Proposal Assignment

1. **What problem are you solving?**

- Problem 1: Assume that donors have the option to earmark their donations for certain types of animals. How can you see the total donated funds for each type of animal?

- Problem 2: Employees must be scheduled for different shifts. How can we schedule different types of employees for different shifts, while making sure employees don't work more than **40** hours per week period.

1. **How will your features solve them?**

- Solution 1: We are assuming donors can earmark their donations for a certain type of animal, so when donors donate their funds at that time, they explain that these funds are for the specific type of animal. For that, we need one Donation table which contains the Donation ID, Donor ID, Animal Type ID, the type of animal, and Amount. Here, Animal Type ID will be a foreign key that drives from the table of Animal Type, and Donor ID is also a foreign key that drives from the Donor table. The join between Animals and Donations table via Animal Type ID, which drives from Animal Type, will help find the total amount and number of donations by animal type.

- Solution 2: We need to create a table with information about employees and their schedules. Hence, we must create an Employee Schedule table. We can track all the employees' schedules through the Employee Schedule table. The schedule table contains information about Schedule ID, Employee ID, Shift ID, Description, Hours Worked, and Animal ID. Moreover, we can track if employee shift timing is morning, afternoon, or evening using Shift ID. Using that, we will track shift and add the maximum time of work into the Employee Schedule Table. Also, this table has a before-insert trigger, preventing any new entry if the employee has reached 40 hours in a week's threshold.

2. **What are your tables, how are they composed, and why is that justified by your solutions?**

- Table 1. Animal 2. Animal Type 3. Donations 4. Donor 5. Employees 6. Employee Schedule 7. Shift

- **Animal Table:** This table will keep an inventory of all animals. Each zoo animal is assigned a unique identifier as a primary key in the Animal ID column. This table will also track Animal Names and Descriptions, Animal types as Type ID, which will be used in tracking the total number of donations by type.

No	Name	Type	Constrain	Extra	Key
1	AnimalID	Int (11)	Not Null	Auto_Increment	PK
2	AnimalName	Varchar (50)	Null		
3	Descriptions	Varchar (200)	Null		
4	TypeID	Int (11)	Null		FK

- **Animal Type:** This table will contain all the Animal Type IDs and Type of Animal.

No	Name	Type	Constrain	Extra	Key
1	AnimalTypeID	Int	Not Null	Auto_Increment	PK
2	Type	Varchar (50)	Not Null		

- **Donations:** This table will keep track of all donations. The table will have attributes such as Donation ID, Amount, Animal Type ID, Donor ID, Donation related information that will help us track how many donations are made by individual donors. The Animal Type ID attribute will be a foreign key derived from the Animal Type, and The Donor ID attribute will be a foreign key derived from the Donor Table.

No	Name	Type	Constrain	Extra	Key
1	DonationID	Int	NOT Null		PK
2	Amount	Int	Null		
3	AnimalTypeID	Int	Null		Fk
5	DonorID	Int	Null		fk

- **Donor:** This table will contain information about the donor, such as Donor ID, Donor Name, DOB, Contact, and Address.

No	Name	Type	Constrain	Extra	Key
1	DonorID	Int	Not Null		Pk
2	DonorName	Varchar (50)	Null		
3	DOB	Date	Null		
4	Contact	int (15)	Null		
5	Address	Varchar (200)	Null		

- **Employees:** This table is used to store the information about the employees, and it also contains employees' data such as Employee ID, Employee Name, Gender, DOB, Contact, and Residential Address.

No	Name	Type	Constrain	Extra	Key
1	EmployeeID	Int	Not null		Pk
2	EmployeeName	Varchar (50)	Null		
3	Gender	Varchar (10)	Null		
4	DOB	Date	Null		
5	Contact	Int (15)	Null		
6	ResidentialAddress	Varchar (200)	Null		

- **Employee Schedule:** The table will contain Schedule ID, Shift ID, Description, and Hours Worked. Here Schedule ID will be a Primary Key of the table, and Employee ID and Shift ID will be a Foreign Key of the table. This table will have a before-insert trigger that checks and prevents users from entering a new shift if they have already worked 40 hours a week.

No	Name	Type	Constrain	Extra	Key
1	ScheduleID	Int	Not null		Pk
2	EmployeeID	Int	Null		Fk
3	ShiftID	Int	Null		Fk
4	Descriptions	Varchar (200)	Null		
5	HoursWorked	Int	Null		

- **Shift:** This table contains a Shift ID and Shift Description, such as Morning shift, Afternoon Shift, and night shift. Here Shift ID will be the Primary key of the table.

No	Name	Type	Constrain	Extra	Key
1	ShiftID	Int	Not Null		Pk
2	ShiftDesc	Varchar (50)	Null		

3. **What are your database tools (procedures, functions), and why are they justified?**
- Normalization: The table arrangement is attempted to keep in normalization by up to 3NF.
- View: To see the donation made for all animals with donor information can be loaded by creating a view by joining animal type, Donor, and donation tables.
- Donation View: "Donation View" will show the details of the Donation ID, Amount, Donor ID, Donor Name, and Type of Animals.
- Procedures: Calling procedures by the procedures name, We will see the type of animal list data with their total donation funds.
- Trigger: The Employee Schedule table will have a before insert to trigger to ensure employees cannot work more than 40 hours a week.
- Trigger: The Donor table will have after delete trigger, which will keep a record of the deleted data of the Donor.

4. **Reasonable estimated timeline:**
- It took more then five hours to complete proposal, and maybe it will take up to ten hours to complete the final project with all the functionalities.