SVKM's NMIMS MPSTME, SHIRPUR

DBMS PROJECT

Course: - BTech CS 4th SEM Submitted To: - Varsha Nemade

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Topic: - Blood Bank Management System

Project Scenario: -

Following Database Management System allows Blood Bank to see all details about:

- Donors
- Blood
- Employees
- Hospitals

Database Design: -

The Entity-Relationship Model was used to create the database most efficiently and logically.

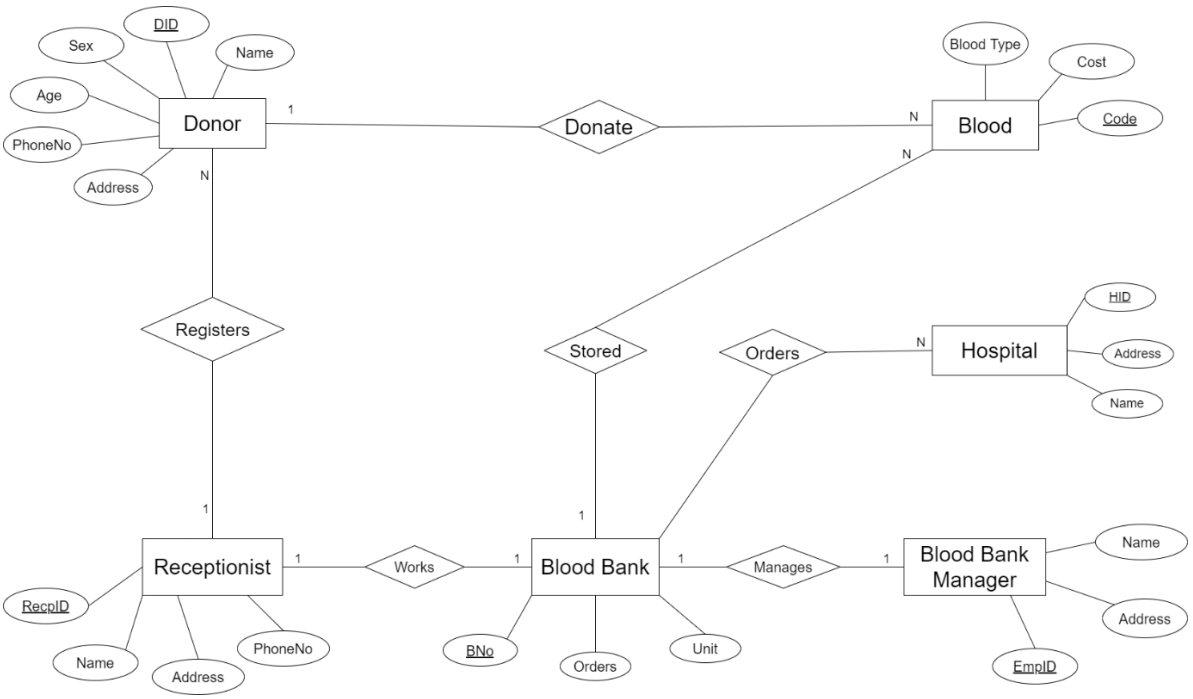
Mapping Cardinality: Mapping cardinalities express the number of entities to which another entity can be associated via a relationship set. Cardinality can be-

- One-to-one
- One-to-many
- Many-to-one
- Many-to-many

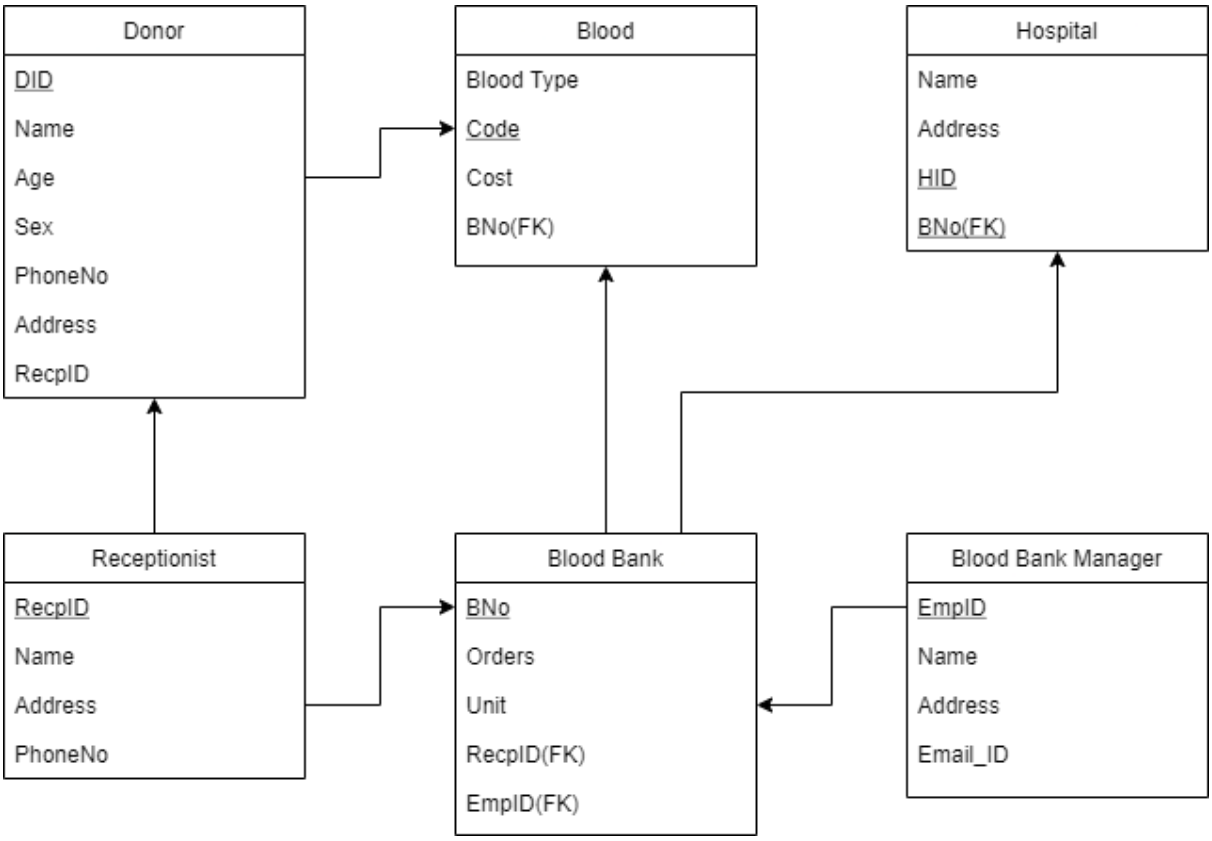
E-R diagram: It can express the overall logical structure of a database graphically. A diagram consists of some major components—

- Rectangles: represent entity set.
- Ellipses: represent attributes.
- Diamonds: represent relationships.
- Lines: which link attributes to entity sets and entity sets to relationship sets.

ER Diagram: -


DID
Sex
Name
Age
Donor
PhoneNo
Address
1
N
Donate
Blood Type
Cost
Code
Blood
N
N
Registers
Stored
Orders
N
Hospital
HID
Address
Name
1
1
Receptionist
1
Works
1
Blood Bank
1
Manages
1
Blood Bank Manager
Name
Address
EmpID
RecpID
Name
Address
PhoneNo
BNo
Orders
Unit

Relational Schema: -



Description of Tables: -

1. **Receptionist – This table has four attributes i.e. RecpID , Name, Address, PhoneNo. (RecpID is primary key)**
2. **BloodBankManager – This table has four attributes i.e. EmpId, Name, Address,Email_ID. (EmpID is primary key)**
3. **Donor – This table has seven attributes i.e. DID, Name, Age, Sex, PhoneNo, Address, RecpID.(DID is primary key and RecpID is foreign key)**
4. **BloodBank – This table has five attributes i.e. BNo, Orders, Unit, RecpID. (BNo is primary key and RecpID,EmpID are foreign key)**
5. **Blood – This table has four attributes i.e. BloodType, Code, Cost, BNo.(Code is primary key and BNo is foreign key)**
6. **Hospital – This has four attributes i.e. Name, Address, HID, BNo.(HID is primary key and BNo is foreign key)**

MySQL Implementation: -

```
niysql> create        Receptionist(RecpID int pr nary key, Kanye varchar(Z0), Address varchar(20), PhoneKo int);
Query OK, 0 rows affectec| C0.12 sec)

nlysql> desc Receptionist ;

  F el d    | Type           null | Key | Default | Extra

I  RecpID   I  int          I  \O    I PRI I NULL
  dante     |  \zarchar(20} | 1'ES   |       | FULL
  Address   |  varchar (20) | 1'ES   |       | FULL
  Phoneho   | Int           | 1'ES   |       | FULL

4 rows in set CO.01 sec)
```

```
mysql> create table BloodBankManager(EmpID int primary key, Name varchar(20), Address varchar(20), EmailID varchar(40));
Query OK, 0 rows affected (0.04 sec)
```

```
niyscj l > desc B l oodB ankt•1anager ;

  F#e4d     | Type            xu4l  | Key | Default | Extra

  EnipID    | Int             | TO    | PRI | FULL
  Name      |   archar¿20)    | \'ES  |     | FULL
  Address   |   archar¿20)    | \'ES  |     | FULL

3 rows #n set (0.01 sec)
```

```
mysql> create table Donor(DID int primary key, Name varchar(20), Age int, Sex varchar(1), PhoneNo int, Address varchar(20), RecpID int
, foreign key(RecpID) references Receptionist(RecpID));
Query OK, 0 rows affected (0.07 sec)

mysql> desc Donor;
+---------+-------------+------+-----+---------+-------+
| Field   | Type        | Null | Key | Default | Extra |
+---------+-------------+------+-----+---------+-------+
| DID     | int         | NO   | PRI | NULL    |       |
| Name    | varchar(20) | YES  |     | NULL    |       |
| Age     | int         | YES  |     | NULL    |       |
| Sex     | varchar(1)  | YES  |     | NULL    |       |
| PhoneNo | int         | YES  |     | NULL    |       |
| Address | varchar(20) | YES  |     | NULL    |       |
| RecpID  | int         | YES  | MUL | NULL    |       |
+---------+-------------+------+-----+---------+-------+
7 rows in set (0.04 sec)
```

```
mysql> create table BloodBank(BNo int primary key, Orders varchar(20), Unit int, EmpID int, RecpID int, foreign key(EmpID) references
BloodBankManager(EmpID), foreign key(RecpID) references Receptionist(RecpID));
Query OK, 0 rows affected (0.07 sec)

mysql> desc BloodBank;
+--------+-------------+------+-----+---------+-------+
| Field  | Type        | Null | Key | Default | Extra |
+--------+-------------+------+-----+---------+-------+
| BNo    | int         | NO   | PRI | NULL    |       |
| Orders | varchar(20) | YES  |     | NULL    |       |
| Unit   | int         | YES  |     | NULL    |       |
| EmpID  | int         | YES  | MUL | NULL    |       |
| RecpID | int         | YES  | MUL | NULL    |       |
+--------+-------------+------+-----+---------+-------+
5 rows in set (0.00 sec)
```

```
mysql> create table Blood(Code int primary key, BloodType varchar(3), Cost int, BNo int, foreign key(BNo) references BloodBank(BNo));
Query OK, 0 rows affected (0.06 sec)

mysql> desc Blood;
+-----------+------------+------+-----+---------+-------+
| Field     | Type       | Null | Key | Default | Extra |
+-----------+------------+------+-----+---------+-------+
| Code      | int        | NO   | PRI | NULL    |       |
| BloodType | varchar(3) | YES  |     | NULL    |       |
| Cost      | int        | YES  |     | NULL    |       |
| BNo       | int        | YES  | MUL | NULL    |       |
+-----------+------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

```
mysql> create table Hospital(HID int primary key, Name varchar(20), Address varchar(40), BNo int, foreign key(BNo) references BloodBan
k(BNo));
Query OK, 0 rows affected (0.06 sec)

mysql> desc Hospital;
+---------+-------------+------+-----+---------+-------+
| Field   | Type        | Null | Key | Default | Extra |
+---------+-------------+------+-----+---------+-------+
| HID     | int         | NO   | PRI | NULL    |       |
| Name    | varchar(20) | YES  |     | NULL    |       |
| Address | varchar(40) | YES  |     | NULL    |       |
| BNo     | int         | YES  | MUL | NULL    |       |
+---------+-------------+------+-----+---------+-------+
4 rows in set (0.03 sec)
```

```
mysql> select * from Receptionist;
+--------+--------+--------------+---------+
| RecpID | Name   | Address      | PhoneNo |
+--------+--------+--------------+---------+
|   9001 | Shreya | Lajpat Nagar |  910252 |
|   9002 | Harsh  | Johri Nagar  |  952522 |
+--------+--------+--------------+---------+
2 rows in set (0.00 sec)
```

```
mysql> select * from BloodBankManager;
+-------+-------+-------------+
| EmpID | Name  | Address     |
+-------+-------+-------------+
|  9005 | Naman | Nehru Nagar |
|  9006 | Jeet  | Rajiv Nagar |
+-------+-------+-------------+
2 rows in set (0.00 sec)
```

```
nlysql> select * fron  Donor;

  DID | hanle     | Age   | Sex   | PhoneKo                  Rec plD

 1  101  l Ar4hant |    19 l M     l 2101089 l  Rajat Path    l   9001 l
  10/ | Pr4ya    |    21 | F     | 2458974    Bor4val 4     |   9001
 l 111 l Adit     I    30 l u     l 2689754 l  KeruJ          |   9001
  115 | Mohit    |    25 | M     | 2145789    Airport Road |   9002
 l 119 | Sanlyak  |    20 l M     l 2397Z05 l  Gotr4 Road    |   9002 l
```

```
mysql> select * from BloodBank;
+-----+--------------+------+-------+--------+
| BNo | Orders       | Unit | EmpID | RecpID |
+-----+--------------+------+-------+--------+
|   1 | Eight orders |    5 |  9005 |   9001 |
|   2 | Six orders   |    9 |  9006 |   9002 |
+-----+--------------+------+-------+--------+
2 rows in set (0.00 sec)
```

```
mysql> select * from Blood;
+------+-----------+------+------+
| Code | BloodType | Cost | BNo  |
+------+-----------+------+------+
|  201 | A+        |  500 |    1 |
|  202 | O-        |  800 |    1 |
|  203 | B+        |  300 |    2 |
|  205 | B-        |  300 |    2 |
|  207 | AB+       |  800 |    2 |
+------+-----------+------+------+
5 rows in set (0.00 sec)
```

```
mysql> select * from Hospital;
+------+------------+-------------------------+------+
| HID  | Name       | Address                 | BNo  |
+------+------------+-------------------------+------+
| 5001 | Geetanjali | National Highway Eight  |    1 |
| 5002 | Pacific    | Sukher                  |    2 |
+------+------------+-------------------------+------+
2 rows in set (0.00 sec)
```

Query :-

Q. Pacifice hospital received how many O +ve blood from blood bank 1

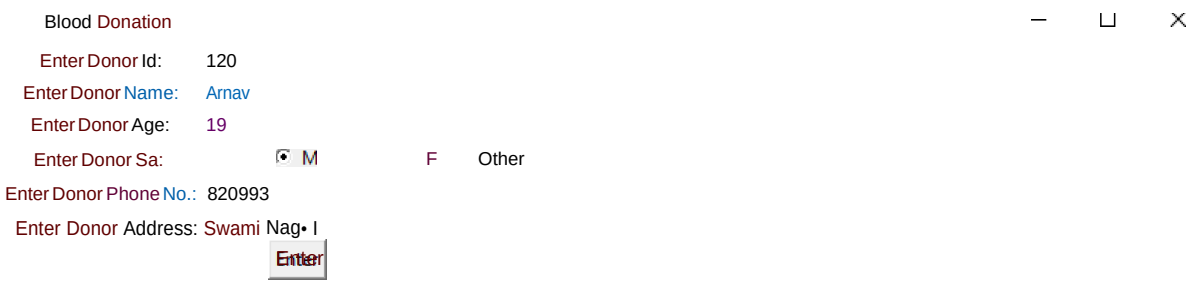
```
mysql> select Unit from BloodBank,Hospital,Blood where Blood.BNo=BloodBank.BNo and BloodType="O+" and Name="Pacific";
+------+
| Unit |
+------+
|    5 |
+------+
1 row in set (0.03 sec)
```

Python Integration:

main.py

C: > Users > jaina > Desktop > DBMS Project > main.py > insert

```python
import tkinter as tk
import mysql.connector
import random
db = mysql.connector.connect(host = "localhost", user = "root", passwd = "JA11**in", database = "BloodBankManagement")
cursor = db.cursor()


def insert():
    cursor.execute("select * from Receptionist")
    result = cursor.fetchall()
    recp = random.choice(result)
    DID2 = DID.get()
    Dname2 = Dname.get()
    Dage2 = Dage.get()
    Dsex2 = radio.get()
    Dphno2 = int(Dphno.get())
    Dadd2 = Dadd.get()
    ins = ("insert into Donor values(%s,%s,%s,%s,%s,%s,%s)")
    data = (DID2,Dname2,Dage2,Dsex2,Dphno2,Dadd2,recp[0])
    cursor.execute(ins,data)
    cursor.execute("commit")

root = tk.Tk()
root.geometry("800x400")
root.title("Blood Donation")

DID = tk.StringVar()
DID1 = tk.Label(root,text="Enter Donor Id: ")
DID_text = tk.Entry(root,textvariable=DID)
DID1.grid(row = 1,column = 0)
DID_text.grid(row = 1,column = 1)

Dname = tk.StringVar()
Dname1 = tk.Label(root,text="Enter Donor Name: ")
Dname_text = tk.Entry(root,textvariable=Dname)
Dname1.grid(row = 2,column = 0)
Dname_text.grid(row = 2,column = 1)

Dage = tk.StringVar()
Dage1 = tk.Label(root,text="Enter Donor Age: ")
Dage_text = tk.Entry(root,textvariable=Dage)
Dage1.grid(row = 3,column = 0)
Dage_text.grid(row = 3,column = 1)

Dsex1 = tk.Label(root,text="Enter Donor Sex: ")
radio = tk.StringVar()
R1 = tk.Radiobutton(root,text = "M",variable = radio,value = "M")
R2 = tk.Radiobutton(root,text = "F",variable = radio,value = "F")
R3 = tk.Radiobutton(root,text = "Other",variable = radio,value = "Other")
Dsex1.grid(row = 4,column = 0)
R1.grid(row = 4,column = 1)
R2.grid(row = 4,column = 2)
R3.grid(row = 4,column = 3)

Dphno = tk.StringVar()
Dphno1 = tk.Label(root,text="Enter Donor Phone No.: ")
Dphno_text = tk.Entry(root,textvariable=Dphno)
Dphno1.grid(row = 5,column = 0)
Dphno_text.grid(row = 5,column = 1)

Dadd = tk.StringVar()
Dadd1 = tk.Label(root,text="Enter Donor Address: ")
Dadd_text = tk.Entry(root,textvariable=Dadd)
Dadd1.grid(row = 6,column = 0)
Dadd_text.grid(row = 6,column = 1)

button = tk.Button(root,text = "Enter",command = insert).grid(row = 7, column = 1)

root.mainloop()
```


Blood Donation
Enter Donor Id:
120
Enter Donor Name:
Arnav
Enter Donor Age:
19
Enter Donor Sa:
M
F
Other
Enter Donor Phone No.:
820993
Enter Donor Address:
Swami Nag• I
Enter