A

MINI PROJECT

(FOR ICT 3163 DATABASE SYSTEMS LAB)

ON

BLOOD DONATION MANAGEMENT SYSTEM

By

Team *ETERNALS*

(Batch-4)

GUIDED BY:- DR. GIRIJA ATTIGERI & DR . SUMITH N

Title of the project

Blood Donation Management System

Introduction

The Online Blood Donation management System is to create an e-Information about the donor and organization that are related to donating the blood. Through this application any person who is interested in donating the blood can register himself.

Moreover if any general consumer wants to make request blood online he can also take the help of this site. Admin is the main authority who can do addition, deletion, and modification if required.

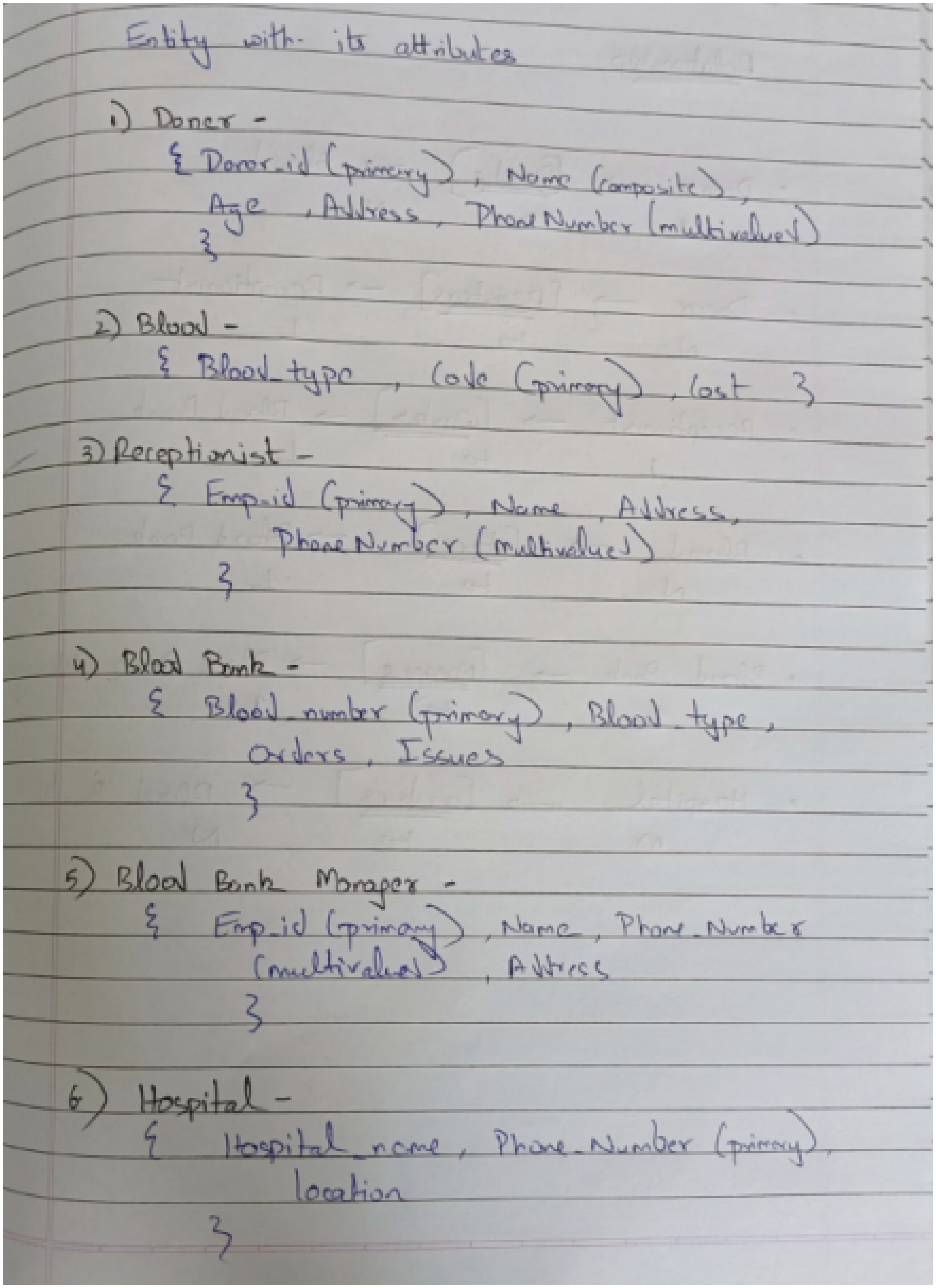
Software and Hardware Requirements

Softwares that were used in this project are Visual Studio(C#) for the user interface, Oracle SQL for creating the database and a Windows OS. Hardware requirements would be a PC, mouse, keyboard, monitor etc.

Design and Methodology

Blood Donation Management System project is designed such that it follows the view of distributed architecture having centralized storage of the database part. (By using the constructs of MS-SQL Server) Blood Donation Management System (BDMS) is a Web-based application that is designed to store, process, retrieve and analyze information concerned with the administrative and inventory management within a blood bank.

Schema



Entity with its attributes

1) Doner -

{ Donor_id (primary), Name (composite),
Age , Address , Phone Number (multivalued)
}

2) Blood -

{ Blood_type , Code (primary) , Cost }

3) Receptionist -

{ Emp_id (primary) , Name , Address,
Phone Number (multivalued)
}

4) Blood Bank -

{ Blood_number (primary) , Blood_type ,
Orders , Issues
}

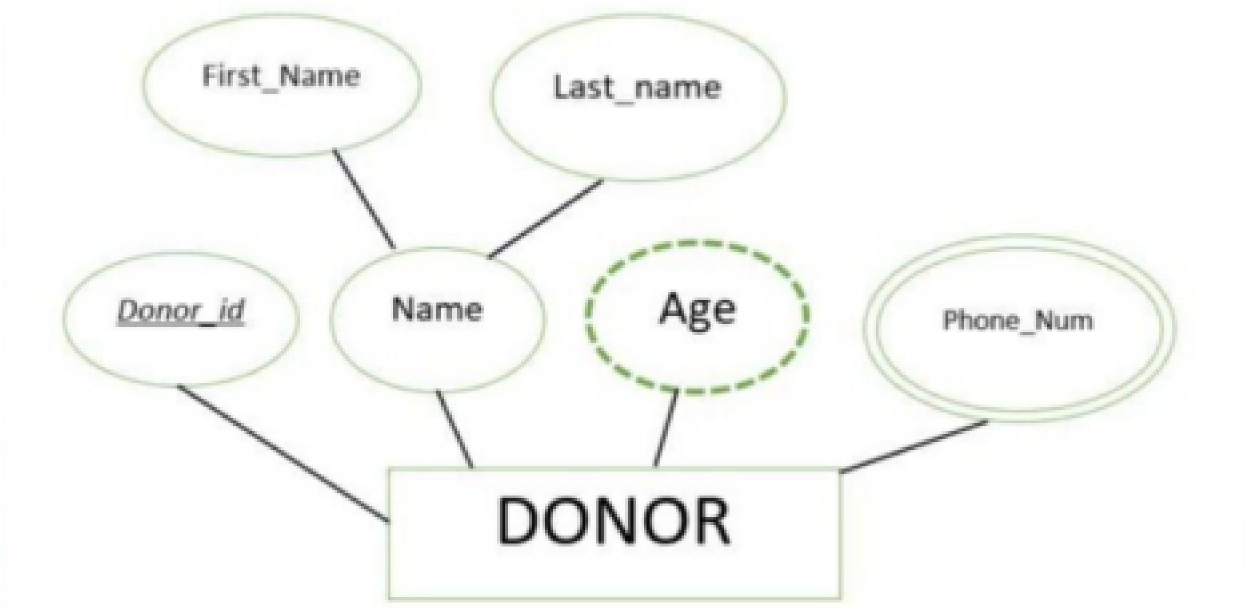
5) Blood Bank Manager -

{ Emp_id (primary) , Name , Phone_Number
(multivalued) , Address
}

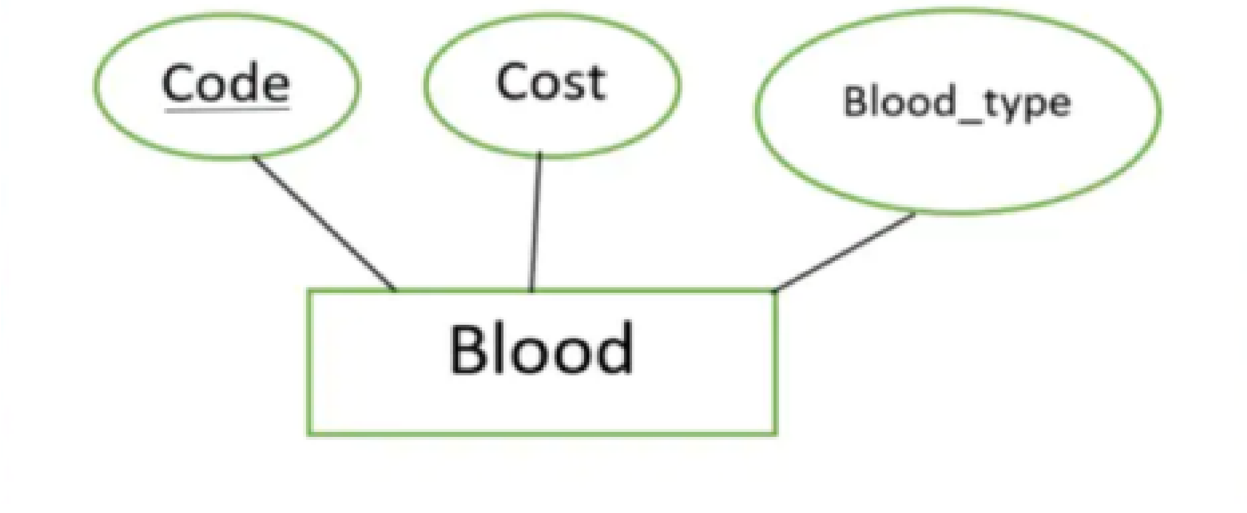
6) Hospital -

{ Hospital_name , Phone_Number (primary),
location
}

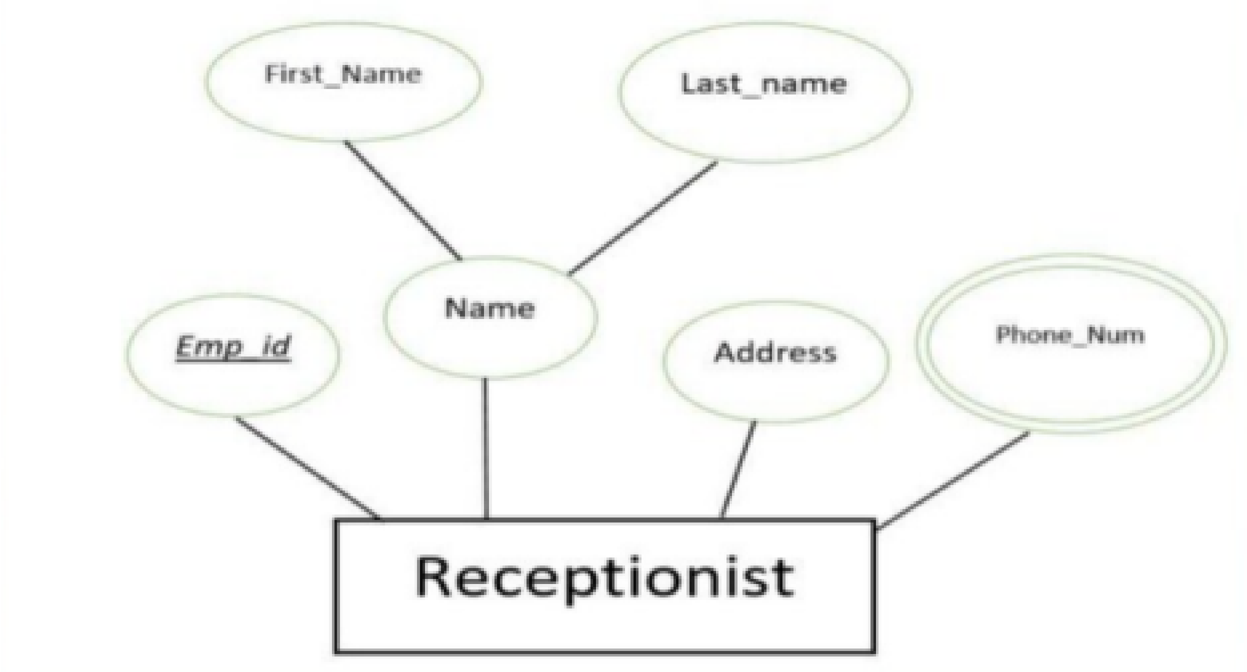
Donor Entities with Attributes



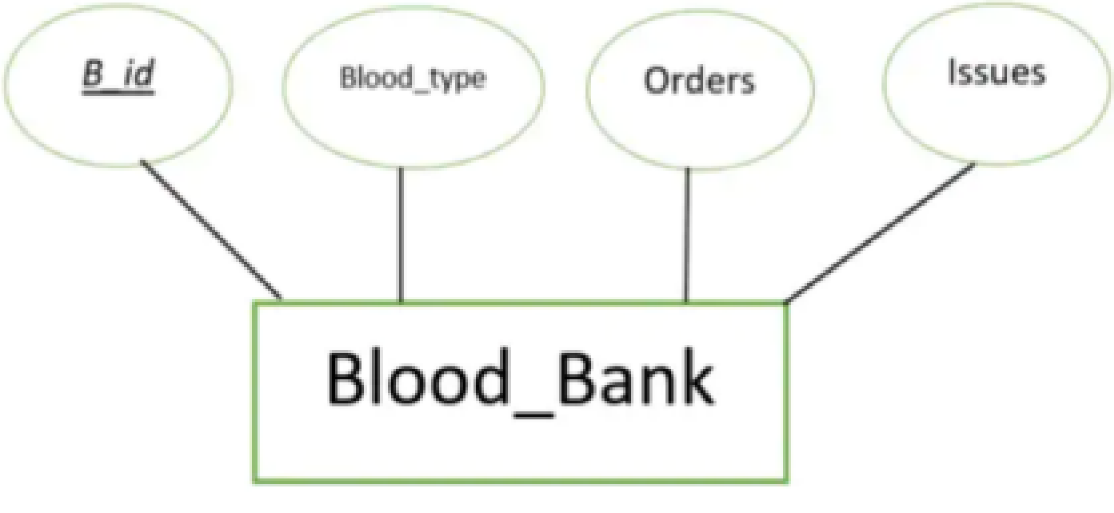
Blood Entities with Attributes



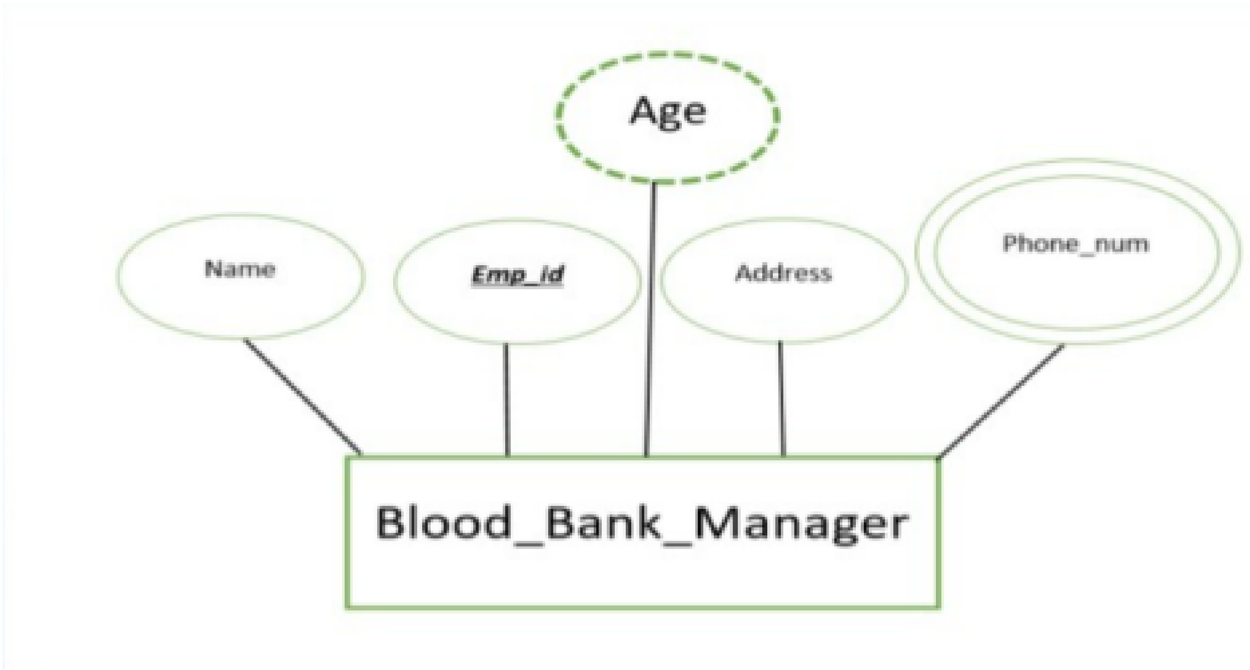
Receptionist Entities with Attributes



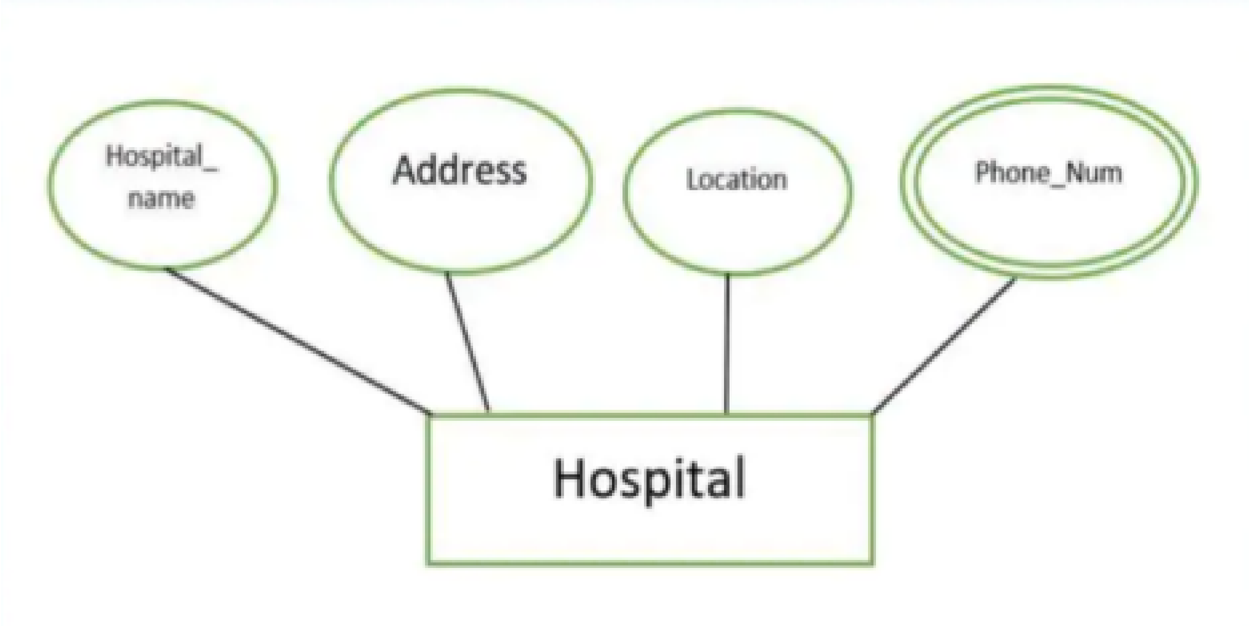
Blood Bank Entities with Attributes



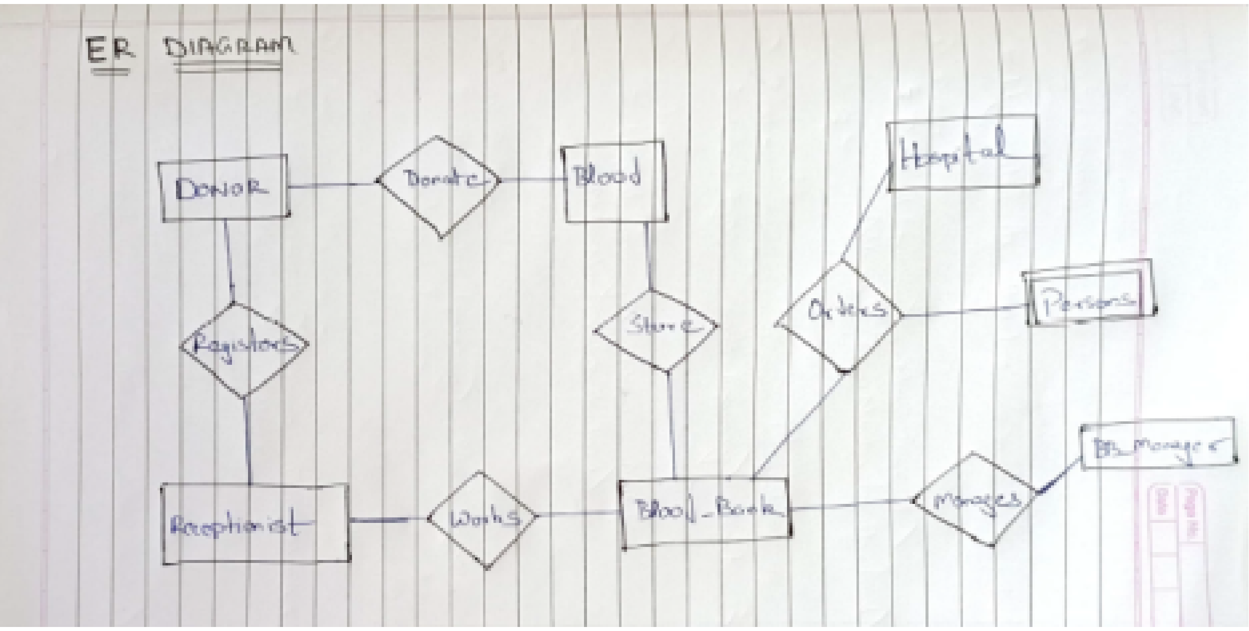
Blood Bank Manager Entities with Attributes



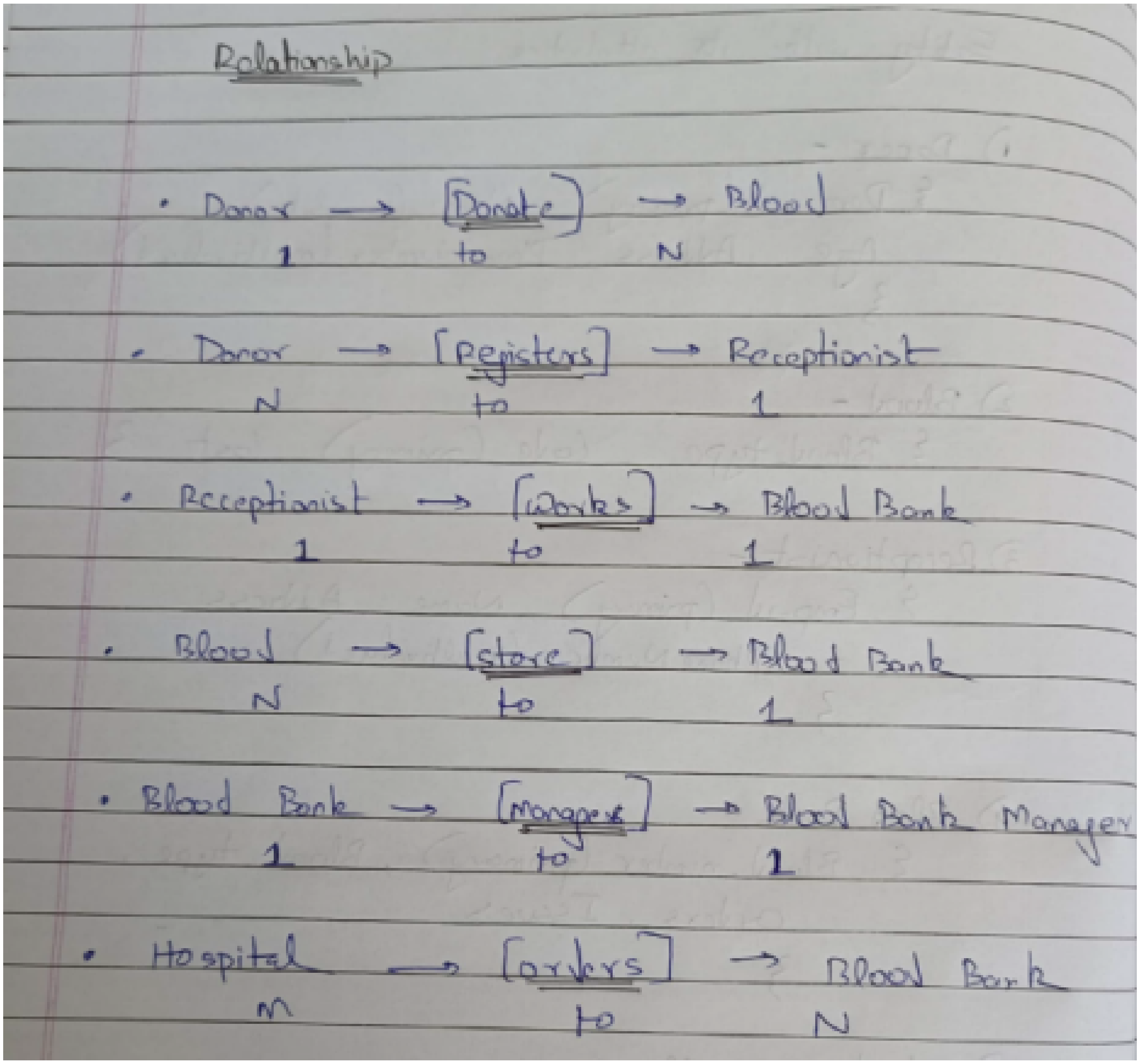
Hospital Entities with Attributes



Entity Relationship Diagram



Steps for Relationship-Schema Diagram



Relationship

- Donor → [Donate] → Blood
  1 to N
- Donor → [Registers] → Receptionist
  N to 1
- Receptionist → [Works] → Blood Bank
  1 to 1
- Blood → [store] → Blood Bank
  N to 1
- Blood Bank → [Manages] → Blood Bank Manager
  1 to 1
- Hospital → [orders] → Blood Bank
  M to N

Tables

Donor Table

Field Type	Type Constraints
Donor_id	int Primary key
Name	composite Not null
Age	int Not null
Address	varchar Not null
PhoneNumber	multivalue Not null

Blood

Field Type Type Constraints Blood_type varchar(2) Not

null code varchar Primary key cost int Not null

Receptionist

Field Type	Type Constraints
Emp_id Name	Int Primary key varchar Not null
Address	varchar Not null
PhoneNumber	int Not null

Blood Bank

Field Type	Type Constraints
Blood_number	int Primary key
blood_type	varchar(2) Not null
orders	int
Issues	varchar

Blood Bank Manager

Field Type	Type Constraints
Emp_id	int Foreign key
Name	varchar Not null
PhoneNumber	multivalue Not null
Address	varchar Not null

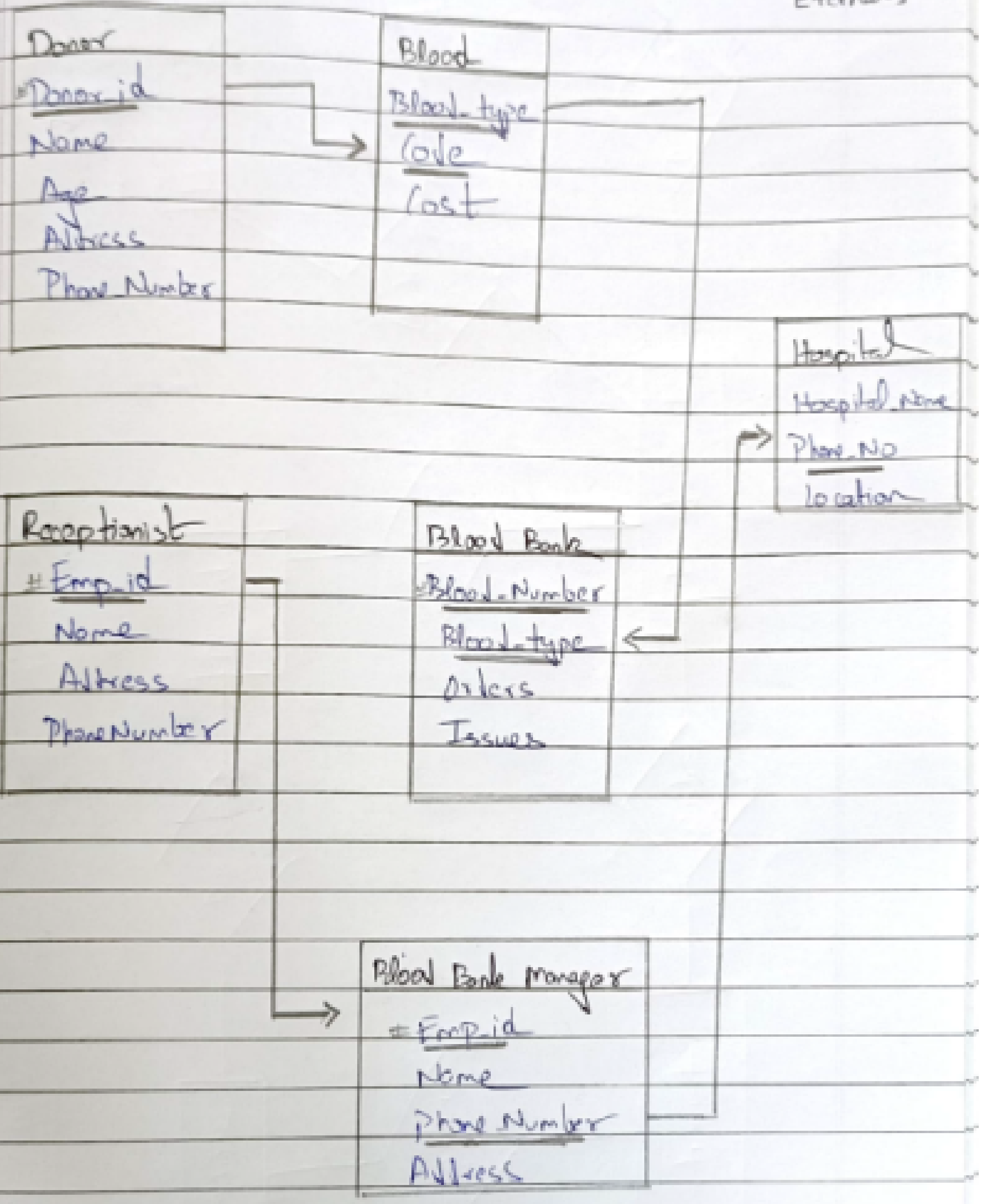
Hospital

Field Type	Type Constraints
Hospital_name Phone_number	varchar Not null int Primary key
Location	varchar Not null

Relationship Schema Diagram

Relationship Schema Diagram

Team
Eternals

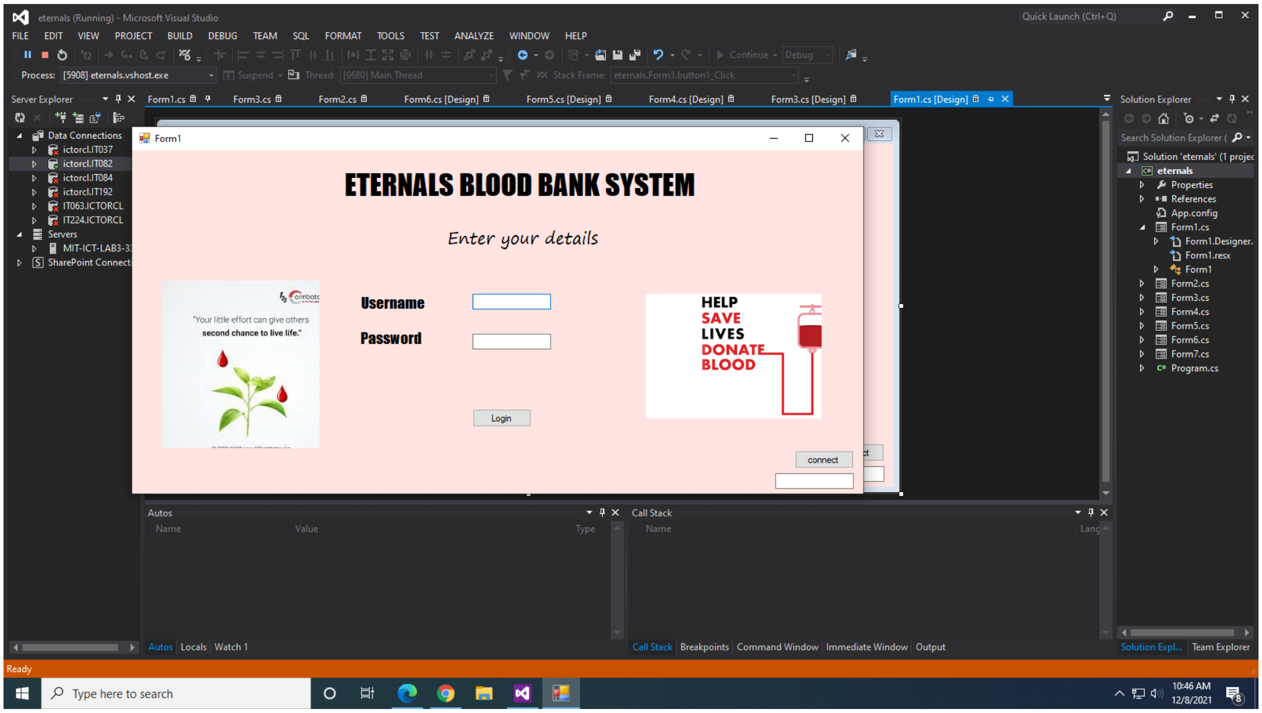


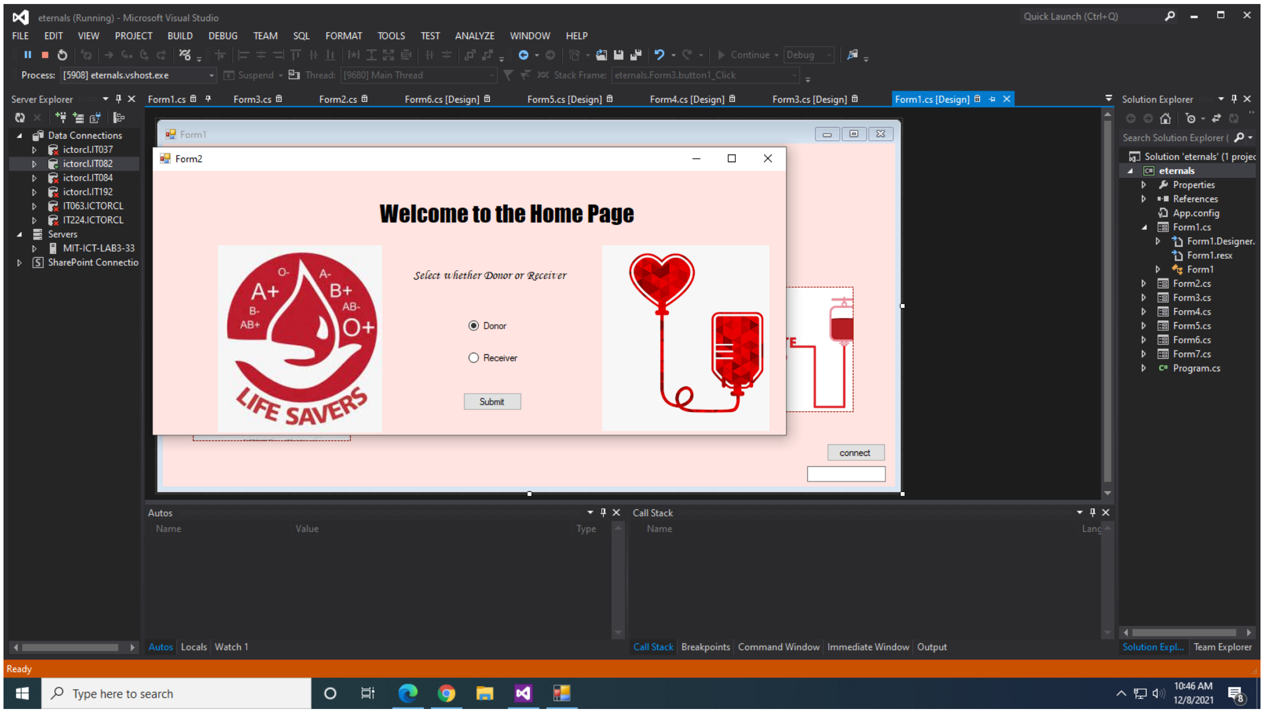
Normalization

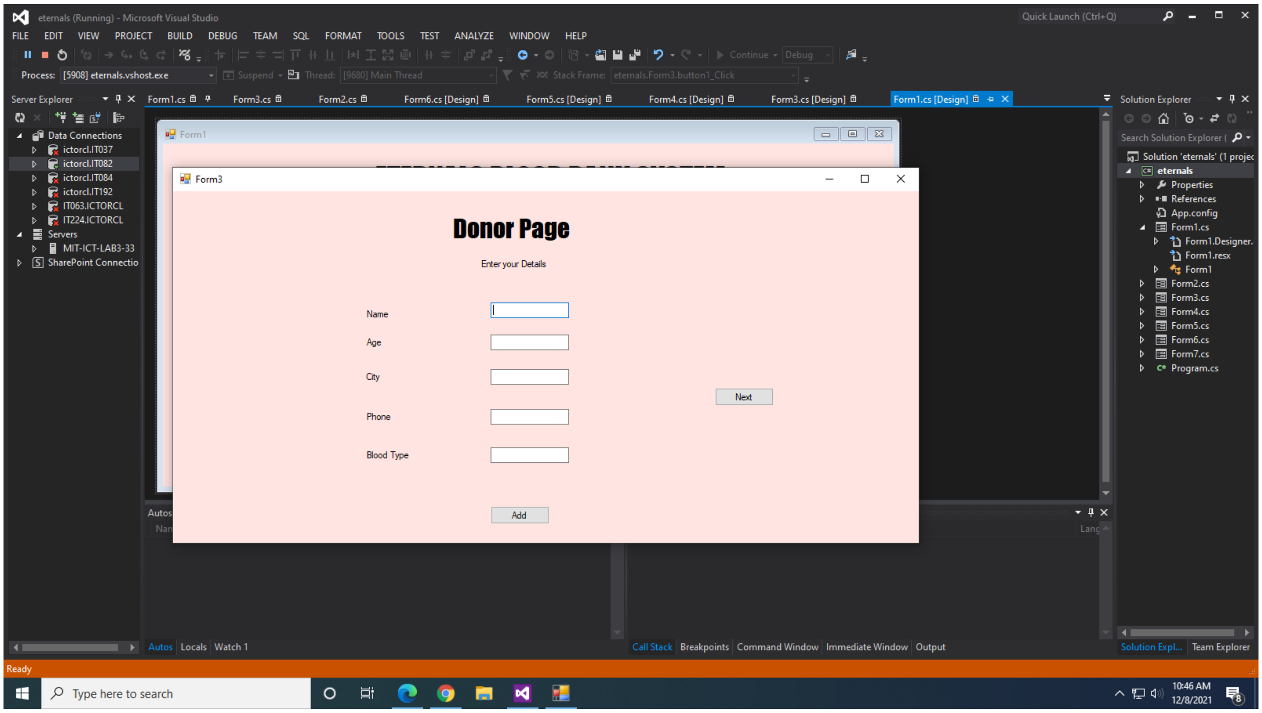
All tables are in the 2nd Normal Form, that means there is no partial dependency and only single valued attributes.

User Interface

Starting with a login page for authorised users only, a set of predefined usernames and passwords are accepted by the application.


eternals (Running) - Microsoft Visual Studio
FILE EDIT VIEW PROJECT BUILD DEBUG TEAM SQL FORMAT TOOLS TEST ANALYZE WINDOW HELP
Process: [5908] eternals.vshost.exe
Stack Frame: eternals.Form3.button1_Click
Server Explorer
Data Connections
Form1
ETERNALS BLOOD BANK SYSTEM
Enter your details
"Your little effort can give others second chance to live life."
Username
Password
Login
HELP
SAVE
LIVES
DONATE
BLOOD
connect
Solution Explorer
Solution 'eternals' (1 project)
eternals
Properties
References
App.config
Form1.cs
Form2.cs
Form3.cs
Form4.cs
Form5.cs
Form6.cs
Form7.cs
Program.cs
Autos
Call Stack
Ready
Type here to search
10:46 AM
12/8/2021


eternals (Running) - Microsoft Visual Studio
Quick Launch (Ctrl+Q)
FILE EDIT VIEW PROJECT BUILD DEBUG TEAM SQL FORMAT TOOLS TEST ANALYZE WINDOW HELP
Process: [5908] eternals.vshost.exe
Suspend
Thread: [9680] Main Thread
Stack Frame: eternals.Form3.button1_Click
Continue
Debug
Server Explorer
Data Connections
ictorcl.IT037
ictorcl.IT082
ictorcl.IT084
ictorcl.IT192
IT063.ICTORCL
IT224.ICTORCL
Servers
MIT-ICT-LAB3-33
SharePoint Connectio
Form1.cs
Form3.cs
Form2.cs
Form6.cs [Design]
Form5.cs [Design]
Form4.cs [Design]
Form3.cs [Design]
Form1.cs [Design]
Form1
Form2
Welcome to the Home Page
A+
B+
O-
A-
AB-
B-
AB+
O+
LIFE SAVERS
Select whether Donor or Receiver
Donor
Receiver
Submit
connect
Solution Explorer
Search Solution Explorer (
Solution 'eternals' (1 projec
eternals
Properties
References
App.config
Form1.cs
Form1.Designer.
Form1.resx
Form1
Form2.cs
Form3.cs
Form4.cs
Form5.cs
Form6.cs
Form7.cs
Program.cs
Autos
Name
Value
Type
Call Stack
Name
Lang
Autos Locals Watch 1
Call Stack Breakpoints Command Window Immediate Window Output
Solution Expl... Team Explorer
Ready
Type here to search
10:46 AM
12/8/2021


eternals (Running) - Microsoft Visual Studio
Quick Launch (Ctrl+Q)
FILE EDIT VIEW PROJECT BUILD DEBUG TEAM SQL FORMAT TOOLS TEST ANALYZE WINDOW HELP
Process: [5908] eternals.vshost.exe
Suspend
Thread: [9680] Main Thread
Stack Frame: eternals.Form3.button1_Click
Continue
Debug
Server Explorer
Data Connections
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Servers
MIT-ICT-LAB3-33
SharePoint Connectio
Form1.cs
Form3.cs
Form2.cs
Form6.cs [Design]
Form5.cs [Design]
Form4.cs [Design]
Form3.cs [Design]
Form1.cs [Design]
Form1
Form3
Donor Page
Enter your Details
Name
Age
City
Phone
Blood Type
Next
Add
Solution Explorer
Search Solution Explorer (
Solution 'eternals' (1 projec
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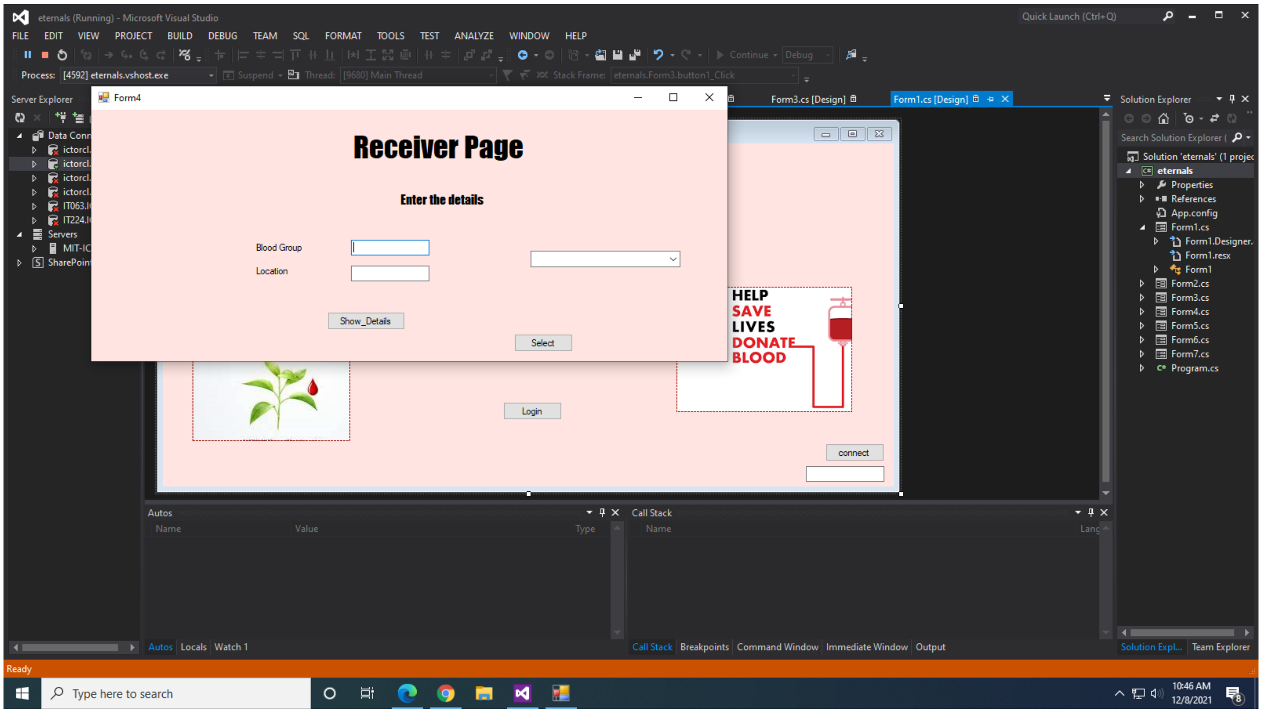
Properties
References
App.config
Form1.cs
Form1.Designer.
Form1.resx
Form1
Form2.cs
Form3.cs
Form4.cs
Form5.cs
Form6.cs
Form7.cs
Program.cs
Autos
Lang
Autos Locals Watch 1
Call Stack Breakpoints Command Window Immediate Window Output
Solution Expl... Team Explorer
Ready
Type here to search
10:46 AM
12/8/2021



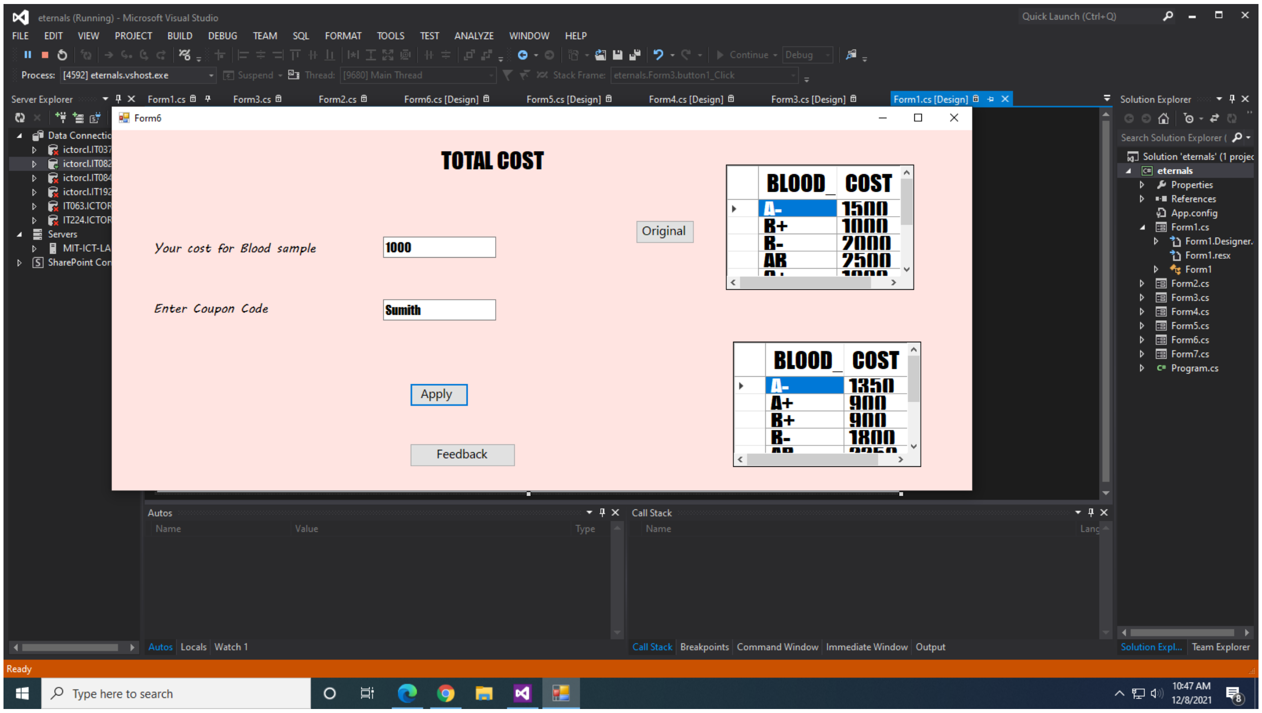
eternals (Running) - Microsoft Visual Studio
FILE EDIT VIEW PROJECT BUILD DEBUG TEAM SQL FORMAT TOOLS TEST ANALYZE WINDOW HELP
Process: [4592] eternals.vshost.exe
Stack Frame: eternals.Form3.button1_Click
Form4
Form3.cs [Design]
Form1.cs [Design]
Solution Explorer
Show_Details
Select
HELP SAVE LIVES DONATE BLOOD
Login
connect
Ready

Form4

Receiver Page

Enter the details

Blood Group	
Location	



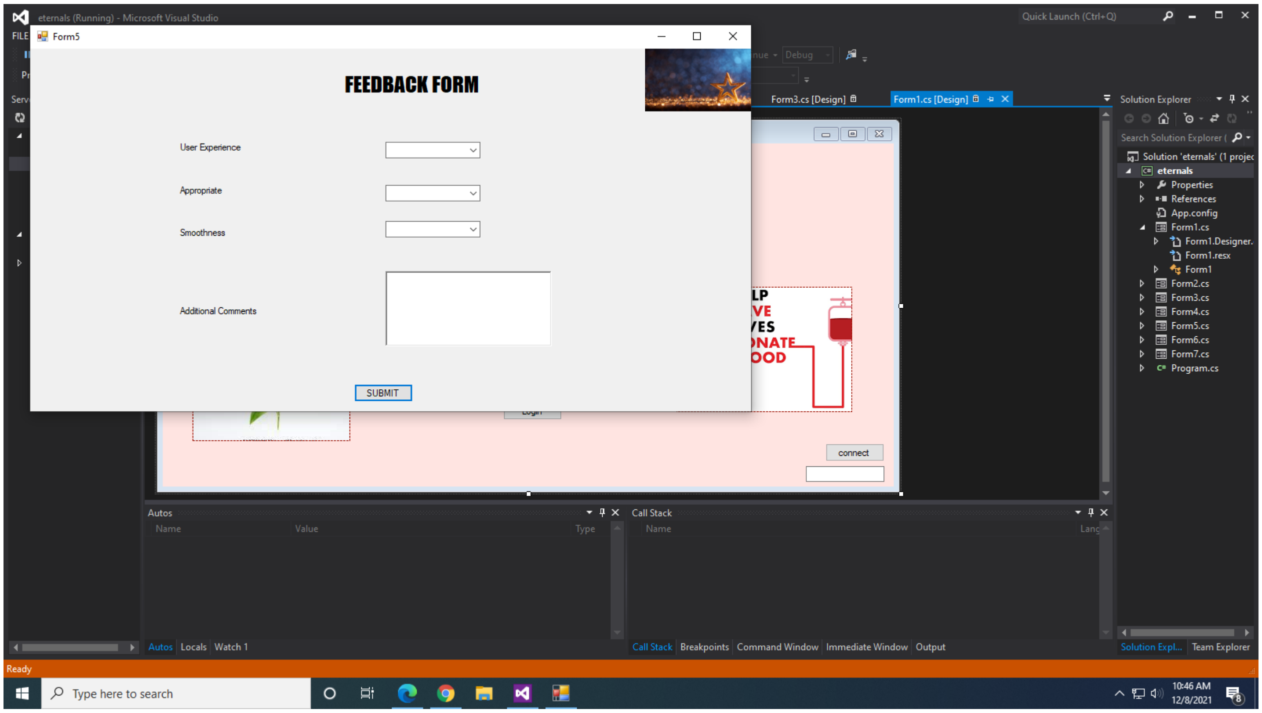
Form6

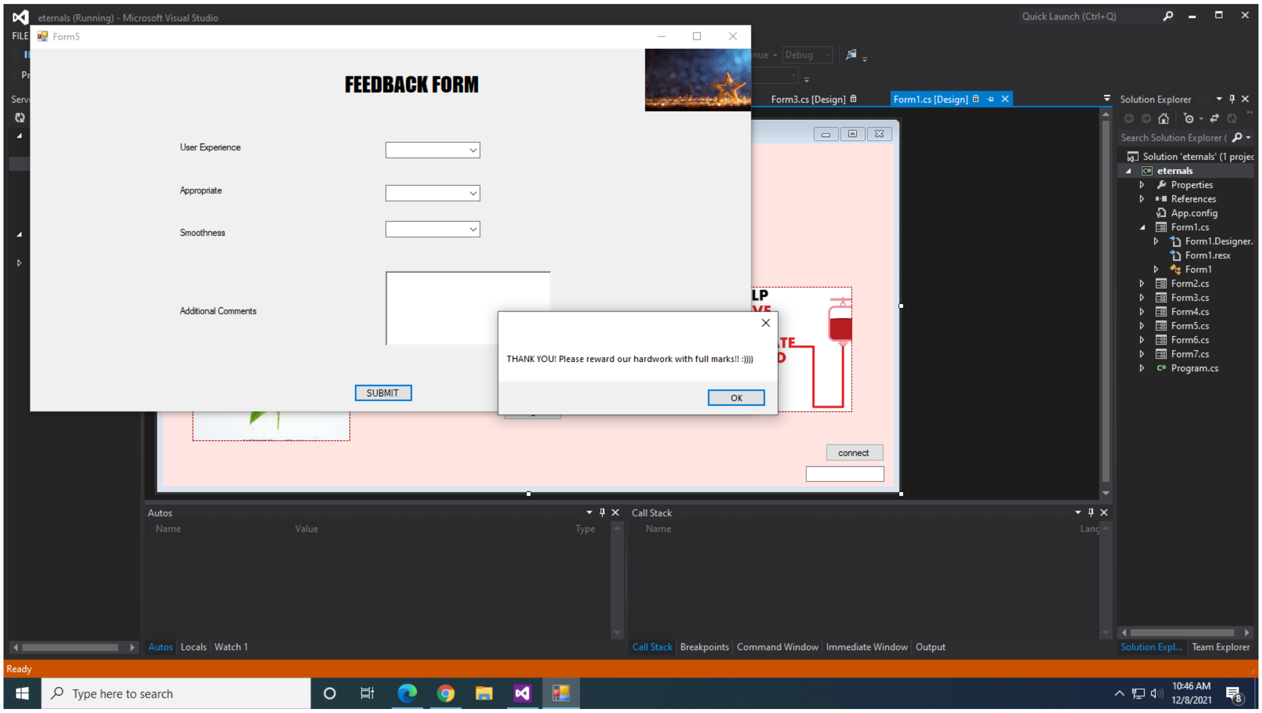
TOTAL COST

Your cost for Blood sample	1000
Enter Coupon Code	Sumith

BLOOD_	COST
A-	1500
B+	1000
B-	2000
AB	2500

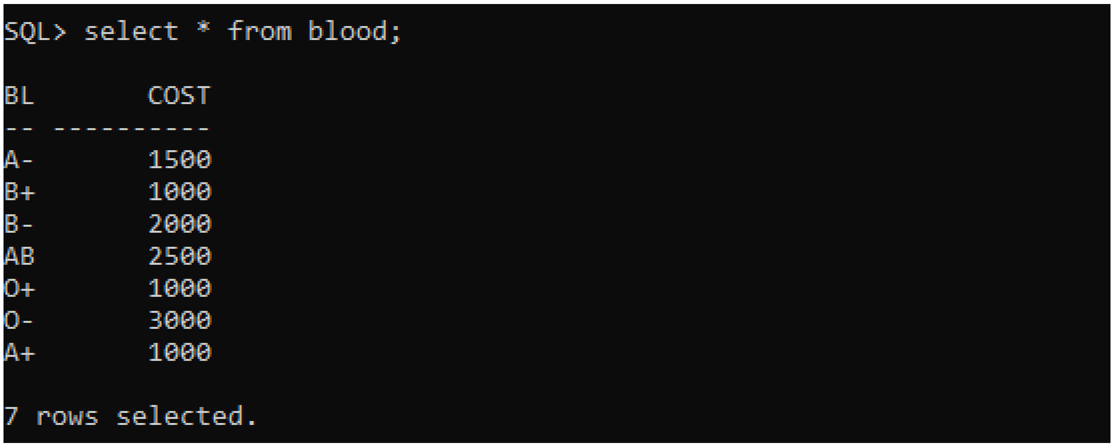
BLOOD_	COST
A-	1350
A+	900
B+	900
B-	1800



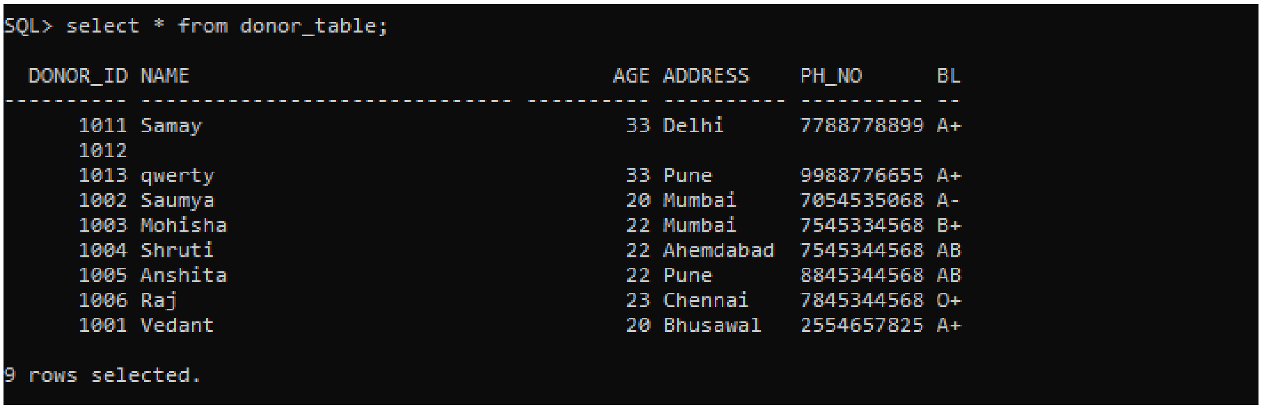


THANK YOU! Please reward our hardwork with full marks!! :))))

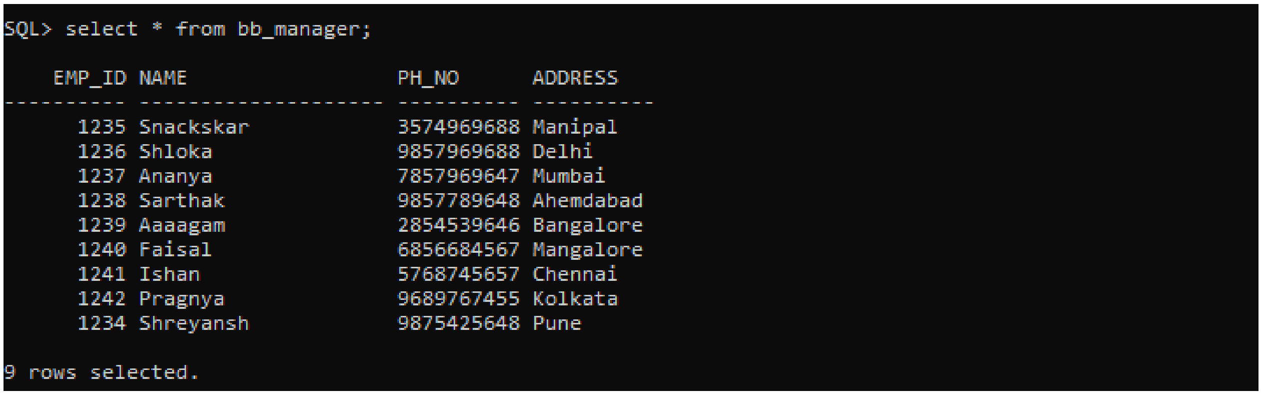
Backend



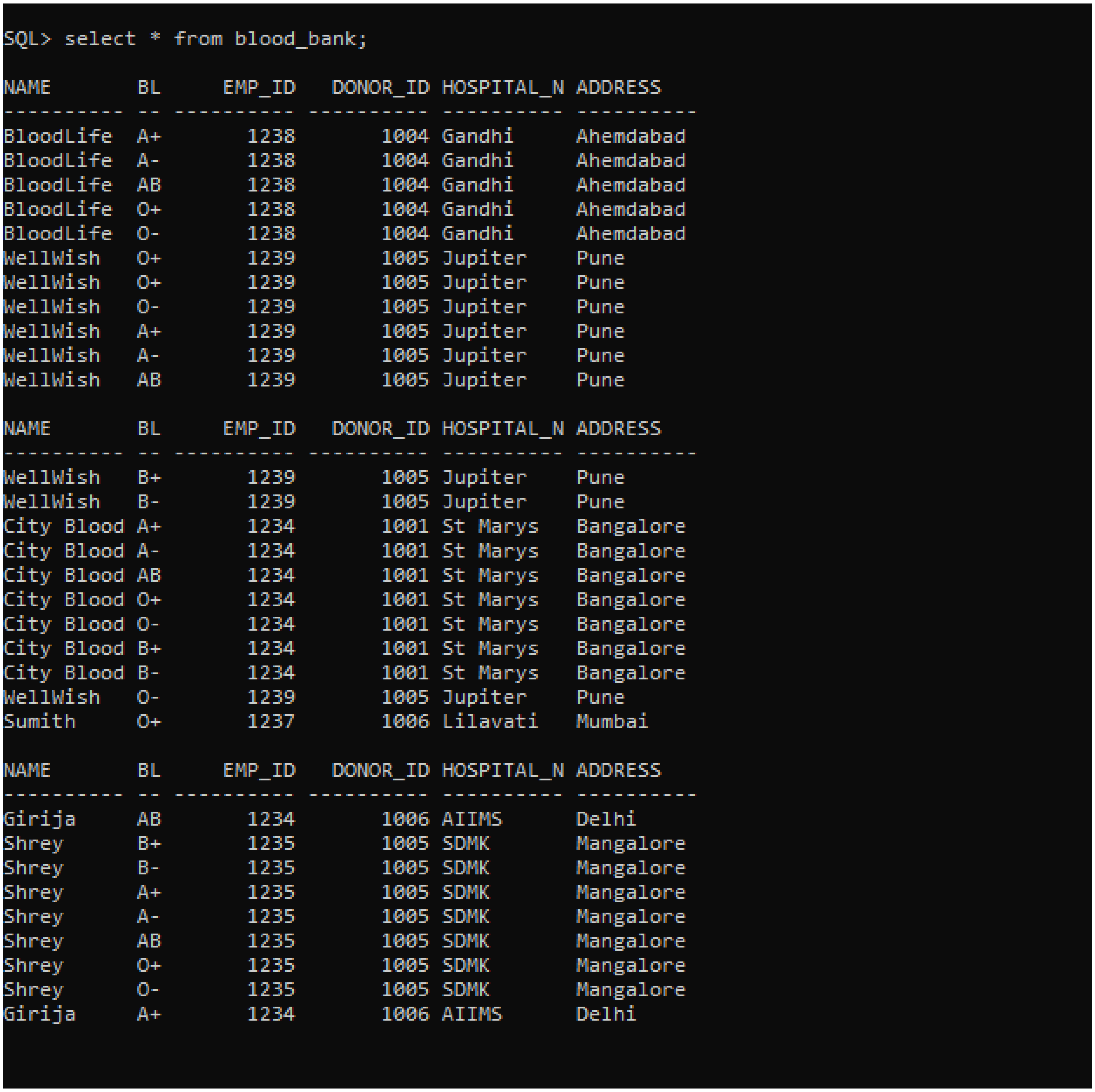
```
SQL> select * from blood;

BL       COST
-- ----------
A-       1500
B+       1000
B-       2000
AB       2500
O+       1000
O-       3000
A+       1000

7 rows selected.
```



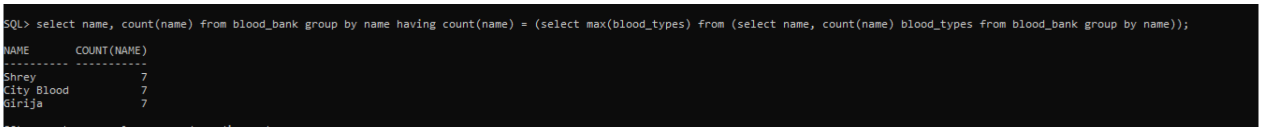
```
SQL> select * from donor_table;

  DONOR_ID NAME                                  AGE ADDRESS    PH_NO      BL
---------- ------------------------------ ---------- ---------- ---------- --
      1011 Samay                                  33 Delhi      7788778899 A+
      1012
      1013 qwerty                                 33 Pune       9988776655 A+
      1002 Saumya                                 20 Mumbai     7054535068 A-
      1003 Mohisha                                22 Mumbai     7545334568 B+
      1004 Shruti                                 22 Ahemdabad  7545344568 AB
      1005 Anshita                                22 Pune       8845344568 AB
      1006 Raj                                    23 Chennai    7845344568 O+
      1001 Vedant                                 20 Bhusawal   2554657825 A+

9 rows selected.
```



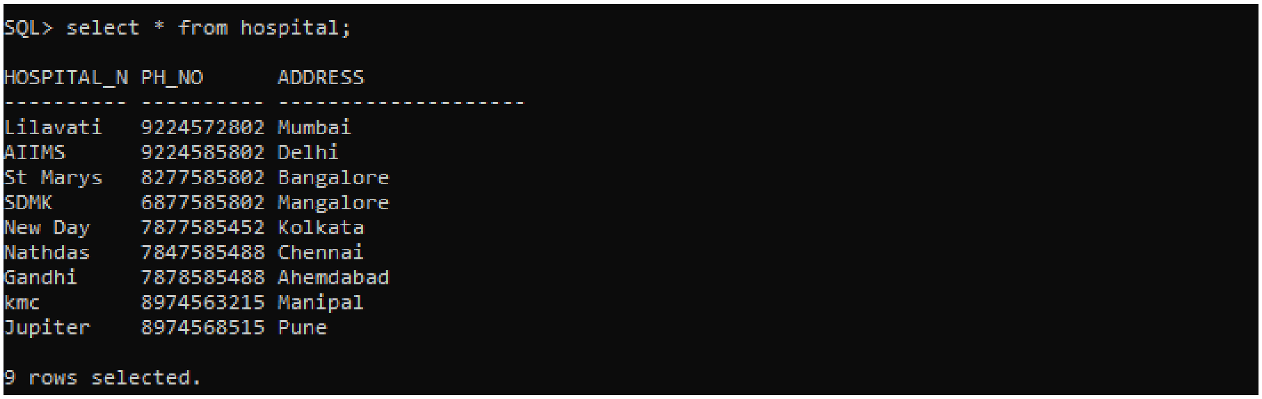
```
SQL> select * from bb_manager;

    EMP_ID NAME                 PH_NO      ADDRESS
---------- -------------------- ---------- ----------
      1235 Snackskar            3574969688 Manipal
      1236 Shloka               9857969688 Delhi
      1237 Ananya               7857969647 Mumbai
      1238 Sarthak              9857789648 Ahemdabad
      1239 Aaaagam              2854539646 Bangalore
      1240 Faisal               6856684567 Mangalore
      1241 Ishan                5768745657 Chennai
      1242 Pragnya              9689767455 Kolkata
      1234 Shreyansh            9875425648 Pune

9 rows selected.
```



```
SQL> select * from blood_bank;

NAME       BL     EMP_ID   DONOR_ID HOSPITAL_N ADDRESS
---------- -- ---------- ---------- ---------- ----------
BloodLife  A+       1238       1004 Gandhi     Ahemdabad
BloodLife  A-       1238       1004 Gandhi     Ahemdabad
BloodLife  AB       1238       1004 Gandhi     Ahemdabad
BloodLife  O+       1238       1004 Gandhi     Ahemdabad
BloodLife  O-       1238       1004 Gandhi     Ahemdabad
WellWish   O+       1239       1005 Jupiter    Pune
WellWish   O+       1239       1005 Jupiter    Pune
WellWish   O-       1239       1005 Jupiter    Pune
WellWish   A+       1239       1005 Jupiter    Pune
WellWish   A-       1239       1005 Jupiter    Pune
WellWish   AB       1239       1005 Jupiter    Pune

NAME       BL     EMP_ID   DONOR_ID HOSPITAL_N ADDRESS
---------- -- ---------- ---------- ---------- ----------
WellWish   B+       1239       1005 Jupiter    Pune
WellWish   B-       1239       1005 Jupiter    Pune
City Blood A+       1234       1001 St Marys   Bangalore
City Blood A-       1234       1001 St Marys   Bangalore
City Blood AB       1234       1001 St Marys   Bangalore
City Blood O+       1234       1001 St Marys   Bangalore
City Blood O-       1234       1001 St Marys   Bangalore
City Blood B+       1234       1001 St Marys   Bangalore
City Blood B-       1234       1001 St Marys   Bangalore
WellWish   O-       1239       1005 Jupiter    Pune
Sumith     O+       1237       1006 Lilavati   Mumbai

NAME       BL     EMP_ID   DONOR_ID HOSPITAL_N ADDRESS
---------- -- ---------- ---------- ---------- ----------
Girija     AB       1234       1006 AIIMS      Delhi
Shrey      B+       1235       1005 SDMK       Mangalore
Shrey      B-       1235       1005 SDMK       Mangalore
Shrey      A+       1235       1005 SDMK       Mangalore
Shrey      A-       1235       1005 SDMK       Mangalore
Shrey      AB       1235       1005 SDMK       Mangalore
Shrey      O+       1235       1005 SDMK       Mangalore
Shrey      O-       1235       1005 SDMK       Mangalore
Girija     A+       1234       1006 AIIMS      Delhi
```



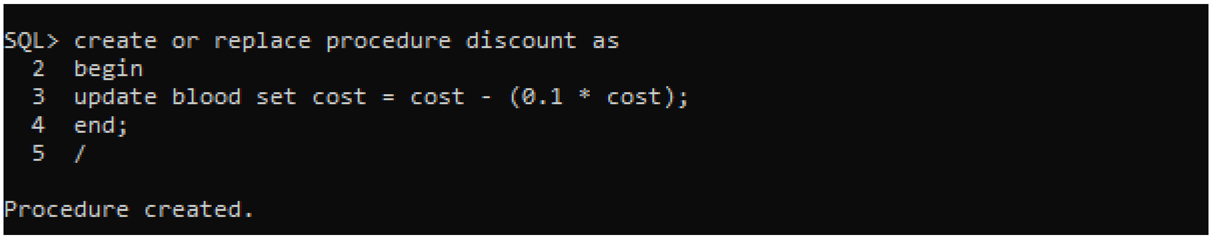
```
SQL> select name, count(name) from blood_bank group by name having count(name) = (select max(blood_types) from (select name, count(name) blood_types from blood_bank group by name));

NAME       COUNT(NAME)
---------- -----------
Shrey                7
City Blood           7
Girija               7
```



```
SQL> select * from hospital;

HOSPITAL_N PH_NO      ADDRESS
---------- ---------- --------------------
Lilavati   9224572802 Mumbai
AIIMS      9224585802 Delhi
St Marys   8277585802 Bangalore
SDMK       6877585802 Mangalore
New Day    7877585452 Kolkata
Nathdas    7847585488 Chennai
Gandhi     7878585488 Ahemdabad
kmc        8974563215 Manipal
Jupiter    8974568515 Pune

9 rows selected.
```

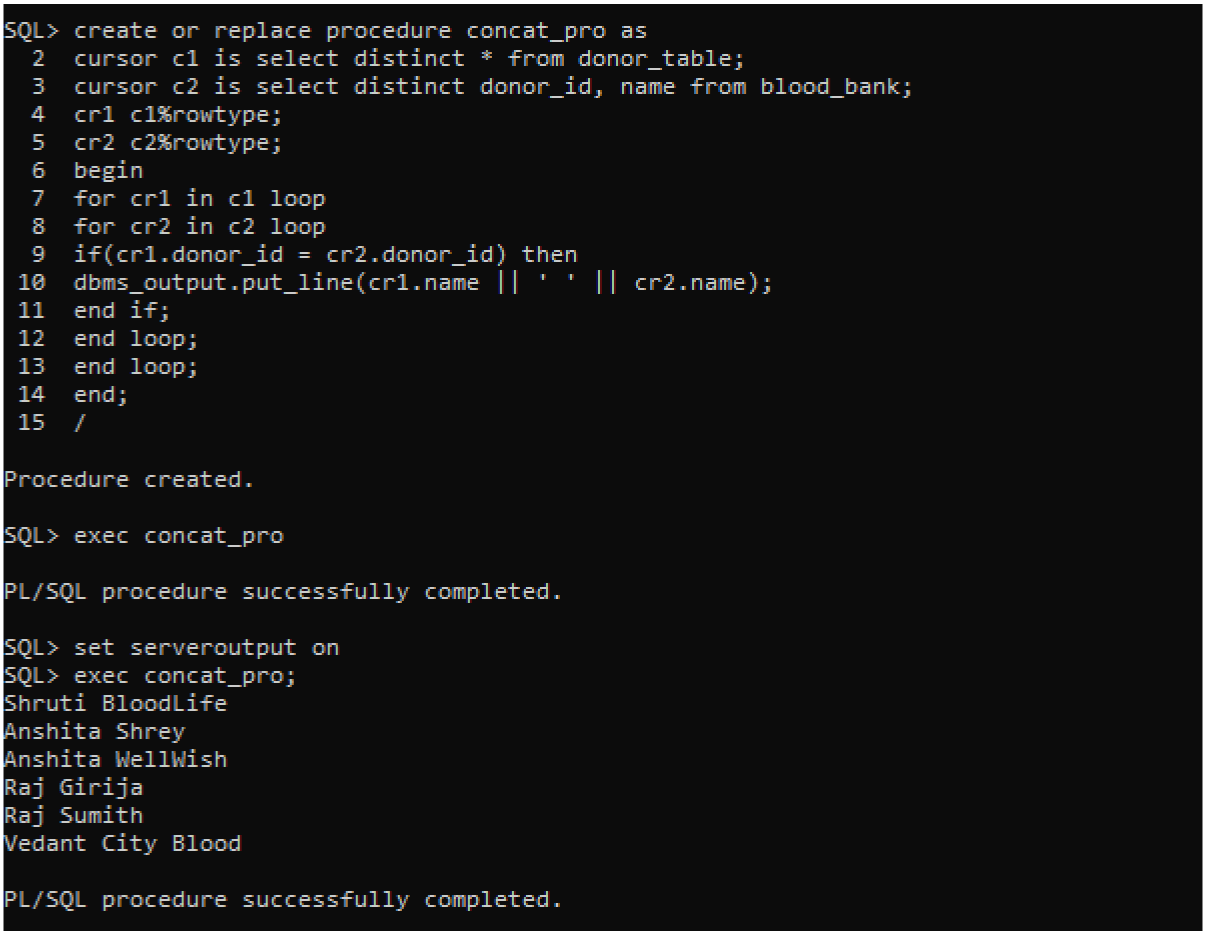
PL/SQL

This procedure gives a discount of 10% on the cost on entering the correct coupon code.



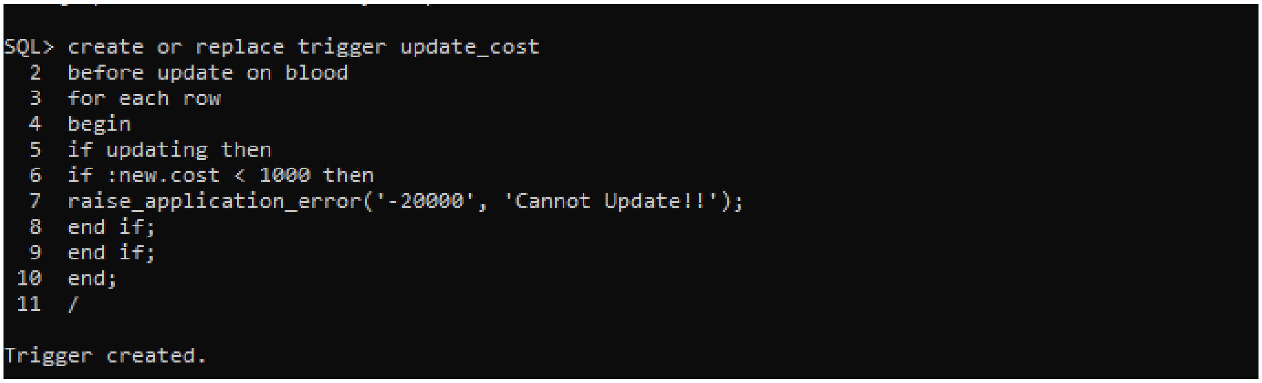
```
SQL> create or replace procedure discount as
     begin
     update blood set cost = cost - (0.1 * cost);
     end;
     /

Procedure created.
```

This procedure is used to concatenate the name of the donor with the respective blood bank name.



```
SQL> create or replace procedure concat_pro as
  2  cursor c1 is select distinct * from donor_table;
  3  cursor c2 is select distinct donor_id, name from blood_bank;
  4  cr1 c1%rowtype;
  5  cr2 c2%rowtype;
  6  begin
  7  for cr1 in c1 loop
  8  for cr2 in c2 loop
  9  if(cr1.donor_id = cr2.donor_id) then
 10  dbms_output.put_line(cr1.name || ' ' || cr2.name);
 11  end if;
 12  end loop;
 13  end loop;
 14  end;
 15  /

Procedure created.

SQL> exec concat_pro

PL/SQL procedure successfully completed.

SQL> set serveroutput on
SQL> exec concat_pro;
Shruti BloodLife
Anshita Shrey
Anshita WellWish
Raj Girija
Raj Sumith
Vedant City Blood

PL/SQL procedure successfully completed.
```

Trigger created in order to keep all updated costs>1000



```
SQL> create or replace trigger update_cost
  2  before update on blood
  3  for each row
  4  begin
  5  if updating then
  6  if :new.cost < 1000 then
  7  raise_application_error('-20000', 'Cannot Update!!');
  8  end if;
  9  end if;
 10  end;
 11  /

Trigger created.
```

Result

A highly efficient working application compatible with Windows was created that can perform all the user requirements. This component can be plugged on to many other systems

Conclusion

The blood bank management system allows the blood banks and hospitals to conveniently manage and filter large amount of data. Moreover a donor can also volunteer to donate blood in the nearest blood bank and hence help the society.

Team Details

Name of the team: Team ETERNALS

Members :

Mohisha Khanna 190911052
Shreyansh Gupta 190911178
Vedant Chaudhari 190911082