**BCS 260**

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**Blood Donation Management system database project**

Business rules:

* Donor must be at least 17 years old to donate.
* Donor blood volume collected will vary, it depends mainly on body weight.
* Donor pulse rate must be between 60 and 100 beats/minute with regular rhythm.
* Donor blood pressure must be between 90 and 160 systolic and 60 and 100 diastolic.
* Donor hemoglobin must be at least 125 g/L.
* Conduct the blood test to match the donor blood type with donor blood type.
* Accept the blood only if the donor is healthy.
* Update the blood inventory as new donors donate blood.
* Donor is assigned to a nurse.
* Nurse is responsible for donors.

**The important entities in the system are Donor, Donor Blood, Blood Bank, Nurse and Appointment**

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|  |  |  |  |
| --- | --- | --- | --- |
| Relationship | | Cardinality | |
| Entity 1/Type | Entity 2/Type | Max | Min |
| Donor/Strong | Appointment/ID dependent weak | 1:M | 1:1 |
| Donor/Strong | Donor\_Blood/ID dependent weak | 1:M | 1:0 |
| Blood\_Bank/Strong | Donor\_ Blood/ID dependent weak | 1:M | 1:0 |
| Nurse/Strong | Donor/Strong | 1:M | 1:0 |
| Manager/Strong | Nurse/Strong | 1:M | 1:0 |

DONOR (DonorEmail, FirstName, LastName, Gender, Age, Weight, Address, phone, *EmployeeID*)

APPOINTMENT (AppointmentNum, *DonorEmail*, Date, Time)

DONOR\_BLOOD (DonorEmail, BloodType)

BLOOD\_BANK (BankBranch, BloodType, BloodQuantity, Orders, ContactEmail, Phone)

NURSE (EmployeeID, FirstName, LastName, Address, Phone, HoursWorked, Shift, Manager)

*EmployeeID* inDONOR is Foreign Key that references the primary key EmployeeID in NURSE

*DonorEmail* inAPPOINTMENT is Foreign Key that references the primary key DonorEmail in DONOR

**What did you learn?**

I learn a lot. This project teaches me how to design database. Also, I learned how to use aggregate functions, inner join, subquery and more code. The most important thing that I learned is being able to analyze the data especially in the project as I make the questions myself and answer them.

1-Find Donors Age that is between 20 and 30.

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2-Find what is the quantity you have for each blood type, what is the order required quantity and what is the reminder.

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3-What are the donor’s appointments?

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4-What are the donor’s nurse name?

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5-Who are the Donors that they would come on 12/10/2019?

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6-How many men and women are going to donate Blood?

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7-What is the minimum, maximum, Average, Total of the worked hours by nurses?

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8-How many donors does each nurse have to work with?

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9-Calculate nurse’s salary with 20$ per hour and for every hour overtime is 40$?

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10-How many nurses for each shift?

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**Code used for Creating Table:**

**Appointment Query:**

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**Blood Bank Query:**

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**Donor Blood Query:**

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**Donor Query:**

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**Nurse Query:**

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