**Mapping E-R Model to Relational**

**Animal :-**

Animal(animal\_id, name, height, weight, sci\_name, age, life\_span, color, gender)

**Domain Constraints:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Attribute** | **Datatype** | **Contraint** | **Example** |
| animal\_id | number(8) | PRIMARY KEY | 4 |
| name | varchar(30) | NOT NULL | White Tiger |
| height | varchar(6) | NOT NULL | 5.5ft |
| weight | number(5) | NOT NULL | 150 |
| sci\_name | varchar(30) | NOT NULL | Panthera tigris tigris |
| life\_span | number(3) | NOT NULL | 20 |
| age | number(3) | NOT NULL | 15 |
| color | varchar(50) | NOT NULL | white |
| gender | varchar(6) | NOT NULL | male |

**Catagory :-**

Catagory(category\_id, category\_name)

**Domain Constraints:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Attribute** | **Datatype** | **Contraint** | **Example** |
| category\_id | number(1) | PRIMARY KEY | 2 |
| category\_name | varchar(50) | NOT NULL | Least Concern |

**Sub-Category:-**

sub\_category(sub\_category\_id, sub\_category\_name)

**Domain Constraints:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Attribute** | **Datatype** | **Contraint** | **Example** |
| sub\_category\_id | number(1) | PRIMARY KEY | 2 |
| sub\_category\_name | varchar(50) | NOT NULL | Birds |

**Main-category** :-

main\_category(main\_category\_id, sub\_category\_id, category\_id, animal\_id)

**Domain Constraints:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Attribute** | **Datatype** | **Contraint** | **Example** |
| main\_category\_id | number(2) | PRIMARY KEY | 2 |
| sub\_category\_id | number(1) | NOT NULL | 1 |
| category\_id | number(1) | NOT NULL | 2 |
| animal\_id | number(4) | NOT NULL | 34 |

**Animal details :-**

animal\_details(animal\_id, city\_id, population)

**Domain Constraints:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Attribute** | **Datatype** | **Contraint** | **Example** |
| animal\_id | number(8) | PRIMARY KEY | 12 |
| city\_id | number (3) | NOT NULL | 34 |
| population | number(7) | NOT NULL | 100 |

**City :-**

city(city\_id ,city\_name, state\_id)

**Domain Constraints:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Attribute** | **Datatype** | **Contraint** | **Example** |
| city\_id | number(3) | PRIMARY KEY | 45 |
| city\_name | varchar(50) | NOT NULL | surat |
| state\_id | number(2) | NOT NULL | 23 |

**State :-**

state(state\_id,state\_name)

**Domain Constraints:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Attribute** | **Datatype** | **Contraint** | **Example** |
| state\_id | number(3) | PRIMARY KEY | 2 |
| state\_name | varchar(20) | NOT NULL | Gujarat |

**SQL Queries**

**Create Database:**

CREATE DATABASE Animal Species Repository System

WITH

OWNER = postgres

ENCODING = 'UTF8'

LC\_COLLATE = 'English\_India.1252'

LC\_CTYPE = 'English\_India.1252'

TABLESPACE = pg\_default

CONNECTION LIMIT = -1;

**Creating Tables:**

CREATE TABLE animal(

animal\_id number(8) PRIMARY KEY,

name varchar(30) NOT NULL,

height varchar(6) NOT NULL,

weight number(5) NOT NULL,

sci\_name varchar(30) NOT NULL,

life\_span number(3) NOT NULL,

age number(3) NOT NULL,

color varchar(50) NOT NULL,

gender varchar(6) NOT NULL

);

CREATE TABLE category(

category\_id number(1) PRIMARY KEY,

category\_name varchar(50) NOT NULL

);

CREATE TABLE sub\_catagory(

sub\_category\_id number(1) PRIMARY KEY,

sub\_category\_name varchar(50) NOT NULL

);

CREATE TABLE main\_category(

main\_category\_id number(2) PRIMARY KEY,

sub\_category\_id number(1) REFERENCES sub\_category(sub\_category\_id)

ON DELETE RESTRICT NOT NULL,

category\_id number(1) REFERENCES category(category\_id)

ON DELETE RESTRICT NOT NULL,

animal\_id number(8) REFERENCES animal(animal\_id)

ON DELETE RESTRICT NOT NULL

);

CREATE TABLE animal\_details(

animal\_id number(8) REFERENCES animal(animal\_id)

ON DELETE RESTRICT NOT NULL ,

city\_id number(3) REFERENCES city(city\_id)

ON DELETE RESTRICT NOT NULL ,

population number(7) NOT NULL

);

CREATE TABLE state(

state\_id number(2) PRIMARY KEY,

state\_name varchar(50) NOT NULL

);

CREATE TABLE city(

city\_id number(3) PRIMARY KEY,

city\_name varchar(50) NOT NULL,

state\_id number(2) REFERENCES state(state\_id)

ON DELETE RESTRICT NOT NULL

);