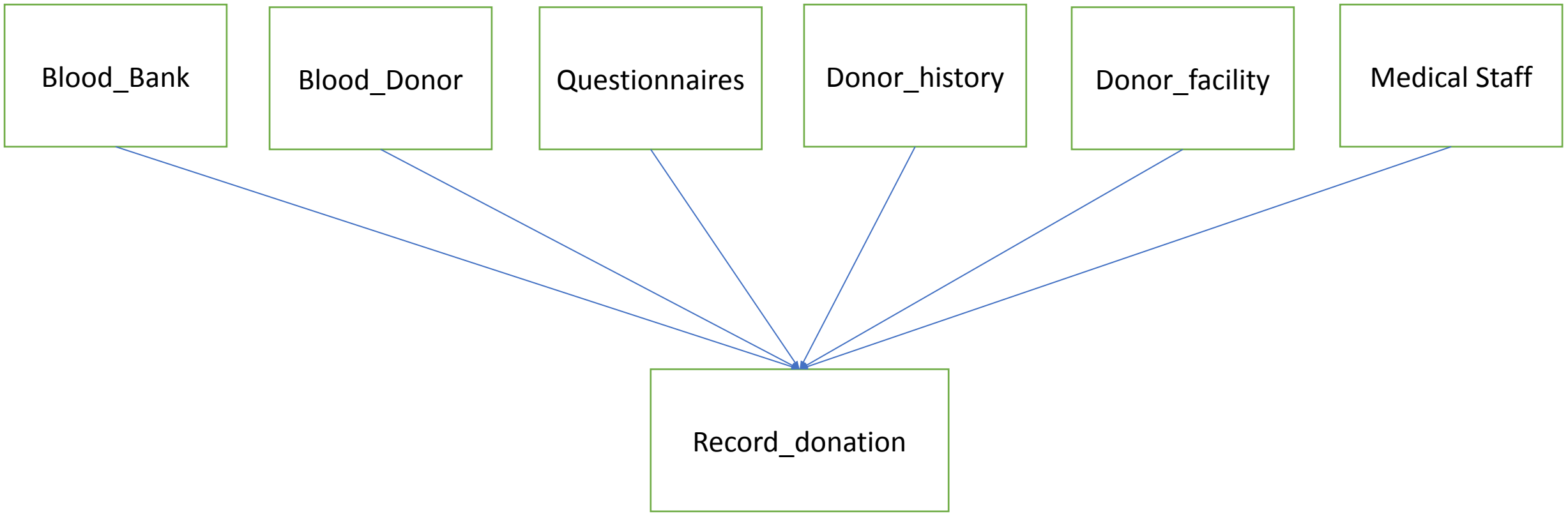
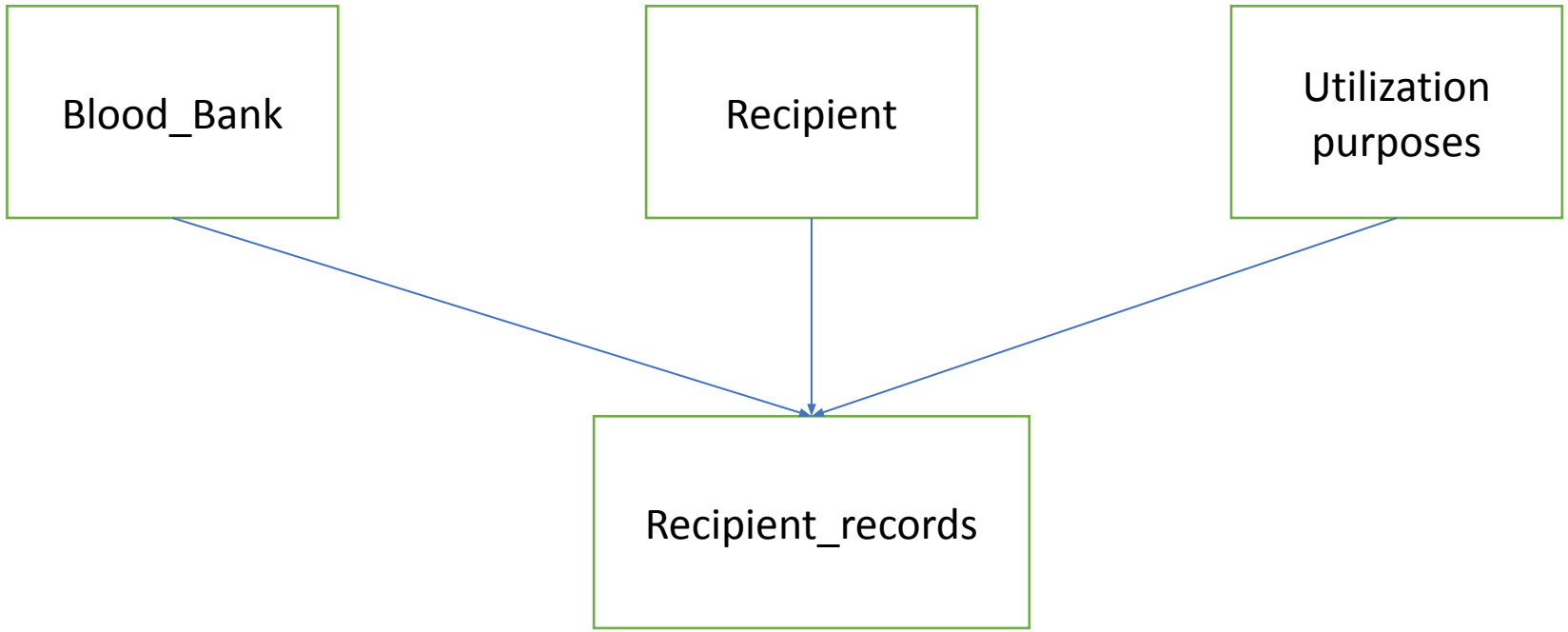
ER Diagrams For Blood Bank Management System

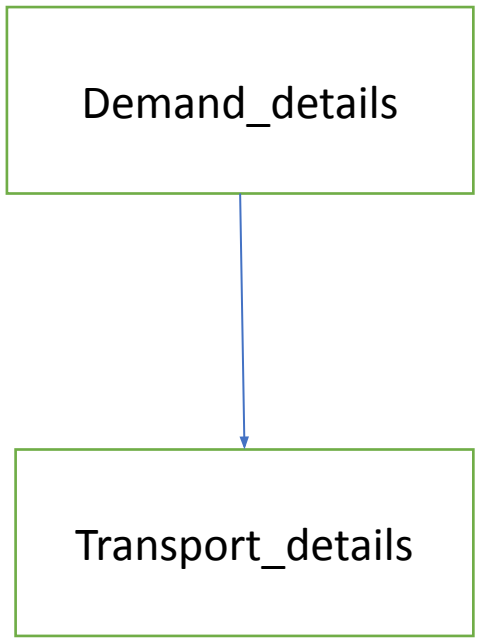
By Lokesh Goenka & Sumiran Rai


Blood_Bank
Blood_Donor
Questionnaires
Donor_history
Donor_facility
Medical Staff
Record_donation

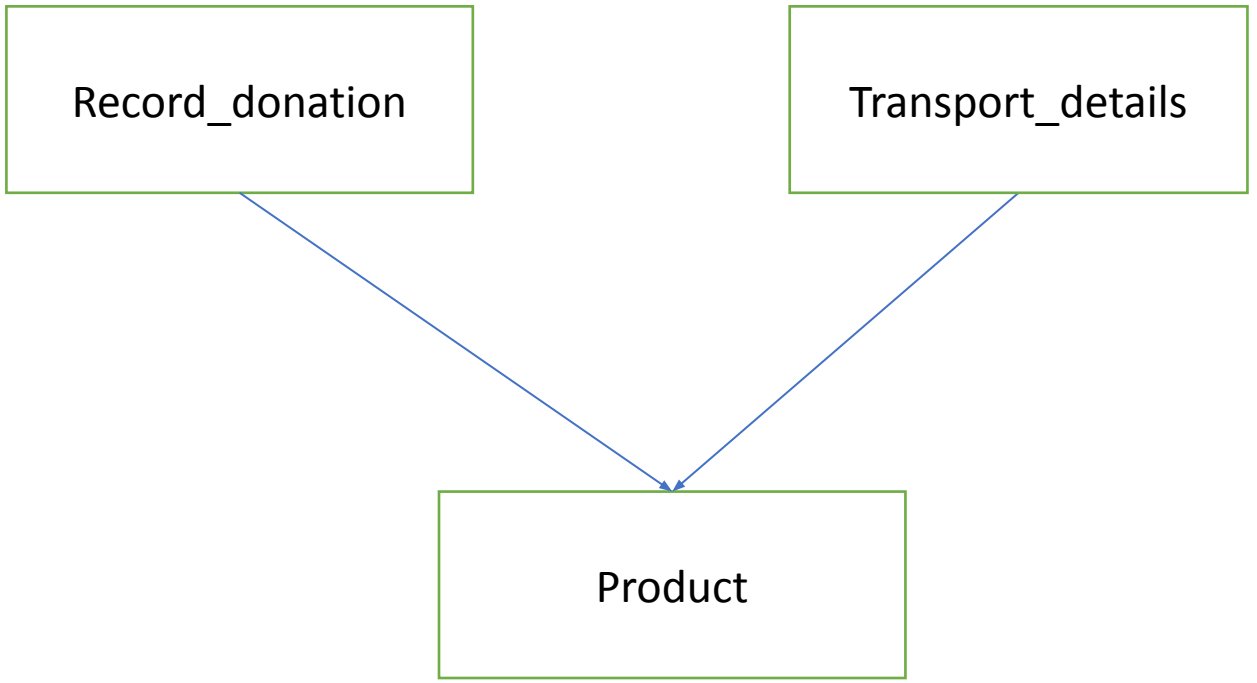
Many to One


Blood_Bank
Recipient
Utilization purposes
Recipient_records

Many to One

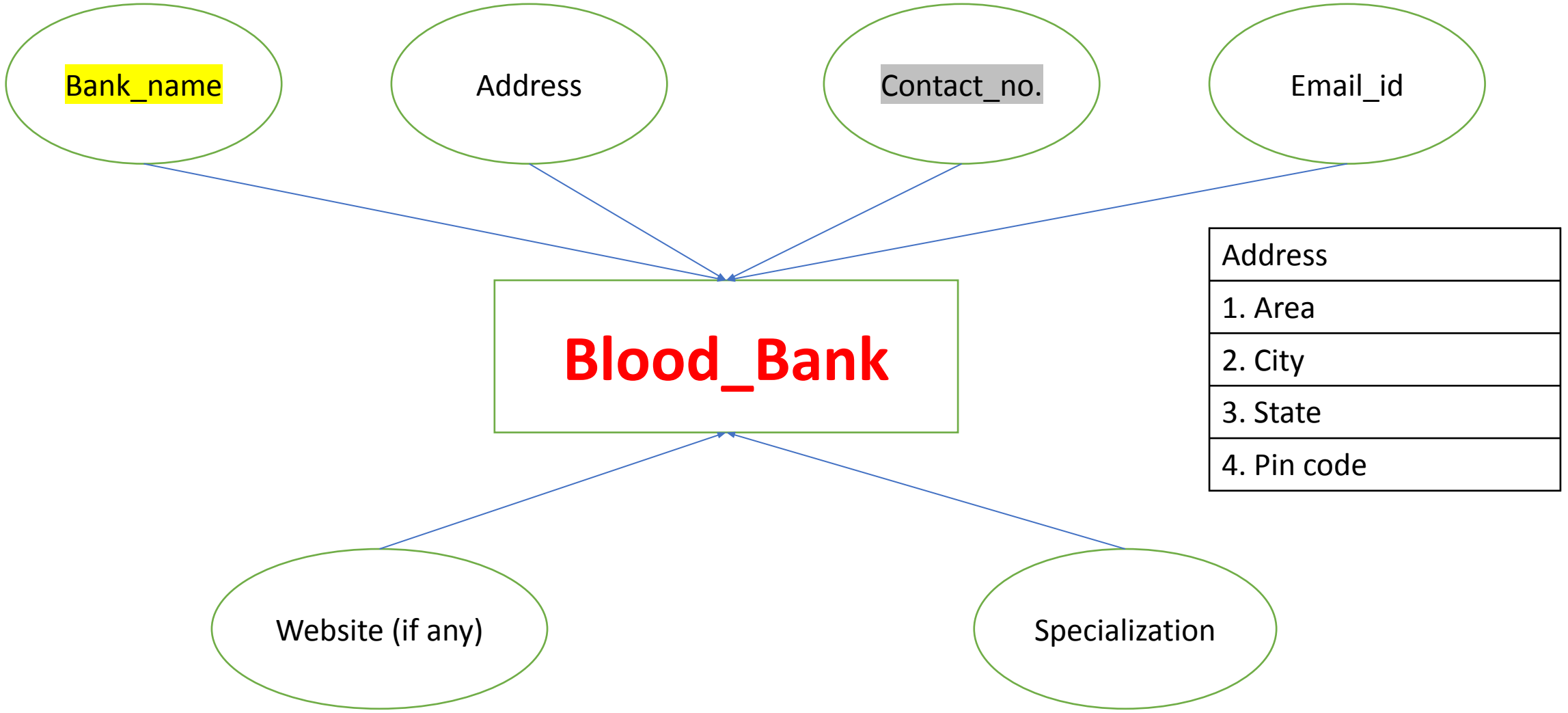


One to One

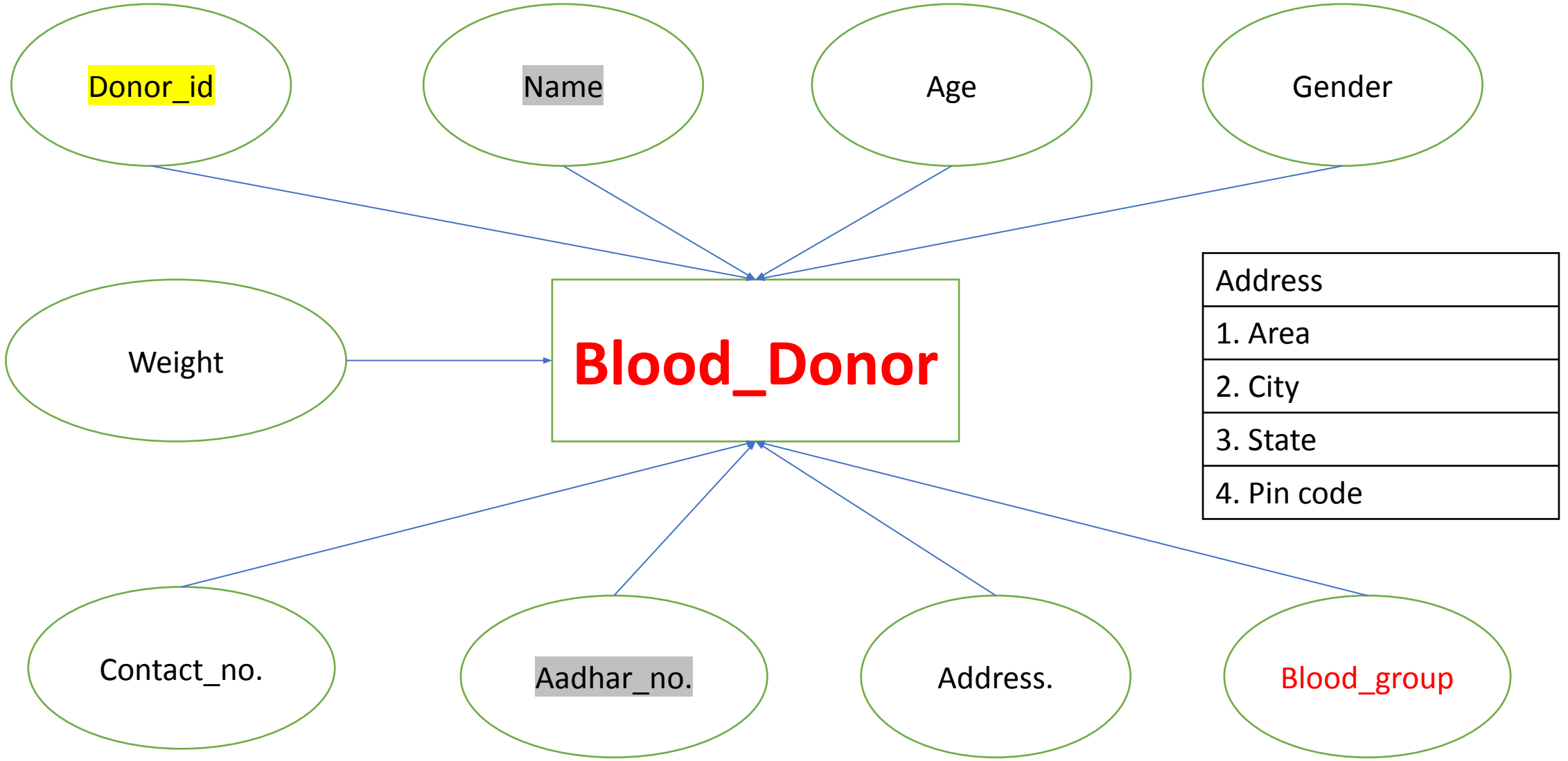


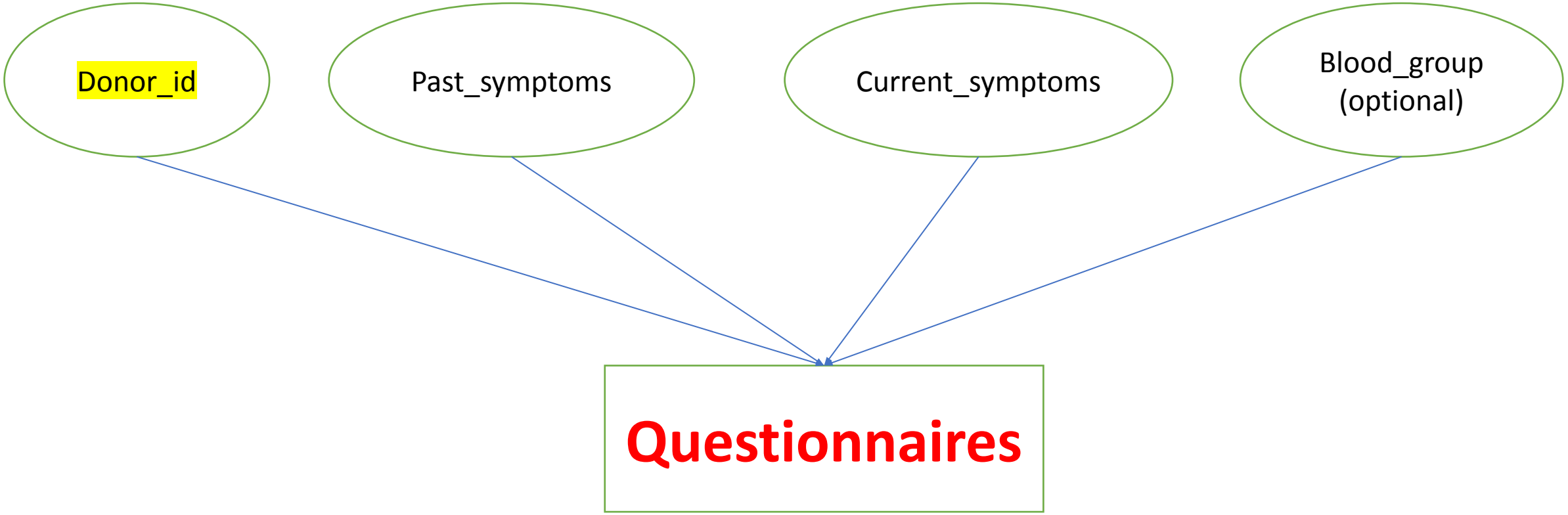
Many to One

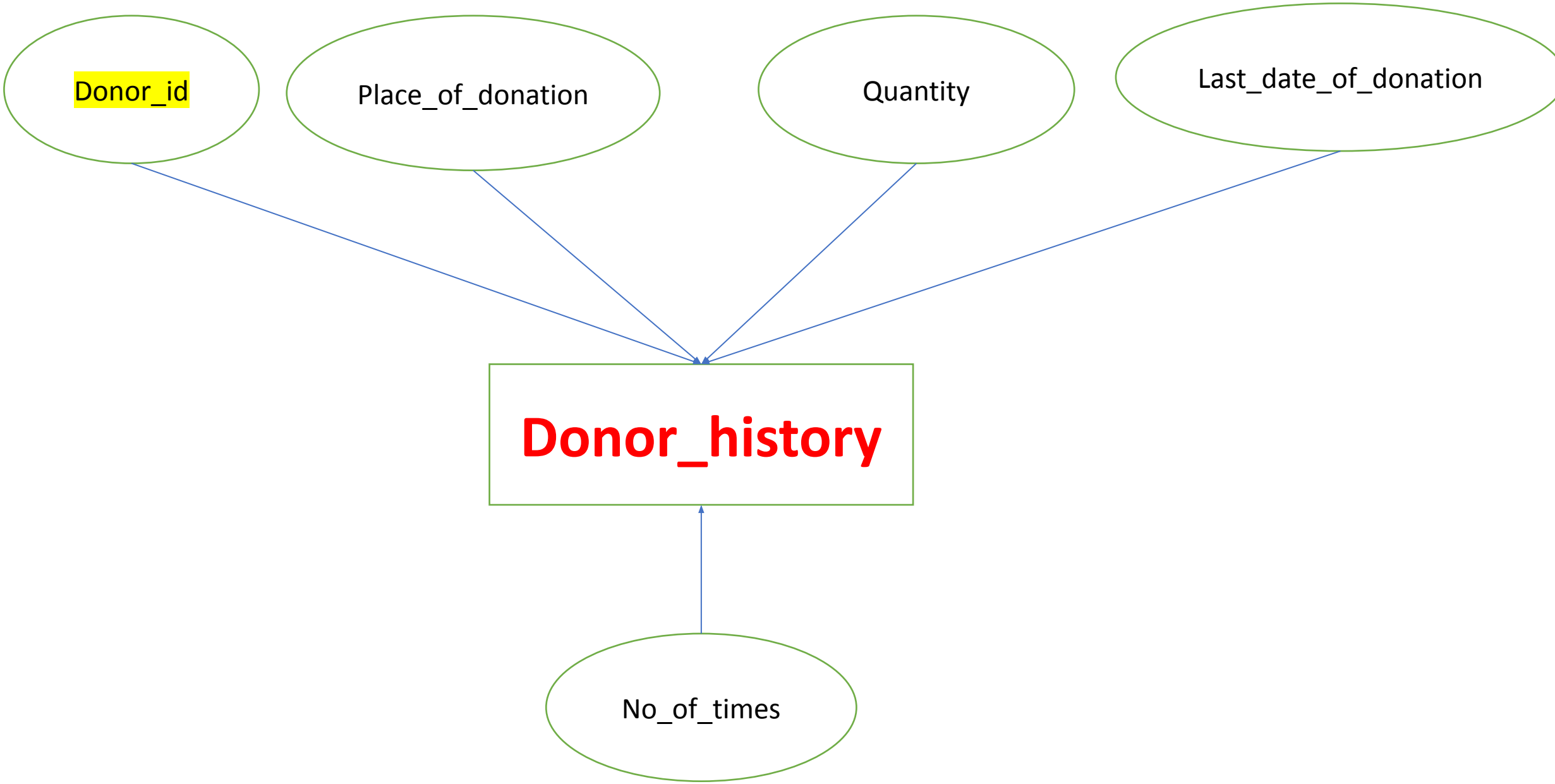
Attributes and Entity

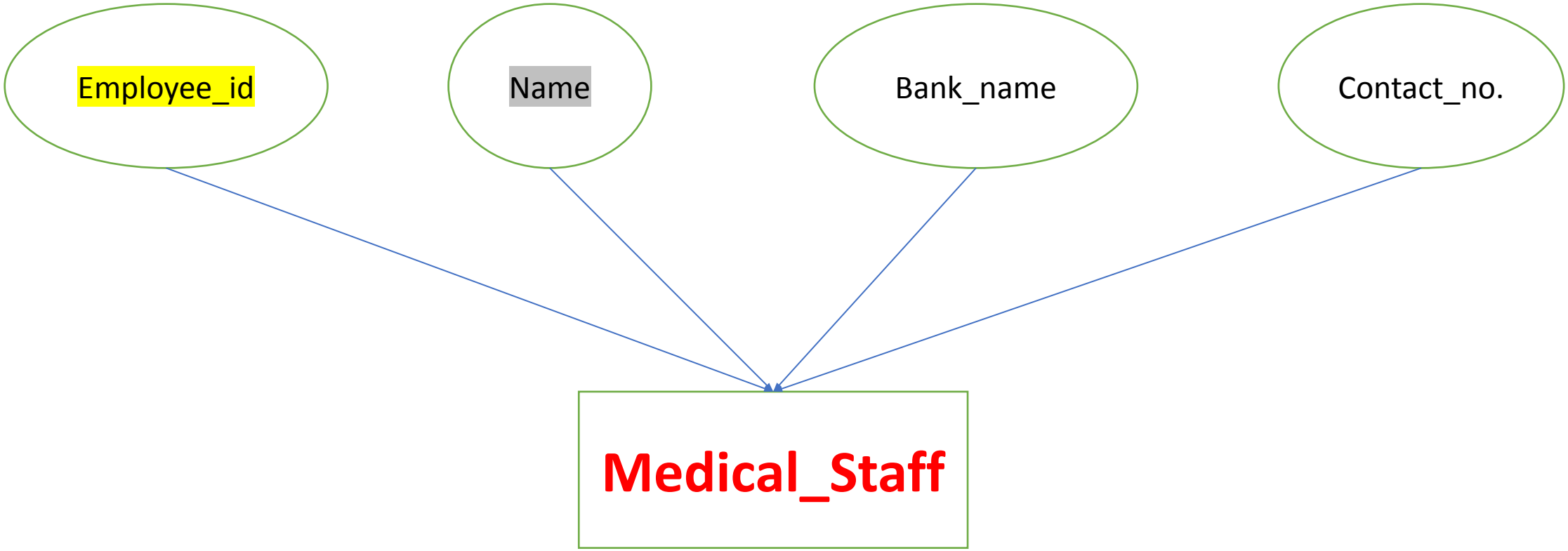


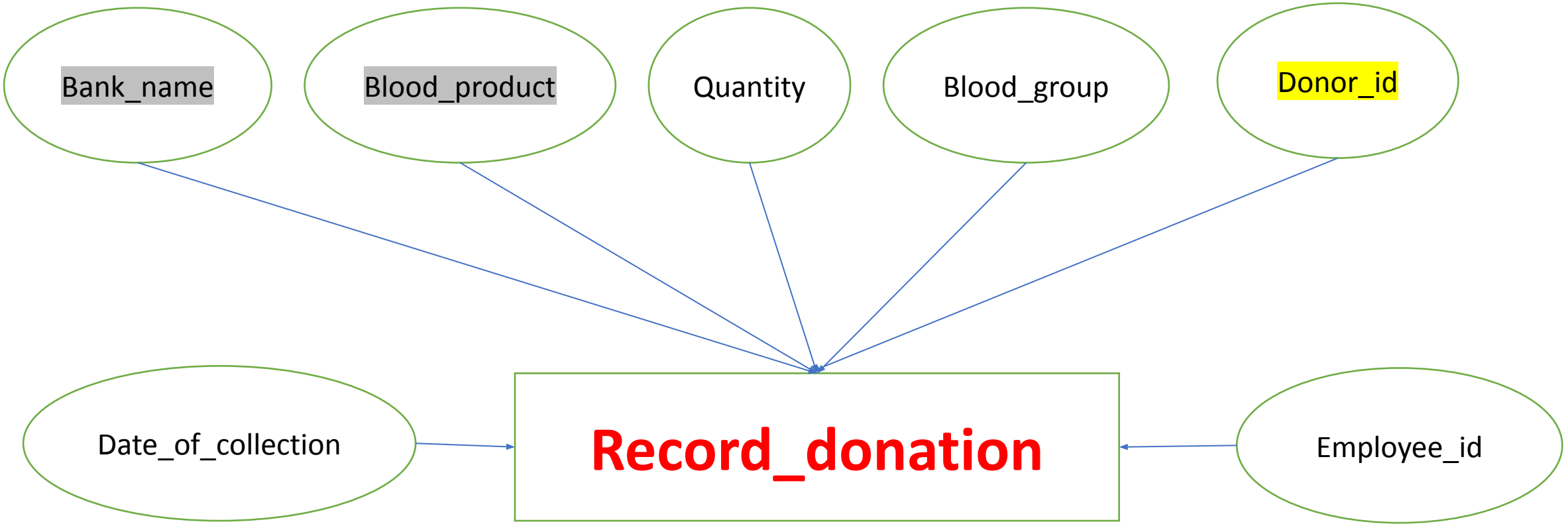
Address
1. Area
2. City
3. State
4. Pin code

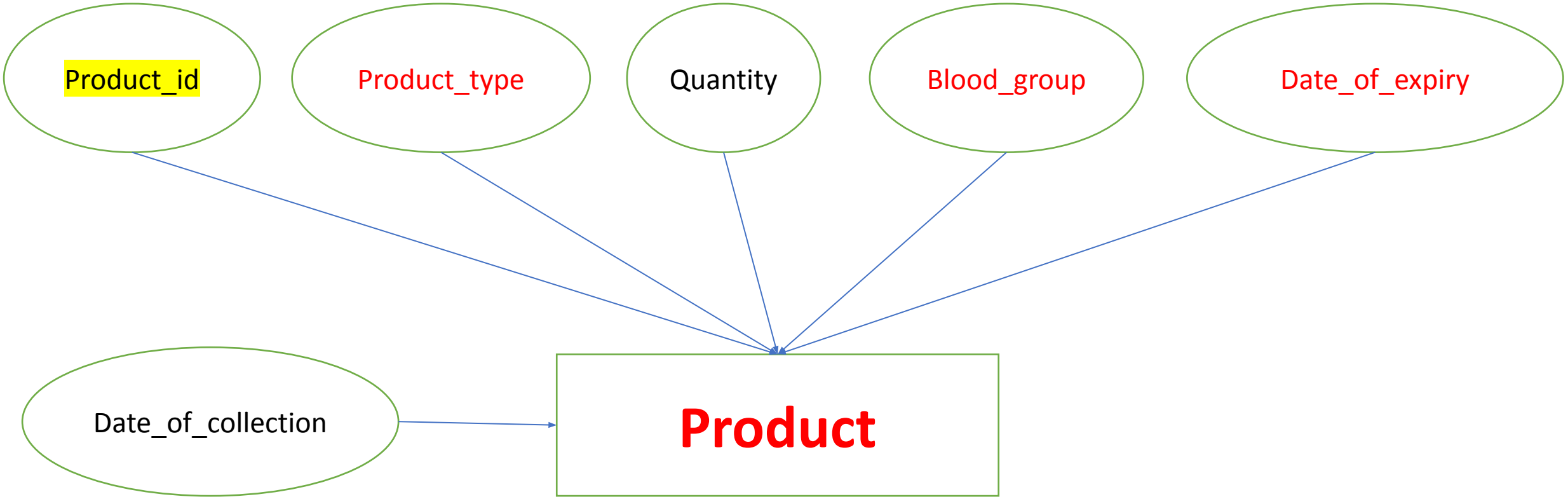

Donor_id
Name
Age
Gender
Weight
Blood_Donor
Address
1. Area
2. City
3. State
4. Pin code
Contact_no.
Aadhar_no.
Address.
Blood_group

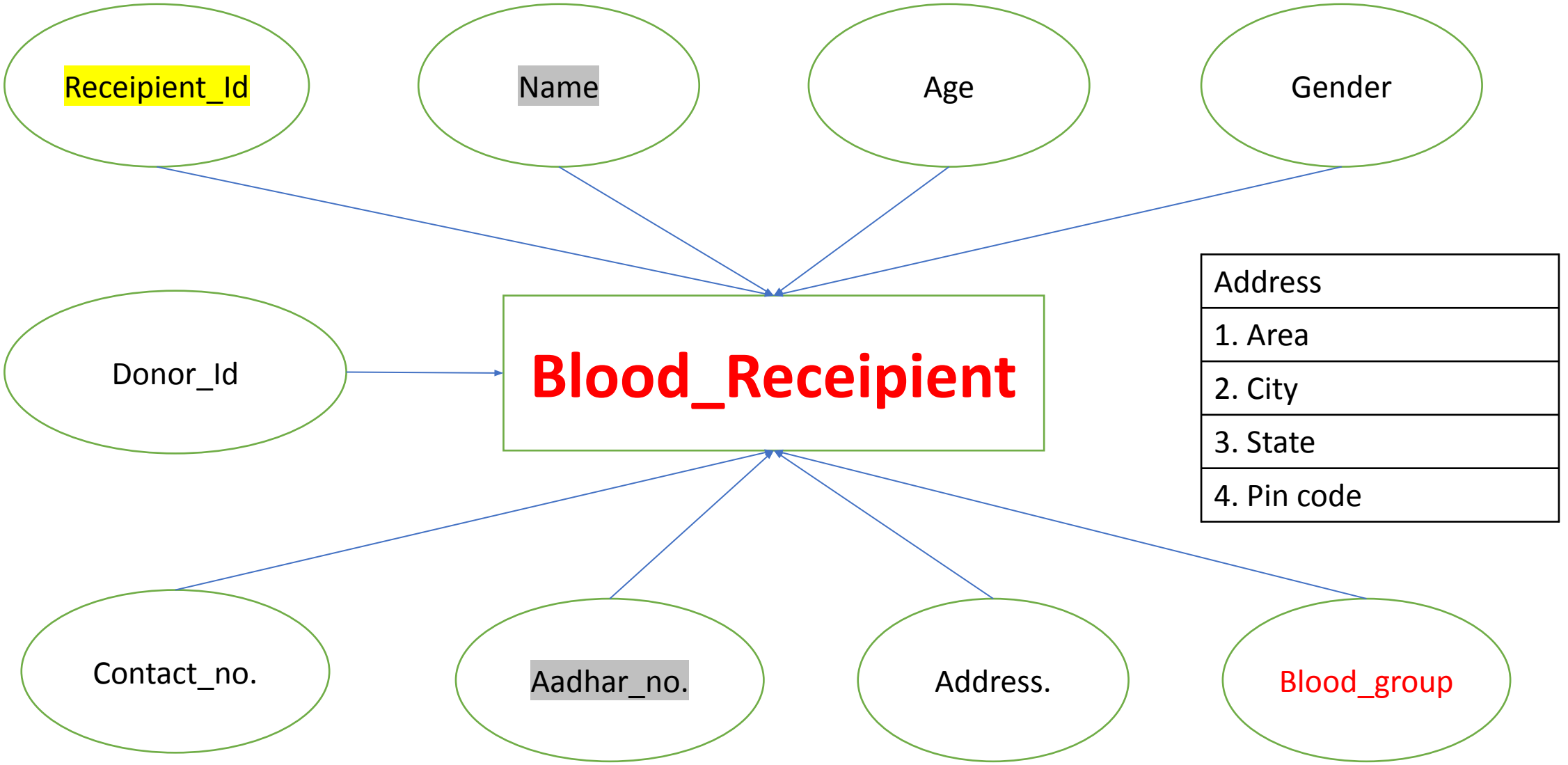

Donor_id
Past_symptoms
Current_symptoms
Blood_group
(optional)
Questionnaires

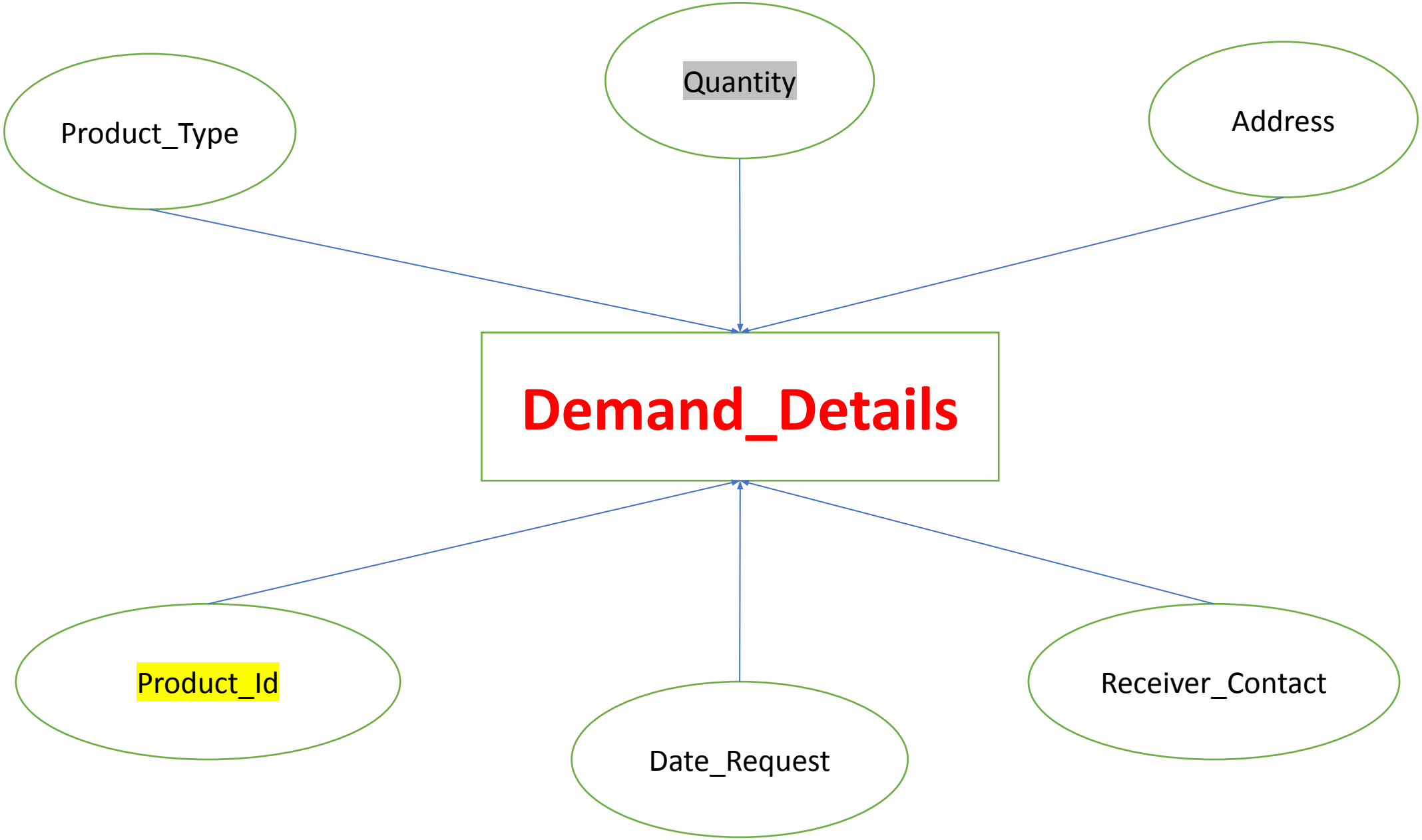

Donor_id
Place_of_donation
Quantity
Last_date_of_donation
Donor_history
No_of_times

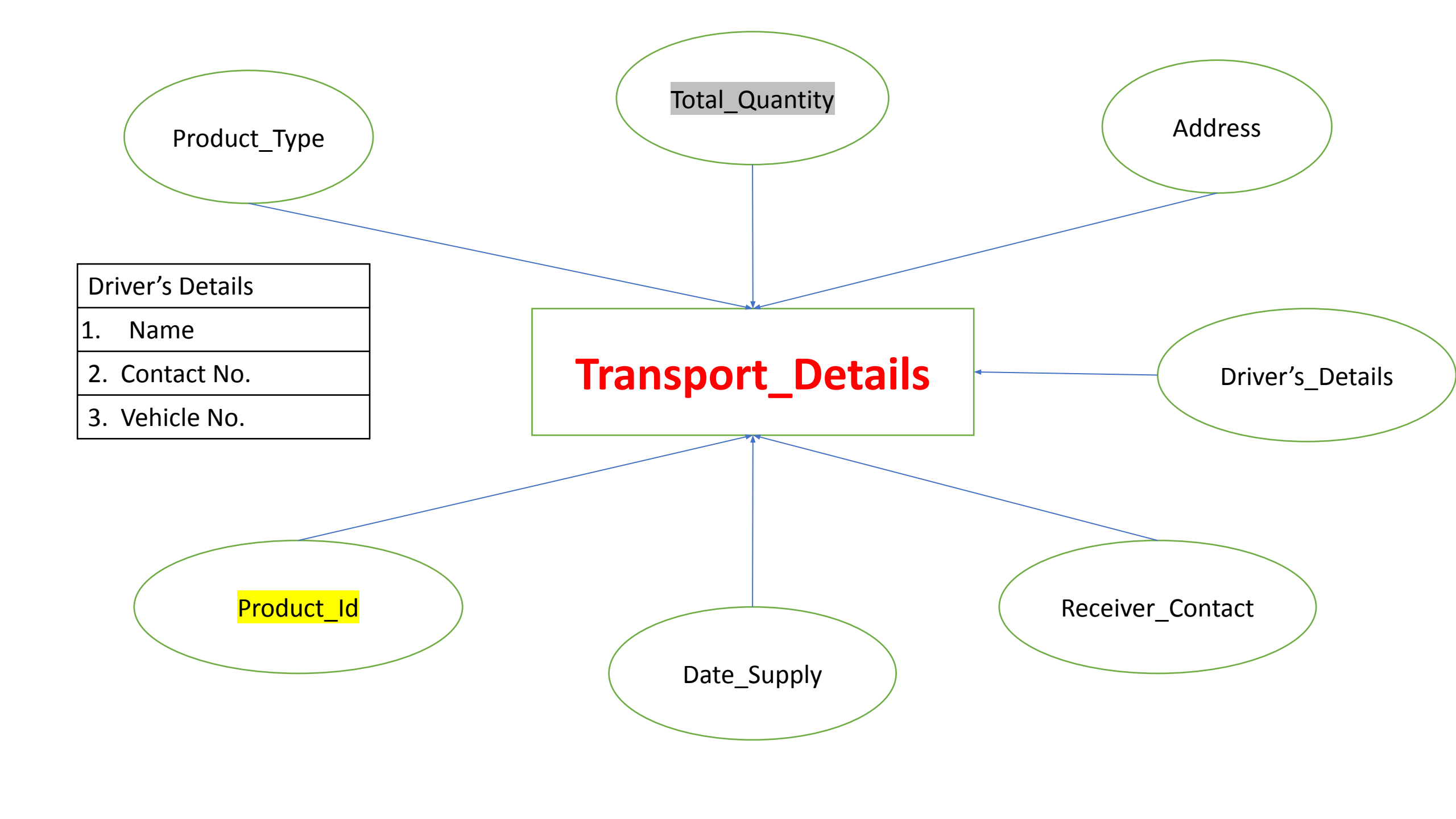

Employee_id
Name
Bank_name
Contact_no.
Medical_Staff

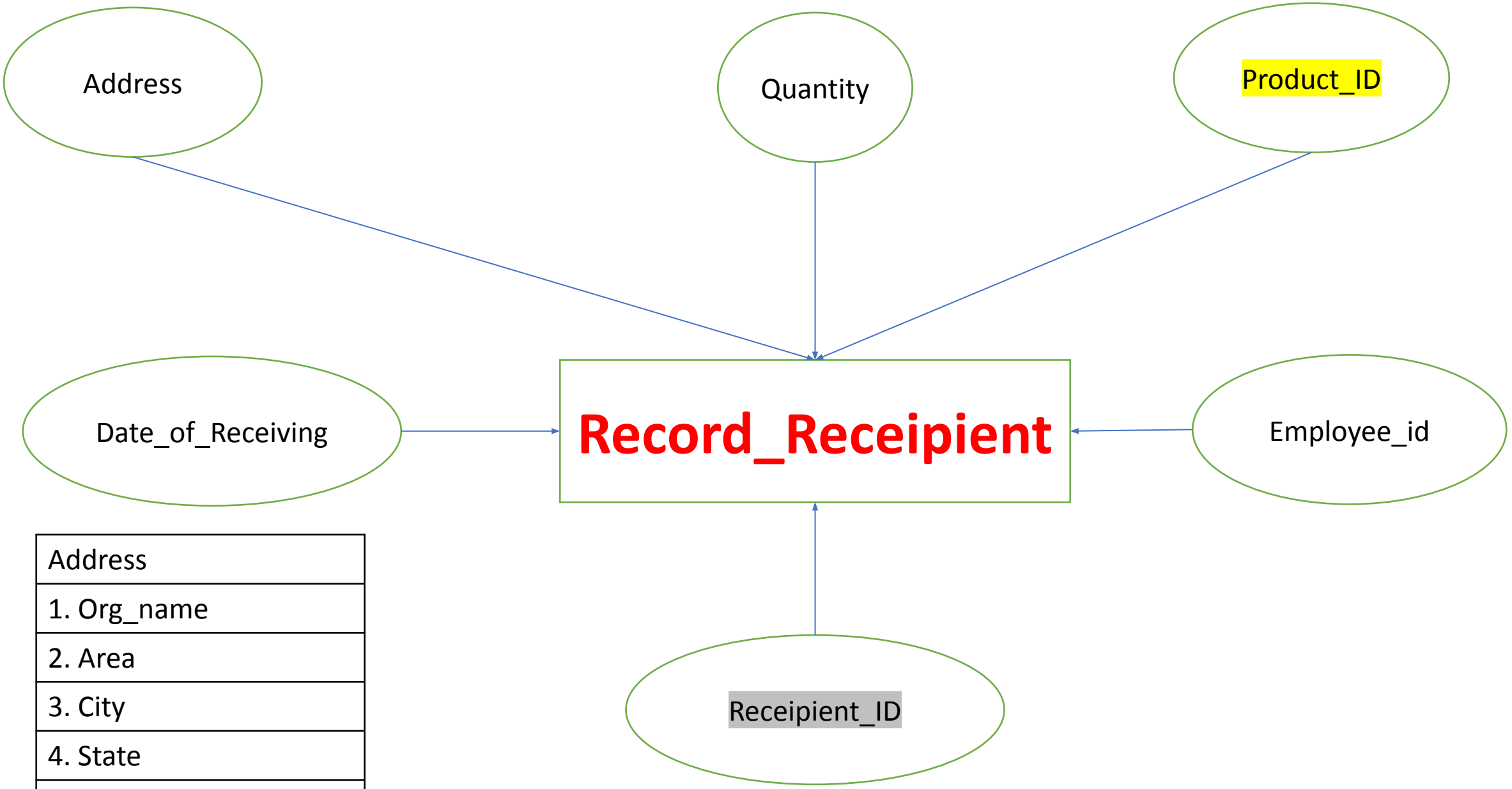

Bank_name
Blood_product
Quantity
Blood_group
Donor_id
Date_of_collection
Record_donation
Employee_id


Product_id
Product_type
Quantity
Blood_group
Date_of_expiry
Date_of_collection
Product

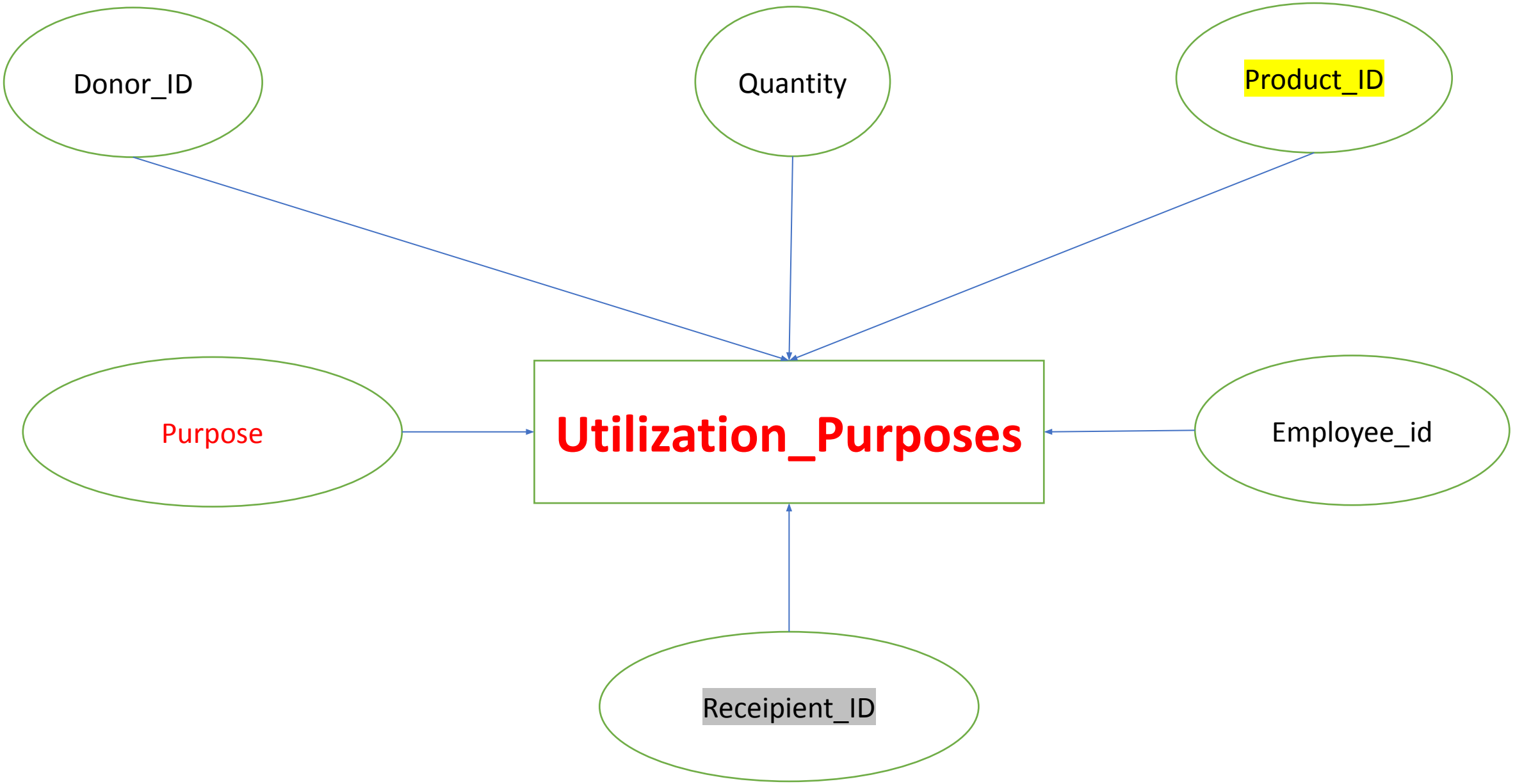

Receipient_Id
Name
Age
Gender
Donor_Id
Blood_Receipient
Address
1. Area
2. City
3. State
4. Pin code
Contact_no.
Aadhar_no.
Address.
Blood_group

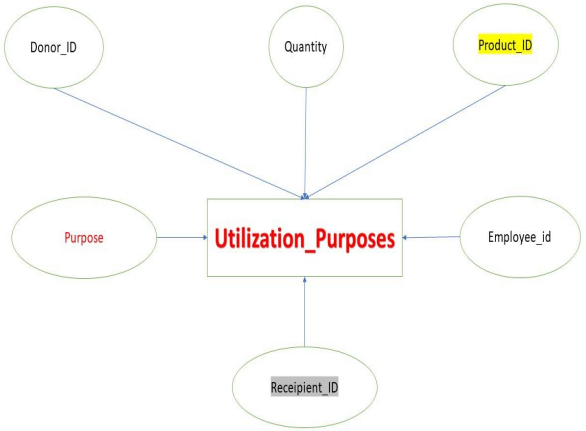

Product_Type
Quantity
Address
Demand_Details
Product_Id
Date_Request
Receiver_Contact

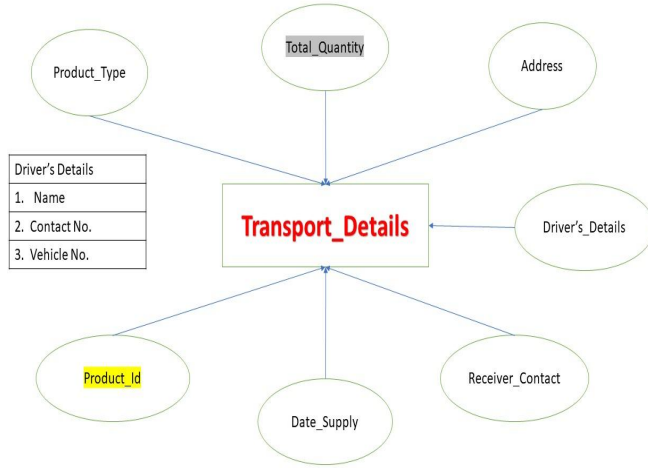

Product_Type
Total_Quantity
Address
Driver's Details
1. Name
2. Contact No.
3. Vehicle No.
Transport_Details
Driver's_Details
Product_Id
Date_Supply
Receiver_Contact

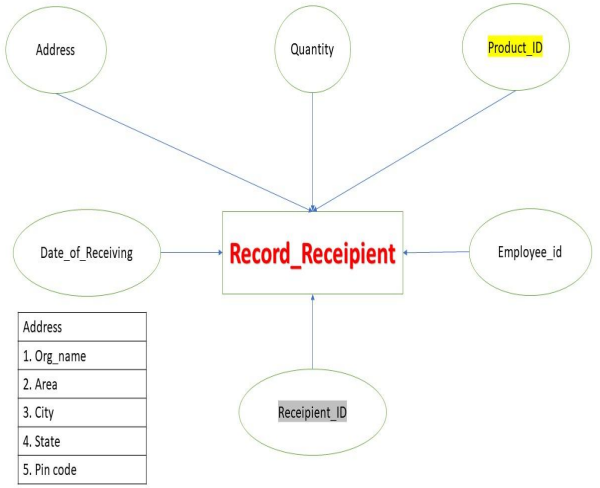


Address
1. Org_name
2. Area
3. City
4. State
5. Pin code

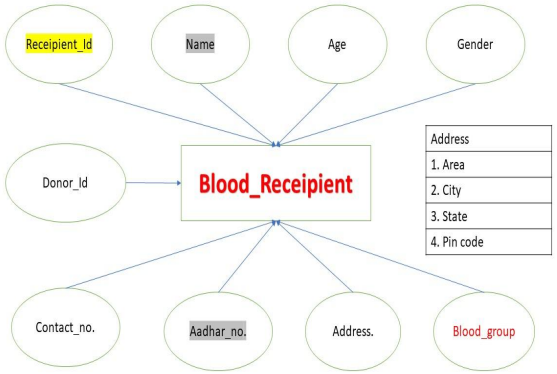

Donor_ID
Quantity
Product_ID
Purpose
Utilization_Purposes
Employee_id
Receipient_ID

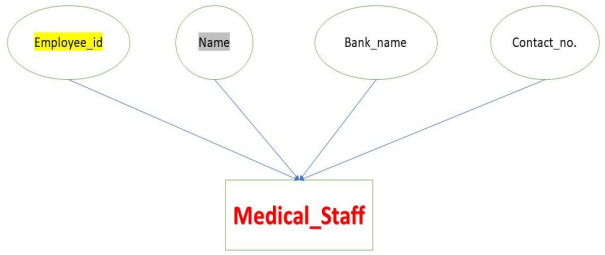

Donor_ID
Quantity
Product_ID
Purpose
Utilization_Purposes
Employee_id
Receipient_ID

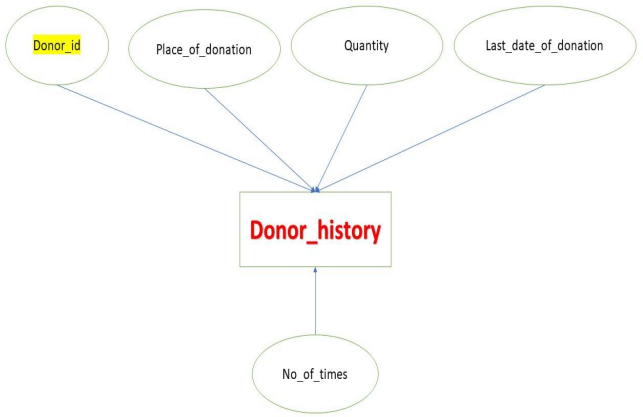

Product_Type
Total_Quantity
Address
Driver's Details
1. Name
2. Contact No.
3. Vehicle No.
Transport_Details
Driver's_Details
Product_Id
Date_Supply
Receiver_Contact

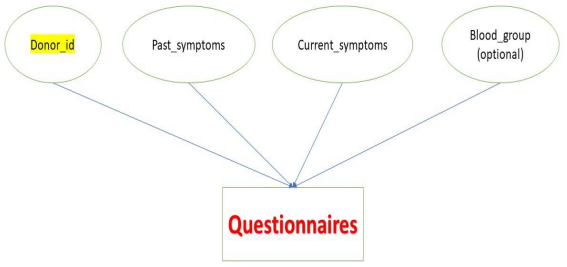

Address
Quantity
Product_ID
Date_of_Receiving
Record_Receipient
Employee_id
Address
1. Org_name
2. Area
3. City
4. State
5. Pin code
Receipient_ID

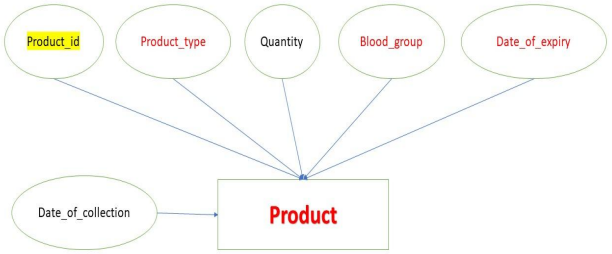
Product_Type
Quantity
Address
Demand_Details
Product_Id
Date_Request
Receiver_Contact

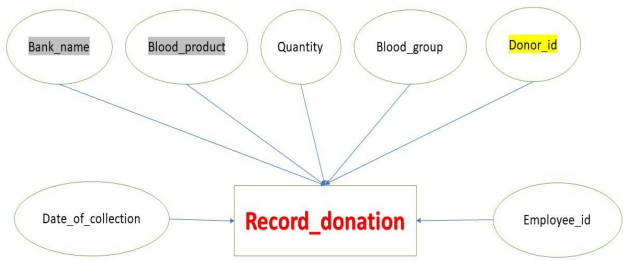

Receipient_Id
Name
Age
Gender
Donor_Id
Blood_Receipient
Address
1. Area
2. City
3. State
4. Pin code
Contact_no.
Aadhar_no.
Address.
Blood_group

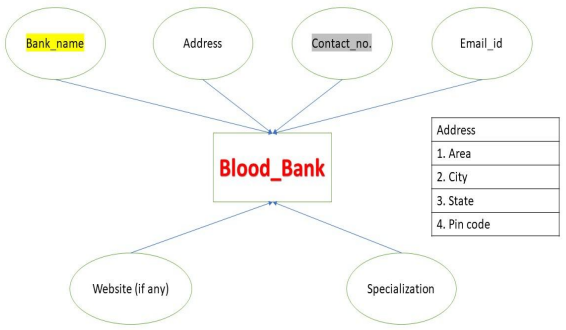

Employee_id
Name
Bank_name
Contact_no.
Medical_Staff

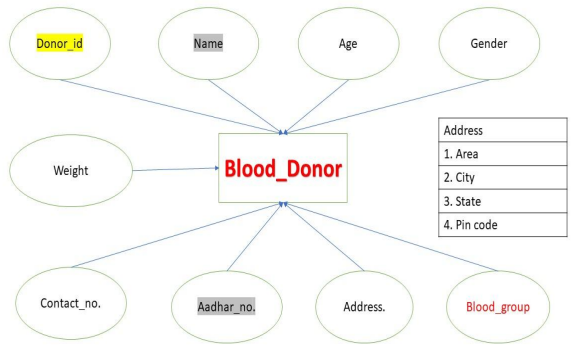

Donor_id
Place_of_donation
Quantity
Last_date_of_donation
Donor_history
No_of_times

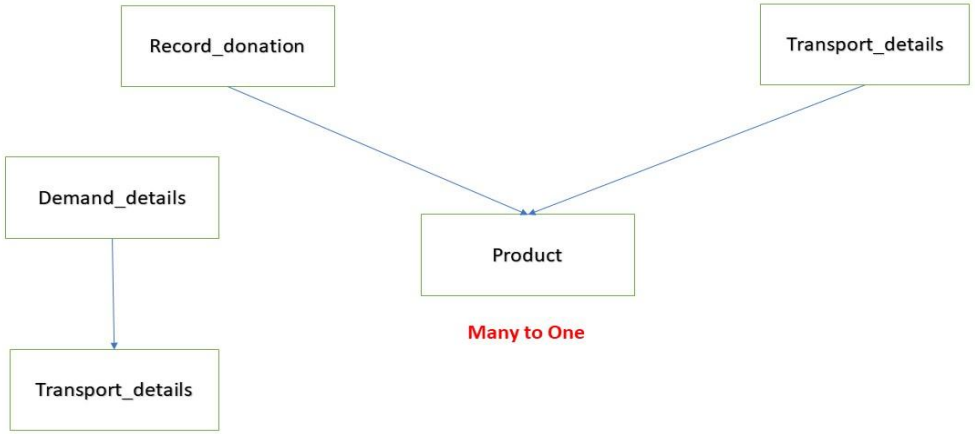

Donor_id
Past_symptoms
Current_symptoms
Blood_group (optional)
Questionnaires


Product_id
Product_type
Quantity
Blood_group
Date_of_expiry
Date_of_collection
Product


Bank_name
Blood_product
Quantity
Blood_group
Donor_id
Date_of_collection
Record_donation
Employee_id

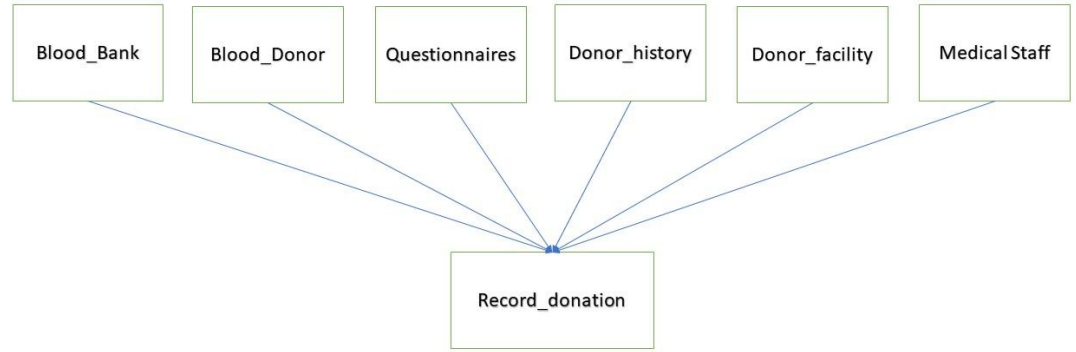

Bank_name
Address
Contact_no.
Email_id
Blood_Bank
Address
1. Area
2. City
3. State
4. Pin code
Website (if any)
Specialization


Donor_id
Name
Age
Gender
Weight
Blood_Donor
Address
1. Area
2. City
3. State
4. Pin code
Contact_no.
Aadhar_no.
Address.
Blood_group

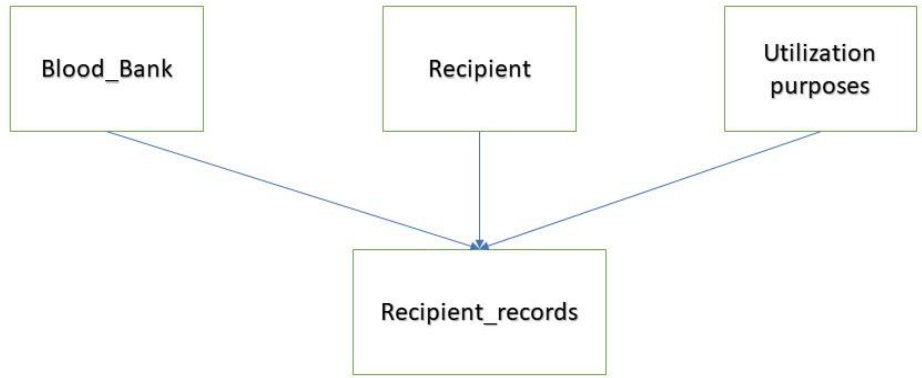


Many to One

One to One

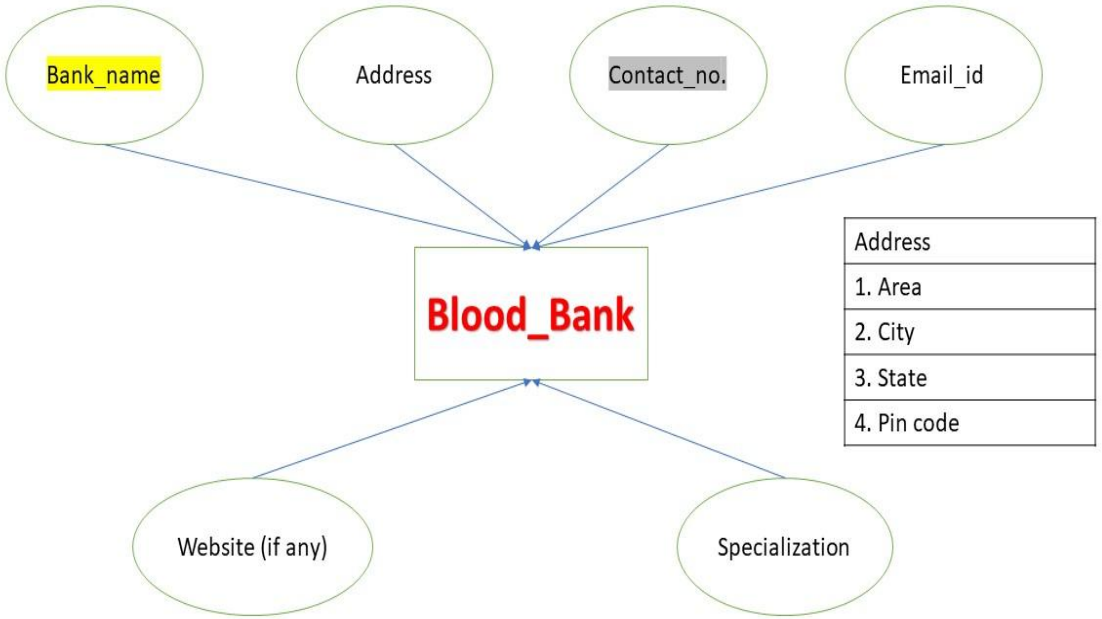


Many to One



Many to One

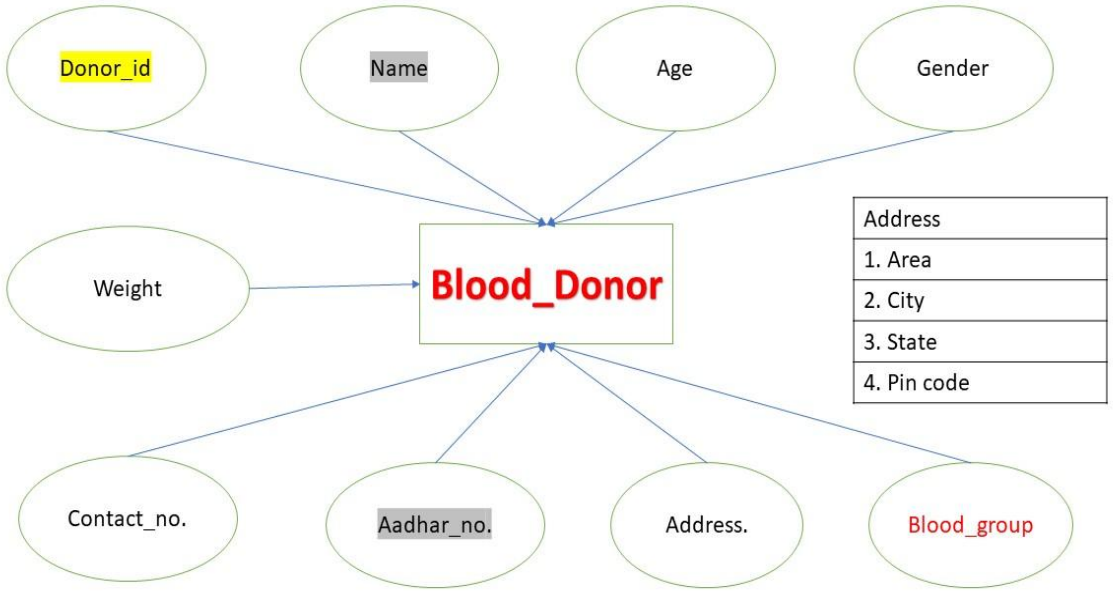
Queries



Interested queries:

1. Getting the name of the blood bank.
2. Getting the address of the required blood bank.
3. Getting the contact information of the blood bank.
4. What is the blood bank specializing in? (Whether it provides blood products for transfusion, medical institutions, scientific research, first aid, emergency purposes, etc.)

5. All of these can be displayed as a whole.



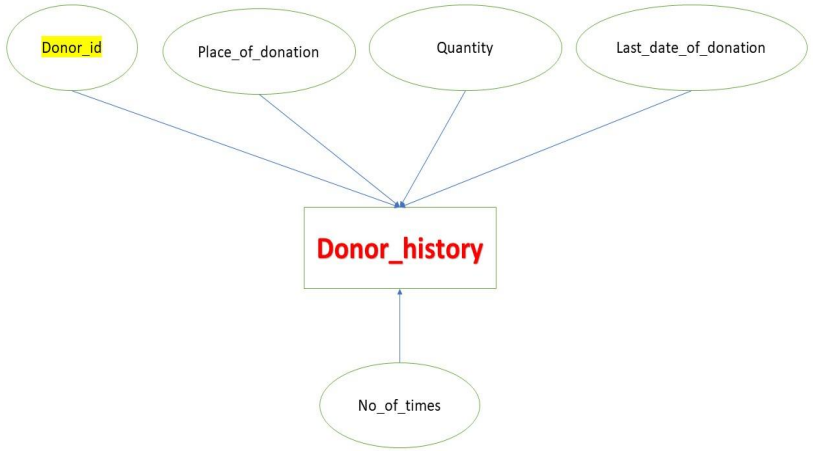
Interested Queries

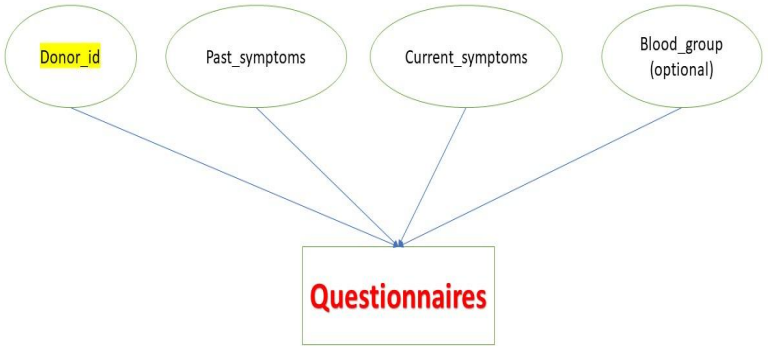
1. Displaying the information of the donor as a whole.

2. We can either use donor id for identifying the donor. For simplicity purposes, name or else Aadhar no. can also be used to retrieve information.

3. We are interested to find the blood group of the donor.

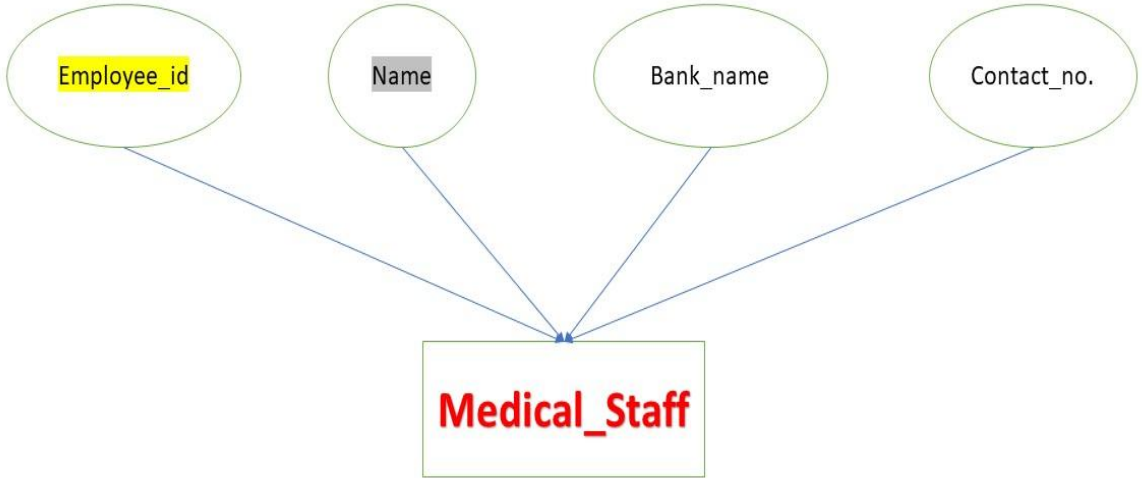
4. All of these queries can be resolved in the donor records.

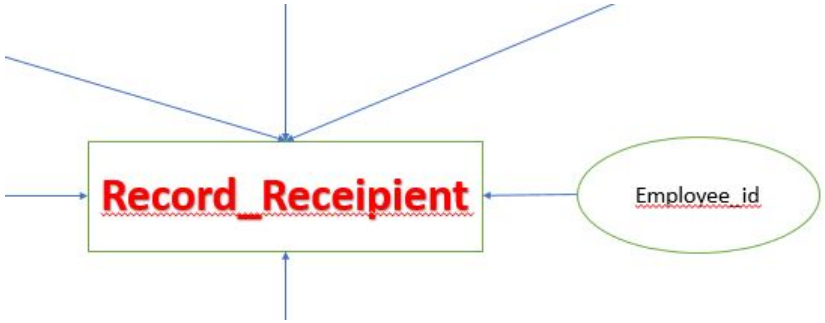




Interested Queries

- We are not much interested to get information for this two entities. However if ever information regarding this is needed, it shall be displayed for queries regarding records of donor.
- Donor id is the foreign obtained from blood_donor entity.
- With the help of donor id, these two entites is linked with the records of donors.



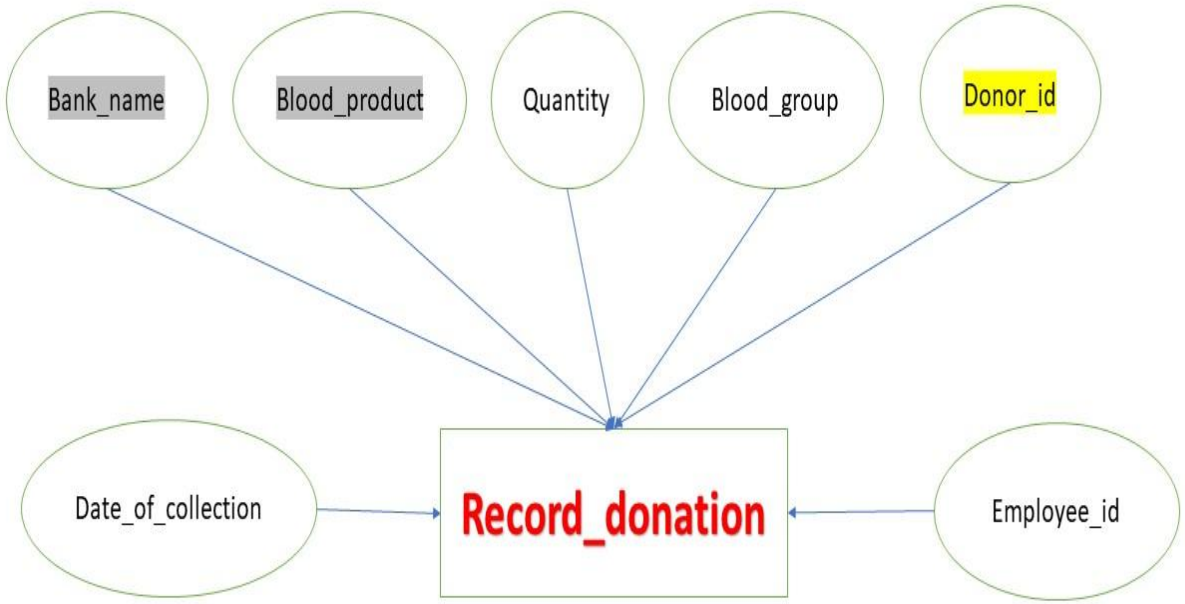


Interested Queries

1. Medical staff is linked with the donor records. We are interested to get information regarding the employees of respective blood banks who were involved in collecting blood from respective donor. Therefore details of medical staff will be displayed as a whole.

2. Here employee_id is the primary key. However for simplicity sake, name can be used as an alternative.

3. We also have medical_staff who are responsible for providing blood facilities to the recipient. But for those case, only employee_id shall be provided by respective organizations as we are not dealing with databases of respective medical organizations. In simpler terms, this medical_staff shall be different entity compared to medical_staff attribute of recipient records.



Important Queries

1. Getting the whole information of a blood donor with the help of donor_id.

2. Sorting blood_products from the records.

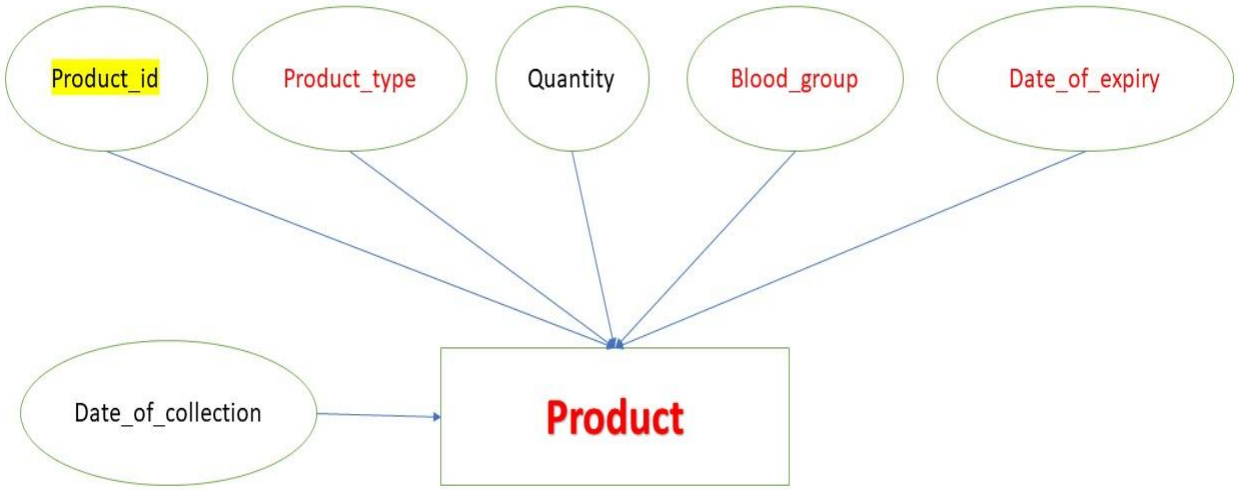
3. Sorting blood_products based on blood groups.

4. Sorting donors based on date_of_collection.

5. Obtaining quantity of the blood from the table and deriving useful information.

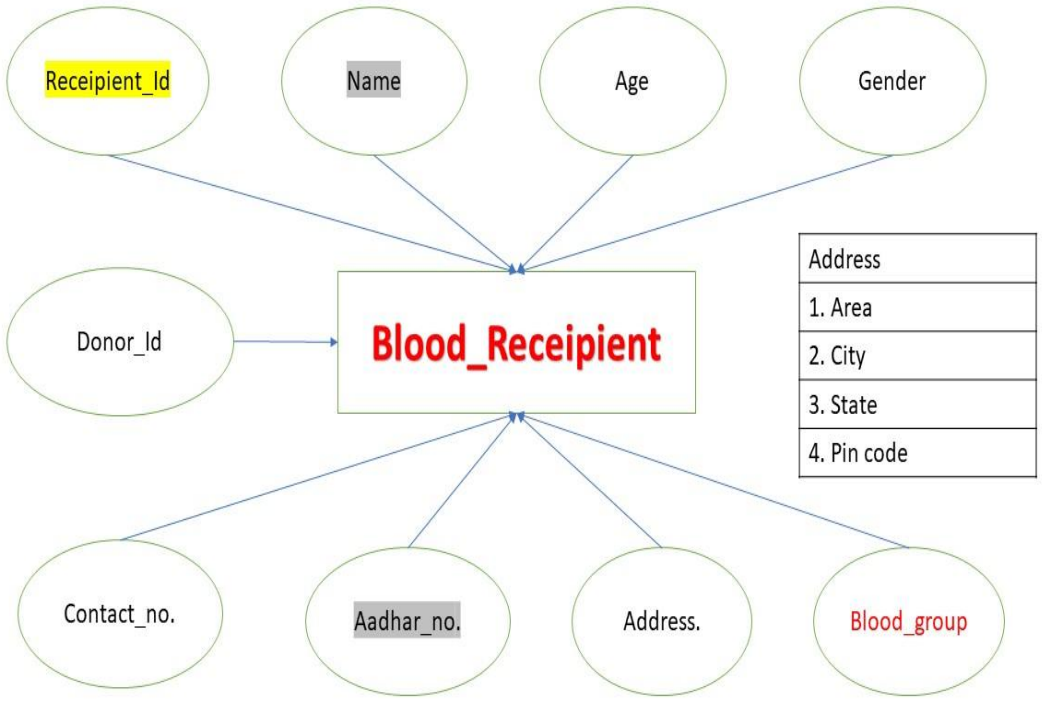
6. Obtaining blood banks information regarding availability of blood. Useful for analysing availability of blood in different blood banks and places.

7. Donor_id enables us to obtain information regarding everything about the donor. It is the primary key.



Important queries

1. Sort the table to see availability of a particular product type.
2. Sort the table to obtain availability of a particular product type with specific blood group.
3. Obtain quantity of required product using addition operators on quantity.
4. Sort the table to obtain product based on the expiry date.
5. Product_id is generated with the help of donor id. Can be used to obtain information regarding donor and blood bank.
6. Will be update after each demand has been made.
7. Product_id is the primary key for this table.



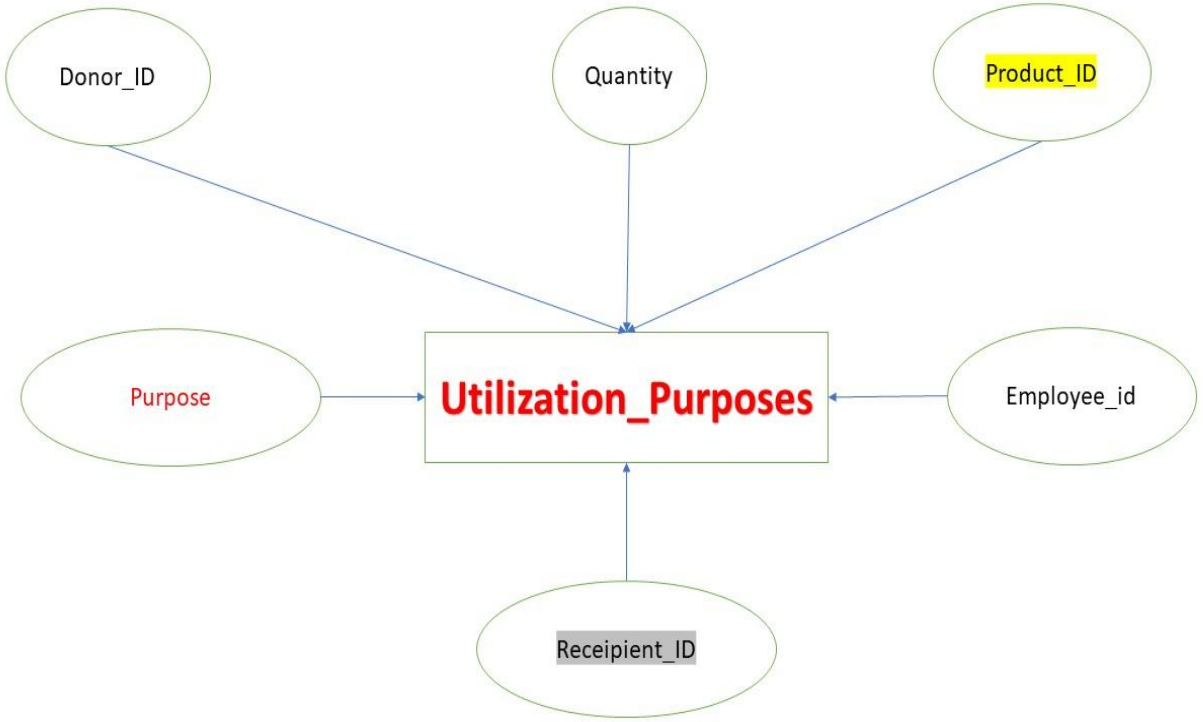
Interested Queries

1. Displaying the information of the recipient as a whole.

2. We can either use recipient id for identifying the recipient. For simplicity purposes, name or else Aadhar no. can also be used to retrieve information.

3. We are interested to find the blood group of the.

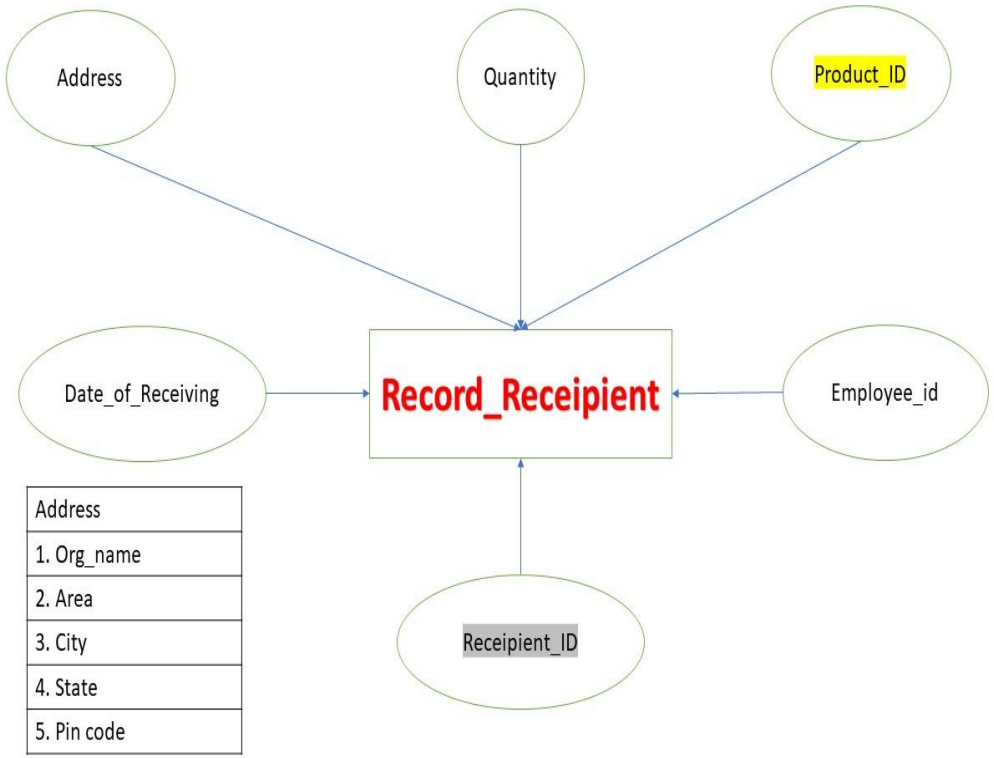
4. All of these queries can be resolved in the recipient records.



Interested Queries

1. It keeps the record of the blood products which were utilized by a medical facility and its purpose. We are interested to know what was the product used for. Although it is linked with recipient records, just to know the purpose and other details related with the product with the help of its id while maintaining the secrecy of the recipient would be much helpful.

2. However this can also be resolved in recipient records but a direct approach would be better for security purposes.



Important Queries

1. Getting the whole information of a blood recipient with the help of recipient_id.

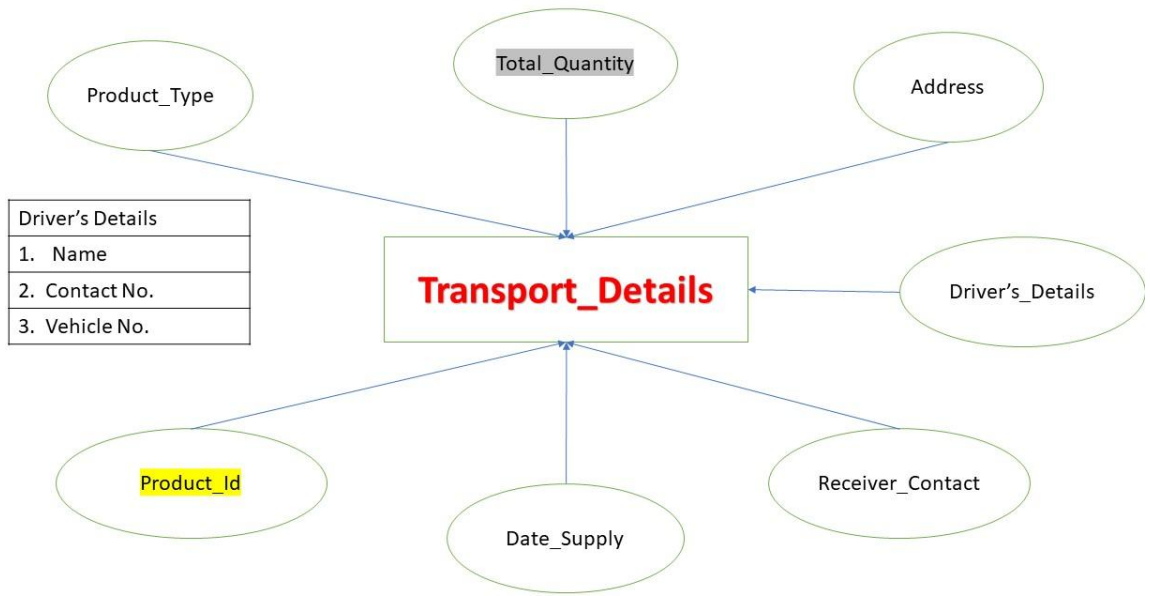
2. Sorting blood_recipients based on blood groups.

4. Sorting recipient based on date_of_receiving.

5. Obtaining addresses of recipients from the table and deriving useful information.

6. Obtaining blood banks information regarding utiliztaion of blood. Useful for analysing blood usage in various medical facilities and requirements estimation beforehand.

7. Recipient_id enables us to obtain information regarding everything about the recipient. It is the primary key.


Product_Type
Total_Quantity
Address
Driver's Details
1. Name
2. Contact No.
3. Vehicle No.
Transport_Details
Driver's_Details
Product_Id
Date_Supply
Receiver_Contact

Product_Type
Quantity
Address
Demand_Details
Product_Id
Date_Request
Receiver_Contact