# BLOOD AND ORGAN DONATION NETWORK

## Milestone: Application in Python

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# CONNECTING THE DATABASE TO PYHTON AND FETHCING DATA FROM EACH TABLE

```python
import mysql.connector
import pandas as pd

# Connect to MySQL
conn = mysql.connector.connect(
    host="127.0.0.1",
    port=3306,
    user="root",
    password="pranathi123",
    database="organdonationdb"
)

# Create a dictionary to store DataFrames
tables_data = {}

# Fetch the list of all tables in the schema
cursor = conn.cursor()
cursor.execute("SHOW TABLES;")
tables = cursor.fetchall()

# Iterate over each table and fetch its data
for table in tables:
    table_name = table[0]
    try:
        query = f"SELECT * FROM {table_name}"
        df = pd.read_sql(query, conn)
        tables_data[table_name] = df
        print(f"Successfully fetched data from table: {table_name}")
    except Exception as e:
        print(f"Error fetching data from table {table_name}: {e}")

# Close the connection
conn.close()

# Print the data from each table
for table_name, df in tables_data.items():
    print(f"\nData from table '{table_name}':")
    print(df.head())
```

```
Successfully fetched data from table: blood
Successfully fetched data from table: bloodbank
Successfully fetched data from table: clinicalanalyst
Successfully fetched data from table: donation
Successfully fetched data from table: hospital
Successfully fetched data from table: manager
Successfully fetched data from table: organ
Successfully fetched data from table: organstorage
Successfully fetched data from table: organtransplantcentre
Successfully fetched data from table: patient
Successfully fetched data from table: registrationteam

Data from table 'blood':
   BloodID BloodGroup  QuantityAvailable           StorageLocation
0        1         A+                 10       New York Blood Bank
1        2         O-                 15  Los Angeles Blood Center
2        3         B+                  8  Chicago Central Hospital
3        4        AB-                 12           Houston General
4        5         A-                  9     Phoenix Blood Storage
```

## RETRIVING DATA FROM TABLES USING DIFFERENT QUESRIES:

- **Using Select Statement**

```
Fetching data from table: blood

Data from table 'blood':
   BloodID BloodGroup  QuantityAvailable           StorageLocation
0        1         A+                 10       New York Blood Bank
1        2         O-                 15  Los Angeles Blood Center
2        3         B+                  8  Chicago Central Hospital
3        4        AB-                 12           Houston General
4        5         A-                  9     Phoenix Blood Storage
Fetching data from table: organ

Data from table 'organ':
   OrganID OrganType  DonorID  PatientID           StorageLocation     Status  \
0        1    Kidney        1          1       New York Blood Bank  Available
1        2     Heart        2          2  Los Angeles Blood Center  Available
2        3     Liver        3          3  Chicago Central Hospital  Available
3        4      Lung        4          4           Houston General  Available
4        7     Liver        7          7         San Diego Medical  Available

  TissueType
0          A
1          B
```

## ❖ Using Outer Join Query

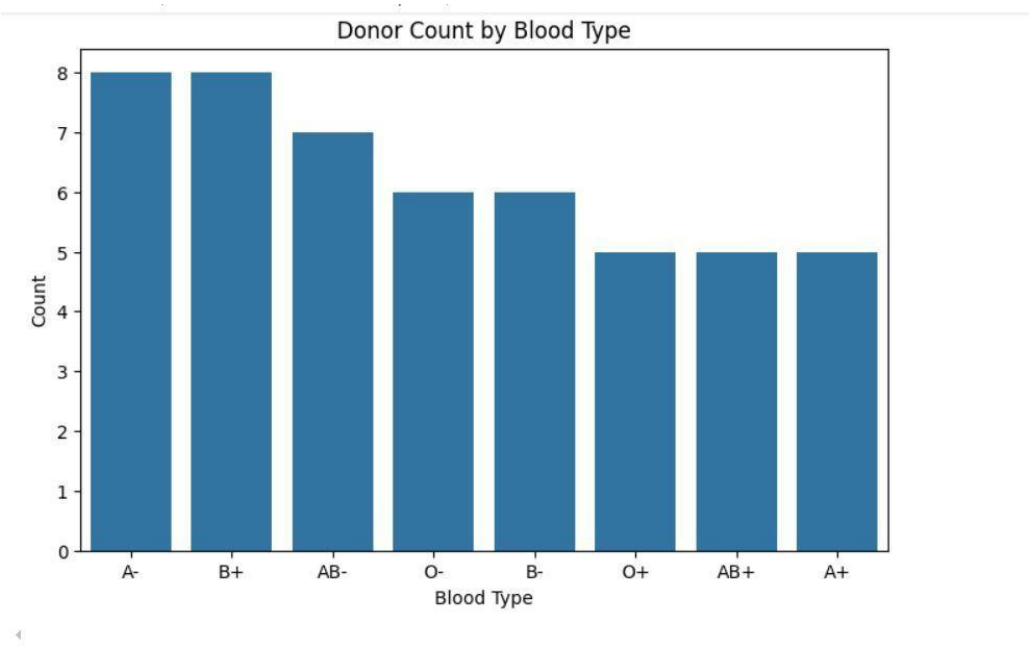
```
Outer Join of blood and organ tables:
   BloodID BloodGroup  QuantityAvailable           StorageLocation  OrganID  \
0        1         A+                 10       New York Blood Bank     16.0
1        1         A+                 10       New York Blood Bank      1.0
2        2         O-                 15  Los Angeles Blood Center     17.0
3        2         O-                 15  Los Angeles Blood Center      2.0
4        3         B+                  8  Chicago Central Hospital     18.0

  OrganType     Status TissueType
0    Kidney  Available          O
1    Kidney  Available          A
2     Heart  Available          A
3     Heart  Available          B
4     Liver  Available          B
Joined data saved to 'blood_organ_outer_join.csv'
```

## ❖ Using Nested Query

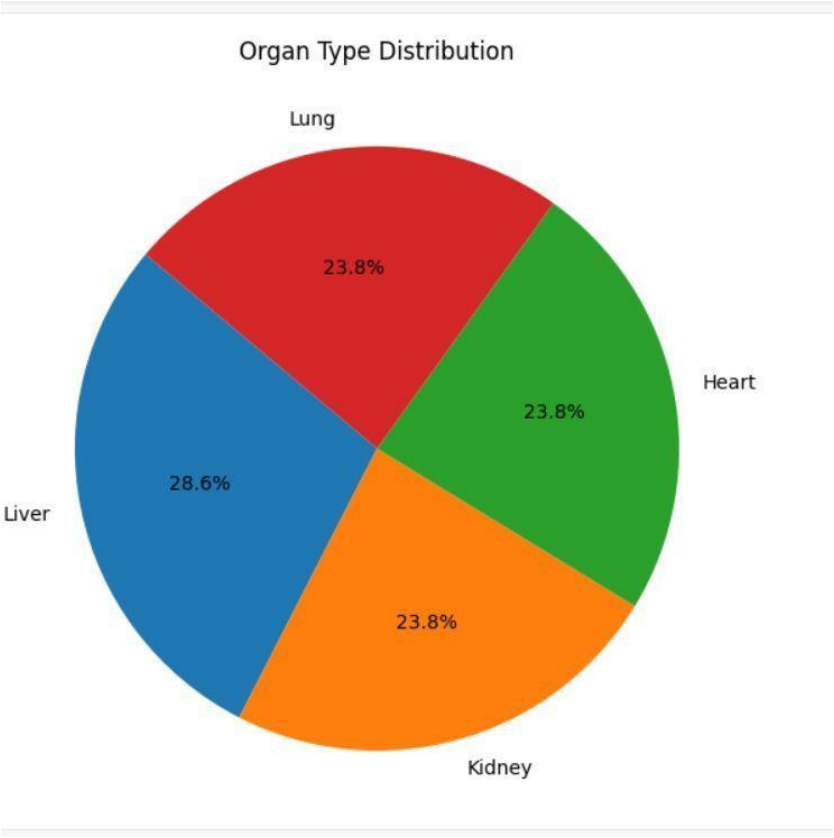
```
Blood groups with quantity greater than the average:
    BloodID BloodGroup  QuantityAvailable           StorageLocation
0         2         O-                 15  Los Angeles Blood Center
1         4        AB-                 12          Houston General
2         6         O+                 20  San Francisco Donor Center
3         8        AB+                 14  Seattle Health Services
4         9         A+                 13         Dallas Blood Hub
5        11         B+                 16  Miami Transfusion Center
6        13         A-                 18  Boston Medical Blood Bank
7        15         B-                 20  Atlanta General Storage
8        17         A+                 17          Detroit Medical
9        18         O-                 14  Portland Blood Services
10       20        AB-                 19  Indianapolis Blood Vault
11       22         O+                 12  Nashville Donor Services
12       26         O-                 13  Sacramento Blood Bank
13       27         B+                 15  Salt Lake City Health
14       28        AB-                 14  Cleveland Blood Reserve
15       29         A-                 16          Tampa Medical
16       30         O+                 18  New Orleans Blood Services
17       33         A+                 12  Columbus Health Storage
```

# VISUALIZATIONS IN PYTHON

- **Bar Graph to represent Donor Count by Blood Type**




- **Pie Chart to represent Distribution by Organ Type**



❖ **Histogram to represent Frequency of Organ Types**