

PROJECT GROUP 13

ORGAN DONATION MANAGEMENT SYSTEM

Group Members:

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BUSINESS PROBLEM:

The current system for handling organ donation and transplantation is ineffective and slow, resulting in possible delays and unfortunate loss of lives. It is essential to establish a thorough and efficient system that can oversee the entire process of organ donation and transplantation, starting from the registration of potential donors to the actual transplant surgery.

SOLUTION:

To tackle the problem, we suggest implementing an Organ Donation Management System (ODMS) that employs a database to regulate the complete process of organ donation and transplantation. The ODMS database will incorporate various entities, such as Donor, Recipient, Doctor, Organ, Examination, Request, Organ Bank, Hospital, Transplant, and Transport Facility.

Donor: This entity will store information about the donors, including their personal details, x, and organ donation preferences.

Recipient: This entity will store information about the recipients, including their personal details, Insurance detail, and organ transplant need.

Doctor: This entity will store information about the doctors including their personal details, medical specializations, and contact information.

Organ: This entity will store information about the organs available for donation, including their type and location.

Examination: This entity will store information about recipient's health examination details

Request: This entity will store information about request made by the hospital to the organ bank

Organ Bank: This entity will store information about the organ banks that are responsible for managing the organs, including their contact information, location.

Hospital: This entity will store information about the hospitals involved in the organ donation and transplantation process, including their contact information, location.

Transplant: This entity will store information about the organ transplantation process, including the recipient's information, the organ being transplanted, and the hospital where the transplant surgery will take place.

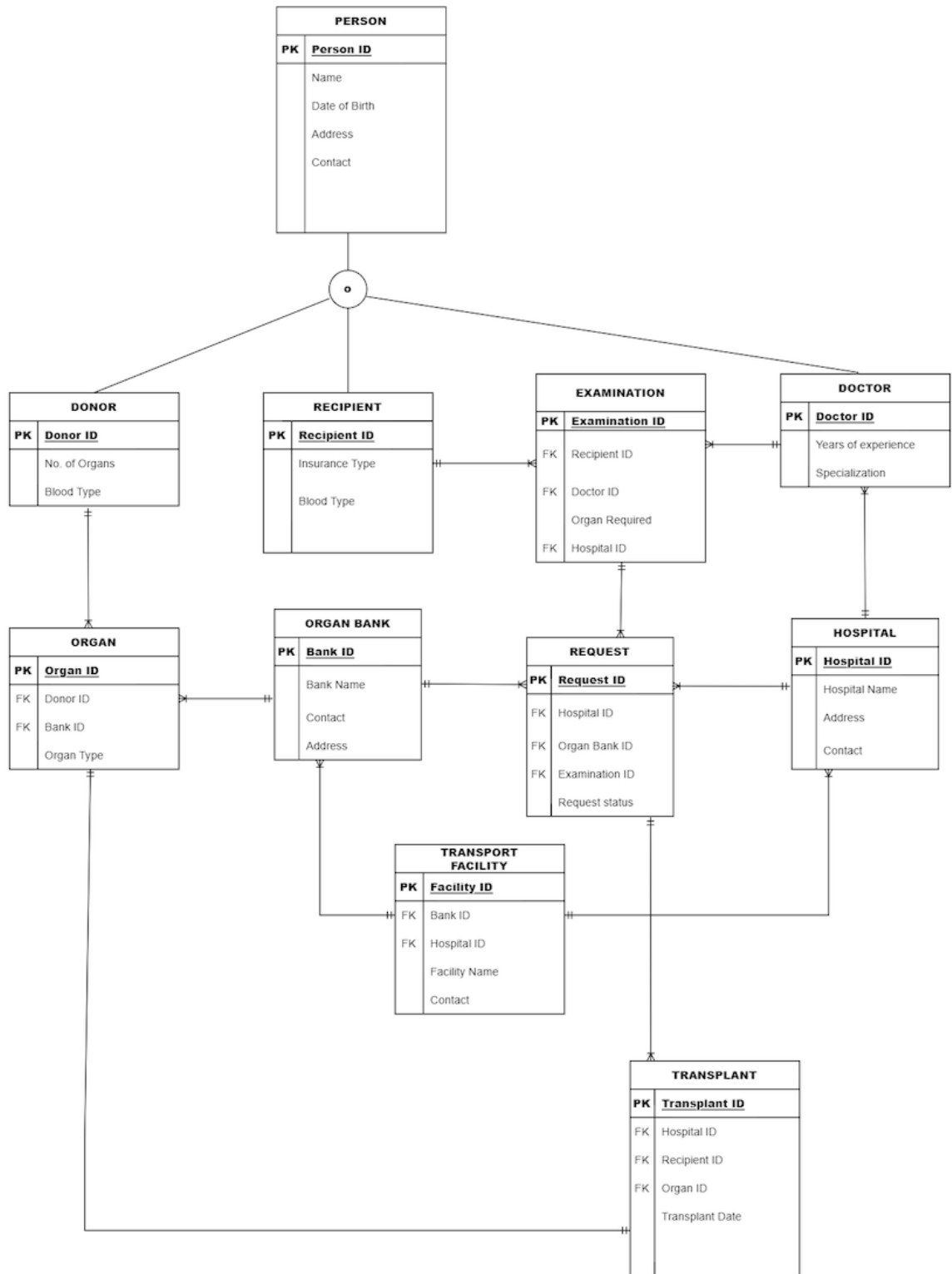
Transport Facility: This entity will store information about the transport facilities involved in the organ donation and transplantation process, including their contact information and location.

KEY DESIGN DECISION

The key design decision for the ODMS is to ensure that all entities are properly linked and that the data is consistent and up to date. For example, when a donor registers with the ODMS, their information is linked to the appropriate organ bank. Similarly, when a recipient requests an organ to the hospital, their information is appropriately identified by the hospital and request is effectively fulfilled. This will help ensure that the organ donation and transplantation process is as efficient and effective as possible.

The ODMS will streamline the organ donation and transplantation process, making it easier for donors to register, for recipients to receive the organs they need, and for doctors and hospitals to manage the entire process.

INITIAL ERD:



SUPERTYPE:

- **Person**
Attributes: Name, Date of Birth, Address, Contact

SUBTYPE:

- **Donor**
Attributes: Donor_Id, No. of organs, Blood Type
- **Recipient**
Attributes: Recipient_Id, Insurance Type, Blood Type
- **Doctor**
Attributes: Doctor_Id, Years_of_Experience, Specialization

OTHER ENTITIES:

- **Organ**
Attributes: Organ_Id, Donor_Id, Bank_Id, Organ_Type
- **Examination**
Attributes: Examination_Id, Recipient_Id, Doctor_Id, Hospital_Id, Organ Required
- **Request**
Attributes: Request_Id, Hospital_Id, Organ_Bank_Id, Examination_Id, Request_Status
- **Organ Bank**
Attributes: Bank_Id, Bank_Name, Contact, Address
- **Hospital**
Attributes: Hospital_Id, Hospital Name, Address, Contact
- **Transplant**
Attributes: Transplant_Id, Hospital_Id, Recipient_Id, Organ_Id, Transplant Date
- **Transport Facility**
Attributes: Facility_Id, Bank_Id, Hospital_Id, Facility_Name, Contact

RELATIONS AND BUSINESS RULES:

- PERSON can be a DONOR, RECIPIENT, or a DOCTOR; similarly, DONOR, RECIPIENT or a DOCTOR must be a PERSON.
- DONOR must donate one or more ORGAN and each ORGAN is donated by one DONOR.
- RECIPIENT will undergo one or many EXAMINATION.
- DOCTOR can perform one or many EXAMINATION.
- REQUEST can have one or many EXAMINATION records.
- HOSPITAL has one or many DOCTOR.
- Many ORGAN can be preserved in one ORGAN BANK.
- ORGAN BANK can fulfill one or many REQUEST.
- HOSPITAL can make one or many REQUEST.
- TRANSPORT FACILITY is associated with one or many ORGAN BANK.
- TRANSPORT FACILITY is associated with one or many HOSPITAL.

- TRANSPLANT will include record of approved REQUEST.
- TRANSPLANT can have only one ORGAN.