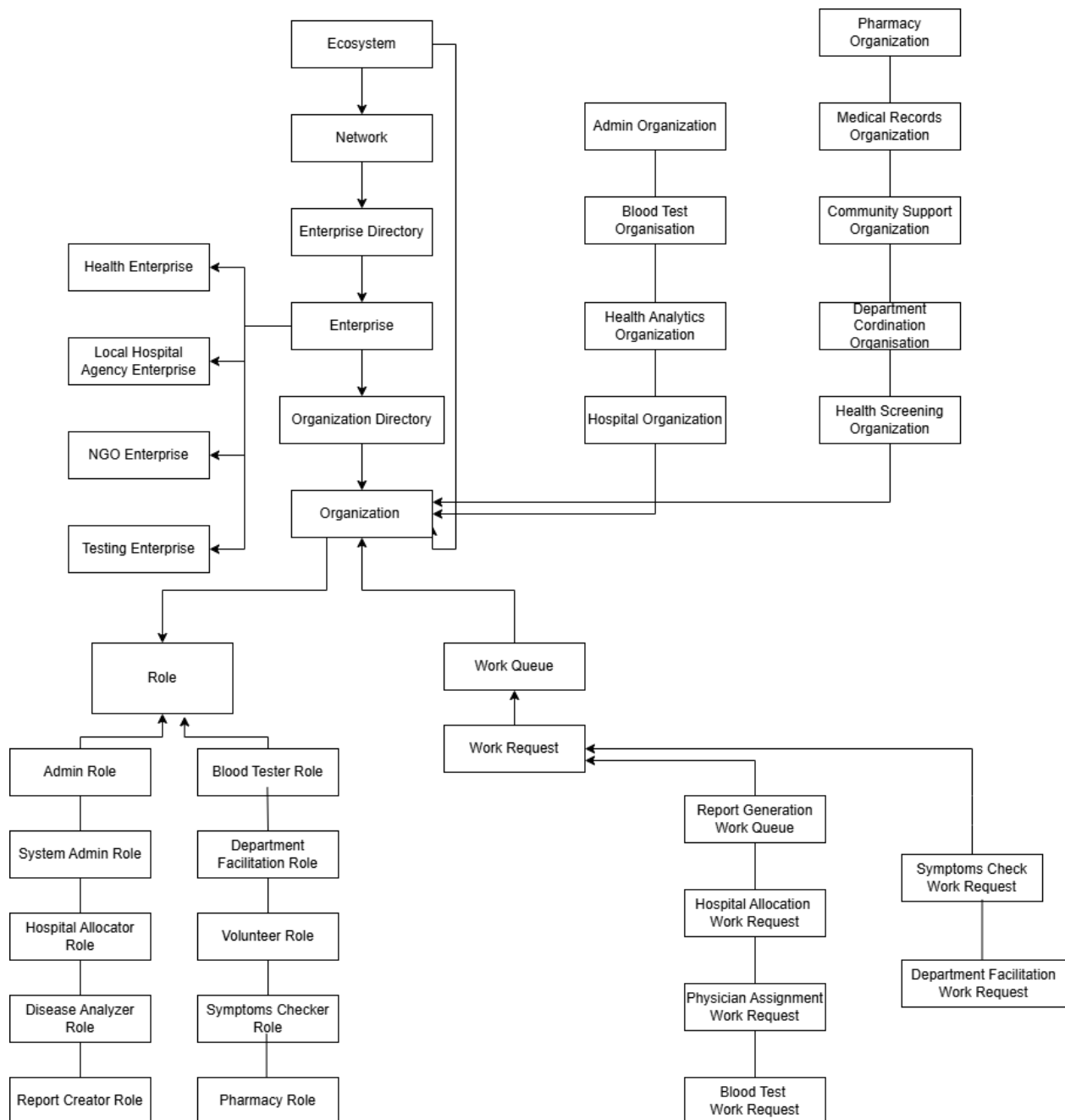
Problem Statement

Over 582,000 Americans experience homelessness on any given night, facing severe health challenges such as communicable diseases, chronic conditions, and limited access to healthcare. Homeless individuals are disproportionately affected, being 3-4 times more likely to suffer from untreated illnesses due to financial constraints, mobility limitations, and lack of preventive care. There is a pressing need for a solution that bridges this healthcare gap and provides accessible, affordable, and timely medical support to improve health outcomes for this vulnerable population.

Solution

The Proposed system is an application that connects homeless individuals with nearby hospitals to access healthcare based on what they can afford. By inputting their symptoms and medical history, users are matched with appropriate hospitals and departments. The app facilitates blood tests to help diagnose health conditions and ensure timely treatment. This solution addresses the significant barriers to healthcare faced by homeless people, reducing health risks and improving access to necessary medical care, ultimately improving their overall well-being.

Data Model



Ecosystem Hierarchy

1. Top-Level Ecosystem Management:

- **System Admin:** Responsible for overseeing the overall operation of the platform, managing users, Enterprises, Organizations and ensuring system functionality. This role maintains access control and security for all participants in the ecosystem.
- **Healthcare Network:** This includes hospitals, pathology labs, and healthcare providers who participate in the system to offer medical services.
- **NGOs and Volunteer Organizations:** These entities work on outreach, data collection, and engaging with the homeless population to connect them to healthcare resources.

2. Middle Layer – Organizational and Role-Based Structures:

- **Healthcare Organizations:**
 - **Hospitals:** Local hospitals receive patients, provide care, and allocate departments based on medical needs of registered homeless people.
 - **Diagnostic Labs:** These labs process blood sample collected from homeless individuals, performing tests to identify health conditions.
- **Volunteer Organizations:** Volunteers are key players in data collection, sample collection, and outreach to homeless individuals.
- **NGOs:** Support groups that act as intermediaries, guiding homeless individuals through the process of registering and receiving medical care.

3. Roles within the System:

- **Admin Role:** Manages all administrative tasks such as overseeing the user database, assigning tasks, and ensuring the system runs smoothly.
- **Volunteer Role:** Volunteers collect medical data, perform initial symptom checks, and help homeless individuals register for healthcare services.
- **Doctor Role:** Healthcare professionals who analyze symptoms, provide diagnoses, and allocate treatments. They work in collaboration with the system's workflow.
- **Health Data Collection Role:** Volunteers or assigned healthcare workers who collect blood samples and other data necessary for diagnosis.
- **Doctor Allocator:** Responsible for assigning homeless individuals to the right department or doctor based on the symptoms and analysis.

4. Workflows and Use Case Flows:

- **Work Queue:** The platform uses a work queue system to allocate and track tasks across the ecosystem. This ensures the following tasks are completed:

- **Symptom Analysis:** Based on the input from volunteers and doctors, the symptoms are analyzed to direct the individual to the appropriate medical department.
- **Doctor Allocation:** Once symptoms are analyzed, doctors are assigned to treat the homeless individual based on the department needed (e.g., cardiology, ENT).
- **Health Report Generation:** After diagnosis and treatment, a health report is generated to provide an ongoing medical record for the individual.

5. Data Flow and Task Management:

- **Blood Testing and Data Collection:** Volunteers and healthcare providers work together to collect and send medical data and blood samples to diagnostic labs.
- **Task Management:** The work queue monitors and ensures that each patient is processed in the correct order for care, including task assignments for doctor consultations, symptom analysis, and treatment.
- **Health Report Creation:** After treatments and analysis, a detailed report is created for the homeless individual, summarizing their diagnosis and treatment plan, to be used for future healthcare needs.

6. Integrated Ecosystem:

- **System Coordination:** The ecosystem relies on seamless integration between all roles, including the volunteer network, diagnostic labs, doctors, and hospitals. The digital platform ensures that all participants are connected and tasks are assigned based on the needs of each homeless individual.
- **Outcome Monitoring:** This integrated system helps improve the quality of care and reduces health risks by offering timely and affordable healthcare to homeless individuals, addressing their unique challenges.

In summary, this system creates a **collaborative ecosystem** where **NGOs, volunteers, hospitals, and diagnostic labs** work together, with **roles clearly defined** to facilitate seamless care delivery and task management through a **digital platform**.