SEGUNDO PARCIAL PRACTICO INGENIERIA DE DATOS

JUAN SEBASTIAN ARROYO

SERGIO VELANDIA

DESARROLLO DE LOS PUNTOS:

1.

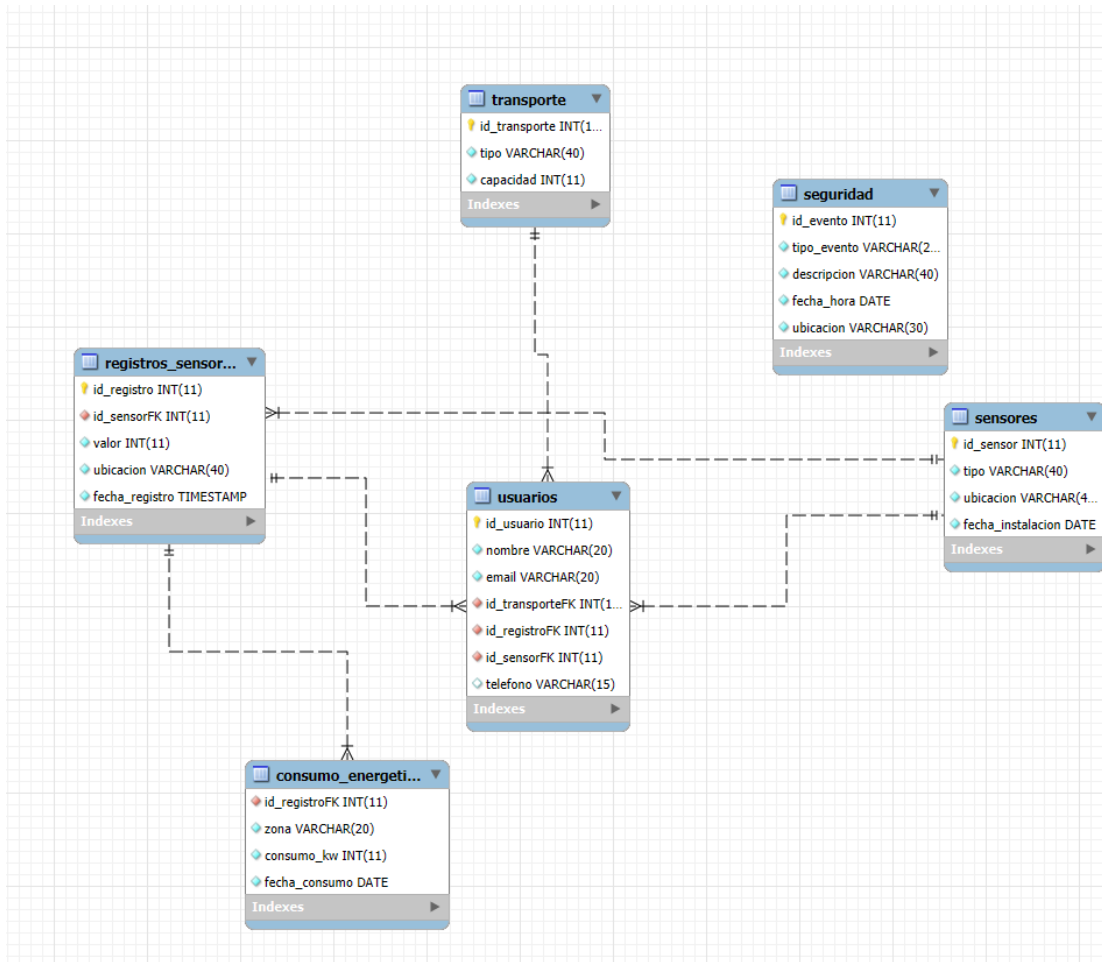|	19	13:39:20	CREATE DATABASE BDDataVerse
	20	13:39:57	USE BDDataVerse

2.

	21	13:40:27	CREATE TABLE Sensores(id_sensor INT PRIMARY KEY AUTO_INCREMENT, tipo VARCHAR(40) NOT NULL, ubicacion VARCHAR(40) NOT NULL, fe...	0 row(s) affected
	22	13:40:27	CREATE TABLE Registros_Sensores(id_registro INT PRIMARY KEY AUTO_INCREMENT, id_sensorFK INT NOT NULL, valor VARCHAR(40) NOT NULL...	0 row(s) affected
	23	13:40:27	CREATE TABLE Transporte(id_transporte INT PRIMARY KEY AUTO_INCREMENT, tipo VARCHAR(40) NOT NULL, capacidad INT NOT NULL)	0 row(s) affected
	24	13:40:27	CREATE TABLE Usuarios(id_usuario INT PRIMARY KEY AUTO_INCREMENT, nombre VARCHAR(20) NOT NULL, email VARCHAR(20) NOT NULL, id_t...	0 row(s) affected
	25	13:40:27	CREATE TABLE Consumo_Energetico(id_registroFK INT NOT NULL, zona VARCHAR(20) NOT NULL, consumo_kw INT NOT NULL, fecha_consumo IN...	0 row(s) affected
	26	13:40:27	CREATE TABLE Seguridad (id_evento INT PRIMARY KEY AUTO_INCREMENT, tipo_evento VARCHAR(20) NOT NULL, descripcion VARCHAR(40) NO...	0 row(s) affected

4.

	27	13:40:42	ALTER TABLE Usuarios ADD COLUMN telefono VARCHAR (15)

5.

transporte
- 🔑 id_transporte INT(1...
- ◆ tipo VARCHAR(40)
- ◆ capacidad INT(11)
- Indexes

seguridad
- 🔑 id_evento INT(11)
- ◆ tipo_evento VARCHAR(2...
- ◆ descripcion VARCHAR(40)
- ◆ fecha_hora DATE
- ◆ ubicacion VARCHAR(30)
- Indexes

registros_sensor...
- 🔑 id_registro INT(11)
- 🔸 id_sensorFK INT(11)
- ◆ valor INT(11)
- ◆ ubicacion VARCHAR(40)
- ◆ fecha_registro TIMESTAMP
- Indexes

sensores
- 🔑 id_sensor INT(11)
- ◆ tipo VARCHAR(40)
- ◆ ubicacion VARCHAR(4...
- ◆ fecha_instalacion DATE
- Indexes

usuarios
- 🔑 id_usuario INT(11)
- ◆ nombre VARCHAR(20)
- ◆ email VARCHAR(20)
- 🔸 id_transporteFK INT(1...
- 🔸 id_registroFK INT(11)
- 🔸 id_sensorFK INT(11)
- ◆ telefono VARCHAR(15)
- Indexes

consumo_energeti...
- 🔸 id_registroFK INT(11)
- ◆ zona VARCHAR(20)
- ◆ consumo_kw INT(11)
- ◆ fecha_consumo DATE
- Indexes

6.

INSERCIONES

```
62
63     -- INSERCIONES;
64  •  DESCRIBE sensores;
65     INSERT INTO sensores (tipo, ubicacion, fecha_instalacion) VALUES
66     ("Lot", "Colombia", "2023-02-23"),
67     ("red transporte","Colombia","2023-05-03"),
68     ("consumo energetico","Colombia", "2022-04-05"),
69     ("seguridad", "Colombia", "2024-03-06"),
70     ("redes sociales", "Colombia", "2024-12-07");
71  •  SELECT * FROM sensores;
72
73     DESCRIBE registros_sensores;
74  •  INSERT INTO registros_sensores (id_sensorFK, valor, ubicacion, fecha_registro) VALUES
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

id_sensor	tipo	ubicacion	fecha_instalacion
1	Lot	Colombia	2023-02-23
2	red transporte	Colombia	2023-05-03
3	consumo energetico	Colombia	2022-04-05
4	seguridad	Colombia	2024-03-06
5	redes sociales	Colombia	2024-12-07
*	NULL	NULL	NULL	NULL

Result 1 | sensores 2 ✕

Output

Action Output

#	Time	Action	Message
✓	14	14:40:51	CREATE TABLE Consumo_Energetico(id_registroFK INT NOT NULL, zona VARCHAR(20) NOT NULL, consumo_kw INT NOT NULL, fecha_consum...	0 row(s) affected
✓	15	14:40:51	CREATE TABLE Seguridad (id_evento INT PRIMARY KEY AUTO_INCREMENT, tipo_evento VARCHAR(20) NOT NULL, descripcion VARCHAR(40...	0 row(s) affected
✓	16	14:40:51	ALTER TABLE Usuarios ADD COLUMN telefono VARCHAR (15)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0
✓	17	14:51:56	DESCRIBE sensores	4 row(s) returned
✓	18	14:51:56	INSERT INTO sensores (tipo, ubicacion, fecha_instalacion) VALUES ("Lot", "Colombia", "2023-02-23"), ("red transporte","Colombia","2023-05-03"), ("...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0
✓	19	14:51:56	SELECT * FROM sensores LIMIT 0, 500	5 row(s) returned

```
73  •  DESCRIBE registros_sensores;
74  •  INSERT INTO registros_sensores (id_sensorFK, valor, ubicacion, fecha_registro) VALUES
75     (1, 2, "Colombia", "2024-12-02"),
76     (1, 4, "Colombia", "2024-05-04"),
77     (2, 3 , "Colombia", "2023-12-24"),
78     (3, 7 , "Colombia", "2023-01-04"),
79     (4, 6, "Colombia", "2025-02-01"),
80     (5, 2, "Colombia", "2025-02-04");
81  •  SELECT * FROM registros_sensores;
82
83  •  DESCRIBE registros_sensores;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

id_registro	id_sensorFK	valor	ubicacion	fecha_registro
1	1	2	Colombia	2024-12-02 00:00:00
2	1	4	Colombia	2024-05-04 00:00:00
3	2	3	Colombia	2023-12-24 00:00:00
4	3	7	Colombia	2023-01-04 00:00:00
5	4	6	Colombia	2025-02-01 00:00:00
6	5	2	Colombia	2025-02-04 00:00:00
*	NULL	NULL	NULL	NULL	NULL

Result 3 | registros_sensores 4 ✕

Output

Action Output

#	Time	Action	Message
✓	17	14:51:56	DESCRIBE sensores	4 row(s) returned
✓	18	14:51:56	INSERT INTO sensores (tipo, ubicacion, fecha_instalacion) VALUES ("Lot", "Colombia", "2023-02-23"), ("red transporte","Colombia","2023-05-03"), ("...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0
✓	19	14:51:56	SELECT * FROM sensores LIMIT 0, 500	5 row(s) returned
✓	20	14:52:52	DESCRIBE registros_sensores	5 row(s) returned
✓	21	14:52:52	INSERT INTO registros_sensores (id_sensorFK, valor, ubicacion, fecha_registro) VALUES (1, 2, "Colombia", "2024-12-02"), (1, 4, "Colombia", "2024-0...	6 row(s) affected Records: 6 Duplicates: 0 Warnings: 0
✓	22	14:52:52	SELECT * FROM registros_sensores LIMIT 0, 500	6 row(s) returned

```sql
85      (1, 2, "Colombia", "2024-12-02"),
86      (1, 4, "Colombia", "2024-05-04"),
87      (2, 3 , "Colombia", "2023-12-24"),
88      (3, 7 , "Colombia", "2023-01-04"),
89      (4, 6, "Colombia", "2025-02-01"),
90      (5, 2, "Colombia", "2025-02-04");
91  •  SELECT * FROM registros_sensores;
92
93  •  DESCRIBE Transporte;
94  •  INSERT INTO Transporte (tipo, capacidad) values
95      ('Terrestre', '40'),
96      ('Acuatico', '20'),
97      ('Aereo', '50'),
98      ('Terrestre', '80'),
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

id_registro	id_sensorFK	valor	ubicacion	fecha_registro
1	1	2	Colombia	2024-12-02 00:00:00
2	1	4	Colombia	2024-05-04 00:00:00
3	2	3	Colombia	2023-12-24 00:00:00
4	3	7	Colombia	2023-01-04 00:00:00
5	4	6	Colombia	2025-02-01 00:00:00
6	5	2	Colombia	2025-02-04 00:00:00
7	1	2	Colombia	2024-12-02 00:00:00
8	1	4	Colombia	2024-05-04 00:00:00
9	2	3	Colombia	2023-12-24 00:00:00
10	3	7	Colombia	2023-01-04 00:00:00
11	4	6	Colombia	2025-02-01 00:00:00
12	5	2	Colombia	2025-02-04 00:00:00
NULL	NULL	NULL	NULL	NULL

Result 5 | registros_sensores 6 ×   Apply

Output

Action Output

#	Time	Action	Message
✓ 20	14:52:52	DESCRIBE registros_sensores	5 row(s) returned
✓ 21	14:52:52	INSERT INTO registros_sensores (id_sensorFK, valor, ubicacion, fecha_registro) VALUES (1, 2, "Colombia", "2024-12-02"), (1, 4, "Colombia", "2024-0...	6 row(s) affected Records: 6 Duplicates: 0 Warnings: 0
✓ 22	14:52:52	SELECT * FROM registros_sensores LIMIT 0, 500	6 row(s) returned
✓ 23	14:53:07	DESCRIBE registros_sensores	5 row(s) returned
✓ 24	14:53:07	INSERT INTO registros_sensores (id_sensorFK, valor, ubicacion, fecha_registro) VALUES (1, 2, "Colombia", "2024-12-02"), (1, 4, "Colombia", "2024-0...	6 row(s) affected Records: 6 Duplicates: 0 Warnings: 0
✓ 25	14:53:07	SELECT * FROM registros_sensores LIMIT 0, 500	12 row(s) returned

```sql
93  •  DESCRIBE Transporte;
94  •  INSERT INTO Transporte (tipo, capacidad) values
95      ('Terrestre', '40'),
96      ('Acuatico', '20'),
97      ('Aereo', '50'),
98      ('Terrestre', '80'),
99      ('Aereo', '70');
100 •  SELECT * FROM Transporte;
101
102 •  DESCRIBE Usuario;
103 •  INSERT INTO Usuario (nombre, email) values
104     ('Lina', 'linapena@hotmail.com'),
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

id_transporte	tipo	capacidad
1	Terrestre	40
2	Acuatico	20
3	Aereo	50
4	Terrestre	80
5	Aereo	70
NULL	NULL	NULL

Result 7 | Transporte 8 ×   Apply   Con

Output

Action Output

#	Time	Action	Message
✓ 23	14:53:07	DESCRIBE registros_sensores	5 row(s) returned
✓ 24	14:53:07	INSERT INTO registros_sensores (id_sensorFK, valor, ubicacion, fecha_registro) VALUES (1, 2, "Colombia", "2024-12-02"), (1, 4, "Colombia", "2024-0...	6 row(s) affected Records: 6 Duplicates: 0 Warnings: 0
✓ 25	14:53:07	SELECT * FROM registros_sensores LIMIT 0, 500	12 row(s) returned
✓ 26	14:53:26	DESCRIBE Transporte	3 row(s) returned
✓ 27	14:53:26	INSERT INTO Transporte (tipo, capacidad) values ('Terrestre', '40'), ('Acuatico', '20'), ('Aereo', '50'), ('Terrestre', '80'), ('Aereo', '70')	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0
✓ 28	14:53:26	SELECT * FROM Transporte LIMIT 0, 500	5 row(s) returned

```sql
91    SELECT * FROM registros_sensores;
92
93    DESCRIBE Transporte;
94    INSERT INTO Transporte (tipo, capacidad) values
95    ('Terrestre', '40'),
96    ('Acuatico', '20'),
97    ('Aereo', '50'),
98    ('Terrestre', '80'),
99    ('Aereo', '70');
100   SELECT * FROM Transporte;
101
102   DESCRIBE Usuarios;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Field	Type	Null	Key	Default	Extra
id_usuario	int(11)	NO	PRI	NULL	auto_increment
nombre	varchar(20)	NO		NULL	
email	varchar(20)	NO		NULL	
id_transporteFK	int(11)	NO	MUL	NULL	
id_registroFK	int(11)	NO	MUL	NULL	
id_sensorFK	int(11)	NO	MUL	NULL	
telefono	varchar(15)	YES		NULL	

Result 9 ×   Read Only Co...

Output

Action Output

#	Time	Action	Message
✓	26	14:53:26	DESCRIBE Transporte	3 row(s) returned
✓	27	14:53:26	INSERT INTO Transporte (tipo, capacidad) values ('Terrestre', '40'), ('Acuatico', '20'), ('Aereo', '50'), ('Terrestre', '80'), ('Aereo', '70')	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0
✓	28	14:53:26	SELECT * FROM Transporte LIMIT 0, 500	5 row(s) returned
✗	29	14:53:44	DESCRIBE Usuario	Error Code: 1146. Table 'bddataverse.usuario' doesn't exist
✓	30	14:54:05	DESCRIBE Usuarios	7 row(s) returned
✗	31	14:54:05	INSERT INTO Usuarios (nombre, email) values ('Lina', '1inapena@hotmail.com'), ('Ana', 'anacherry@hotmail.com'), ('Samuel', 'samuelfke@hotmail.com'), ...	Error Code: 1452. Cannot add or update a child row: a foreign key constraint fails ('bddataverse'.'usua...

Limit to 500 rows

```sql
109   SELECT * FROM Usuarios;
110           Execute the selected portion of the script or everything, if there is no selection
111   Describe seguridad;
112   insert into seguridad (tipo_evento,descripcion,fecha_hora, ubicacion) values
113   ('1', 'Terremoto','2022-02-04','ciudadela'),
114   ('2', 'Tsunami','2021-02-04','Costa Norte'),
115   ('3', 'Ruptura','2023-02-04','Centro de la ciudad'),
116   ('4', 'Derrumbe','2024-02-04','Afueras de la ciudad'),
117   ('5', 'Inundacion','2019-02-04','Nor-occidente de la ciudad');
118   SELECT * FROM Seguridad;
119
120   describe Consumo_Energetico;
121   insert into Consumo_Energetico (zona, consumo_kw, fecha_consumo) values
122   ('Central', '10000','2019-02-04'),
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

id_evento	tipo_evento	descripcion	fecha_hora	ubicacion
1	1	Terremoto	2022-02-04	ciudadela
2	2	Tsunami	2021-02-04	Costa Norte
3	3	Ruptura	2023-02-04	Centro de la ciudad
4	4	Derrumbe	2024-02-04	Afueras de la ciudad
5	5	Inundacion	2019-02-04	Nor-occidente de la ciudad
NULL	NULL	NULL	NULL	NULL

Result 10   Seguridad 11 ×

Output

Action Output

#	Time	Action	Message
✗	29	14:53:44	DESCRIBE Usuario	Error Code: 1146. Table 'bddataverse.usuario' doesn't exist
✓	30	14:54:05	DESCRIBE Usuarios	7 row(s) returned
✗	31	14:54:05	INSERT INTO Usuarios (nombre, email) values ('Lina', '1inapena@hotmail.com'), ('Ana', 'anacherry@hotmail.com'), ('Samuel', 'samuelfke@hotmail.com'), ...	Error Code: 1452. Cannot add or update a child row: a foreign key co...
✓	32	14:54:27	Describe seguridad	5 row(s) returned
✓	33	14:54:27	insert into seguridad (tipo_evento,descripcion,fecha_hora, ubicacion) values ('1', 'Terremoto','2022-02-04','ciudadela'), ('2', 'Tsunami','2021-02-04','Costa...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0
✓	34	14:54:27	SELECT * FROM Seguridad LIMIT 0, 500	5 row(s) returned

```
/*TRIGGER*/
DELIMITER //
    CREATE TRIGGER Verificar_Consumo_Maximo
    BEFORE INSERT ON Consumo_Energetico
    FOR EACH ROW
    BEGIN
    INSERT INTO consumo energetico(consumo_kw) VALUES(CHECK (NEW.consumo_kw < 10000);
  END //

DELIMITER ;
```

LINK REPO: https://github.com/ivysrrgo/Trabajos-Ing-Datos_Sergio-Velandia