**ICS 321 – Database Systems**

**Database Application for Managing Blood Donations**

*PHASE 1: High-Level Requirements*

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Group 38

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**ABSTRACT**

This report discusses the first phase of the development of a DBMS for a blood donation clinic. It includes the EER diagram of the database, and its relational schema, as well as the constraints and assumptions for the system.

# Conceptual Model (EER Diagram):

LINK:

<https://miro.com/app/board/uXjVNSwY-NY=/?moveToWidget=3458764569531136413&cot=14>

# Logical Model (Relational Schema):

A diagram of a medical organization

Description automatically generated

LINK:

<https://miro.com/app/board/uXjVNQKgAT0=/?share_link_id=40487571849>

# Assumptions and Semantic Requirements:

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| **#** | **Assumption** |
| 1 | Nurses are the administrators of the system, and the ones responsible for entering the information. |
| 2 | This system is made to be managed by a clinic. Therefore, there’s no need to save information about other clinic in the system. |
| 3 | Donations only happen at blood drives organized by nurses. |
| 4 | Receiving the donation happens at anytime a recipient enters the clinic, if there’s blood products in the inventory. |

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| **#** | **Semantic Requirements** |
| 1 | To donate blood, a donor must pass a health screening and it contains:   * Must be older than 17. * Must weigh more than 114 lbs. * Mustn’t have any major disease. |
| 2 | Passwords saved in the table are encrypted before. |
| 3 | Blood collection drives happen every three months. |
| 4 | Nurses approve the blood collection drive, the retrieval of blood and registering into the system. |
| 5 | A recipient can only take blood products of compatible types. |
| 6 | A donor can only donate twice every year. |
| 7 | Recipients have an urgency level from 1 to 10 for their needs. Depending on that number, they may get their treatment faster. |
| 8 | Blood products have an expiration date, usually 42 days after the donation, in which they have to be given. If not, they are to be discarded. |
| 9 | Depending on the status of the donation, the blood sample may be discarded and not allowed to be given to recipients. |

# Team Contribution:

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| **STUDENT NAME** | **CONTRIBUTION** |
| *Ali Alrebdi* | * *Report + assistance on RD* |
| *Nawaf Almalki* | * *EER Diagram + assistance on RD and report* |
| *Khalid Alqhtani* | * *RD + assistance on EER and report* |