



BloodNation Thalassemia Center

COMPUTER SCIENCE AND ENGINEERING
DATABASES AND SYSTEMS
CS 355

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Contents

1	Abstract	2
2	Entity Relationship Diagram	2

1 Abstract

BloodNation is the database management system entirely focused on Thalassemia. The main motivation behind choosing Thalassemia is the increasing number of children specifically among the underprivileged population in Pakistan suffering from the disease. We aim to assure proper medical facilities to the patients by making the process more systematic.

We would like to thank Kashif Iqbal Thalassemia trust for helping us understand their system before we designed our own.

2 Entity Relationship Diagram

Assumptions

- **Inventory**

The system maintains a list of items available in the stock. An item can belong to only one category while a category may contain multiple items. An Item is supplied by a supplier when the item availability has reached the re-ordering level. An employee from a department (specifically pharmacy/admin) can order an item when the re-ordering level for that item has been reached. Every supplier has a primary contact person. A contact person can belong only to one supplier at a time.

- **Donor**

A donor is added to the system only after the test results are up to the requirements. A test result report is generated for every donor and then the donated blood is kept in store. Before transfusion, cross-matching is performed for patient sample and the blood available in the store. If the blood is cross-matched, the respective blood bag is assigned for transfusion to that patient and is removed from the main entity other wise the stored blood is available to be cross-matched with another patient's sample.

- **Patient**

Every Patient is required to get a few selected (by the doctor) tests done soon after transfusion. The blood tests so obtained decide the next transfusion schedule of the patient. An invoice is generated against the patient ID that contains the record for all tests.