



AMERICAN INTERNATIONAL UNIVERSITY–BANGLADESH

FACULTY OF SCIENCE & TECHNOLOGY

INTRODUCTION TO DATABASE

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Section: G

Final Project On

Blood Donation Management System

Supervised By

Methila Farzana Woishe

Submitted By

MD ABU BAKAR SIDDIQUE (22-48322-3)

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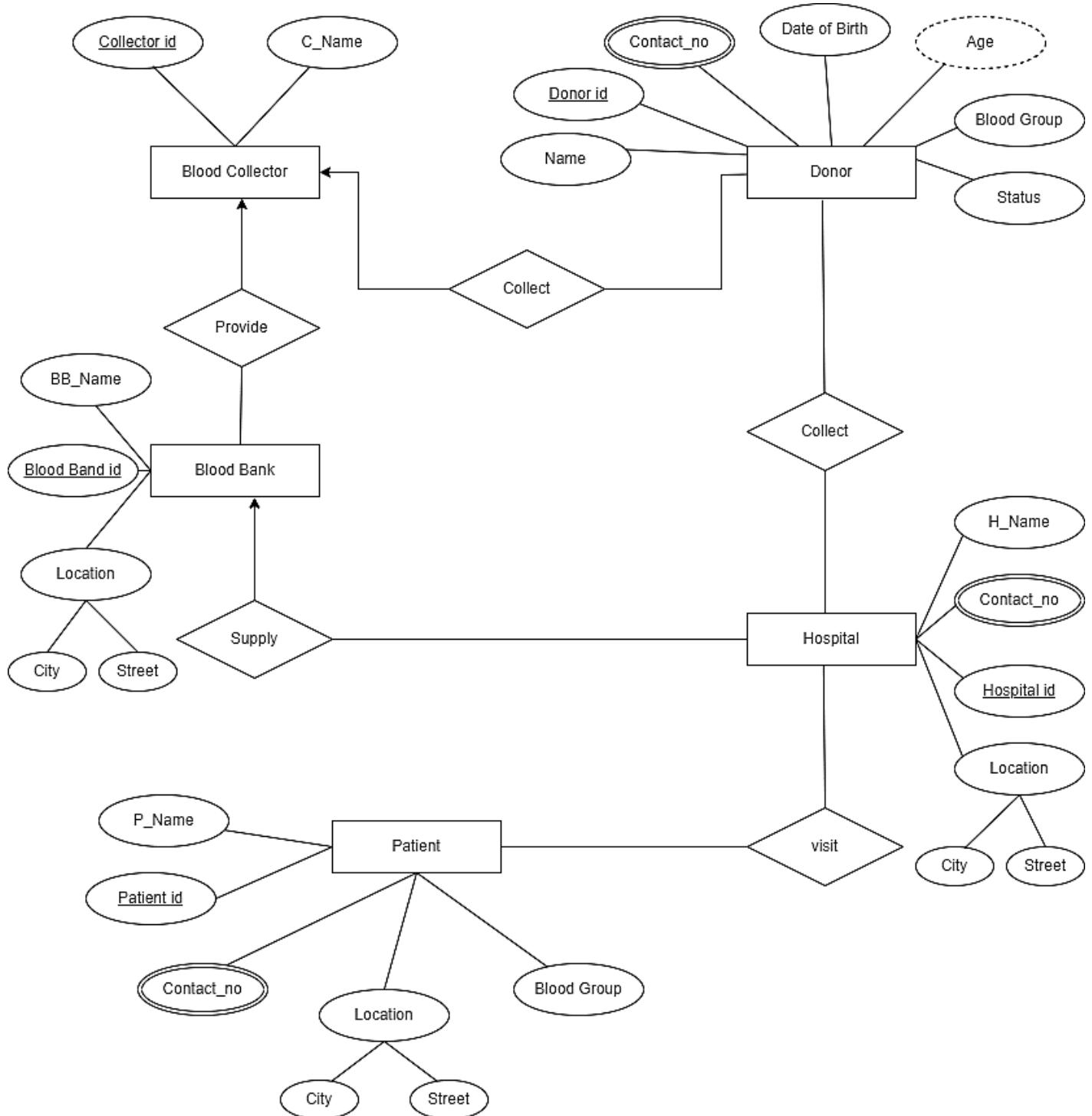
1. Introduction:

In the aftermath of the Maui Fire Tragedy, the Local Authority aims to establish an efficient and organized database system to manage blood donors, blood collectors, blood banks, hospitals, and patients in the affected area. This system will streamline the process of collecting and distributing blood to the hospitals for the victims and ensure timely access to blood in emergency situations.

2. Scenario Description:

The Local Authority is taking measures to establish a comprehensive database of blood donors within the region for the past month. The Blood Collector plays a vital role in this initiative, collecting blood from willing donors and preserving it in the Blood Bank. These collectors have the responsibility of gathering various blood groups from multiple donors. However, it is important to acknowledge that there may be exceptional cases where collectors fail to obtain blood from any donors. Each Blood Collector is identified by their unique name and ID. They actively collect blood from numerous donors. On the other hand, donors are required to provide essential information, including their blood group, donor id, contact number, name, date of birth, and age. Each individual possesses a distinctive blood group, and donors have the option to either contribute their blood to the blood bank or decline if they feel unfit to do so. The Blood Bank, with its name, ID, blood group inventory, and location, serves as a crucial storage facility for the collected blood from the donors. Blood Collectors supply different blood groups to the Blood Bank based on its specific requirements. Subsequently, the Blood Bank fulfills the demand for blood by distributing different blood groups to various hospitals. Hospitals, characterized by their name, location, ID, and contact number, also play a critical role in this system. They can place orders for specific blood groups from the Blood Bank according to their immediate needs. Alternatively, hospitals may directly collect blood from donors if necessary. Patients seeking medical attention visit different hospitals for check-up and treatments. Each patient is identified by their name, number, ID, location, and blood group, ensuring the appropriate matching of blood when required. By creating this comprehensive Blood Donor Database, the Local Authority aims to facilitate a well-organized system for managing blood donation, storage, and distribution in response to emergencies like the Maui Fire Tragedy. The efficient coordination between Blood Collectors, Blood Bank, Hospitals, and Donors will save lives and provide critical support to those in need during such challenging times.

3. ER Diagram:



4. Normalization:

Relation: One to Many (A Blood Collector can collect blood from many Donors)

UNF: Collector_id, C_Name, Contact_no, D_Name, Donor_id, Contact_no, Date of Birth, Age, Blood Group, Status, City, Street

1NF: Multivalued Attributes: Contact_no, Contact_no

Collector_id, C_Name, D_Name, Donor_id, Date of Birth, Age, Blood_Group, Status, City, Street

2NF: 1. Collector_id, Contact_no

2. Donor_id, Contact_no

3. Collector_id, C_Name

4. Donor_id, D_Name, Date of Birth, Age, Blood Group, Status, City, Street, **Collector_id**

3NF: 1. Donor_id, City, Street

2. Collector_id, Contact_no

3. Donor_id, Contact_no

4. Collector_id, C_Name

5. Donor_id, D_Name, Date of Birth, Age, Blood Group, Status, **Collector_id**

Relation: One-to-Many (A blood collector can provide blood to many Blood Bank)

UNF: Collector_id, C_Name, Contact_no, BB_Name, Blood_Bank_id, City, Street, Contact_no

1NF: Multivalued Attributes: Contact_no, Contact_no

Collector_id, C_Name, BB_Name, Blood_Bank_id, City, Street

2NF: 1. Collector_id, Contact_no

2. Blood_Bank_id, Contact_no

3. Collector_id, C_Name

4. Blood_Bank_id, BB_Name, City, Street, **Collector_id**

3NF: 1. Blood_Bank_id, City, Street

2. Collector_id, Contact_no

3. Blood_Bank_id, Contact_no

4. Collector_id, C_Name

5. Blood_Bank_id, BB_Name, **Collector_id**

Relation: One-to-Many (The Blood Bank supplies different blood groups to Hospitals)

UNF: BB_Name, Blood_Bank_id, City, Street, Contact_no, H_Name, Contact_no, Hospital_id, city, Street

1NF: Multivalued Attributes: Contact_no, Contact_no

BB_Name, Blood_Bank_id, City, Street, H_Name, Hospital_id, city, Street

2NF: 1. Hospital_id, Contact_no

2. Blood_Bank_id, Contact_no

3. Blood_Bank_id, BB_Name, City, Street

4. Hospital_id, H_Name, city, Street, **Blood_Bank_id**

3NF: 1. Hospital_id, City, Street

2. Blood_Bank_id, City, Street

3. Hospital_id, Contact_no

4. Blood_Bank_id, Contact_no

5. Blood_Bank_id, BB_Name

6. Hospital_id, H_Name, **Blood_Bank_id**

Relation: Many-to-Many (Patients seeking medical attention visit different hospitals for check-up and treatments)

UNF: H_Name, Contact_no, Hospital_id, city, Street, P_Name, Patient_id, Contact_no, City, Street, Blood Group

1NF: Multivalued Attributes: Contact_no, Contact_no

H_Name, Hospital_id, city, Street, P_Name, Patient_id, City, Street, Blood Group

2NF: 1. Hospital_id, Contact_no

2. Patient_id, Contact_no

3. Hospital_id, H_Name, city, Street

4. Patient_id, P_Name, City, Street, Blood Group, **Hospital_id**

3NF: 1. Hospital_id, City, Street

2. Patient_id, City, Street

3. Hospital_id, Contact_no

4. Patient_id, Contact_no

5. Hospital_id, H_Name

6. Patient_id, P_Name, Blood Group, **Hospital_id**

Relation: Many-to-Many (Hospitals can directly collect blood from Donors in emergency situations)

UNF: Hospital_id, H_Name, Contact_no, city, Street, D_Name, Donor_id, Contact_no, Date of Birth, Age, Blood Group, Status, City, Street

1NF: Multivalued Attributes: Contact_no, Contact_no

Hospital_id, H_Name, city, Street, D_Name, Donor_id, Date of Birth, Age, Blood_Group, Status, City, Street

2NF: 1. Hospital_id, Contact_no

2. Donor_id, Contact_no

3. Hospital_id, H_Name, city, Street

4. Donor_id, D_Name, Date of Birth, Age, Blood_Group, Status, City, Street, **Hospital_id**

3NF: 1. Hospital_id, City, Street

2. Donor_id, City, Street

3. Hospital_id, Contact_no

4. Donor_id, Contact_no

5. Hospital_id, H_Name

6. Donor_id, D_Name, Date of Birth, Age, Blood_Group, Status, **Hospital_id**

5. Finalization:

1. Donor_id, City, Street
2. Collector_id, Contact_no
3. Donor_id, Contact_no
4. Collector_id, C_Name
5. Donor_id, D_Name, Date of Birth, Age, Blood Group, Status, **Collector_id**
6. Blood_Bank_id, City, Street
7. Collector_id, Contact_no
8. Blood_Bank_id, Contact_no
9. Collector_id, C_Name
10. Blood_Bank_id, BB_Name, **Collector_id**
11. Hospital_id, City, Street
12. Blood_Bank_id, City, Street
13. Hospital_id, Contact_no
14. Blood_Bank_id, Contact_no
15. Blood_Bank_id, BB_Name
16. Hospital_id, H_Name, **Blood_Bank_id**
17. Hospital_id, City, Street
18. Patient_id, City, Street
19. Hospital_id, Contact_no
20. Patient_id, Contact_no
21. Hospital_id, H_Name
22. Patient_id, P_Name, Blood Group, **Hospital_id**
23. Hospital_id, City, Street
24. Donor_id, City, Street
25. Hospital_id, Contact_no
26. Donor_id, Contact_no
27. Hospital_id, H_Name
28. Donor_id, D_Name, Date of Birth, Age, Blood_Group, Status, **Hospital_id**

6. Optimization:

1. Donor_id, City, Street
2. Collector_id, Contact_no
3. Donor_id, Contact_no
4. Collector_id, C_Name
5. Donor_id, D_Name, Date of Birth, Age, Blood Group, Status, **Collector_id**
6. Blood_Bank_id, City, Street
7. Blood_Bank_id, Contact_no
8. Blood_Bank_id, BB_Name, **Collector_id**
9. Hospital_id, City, Street
10. Hospital_id, Contact_no
11. Blood_Bank_id, BB_Name
12. Hospital_id, H_Name, **Blood_Bank_id**
13. Patient_id, City, Street
14. Patient_id, Contact_no
15. Hospital_id, H_Name
16. Patient_id, P_Name, Blood Group, **Hospital_id**
17. Donor_id, D_Name, Date of Birth, Age, Blood_Group, Status, **Hospital_id**

7. Table Creation:

No 1:

```
Create table No1 (Donor_id varchar(10) Primary key Not Null, city  
varchar(20), Street varchar(20))
```

```
desc No1
```

The screenshot shows the Oracle Database Express Edition interface. In the SQL Commands window, the following SQL statements are entered:

```
Create table No1 (Donor_id varchar(10) Primary key Not Null, city varchar(20), Street varchar(20))  
desc No1
```

Below the SQL window, the 'Describe' tab is selected in the results pane, showing the structure of the NO1 table:

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|-------|----------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| NO1 | DONOR_ID | Varchar2 | 10 | - | - | 1 | - | - | - |
| | CITY | Varchar2 | 20 | - | - | - | ✓ | - | - |
| | STREET | Varchar2 | 20 | - | - | - | ✓ | - | - |

At the bottom of the interface, it says 'Language: en-gb' and 'Application Express 2.1.0.0.39 Copyright © 1999, 2006, Oracle. All rights reserved.'

No 2:

```
Create table No2 (Collector_id varchar(10) Primary key Not  
Null, Contact_no int)
```

```
desc No2
```

The screenshot shows the Oracle Database Express Edition interface. In the SQL Commands window, the following SQL statements are entered:

```
Create table No2 (Collector_id varchar(10) primary key not null, Contact_no int)  
desc No2
```

Below the SQL window, the 'Describe' tab is selected in the results pane, showing the structure of the NO2 table:

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|-------|--------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| NO2 | COLLECTOR_ID | Varchar2 | 10 | - | - | 1 | - | - | - |
| | CONTACT_NO | Number | - | - | 0 | - | ✓ | - | - |

At the bottom of the interface, it says 'Language: en-gb' and 'Application Express 2.1.0.0.39 Copyright © 1999, 2006, Oracle. All rights reserved.'

No 3:

Create table No2 (Donor_id varchar(10) primary key not null, Contact_no int)

desc No3

The screenshot shows the Oracle Database Express Edition interface. The SQL command window contains the following code:

```
CREATE TABLE NO3 (Donor_id varchar(10) primary key not null, Contact_no int)
desc NO3
```

Below the code, the results section displays the table structure:

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|-------|------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| NO3 | DONOR_ID | VARCHAR2 | 10 | - | - | 1 | - | - | - |
| | CONTACT_NO | NUMBER | - | - | 0 | - | ✓ | - | - |

At the bottom, the status bar shows "Language: en-gb" and "Application Express 2.1.0.00.39 Copyright © 1999, 2006, Oracle. All rights reserved."

No 4:

Create table No4 (Collector_id varchar(10) primary key not null, C_Name varchar(255))

desc No4

The screenshot shows the Oracle Database Express Edition interface. The SQL command window contains the following code:

```
CREATE TABLE NO4 (Collector_id varchar(10) primary key not null, C_Name varchar(255))
desc NO4
```

Below the code, the results section displays the table structure:

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|-------|--------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| NO4 | COLLECTOR_ID | VARCHAR2 | 10 | - | - | 1 | - | - | - |
| | C_NAME | VARCHAR2 | 255 | - | - | - | ✓ | - | - |

At the bottom, the status bar shows "Application Express 2.1.0.00.39"

No 5:

```
create table No5(Donor_id varchar(10) not NULL Primary Key, D_Name  
varchar(50), Date_of_Birth date, Age Number(3), Blood_Group varchar(5)  
Not Null, Status varchar(10) )
```

```
desc No5
```

The screenshot shows the Oracle Database Express Edition interface. The SQL Commands window contains the following code:

```
create table No5(Donor_id varchar(10) not NULL Primary Key, D_Name  
varchar(50), Date_of_Birth date, Age Number(3), Blood_Group varchar(5) Not Null, Status varchar(10) )  
desc No5;
```

The results section shows the table structure:

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|-------|---------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| NO5 | DONOR_ID | VARCHAR2 | 10 | - | - | 1 | ✓ | - | - |
| | D_NAME | VARCHAR2 | 50 | - | - | - | ✓ | - | - |
| | DATE_OF_BIRTH | DATE | 7 | - | - | - | ✓ | - | - |
| | AGE | NUMBER | - | 3 | 0 | - | ✓ | - | - |
| | BLOOD_GROUP | VARCHAR2 | 5 | - | - | - | ✓ | - | - |
| | STATUS | VARCHAR2 | 10 | - | - | - | ✓ | - | - |

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No 6:

```
create table No6(Blood_Bank_id varchar(10) not null Primary Key, City  
varchar(10), Street varchar(10))
```

```
desc No6
```

The screenshot shows the Oracle Database Express Edition interface. The SQL Commands window contains the following code:

```
create table No6(Blood_Bank_id varchar(10) not null Primary Key, City varchar(10), Street varchar(10))  
desc No6;
```

The results section shows the table structure:

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|-------|---------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| NO6 | BLOOD_BANK_ID | VARCHAR2 | 10 | - | - | 1 | ✓ | - | - |
| | CITY | VARCHAR2 | 10 | - | - | - | ✓ | - | - |
| | STREET | VARCHAR2 | 10 | - | - | - | ✓ | - | - |

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No 7:

```
create table No7(Blood_Bank_id varchar(10) not null primary key,
Contact_no int)
```

```
desc No7
```

User: SCOTT

Home > SQL > SQL Commands

Autocommit Display 10

```
create table No7(Blood_Bank_id varchar(10) not null primary key, Contact_no int)
desc No7
```

Results Explain Describe Saved SQL History

Object Type TABLE Object NOT

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|-------|---------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| NO7 | BLOOD_BANK_ID | Varchar2 | 10 | - | - | 1 | - | - | - |
| | CONTACT_NO | Number | - | - | 0 | - | ✓ | - | - |
| | | | | | | | | | 1 - 2 |

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No 8:

```
create table No8(Blood_Bank_id varchar(10) not null primary key, BB_Name
varchar(20), Collector_id varchar(10))
```

```
drop table No8
```

```
desc No8
```

```
desc No4
```

```
Alter table No8 add constraint cons2 Foreign Key(Collector_id) references
No4 (Collector_id)
```

User: SCOTT

Home > SQL > SQL Commands

Autocommit Display 10

```
create table No8(Blood_Bank_id varchar(10) not null primary key, BB_Name varchar(20),Collector_id varchar(10))
drop table No8
desc No8
desc No4
Alter table No8 add constraint cons2 Foreign key(Collector_id) references No4 (Collector_id)
```

Results Explain Describe Saved SQL History

Object Type TABLE Object NO8

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|-------|---------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| NO8 | BLOOD_BANK_ID | Varchar2 | 10 | - | - | 1 | - | - | - |
| | BB_NAME | Varchar2 | 20 | - | - | - | ✓ | - | - |
| | COLLECTOR_ID | Varchar2 | 10 | - | - | - | ✓ | - | - |
| | | | | | | | | | 1 - 3 |

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No 9:

```
create table No9(Hospital_id varchar(10) not null primary key , City  
varchar(20),Street varchar(20))
```

```
desc No9
```

User: SCOTT

Home > SQL > SQL Commands

Autocommit

```
create table No9(Hospital_id varchar(10) not null primary key , City varchar(20),Street varchar(20))  
drop table No9  
desc No9
```

Results Explain Describe Saved SQL History

Object Type TABLE Object NO9

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|-------|-------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| NO9 | HOSPITAL_ID | Varchar2 | 10 | - | - | 1 | - | - | - |
| | CITY | Varchar2 | 20 | - | - | - | ✓ | - | - |
| | STREET | Varchar2 | 20 | - | - | - | ✓ | - | - |

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No 10:

```
create table No10(Hospital_id varchar(10) not null primary key ,  
Contact_no int)
```

```
desc No10
```

ORACLE Database Express Edition

User: SCOTT

Home > SQL > SQL Commands

Autocommit

```
create table No10(Hospital_id varchar(10) not null primary key , Contact_no int)  
desc No10
```

Results Explain Describe Saved SQL History

Object Type TABLE Object NO10

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|-------|-------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| NO10 | HOSPITAL_ID | Varchar2 | 10 | - | - | 1 | - | - | - |
| | CONTACT_NO | Number | - | - | 0 | - | ✓ | - | - |

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No 11:

```
create table No11(Blood_Bank_id varchar(10) not null primary key ,  
BB_Name varchar(20))
```

```
desc No11
```

The screenshot shows the Oracle Database Express Edition interface. The SQL Commands window contains the following SQL code:

```
create table No11(Blood_Bank_id varchar(10) not null primary key ,  
BB_Name varchar(20))  
desc No11
```

Below the code, the results show the table structure:

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|-------|---------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| NO11 | BLOOD_BANK_ID | Varchar2 | 10 | - | - | 1 | - | - | - |
| | BB_NAME | Varchar2 | 20 | - | - | - | ✓ | - | - |

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No 12:

```
Alter table No12 add constraint cons3 foreign key(Blood_Bank_id)  
references No11(Blood_Bank_id)
```

```
desc No12
```

```
Alter table No12 add constraint cons3 foreign key(Blood_Bank_id)  
references No11(Blood_Bank_id)
```

The screenshot shows the Oracle Database Express Edition interface. The SQL Commands window contains the following SQL code:

```
Alter table No12 add constraint cons3 foreign key(Blood_Bank_id) references No11(Blood_Bank_id)  
desc No12  
Alter table No12 add constraint cons3 foreign key(Blood_Bank_id) references No11(Blood_Bank_id)
```

Below the code, the results show the table structure:

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|-------|---------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| NO12 | HOSPITAL_ID | Varchar2 | 10 | - | - | 1 | - | - | - |
| | H_NAME | Varchar2 | 50 | - | - | - | ✓ | - | - |
| | BLOOD_BANK_ID | Varchar2 | 10 | - | - | - | ✓ | - | - |

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No 13:

```
create table No13(patient_id varchar(10) not null primary key, Contact_no int)
```

```
desc No13
```

The screenshot shows the Oracle Database Express Edition interface. The SQL Commands window contains the following SQL code:

```
create table No13(patient_id varchar(10) not null primary key, contact_no int)
desc No13;
```

The results section shows the table structure:

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|-------|------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| NO13 | PATIENT_ID | VARCHAR2 | 10 | - | - | 1 | - | - | |
| | CITY | VARCHAR2 | 20 | - | - | - | ✓ | - | |
| | STREET | VARCHAR2 | 20 | - | - | - | ✓ | - | |

Below the table structure, the comments column shows "1 - 3".

At the bottom of the interface, it says "Language: en-gb" and "Application Express 2.1.0.00.39 Copyright © 1999, 2006, Oracle. All rights reserved."

No 14:

```
create table No14(patient_id varchar(10) not null primary key, Contact_no int)
```

```
desc No14
```

The screenshot shows the Oracle Database Express Edition interface. The SQL Commands window contains the following SQL code:

```
create table No14(patient_id varchar(10) not null primary key, contact_no int)
desc No14;
```

The results section shows the table structure:

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|-------|------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| NO14 | PATIENT_ID | VARCHAR2 | 10 | - | - | 1 | - | - | - |
| | CONTACT_NO | NUMBER | - | - | 0 | - | ✓ | - | - |

Below the table structure, the comments column shows "1 - 2".

At the bottom of the interface, it says "Language: en-gb" and "Application Express 2.1.0.00.39 Copyright © 1999, 2006, Oracle. All rights reserved."

No 15:

```
create table No15(Hospital_id varchar(10) not null primary key, H_Name
varchar(20))
```

```
desc No15
```

The screenshot shows the Oracle Database Express Edition interface. In the SQL Commands window, the following SQL statements are entered:

```
create table No15(Hospital_id varchar(10) not null primary key, H_Name varchar(20))
desc No15
```

Below the SQL window, the results of the 'Describe' command are displayed in a table:

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|-------|-------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| NO15 | HOSPITAL_ID | VARCHAR2 | 10 | - | - | 1 | - | - | - |
| | H_NAME | VARCHAR2 | 20 | - | - | - | ✓ | - | - |

At the bottom of the interface, it says 'Language: en-gb' and 'Application Express 2.1.0.00.39 Copyright © 1999, 2006, Oracle. All rights reserved.'

No 16:

```
create table No16(Patient_id varchar(10) not null primary key, P_Name
varchar(20), Blood_Group varchar(5), Hospital_id varchar(10))
```

```
desc No16
```

```
Alter table No16 add constraint cons4 foreign key(Hospital_id) references
No15(Hospital_id)
```

The screenshot shows the Oracle Database Express Edition interface. In the SQL Commands window, the following SQL statements are entered:

```
create table No16(Patient_id varchar(10) not null primary key, P_Name varchar(20), Blood_Group varchar(5), Hospital_id varchar(10))
desc No16
Alter table No16 add constraint cons4 foreign key(Hospital_id) references No15(Hospital_id)
```

Below the SQL window, the results of the 'Describe' command are displayed in a table:

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|-------|-------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| NO16 | PATIENT_ID | VARCHAR2 | 10 | - | - | 1 | - | - | - |
| | P_NAME | VARCHAR2 | 20 | - | - | - | ✓ | - | - |
| | BLOOD_GROUP | VARCHAR2 | 5 | - | - | - | ✓ | - | - |
| | HOSPITAL_ID | VARCHAR2 | 10 | - | - | - | ✓ | - | - |

Language: en-gb Application Express 2.1.0.00.39
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No 17:

```
create table No17 (Donor_id varchar(10) not NULL Primary Key, D_Name  
varchar(50), Date_of_Birth date, Age Number(3), Blood_Group varchar(5)  
not Null, Status varchar(10), Hospital_id varchar(10))
```

```
desc No17
```

```
Alter table No17 add constraint cons5 foreign key(Hospital_id) references  
No15(Hospital_id)
```

The screenshot shows the Oracle Database Express Edition interface. The SQL worksheet contains the following commands:

```
create table No17(Donor_id varchar(10) not Null Primary Key, D_Name varchar(50), Date_of_Birth date, Age Number(3), Blood_Group varchar(5) not Null, Status varchar(10), Hospital_id varchar(10))  
desc No17  
Alter table No17 add constraint cons5 foreign key(Hospital_id) references No15(Hospital_id)
```

Below the worksheet, the table structure for No17 is displayed:

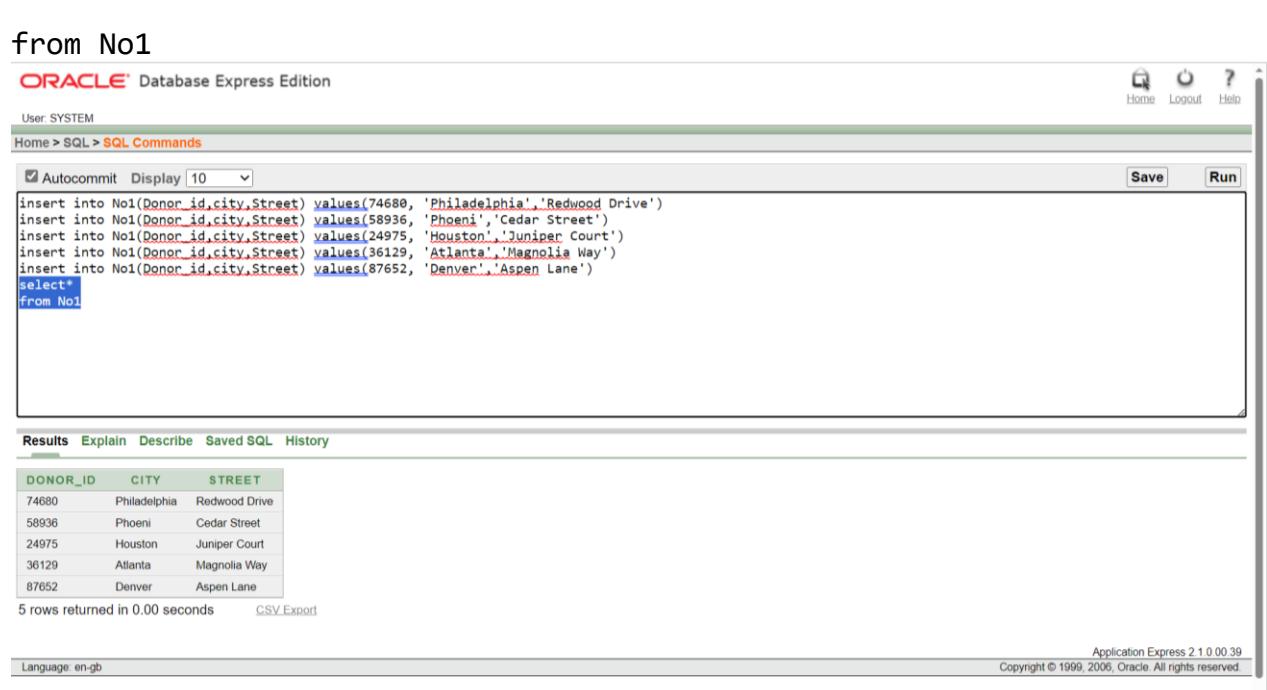
| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|-------|---------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| NO17 | DONOR_ID | VARCHAR2 | 10 | - | - | 1 | - | - | - |
| | D_NAME | VARCHAR2 | 50 | - | - | - | ✓ | - | - |
| | DATE_OF_BIRTH | DATE | 7 | - | - | - | ✓ | - | - |
| | AGE | NUMBER | - | 3 | 0 | - | ✓ | - | - |
| | BLOOD_GROUP | VARCHAR2 | 5 | - | - | - | - | - | - |
| | STATUS | VARCHAR2 | 10 | - | - | - | ✓ | - | - |
| | HOSPITAL_ID | VARCHAR2 | 10 | - | - | - | ✓ | - | - |

At the bottom of the interface, it says "Language: en-gb" and "Application Express 2.1.0.0.39 Copyright © 1999, 2006, Oracle. All rights reserved."

8. Data Insertion:

No 1:

```
insert into No1(Donor_id,city,Street)values(74680,'Philadelphia','Redwood Drive')  
insert into No1(Donor_id,city,Street) values (58936, 'Phoeni','Cedar Street')  
insert into No1(Donor_id,city,Street) values (24975, 'Houston','Juniper Court')  
insert into No1(Donor_id,city,Street) values (36129, 'Atlanta','Magnolia Way')  
insert into No1(Donor_id,city,Street) values (87652, 'Denver','Aspen Lane')  
  
select*  
  
from No1
```



The screenshot shows the Oracle Database Express Edition interface. The SQL command window contains the following SQL code:

```
insert into No1(Donor_id,city,Street)values(74680,'Philadelphia','Redwood Drive')  
insert into No1(Donor_id,city,Street) values (58936, 'Phoeni','Cedar Street')  
insert into No1(Donor_id,city,Street) values (24975, 'Houston','Juniper Court')  
insert into No1(Donor_id,city,Street) values (36129, 'Atlanta','Magnolia Way')  
insert into No1(Donor_id,city,Street) values (87652, 'Denver','Aspen Lane')  
  
select*  
  
from No1
```

The results tab displays the data inserted into the No1 table:

| DONOR_ID | CITY | STREET |
|----------|--------------|---------------|
| 74680 | Philadelphia | Redwood Drive |
| 58936 | Phoeni | Cedar Street |
| 24975 | Houston | Juniper Court |
| 36129 | Atlanta | Magnolia Way |
| 87652 | Denver | Aspen Lane |

5 rows returned in 0.00 seconds [CSV Export](#)

Language: en-gb Application Express 2.1.0.00.39
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No 2:

```
insert into No2(Collector_id, Contact_no) values('67-890', 4589632587)
insert into No2(Collector_id, Contact_no) values('54-321', 4987963254)
insert into No2(Collector_id, Contact_no) values('98-765', 4087963201)
insert into No2(Collector_id, Contact_no) values('24-680', 4189630257)
insert into No2(Collector_id, Contact_no) values('13-579', 4985201478)
select*
from No2
desc No2
```

The screenshot shows the Oracle Database Express Edition interface. The SQL command window contains the following SQL code:

```
insert into No2(Collector_id, Contact_no) values('67-890', 4589632587)
insert into No2(Collector_id, Contact_no) values('54-321', 4987963254)
insert into No2(Collector_id, Contact_no) values('98-765', 4087963201)
insert into No2(Collector_id, Contact_no) values('24-680', 4189630257)
insert into No2(Collector_id, Contact_no) values('13-579', 4985201478)
select*
from No2
desc No2
```

The results section displays the data from the No2 table:

| COLLECTOR_ID | CONTACT_NO |
|--------------|------------|
| 67-890 | 4589632587 |
| 54-321 | 4987963254 |
| 98-765 | 4087963201 |
| 24-680 | 4189630257 |
| 13-579 | 4985201478 |

5 rows returned in 0.00 seconds

CSV Export

Language: en-gb

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No 3:

```
insert into No3(Donor_id, Contact_no) values('74-680', 49658741)
insert into No3(Donor_id, Contact_no) values('58-936', 45897852)
insert into No3(Donor_id, Contact_no) values('24-975', 49652398)
insert into No3(Donor_id, Contact_no) values('36-129', 42320145)
insert into No3(Donor_id, Contact_no) values('87-652', 46987520)
select*
from No3
desc No3
```

The screenshot shows the Oracle Database Express Edition interface. The SQL command window contains the following SQL code:

```
insert into No3(Donor_id, Contact_no) values('74-680', 49658741)
insert into No3(Donor_id, Contact_no) values('58-936', 45897852)
insert into No3(Donor_id, Contact_no) values('24-975', 49652398)
insert into No3(Donor_id, Contact_no) values('36-129', 42320145)
insert into No3(Donor_id, Contact_no) values('87-652', 46987520)

select*
from No3
desc No3
```

The results section displays the data inserted into the No3 table:

| DONOR_ID | CONTACT_NO |
|----------|------------|
| 74-680 | 49658741 |
| 58-936 | 45897852 |
| 24-975 | 49652398 |
| 36-129 | 42320145 |
| 87-652 | 46987520 |

5 rows returned in 0.00 seconds

CSV Export

Language: en-gb

Application Express 2.1.0.0.39
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No 4:

```
insert into No4(COLLECTOR_ID, C_NAME) values('67-890', 'Emma')
insert into No4(COLLECTOR_ID, C_NAME) values('54-321', 'Liam')
insert into No4(COLLECTOR_ID, C_NAME) values('98-765', 'Olivia')
insert into No4(COLLECTOR_ID, C_NAME) values('24-680', 'Noah')
insert into No4(COLLECTOR_ID, C_NAME) values('13-579', 'Ava')
select*
from No4
desc No4
```

The screenshot shows the Oracle Database Express Edition interface. The SQL command window contains the following SQL code:

```
insert into No4(COLLECTOR_ID, C_NAME) values('67-890', 'Emma')
insert into No4(COLLECTOR_ID, C_NAME) values('54-321', 'Liam')
insert into No4(COLLECTOR_ID, C_NAME) values('98-765', 'Olivia')
insert into No4(COLLECTOR_ID, C_NAME) values('24-680', 'Noah')
insert into No4(COLLECTOR_ID, C_NAME) values('13-579', 'Ava')
select*
from No4
desc No4
```

The results section displays a table with the following data:

| COLLECTOR_ID | C_NAME |
|--------------|--------|
| 67-890 | Emma |
| 54-321 | Liam |
| 98-765 | Olivia |
| 24-680 | Noah |
| 13-579 | Ava |

Below the table, it says "5 rows returned in 0.00 seconds". At the bottom, there are links for "CSV Export", "Application Express 2.1.0.0.39", and "Copyright © 1999, 2006, Oracle. All rights reserved."

No 5:

```
insert into No5(Donor_id, D_NAME, Date_of_Birth, Age, Blood_Group, Status) values('74-680', 'Isabella', '15-Jan-85', 38 , 'A+', 'Agree')

insert into No5(Donor_id, D_NAME, Date_of_Birth, Age, Blood_Group, Status) values('58-936', 'Sophia', '03-Apr-92', 31 , 'AB+', 'Disagree')

insert into No5(Donor_id, D_NAME, Date_of_Birth, Age, Blood_Group, Status) values('24-975', 'Jackson', '22-Jul-78', 45 , 'B+', 'Agree')

insert into No5(Donor_id, D_NAME, Date_of_Birth, Age, Blood_Group, Status) values('36-129', 'Aiden', '09-Nov-01', 21 , 'O+', 'Disagree')

insert into No5(Donor_id, D_NAME, Date_of_Birth, Age, Blood_Group, Status) values('87-652', 'Lucas', '28-Mar-69', 54, 'B-', 'Agree')

select*
from No5

desc No5
```

The screenshot shows the Oracle Database Express Edition interface. In the SQL Commands window, the user has entered several SQL statements to insert data into a table named 'No5' and then query it. The statements include inserting five rows of data with columns: Donor_id, D_NAME, Date_of_Birth, Age, Blood_Group, and Status. After the inserts, a select* statement is run to display all rows from the table. Finally, a desc No5 statement is run to describe the structure of the table. The results window shows a table with six columns: DONOR_ID, D_NAME, DATE_OF_BIRTH, AGE, BLOOD_GROUP, and STATUS. The data is as follows:

| DONOR_ID | D_NAME | DATE_OF_BIRTH | AGE | BLOOD_GROUP | STATUS |
|----------|----------|---------------|-----|-------------|----------|
| 74-680 | Isabella | 15-JAN-85 | 38 | A+ | Agree |
| 58-936 | Sophia | 03-APR-92 | 31 | AB+ | Disagree |
| 24-975 | Jackson | 22-JUL-78 | 45 | B+ | Agree |
| 36-129 | Aiden | 09-NOV-01 | 21 | O+ | Disagree |
| 87-652 | Lucas | 28-MAR-69 | 54 | B- | Agree |

At the bottom of the interface, there are links for Results, Explain, Describe, Saved SQL, and History.

No 6:

```
insert into No6 (Blood_Bank_id, City,Street) values ('83-759',
'Alexandria', '123 Street')

insert into No6 (Blood_Bank_id, City,Street) values ('52-416', 'New
York', 'Oak Avenue')

insert into No6 (Blood_Bank_id, City,Street) values ('96-842',
'LosAngeles', 'MapleDrive')

insert into No6 (Blood_Bank_id, City,Street) values ('31-679', 'Chicago',
'PineStreet')

insert into No6 (Blood_Bank_id, City,Street) values ('75-420', 'Boston',
'Elm Road')

select*
from No6
desc No6
```

The screenshot shows the Oracle Database Express Edition interface. The SQL command window contains the provided SQL code. The results tab displays a table with five rows of data.

| BLOOD_BANK_ID | CITY | STREET |
|---------------|------------|------------|
| 83-759 | Alexandria | 123 Street |
| 52-416 | New York | Oak Avenue |
| 96-842 | LosAngeles | MapleDrive |
| 31-679 | Chicago | PineStreet |
| 75-420 | Boston | Elm Road |

5 rows returned in 0.00 seconds [CSV Export](#)

Language: en-gb Application Express 2.1 0.00.39
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No 7:

```
insert into No7 (Blood_Bank_id,CONTACT_NO) values ('83-759', '49856324')
insert into No7 (Blood_Bank_id,CONTACT_NO) values ('52-416', '45879602')
insert into No7 (Blood_Bank_id,CONTACT_NO) values ('96-842', '41025698')
insert into No7 (Blood_Bank_id,CONTACT_NO) values ('31-679', '45879632')
insert into No7 (Blood_Bank_id,CONTACT_NO) values ('75-420', '48563210')
select*
from No7
desc No7
```

The screenshot shows the Oracle Database Express Edition SQL Commands interface. The SQL command window displays the following SQL code:

```
insert into No7 (Blood_Bank_id,CONTACT_NO) values ('83-759', '49856324')
insert into No7 (Blood_Bank_id,CONTACT_NO) values ('52-416', '45879602')
insert into No7 (Blood_Bank_id,CONTACT_NO) values ('96-842', '41025698')
insert into No7 (Blood_Bank_id,CONTACT_NO) values ('31-679', '45879632')
insert into No7 (Blood_Bank_id,CONTACT_NO) values ('75-420', '48563210')
select*
from No7
desc No7
```

The results tab shows the data inserted into the No7 table:

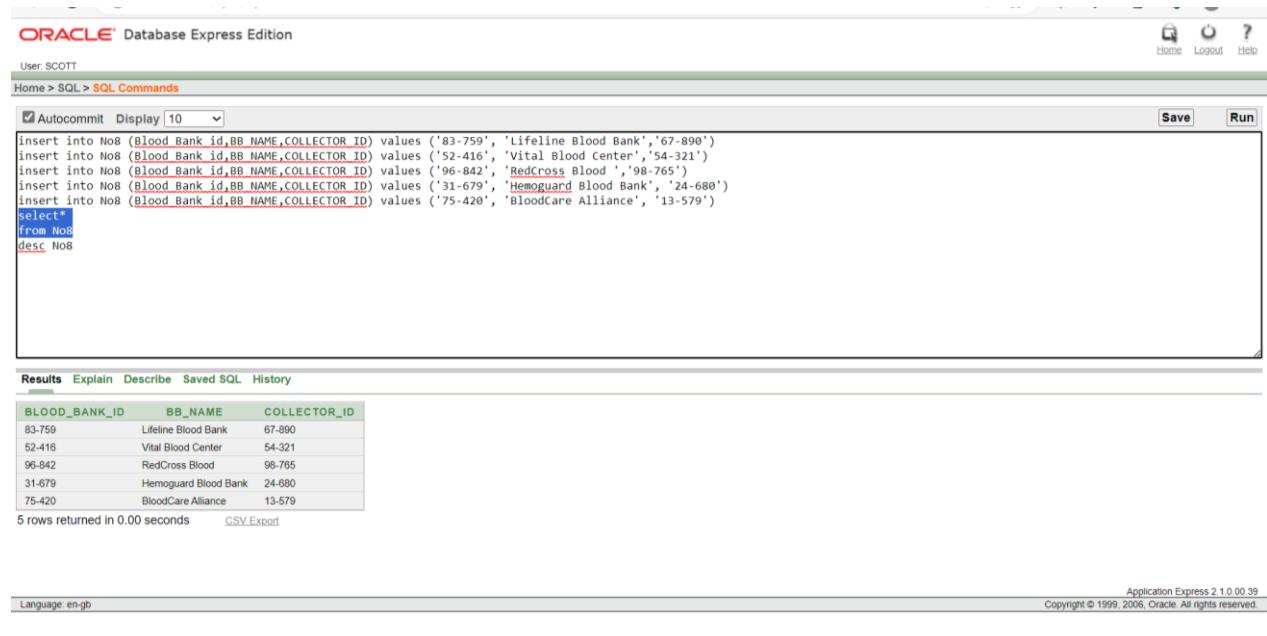
| BLOOD_BANK_ID | CONTACT_NO |
|---------------|------------|
| 83-759 | 49856324 |
| 52-416 | 45879602 |
| 96-842 | 41025698 |
| 31-679 | 45879632 |
| 75-420 | 48563210 |

5 rows returned in 0.01 seconds [CSV Export](#)

At the bottom, the system status bar indicates: Application Express 2.1.0.0.39, Copyright © 1999, 2006, Oracle. All rights reserved.

No 8:

```
insert into No8 (Blood_Bank_id, BB_NAME, COLLECTOR_ID) values ('83-759',  
'Lifeline Blood Bank', '67-890')  
  
insert into No8 (Blood_Bank_id, BB_NAME, COLLECTOR_ID) values ('52-416',  
'Vital Blood Center', '54-321')  
  
insert into No8 (Blood_Bank_id, BB_NAME, COLLECTOR_ID) values ('96-842',  
'RedCross Blood', '98-765')  
  
insert into No8 (Blood_Bank_id, BB_NAME, COLLECTOR_ID) values ('31-679',  
'Hemoguard Blood Bank', '24-680')  
  
insert into No8 (Blood_Bank_id, BB_NAME, COLLECTOR_ID) values ('75-420',  
'BloodCare Alliance', '13-579')  
  
select*  
from No8  
desc No8
```



The screenshot shows the Oracle Database Express Edition interface. The SQL command window contains the following code:

```
insert into No8 (Blood_Bank_id, BB_NAME, COLLECTOR_ID) values ('83-759', 'Lifeline Blood Bank', '67-890')  
insert into No8 (Blood_Bank_id, BB_NAME, COLLECTOR_ID) values ('52-416', 'Vital Blood Center', '54-321')  
insert into No8 (Blood_Bank_id, BB_NAME, COLLECTOR_ID) values ('96-842', 'RedCross Blood', '98-765')  
insert into No8 (Blood_Bank_id, BB_NAME, COLLECTOR_ID) values ('31-679', 'Hemoguard Blood Bank', '24-680')  
insert into No8 (Blood_Bank_id, BB_NAME, COLLECTOR_ID) values ('75-420', 'BloodCare Alliance', '13-579')  
  
select*  
from No8  
desc No8
```

The results section displays the data from the No8 table:

| BLOOD_BANK_ID | BB_NAME | COLLECTOR_ID |
|---------------|----------------------|--------------|
| 83-759 | Lifeline Blood Bank | 67-890 |
| 52-416 | Vital Blood Center | 54-321 |
| 96-842 | RedCross Blood | 98-765 |
| 31-679 | Hemoguard Blood Bank | 24-680 |
| 75-420 | BloodCare Alliance | 13-579 |

5 rows returned in 0.00 seconds [CSV Export](#)

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No 9:

```
insert into No9 (HOSPITAL_ID, City, Street) values ('75420', 'San Francisco','Cedar Lane')

insert into No9 (HOSPITAL_ID, City, Street) values ('10582',
'Chicago','Willow Street')

insert into No9 (HOSPITAL_ID, City, Street) values ('69318',
'Seattle','Birch Avenue')

insert into No9 (HOSPITAL_ID, City, Street) values ('23764',
'Boston','Rosewood Avenue')

insert into No9 (HOSPITAL_ID, City, Street) values ('80173', 'Dallas','12 Main Street, ')

insert into No9 (HOSPITAL_ID, City, Street) values('99925', 'Houston',
'Juniper Court')

select*
from No9

Desc No9
```

The screenshot shows the Oracle Database Express Edition interface. The SQL command window displays the following SQL code:

```
insert into No9 (HOSPITAL_ID, City, Street) values ('75420', 'San Francisco','Cedar Lane')
insert into No9 (HOSPITAL_ID, City, Street) values ('10582',
'Chicago','Willow Street')
insert into No9 (HOSPITAL_ID, City, Street) values ('69318',
'Seattle','Birch Avenue')
insert into No9 (HOSPITAL_ID, City, Street) values ('23764',
'Boston','Rosewood Avenue')
insert into No9 (HOSPITAL_ID, City, Street) values ('80173', 'Dallas','12 Main Street, ')
insert into No9 (HOSPITAL_ID, City, Street) values('99925', 'Houston',
'Juniper Court')
select*
from No9
Desc No9
```

The results section shows the data inserted into the No9 table:

| HOSPITAL_ID | CITY | STREET |
|-------------|---------------|-----------------|
| 75420 | San Francisco | Cedar Lane |
| 10582 | Chicago | Willow Street |
| 69318 | Seattle | Birch Avenue |
| 23764 | Boston | Rosewood Avenue |
| 80173 | Dallas | 12 Main Street, |
| 99925 | Houston | Juniper Court |

6 rows returned in 0.00 seconds [CSV Export](#)

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No 10:

```
insert into No10 (HOSPITAL_ID, Contact_no) values ('75420', '458769852')
insert into No10 (HOSPITAL_ID, Contact_no) values ('10582', '425879658')
insert into No10 (HOSPITAL_ID, Contact_no) values ('69318', '415896024')
insert into No10 (HOSPITAL_ID, Contact_no) values ('23764', '428796548')
insert into No10 (HOSPITAL_ID, Contact_no) values ('80173', '456982356')
select*
from No10
Desc No10
```

The screenshot shows the Oracle Database Express Edition interface. The SQL command window contains the provided SQL code. The results window displays a table with two columns: HOSPITAL_ID and CONTACT_NO, containing the inserted data. The status bar at the bottom right shows system information like weather, battery level, and date.

| HOSPITAL_ID | CONTACT_NO |
|-------------|------------|
| 75420 | 458769852 |
| 10582 | 425879658 |
| 69318 | 415896024 |
| 23764 | 428796548 |
| 80173 | 456982356 |

5 rows returned in 0.00 seconds CSV Export

Language: en-gb Application Express 2.1.0.0.39
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No 11:

```
insert into No11 (BLOOD_BANK_ID, BB_NAME) values ('83-759', '49856324')
insert into No11 (BLOOD_BANK_ID, BB_NAME) values ('52-416', '45879602')
insert into No11 (BLOOD_BANK_ID, BB_NAME) values ('96-842', '41025698')
insert into No11 (BLOOD_BANK_ID, BB_NAME) values ('31-679', '45879632')
insert into No11 (BLOOD_BANK_ID, BB_NAME) values ('75-420', '48563210')
select*
from No11
Desc No11
```

The screenshot shows the Oracle Database Express Edition interface. The SQL command window contains the following code:

```
insert into No11 (BLOOD_BANK_ID, BB_NAME) values ('83-759', '49856324')
insert into No11 (BLOOD_BANK_ID, BB_NAME) values ('52-416', '45879602')
insert into No11 (BLOOD_BANK_ID, BB_NAME) values ('96-842', '41025698')
insert into No11 (BLOOD_BANK_ID, BB_NAME) values ('31-679', '45879632')
insert into No11 (BLOOD_BANK_ID, BB_NAME) values ('75-420', '48563210')
select*
from No11
Desc No11
```

The results section displays the following table:

| BLOOD_BANK_ID | BB_NAME |
|---------------|----------|
| 83-759 | 49856324 |
| 52-416 | 45879602 |
| 96-842 | 41025698 |
| 31-679 | 45879632 |
| 75-420 | 48563210 |

Below the table, it says "5 rows returned in 0.00 seconds". The status bar at the bottom right shows "Application Express 2.1.0.00.39", "Copyright © 1999, 2006, Oracle. All rights reserved.", "Language en-gb", "29°C Mostly cloudy", "01:07 PM", "ENG", and "23-08-2022".

No 12:

```
insert into No12 (HOSPITAL_ID, H_NAME, BLOOD_BANK_ID) values
('75420','Los Angeles Hospital','83-759')

insert into No12 (HOSPITAL_ID, H_NAME, BLOOD_BANK_ID) values
('10582','Chicago Hospital', '52-416')

insert into No12 (HOSPITAL_ID, H_NAME, BLOOD_BANK_ID) values
('69318','Evelyn Hospital', '96-842')

insert into No12 (HOSPITAL_ID, H_NAME, BLOOD_BANK_ID) values
('23764','Boston Hospital', '31-679')

insert into No12 (HOSPITAL_ID, H_NAME, BLOOD_BANK_ID) values
('80173','Amelia Hospital', '75-420')

select*
from No12

Desc No12
```

The screenshot shows the Oracle Database Express Edition SQL Commands interface. The SQL editor window contains the following SQL code:

```
insert into No12 (HOSPITAL_ID, H_NAME, BLOOD_BANK_ID) values ('75420','Los Angeles Hospital','83-759')
insert into No12 (HOSPITAL_ID, H_NAME, BLOOD_BANK_ID) values ('10582','Chicago Hospital', '52-416')
insert into No12 (HOSPITAL_ID, H_NAME, BLOOD_BANK_ID) values ('69318','Evelyn Hospital', '96-842')
insert into No12 (HOSPITAL_ID, H_NAME, BLOOD_BANK_ID) values ('23764','Boston Hospital', '31-679')
insert into No12 (HOSPITAL_ID, H_NAME, BLOOD_BANK_ID) values ('80173','Amelia Hospital', '75-420')
select*
from No12

Desc No12
```

The results section displays the data inserted into the No12 table:

| HOSPITAL_ID | H_NAME | BLOOD_BANK_ID |
|-------------|----------------------|---------------|
| 75420 | Los Angeles Hospital | 83-759 |
| 10582 | Chicago Hospital | 52-416 |
| 69318 | Evelyn Hospital | 96-842 |
| 23764 | Boston Hospital | 31-679 |
| 80173 | Amelia Hospital | 75-420 |

Below the table, it says "5 rows returned in 0.00 seconds". The bottom status bar shows "Language: en-gb", "Application Express 2.1 0 00 39", and "Copyright © 1999, 2006, Oracle. All rights reserved".

No 13:

```
insert into No13 (PATIENT_ID, City, Street) values ('10-628','Atlanta','Magnolia Way')

insert into No13 (PATIENT_ID, City, Street) values ('79-538','Houston','Juniper Court')

insert into No13 (PATIENT_ID, City, Street) values ('25-864','Phoenix','Cedar Street')

insert into No13 (PATIENT_ID, City, Street) values ('67-931','Philadelphia','Redwood Drive')

insert into No13 (PATIENT_ID, City, Street) values ('43-129','Detroit','Maple Avenue')

select*
from No13

Desc No13
```

The screenshot shows the Oracle Database Express Edition interface. The SQL Commands page displays the following SQL code:

```
insert into No13 (PATIENT_ID, City, Street) values ('10-628','Atlanta','Magnolia Way')
insert into No13 (PATIENT_ID, City, Street) values ('79-538','Houston','Juniper Court')
insert into No13 (PATIENT_ID, City, Street) values ('25-864','Phoenix','Cedar Street')
insert into No13 (PATIENT_ID, City, Street) values ('67-931','Philadelphia','Redwood Drive')
insert into No13 (PATIENT_ID, City, Street) values ('43-129','Detroit','Maple Avenue')
select*
from No13
Desc No13
```

The Results tab shows the output of the query:

| PATIENT_ID | CITY | STREET |
|------------|--------------|---------------|
| 10-628 | Atlanta | Magnolia Way |
| 79-538 | Houston | Juniper Court |
| 25-864 | Phoenix | Cedar Street |
| 67-931 | Philadelphia | Redwood Drive |
| 43-129 | Detroit | Maple Avenue |

5 rows returned in 0.01 seconds [CSV Export](#)

Language: en-gb Application Express 2.1 0.00.39 Copyright © 1999, 2006, Oracle. All rights reserved.

No 14:

```
insert into No14 (PATIENT_ID, Contact_No) values ('10-628','458796523')
insert into No14 (PATIENT_ID, Contact_No) values ('79-538','458796302')
insert into No14 (PATIENT_ID, Contact_No) values ('25-864','458712045')
insert into No14 (PATIENT_ID, Contact_No) values ('67-931','459830214')
insert into No14 (PATIENT_ID, Contact_No) values ('43-129','459863021')
select*
from No14
Desc No14
```

The screenshot shows the Oracle Database Express Edition interface. The SQL command window displays the following content:

```
ORAQUE Database Express Edition
User: SCOTT
Home > SQL > SQL Commands
 Autocommit Display 10 ▾
Save Run
insert into No14 (PATIENT_ID, Contact_No) values ('10-628','458796523')
insert into No14 (PATIENT_ID, Contact_No) values ('79-538','458796302')
insert into No14 (PATIENT_ID, Contact_No) values ('25-864','458712045')
insert into No14 (PATIENT_ID, Contact_No) values ('67-931','459830214')
insert into No14 (PATIENT_ID, Contact_No) values ('43-129','459863021')
select*
from No14
Desc No14
```

The Results tab is selected, showing the following table output:

| PATIENT_ID | CONTACT_NO |
|------------|------------|
| 10-628 | 458796523 |
| 79-538 | 458796302 |
| 25-864 | 458712045 |
| 67-931 | 459830214 |
| 43-129 | 459863021 |

5 rows returned in 0.00 seconds [CSV Export](#)

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Language: en-gb

Windows taskbar at the bottom:

- Type here to search
- Icons for File Explorer, Mail, Internet Explorer, Google Chrome, Microsoft Edge, and File Explorer
- Cloud icon with 29°C Mostly cloudy
- Network icon
- Language: ENG
- Date: 23-08-2023
- Time: 01:27 PM

No 15:

```
insert into No15 (Hospital_Id, H_Name) values ('75420','Los Angeles Hospital')
insert into No15 (Hospital_Id, H_Name) values ('10582','Chicago Hospital')
insert into No15 (Hospital_Id, H_Name) values ('69318','Evelyn Hospital')
insert into No15 (Hospital_Id, H_Name) values ('23764','Boston Hospital')
insert into No15 (Hospital_Id, H_Name) values ('80173','Amelia Hospital')
select*
from No15
Desc No15
```

The screenshot shows the Oracle Database Express Edition interface. The SQL command window contains the following SQL code:

```
insert into No15 (Hospital_Id, H_Name) values ('75420','Los Angeles Hospital')
insert into No15 (Hospital_Id, H_Name) values ('10582','Chicago Hospital')
insert into No15 (Hospital_Id, H_Name) values ('69318','Evelyn Hospital')
insert into No15 (Hospital_Id, H_Name) values ('23764','Boston Hospital')
insert into No15 (Hospital_Id, H_Name) values ('80173','Amelia Hospital')
select*
from No15
Desc No15
```

The results tab displays the data inserted into the No15 table:

| HOSPITAL_ID | H_NAME |
|-------------|----------------------|
| 75420 | Los Angeles Hospital |
| 10582 | Chicago Hospital |
| 69318 | Evelyn Hospital |
| 23764 | Boston Hospital |
| 80173 | Amelia Hospital |

5 rows returned in 0.00 seconds

CSV Export

Language: en-gb Application Express 2.1.0.00.39 Copyright © 1999, 2006, Oracle. All rights reserved.

No 16:

```
insert into No16 (PATIENT_ID, P_Name, BLOOD_GROUP, HOSPITAL_ID) values  
('10-628','Madison','AB+', '75420')  
  
insert into No16 (PATIENT_ID, P_Name, BLOOD_GROUP, HOSPITAL_ID) values  
('79-538','Grace','A+', '10582')  
  
insert into No16 (PATIENT_ID, P_Name, BLOOD_GROUP, HOSPITAL_ID) values  
('25-864','Ruby','O-', '69318')  
  
insert into No16 (PATIENT_ID, P_Name, BLOOD_GROUP, HOSPITAL_ID) values  
('67-931','Lily','B-', '23764')  
  
insert into No16 (PATIENT_ID, P_Name, BLOOD_GROUP, HOSPITAL_ID) values  
('43-129','Aurora','A-', '80173')  
  
select*  
from No16  
  
Desc No16
```

ORACLE Database Express Edition

User SCOTT

Home Logout Help

Home > SQL > SQL Commands

Autocommit

```
insert into No16 (PATIENT_ID, P_Name, BLOOD_GROUP, HOSPITAL_ID) values ('10-628','Madison','AB+', '75420')
insert into No16 (PATIENT_ID, P_Name, BLOOD_GROUP, HOSPITAL_ID) values ('79-538','Grace','A+', '10582')
insert into No16 (PATIENT_ID, P_Name, BLOOD_GROUP, HOSPITAL_ID) values ('25-864','Ruby','O-', '69318')
insert into No16 (PATIENT_ID, P_Name, BLOOD_GROUP, HOSPITAL_ID) values ('67-931','Lily','B-', '23764')
insert into No16 (PATIENT_ID, P_Name, BLOOD_GROUP, HOSPITAL_ID) values ('43-129','Aurora','A-', '80173')
select*
from No16

Desc No16
```

Results Explain Describe Saved SQL History

| PATIENT_ID | P_Name | BLOOD_GROUP | HOSPITAL_ID |
|------------|---------|-------------|-------------|
| 10-628 | Madison | AB+ | 75420 |
| 79-538 | Grace | A+ | 10582 |
| 25-864 | Ruby | O- | 69318 |
| 67-931 | Lily | B- | 23764 |
| 43-129 | Aurora | A- | 80173 |

5 rows returned in 0.00 seconds [CSV Export](#)

Application Express 2.1.0.00.39
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Language: en-gb

Type here to search           29°C Mostly cloudy  ENG 23-08-2023

No 17:

```
insert into No17 (Donor_id, D_Name, Date_of_Birth, Age, Blood_Group,
Status, Hospital_id ) VALUES('74-680', 'Isabella', '15-Jan-85', '38',
'A+', 'Agree', '75420')

insert into No17 (Donor_id, D_Name, Date_of_Birth, Age, Blood_Group,
Status, Hospital_id ) VALUES('58-936', 'Sophia', '03-Apr-92', '31',
'AB+', 'Disagree', '10582')

insert into No17 (Donor_id, D_Name, Date_of_Birth, Age, Blood_Group,
Status, Hospital_id ) VALUES('24-975', 'Jackson', '22-Jul-78', '45',
'B+', 'Agree', '69318')

insert into No17 (Donor_id, D_Name, Date_of_Birth, Age, Blood_Group,
Status, Hospital_id ) VALUES('36-129', 'Aiden', '09-Nov-01', '21', 'O+',
'Disagree', '23764')

insert into No17 (Donor_id, D_Name, Date_of_Birth, Age, Blood_Group,
Status, Hospital_id ) VALUES('87-652', 'Lucas', '28-Mar-69', '54', 'B-',
'Agree', '80173')

select*
from No17

Desc No17
```

The screenshot shows the Oracle Database Express Edition interface. The SQL Commands window displays the following SQL statements:

```
insert into No17 (Donor_id, D_Name, Date_of_Birth, Age, Blood_Group, Status, Hospital_id ) VALUES('74-680', 'Isabella', '15-Jan-85', '38', 'A+', 'Agree', '75420')
insert into No17 (Donor_id, D_Name, Date_of_Birth, Age, Blood_Group, Status, Hospital_id ) VALUES('58-936', 'Sophia', '03-Apr-92', '31', 'AB+', 'Disagree', '10582')
insert into No17 (Donor_id, D_Name, Date_of_Birth, Age, Blood_Group, Status, Hospital_id ) VALUES('24-975', 'Jackson', '22-Jul-78', '45', 'B+', 'Agree', '69318')
insert into No17 (Donor_id, D_Name, Date_of_Birth, Age, Blood_Group, Status, Hospital_id ) VALUES('36-129', 'Aiden', '09-Nov-01', '21', 'O+', 'Disagree', '23764')
insert into No17 (Donor_id, D_Name, Date_of_Birth, Age, Blood_Group, Status, Hospital_id ) VALUES('87-652', 'Lucas', '28-Mar-69', '54', 'B-', 'Agree', '80173')
select*
from No17
Desc No17
```

The Results tab shows the data from the No17 table:

| DONOR_ID | D_NAME | DATE_OF_BIRTH | AGE | BLOOD_GROUP | STATUS | HOSPITAL_ID |
|----------|----------|---------------|-----|-------------|----------|-------------|
| 74-680 | Isabella | 15-JAN-85 | 38 | A+ | Agree | 75420 |
| 58-936 | Sophia | 03-APR-92 | 31 | AB+ | Disagree | 10582 |
| 24-975 | Jackson | 22-JUL-78 | 45 | B+ | Agree | 69318 |
| 36-129 | Aiden | 09-NOV-01 | 21 | O+ | Disagree | 23764 |
| 87-652 | Lucas | 28-MAR-69 | 54 | B- | Agree | 80173 |

5 rows returned in 0.00 seconds CSV Export

Application Express 2.1.0.00.39
Language en-gb
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9. Query Writing On Tables:

1. Single-Row Function:

I:

```
select P_Name|| ''s Blood Group is ||Blood_Group as "Patient Blood
Group"
from No16
```

The screenshot shows the Oracle Database Express Edition SQL Commands interface. The query is:

```
select P_Name|| ''s Blood Group is ||Blood_Group as "Patient Blood
Group"
from No16
```

The results are displayed in a table titled "Patient Blood Group" with the following data:

| Patient Blood Group |
|------------------------------|
| Madison's Blood Group is AB+ |
| Grace's Blood Group is A+ |
| Ruby's Blood Group is O- |
| Lily's Blood Group is B- |
| Aurora's Blood Group is A- |

5 rows returned in 0.00 seconds

Language: en-gb Application Express 2.1 0 00 39
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II:

```
select D_Name|| ' is '|| status||' for donate blood' AS" Agree/Disagree to
donate"
from No17
```

The screenshot shows the Oracle Database Express Edition SQL Commands interface. The query is:

```
select D_Name|| ' is '|| status||' for donate blood' AS" Agree/Disagree to donate"
from No17
```

The results are displayed in a table titled "Agree/Disagree To Donate" with the following data:

| Agree/Disagree To Donate |
|-------------------------------------|
| Isabella is Agree for donate blood |
| Sophia is Disagree for donate blood |
| Jackson is Agree for donate blood |
| Aiden is Disagree for donate blood |
| Lucas is Agree for donate blood |

5 rows returned in 0.00 seconds

Language: en-gb Application Express 2.1 0 00 39
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2. Group Function:

I:

```
select AGE "DONOR AGE",COUNT(*)"NUMBER OF DONOR"
FROM No17
group by age
```

The screenshot shows the Oracle Database Express Edition interface. The SQL command entered is:

```
select AGE "DONOR AGE",COUNT(*)"NUMBER OF DONOR"
FROM No17
group by age
```

The results are displayed in a table:

| DONOR AGE | NUMBER OF DONOR |
|-----------|-----------------|
| 54 | 1 |
| 31 | 1 |
| 21 | 1 |
| 38 | 1 |
| 45 | 1 |

5 rows returned in 0.02 seconds

CSV Export

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II:

```
select status,count(*) as "Status(Want to donate)"
FROM No17
group by status
```

The screenshot shows the Oracle Database Express Edition interface. The SQL command entered is:

```
select status,count(*) as "Status(Want to donate)"
FROM No17
group by status
```

The results are displayed in a table:

| STATUS | Status(Want To Donate) |
|----------|------------------------|
| Disagree | 2 |
| Agree | 3 |

2 rows returned in 0.00 seconds

CSV Export

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3. Subquery:

I:

```
select Donor_id, Age, Blood_Group
from No17
where age>18
AND Blood_Group IN(select Blood_Group
                     from No17
                     where lower(Blood_Group)='ab+')
```

The screenshot shows the Oracle Database Express Edition interface. The SQL command entered is:

```
select Donor_id, Age, Blood_Group
from No17
where age>18
AND Blood_Group IN(select Blood_Group
                     from No17
                     where lower(Blood_Group)='ab+')
```

The results are displayed in a table:

| DONOR_ID | AGE | BLOOD_GROUP |
|----------|-----|-------------|
| 58-936 | 31 | AB+ |

1 rows returned in 0.00 seconds CSV Export

At the bottom, the system status bar shows:

Application Express 2.1 0 00.39
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Language: en-gb
Type here to search Rain tonight 03:47 PM
23-08-2023

II:

```
select Patient_id, Blood_Group, Hospital_id
from No16
where Hospital_id='75420'
AND Patient_id IN(
    select Patient_id
    from No16
    where Patient_id='10-628')
```

The screenshot shows the Oracle Database Express Edition interface. In the top navigation bar, it says "ORACLE Database Express Edition" and "User: SCOTT". Below the navigation bar, the URL is "Home > SQL > SQL Commands". The main area contains a SQL editor window with the following code:

```
select Patient_id, Blood_Group, Hospital_id
from No16
where Hospital_id='75420'
AND Patient_id IN(
    select Patient_id
    from No16
    where Patient_id='10-628')
```

Below the SQL editor is a results grid:

| PATIENT_ID | BLOOD_GROUP | HOSPITAL_ID |
|------------|-------------|-------------|
| 10-628 | AB+ | 75420 |

At the bottom of the results grid, it says "1 rows returned in 0.00 seconds" and "CSV Export".

At the very bottom of the screen, there is a Windows taskbar with various icons and a system tray showing the date and time.

4. Joining:

I:

```
Select No16.Patient_id, No16.P_Name, No16.Blood_Group, No17.Blood_Group
"DONOR BLOOD GROUP"
from No16, No17
where No16.Blood_Group=No17.Blood_Group(+)
```

ORACLE Database Express Edition

User: SCOTT

Home > SQL > SQL Commands

Autocommit

```
Select No16.Patient_id, No16.P_Name, No16.Blood_Group, No17.Blood_Group "DONOR BLOOD GROUP"
from No16, No17
where No16.Blood_Group=No17.Blood_Group(+)
```

Results [Explain](#) [Describe](#) [Saved SQL](#) [History](#)

| PATIENT_ID | P_NAME | BLOOD_GROUP | DONOR BLOOD GROUP |
|------------|---------|-------------|-------------------|
| 79-538 | Grace | A+ | A+ |
| 10-628 | Madison | AB+ | AB+ |
| 67-931 | Lily | B- | B- |
| 25-864 | Ruby | O- | - |
| 43-129 | Aurora | A- | - |

5 rows returned in 0.00 seconds [CSV Export](#)

Application Express 2.1 0.00.39

II:

```
Select No15.Hospital_id, No15.H_Name , No17.Donor_id, No17.D_Name
from No15, No17
where No17.Hospital_id (+) = No15.Hospital_id
```

ORACLE Database Express Edition

User: SCOTT

Home > SQL > SQL Commands

Autocommit

```
Select No15.Hospital_id, No15.H_Name , No17.Donor_id, No17.D_Name
from No15, No17
where No17.Hospital_id (+) = No15.Hospital_id
```

Results [Explain](#) [Describe](#) [Saved SQL](#) [History](#)

| HOSPITAL_ID | H_NAME | DONOR_ID | D_NAME |
|-------------|----------------------|----------|----------|
| 10582 | Chicago Hospital | 58-936 | Sophia |
| 23764 | Boston Hospital | 36-129 | Aiden |
| 69318 | Evelyn Hospital | 24-975 | Jackson |
| 75420 | Los Angeles Hospital | 74-680 | Isabella |
| 80173 | Amelia Hospital | 87-652 | Lucas |

5 rows returned in 0.00 seconds [CSV Export](#)

Application Express 2.1 0.00.39

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5. View:

I:

```
CREATE VIEW Donor
AS SELECT Donor_id, D_Name, Age
FROM No5
WHERE Age>30
desc Donor
select*
from Donor
```

The screenshot shows the Oracle Database Express Edition interface. The SQL Commands window displays the following SQL code:

```
CREATE VIEW Donor
AS SELECT Donor_id, D_Name, Age
FROM No5
WHERE Age>30
desc Donor
select*
from Donor
```

The results tab shows a table with the following data:

| DONOR_ID | D_NAME | AGE |
|----------|----------|-----|
| 74-680 | Isabella | 38 |
| 58-936 | Sophia | 31 |
| 24-975 | Jackson | 45 |
| 87-652 | Lucas | 54 |

4 rows returned in 0.00 seconds

CSV Expert

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II:

```
CREATE VIEW Agree_Donor
AS SELECT Donor_id, D_Name, Age, Blood_Group, Status
FROM No5
WHERE Status = 'Agree';
select*
from Agree_Donor
```

The screenshot shows the Oracle Database Express Edition interface. In the SQL Commands window, a CREATE VIEW statement is entered and executed, resulting in a table of three rows. The system status bar at the bottom indicates the application version and copyright information.

```
CREATE VIEW Agree_Donor
AS
SELECT Donor_id, D_Name, Age, Blood_Group, Status
FROM No5
WHERE Status = 'Agree';

select*
from Agree_Donor
```

| DONOR_ID | D_NAME | AGE | BLOOD_GROUP | STATUS |
|----------|----------|-----|-------------|--------|
| 74-680 | Isabella | 38 | A+ | Agree |
| 24-975 | Jackson | 45 | B+ | Agree |
| 87-652 | Lucas | 54 | B- | Agree |

3 rows returned in 0.00 seconds CSV Export

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10. Conclusion:

In the aftermath of the Maui Fire Tragedy, the establishment of a streamlined blood management system stands as a testament to the Local Authority's commitment. The Blood Donor Database seamlessly connects donors, collectors, blood banks, hospitals, and patients, embodying efficiency and swift action. Blood Collectors play a vital role, ensuring a steady supply of blood to the Blood Bank, a crucial repository ready to meet hospital demands. This harmonious synergy ensures timely access to blood, a critical factor during emergencies. The system's adaptability extends its value beyond crisis response, reflecting the Local Authority's foresight. This database not only memorializes the past but safeguards the future, offering a lifeline for those in vulnerable situations. From tragedy to triumph, this efficient blood management system epitomizes unity. The Local Authority's dedication, combined with the cooperation of all stakeholders, paves the way for a safer, more resilient community. This database stands as a symbol of hope and a lifeline for those in need.