

Cardinal: A Communication System for Blood Banks

SWE 3313 | Term Project Proposal | Team #1

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Purpose: The goal of Cardinal is to set up communication between blood banks, as well as allow people such as medical professionals and donors to access information about a bank's current resources.

Reasoning: Many Third World nations are disproportionately developed. While their capital cities may see growth not unlike cities in the First World, the remaining areas of those countries still experience a serious lack of resources. This unfortunately extends to the state of these nations' blood banks, where the lack of donations and inability to communicate in real time means that people cannot get the blood they need. In the current COVID-19 crisis, which has ravaged underdeveloped countries since its beginning, plasma has become an important resource for administering experimental therapies and treatments to patients. For these reasons, it is becoming increasingly important for developing nations to be able to track and manage the resources at their banks, which this software has the potential to assist with.

Methods: Using the Cardinal application, users will have the ability to register under accounts that fit different roles. Blood bank administrators will be able to create an account for their respective establishment, then they will be responsible for uploading information regarding their bank's supplies. There will also be account roles for medical professionals and donors, as they often need information on where they can get or give blood. Users who are searching for a bank that fits their needs will be able to input information such as their location, as well as whether they would like to give or get blood (specified by blood type) or plasma. Using this input, the application will return the best choice(s) for the user, providing information such as a drive time estimate, road quality/conditions, and most importantly, the address of the bank that best fits the

user's specifications. This will allow medical professionals to quickly and easily find the nearest bank with the resources they need, as well as show donors where they are most urgently needed.

Platform/Technology Requirements: Cardinal is intended to be a desktop application with the ability to run on any given operating system. It must also have the ability to update and show information in real time.