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CMSC 508 Database Project Proposal

Problem Statement:

The database will be used in a blood bank. The blood bank database will contain information about the blood donors who are interested in donating blood voluntarily. The blood donors will be registered by the employees and the blood will be drawn and stored in blood inventory. The *Blood Donor* entity will store information common to all blood donors, and it will include the following information: blood id, first name, last name, date of birth, gender, date of donation, address, phone number, and the blood group.

In addition to *Blood Donor* information, blood *Recipient* information will be stored in the database by the employee. The blood *Recipient* entity data will include recipient id, the first and last name of the blood recipient, the date of birth, the gender of the recipient, date of transfusion, visits, and the blood group. This entity will include general information about the blood recipient, but essentially it will be used to accurately match the blood donor and blood recipient blood groups. The *Blood* entity will contain the following attributes: BloodBagNo, Hemoglobin content, BloodAmount, BloodType, and Cost; the *Employee* entity will contain the following attributes: EmpID, FirstName, LastName, Date of Birth, Sex, Phone Number, Address, and Salary; and the *Blood Inventory* entity will contain the following attributes: BloodNo, Description, Blood Type, Order, Quantity.

Additional information will contain the number of times of donation along with date of donation. Only employees will be able to search for a donor with a specific blood group when blood is needed. If blood is able to be obtained from any donor of this system, the receiver information will be recorded in the system along with the blood donation date. Only Employees will be able to register or modify the blood donor's information and the blood inventory.

The entity sets that make up the database:

- Blood Donor
- Recipient
- Blood
- Blood Inventory
- Employee

The operations to be performed to maintain the database:

- Add or modify the blood donor information
- Add or modify the blood recipient information
- Add the group types to the blood bank
- Enter the group types are added to the blood bank
- Search for a specific blood group

Some queries that could be asked of the database include:

1. What is the current stock of the blood inventory?
2. What is the hemoglobin count of a certain BloodBagNo (ex. 25)?
3. What is the gender of the recipient of a specific blood type (ex. B+)?
4. Which blood donors have a specific blood group (ex. AB-)?
5. What is the contact information of a specific blood donor (ex. Tom Brady)?
6. What is/are the name(s) of a specific blood recipient(s) (ex. AB)?
7. How many recipients are waiting for blood donations?
8. What priority of blood need in the blood inventory?
9. What is the description on a certain BloodBagNo (ex. 42785)?
10. When was the last time the blood donor donated?
11. What date did a specific patient receive the blood (Ex. Padme Amidala)?
12. What is the blood amount for a certain BloodBagNo (ex. 0027)?
13. What is the cost of a specific blood transfusion (ex. A-)?
14. What is the list of all available blood donors?
15. What is the date of birth of a certain employee (ex. Gale Hawthorne)?
16. What is the address of a certain employee (ex. Katniss Everdeen)?
17. What is the salary of a certain employee (ex. Katniss Everdeen)?
18. How many blood donations took place on a certain date (ex. 05/20/2019)?
19. What is the BloodID of a certain blood donor (ex. Aaron Rodgers)?
20. How many visits did a specific blood recipient have so far (ex. Ahsoka Tano)?